



Environmental Justice Assessment

Clean Fuels Program Rule Chapter 173-424 WAC

Climate Pollution Reduction Program

Washington State Department of Ecology
Olympia, Washington

October 2025, Publication 25-04-091

Publication Information

This document is available on the Department of Ecology's website at:

<https://apps.ecology.wa.gov/publications/SummaryPages/2514091.html>

Contact Information

Climate Pollution Reduction Program

P.O. Box 47600

Olympia, WA 98504-7600

Phone: 360-407-6000

Website¹: [Washington State Department of Ecology](http://www.ecology.wa.gov)

ADA Accessibility

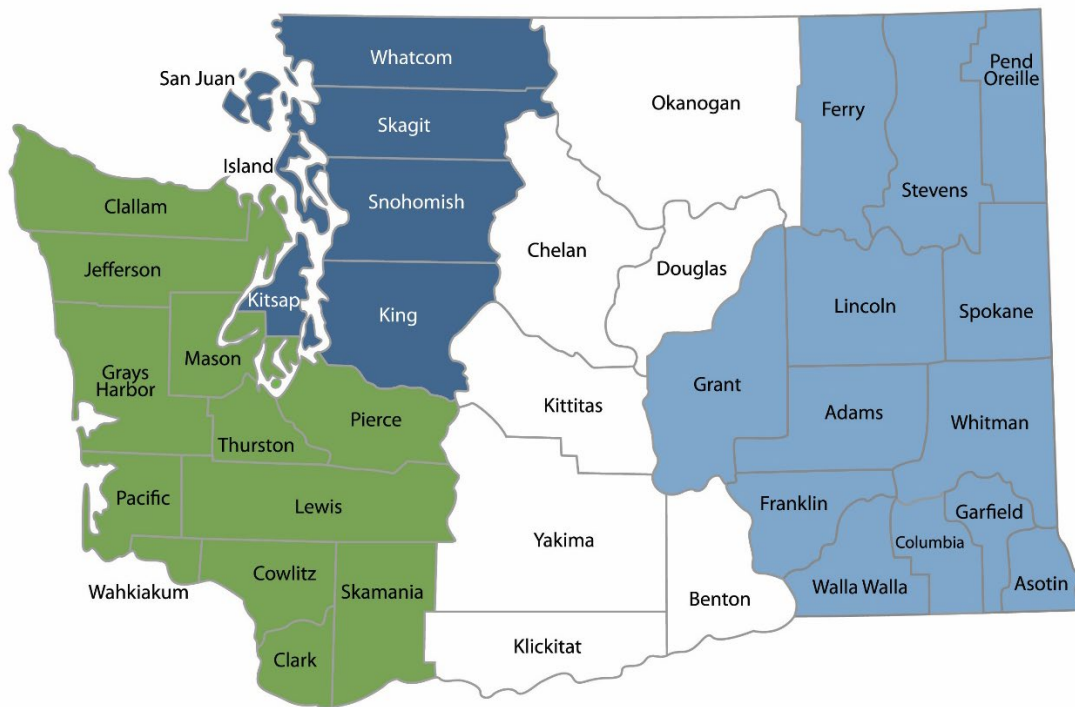
The Department of Ecology is committed to providing people with disabilities access to our information and services by meeting or exceeding the requirements of state and federal laws.

To request an ADA accommodation, email adam.saul@ecy.wa.gov, call (360) 742-7998, or call Ecology through the Washington Telecommunication Relay for services including text telephone (TTY) at 711 or through your preferred relay service provider. Visit Ecology.wa.gov/ADA for more accessibility information.

¹ www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region
360-407-6300

Northwest Region
206-594-0000

Central Region
509-575-2490

Eastern Region
509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 West Alder Street Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 North Monroe Spokane, WA 99205	509-329-3400
Headquarters	Statewide	P.O. Box 46700 Olympia, WA 98504	360-407-6000

Environmental Justice Assessment Clean Fuels Program Rule

Chapter 173-424 WAC

Climate Pollution Reduction Program
Washington State Department of Ecology
Olympia, WA

October 2025 | Publication 25-04-091



DEPARTMENT OF
ECOLOGY
State of Washington

Table of Contents

Table of Contents	5
List of Figures and Tables	6
Executive Summary	7
Section 1: Background	9
Section 2: Notification that an Environmental Justice Assessment has been Initiated	11
Section 3: Identify Affected Tribes	11
Section 4: Offer Consultation	13
Section 5: Summary of Tribal Consultation & Engagement	13
Section 6: Identification of Overburdened Communities & Vulnerable Populations	14
Section 7: Summary of Community Engagement	28
Section 8: Potential Environmental Benefits & Harms from Action	33
Section 9: Options to Eliminate, Reduce or Mitigate Harms and Equitably Distribute Benefits ...	41

List of Figures and Tables

Figure 1: NOx pollution near Seattle-Tacoma International Airport	16
Figure 2: Location of large dairies in Washington	17
Figure 3: PM2.5 and ozone pollution in areas with dairy digesters	18
Figure 4: Location of Sunnyside RNG project in relation to census tracts with high levels of PM2.5 and ozone pollution.....	19
Figure 5: Large-Scale Dairy Farms in the Sunnyside region	25
Figure 6: Population Living in Poverty - Greater Sunnyside Region	25

Executive Summary

Ecology has adopted rule amendments to the Clean Fuel Standard (CFS) program, which reduces the carbon intensity of transportation fuels used in Washington. The rule changes aim to comply with a new state law incentivizing the increased production and use of alternative jet fuels, establish a third-party verification program, expand fueling access for zero-emission heavy-duty vehicles, establish updated standards to verify the environmental attributes of biomethane and electricity claimed in the program, and make various other updates. The proposed regulation will be effective statewide and provide benefits to Washington residents through the reduction of greenhouse gas emissions and air pollution from the transportation sector.

Throughout the rule development process, Ecology staff held numerous public workshops and meetings with community-based environmental organizations, Tribes, regulated entities, and other interested parties to discuss the proposed changes. Some comments focused on the impacts of alternative fuel production on vulnerable populations and overburdened communities; in particular, we heard concerns about the production of biomethane from dairy and swine manure and potential environmental and public health harms to communities living near large livestock farms. Comments also focused on “greenwashing” concerns with alternative jet fuel and biofuel production.

Ecology took steps to address these concerns by establishing updated standards to verify the environmental attributes associated with these fuels, including establishing new parameters on credit generation for livestock-sourced biomethane to mitigate potential harms on communities. Ecology also adopted new “regionality” and “deliverability” provisions to better verify that alternative fuel investments receiving credits under the program are creating direct environmental and economic benefits for Washington.

As the CFS is market-based and fuel-neutral, participating entities may make various investments in alternative fuel production and infrastructure to comply with the program. While these investments will likely create benefits through the displacement of fossil-based fuels and the creation of economic and employment opportunities, they may also produce indirect harms through the expansion of feedstock production, pipeline infrastructure, and fuel refining capacity.

We are not aware of any specific investments made in direct connection with our changes, and any future projects will be separately evaluated according to local, state, and federal regulations at the time that those proposals are issued.

Ecology is planning to announce additional rulemaking in the coming months to implement the revised annual carbon intensity standards in [RCW 70A.535.025\(5\)\(a\)\(v\)](#) established by Second Substitute House Bill 1409 (Chapter 319, Laws of 2025). This rulemaking will likely feature

workshops, informal comment periods, and other engagement opportunities throughout the rule development process. Ecology staff will also continue to assess the impacts of the CFS on vulnerable populations and overburdened communities, and encourage community members, representatives of environmental justice organizations, and others to contact staff with any questions or concerns about the program.

Section 1: Background

Background Information

1. Descriptive title of project/action:
Clean Fuels Program Rulemaking (Amendments to 173-424 WAC)
2. Date EJ Assessment initiated:
December 18, 2023
3. Ecology Program/Office:
Climate Pollution Reduction Program
4. Point of contact for EJ Assessment:
Adam Saul, adam.saul@ecy.wa.gov, 360-742-7998
5. Significant Agency Action type, select one or more:
 - ☒ Rulemaking
 - ☐ New grant or loan program
 - ☐ New capital project, grant, or loan of \$12 million or more
 - ☐ Request legislation
 - ☐ Other, explain:
6. Write a short summary of the action.

Ecology is adopting amendments to Chapter 173-424 WAC, Clean Fuels Program Rule. The rule aims to reduce the life-cycle greenhouse gas emissions per unit energy, or carbon intensity (CI), of transportation fuels used in Washington.

The rulemaking adapts the Clean Fuel Standard to better incentivize greenhouse gas emissions reductions in hard-to-decarbonize sectors such as aviation and heavy-duty trucking. This rule adoption also promotes the production and use of alternative jet fuels, also known as sustainable aviation fuels, in Washington. These non-petroleum fuels can power airplanes while producing fewer carbon emissions. The adopted rule also creates additional incentives for investing in charging equipment for zero-emission heavy-duty trucks—a key part of Washington’s climate strategy.

Ecology is also adopting other changes based on learnings from the program’s first two years, best practices used in other states, and engagement with groups and individuals that have expressed interest in the policy. These changes include:

- In alignment with Engrossed Substitute Senate Bill 5447 (Chapter 232, Laws of 2023), updated rules regarding the production of low carbon intensity alternative jet fuel.
- Requirements for electrolytic hydrogen used in the production of alternative jet fuel and alternative marine fuel.
- The establishment of third-party verification requirements to improve data accuracy, including information used to generate credits and deficits in the program.
- Amended requirements for the use of indirect (also called book-and-claim) accounting of low carbon intensity biomethane or electricity, which allows fuel producers to claim use of renewable electricity delivered to the grid or biomethane injected into the common carrier pipeline without physical traceability under certain conditions. The amendments aim to encourage production of biomethane in the state and Pacific Northwest region and maximize local environmental benefits.
- Changes to avoided methane crediting requirements, which grant fuel producers additional credits for voluntarily capturing methane that would otherwise be released into the atmosphere. The amendments establish updated avoided methane crediting periods for biomethane produced from dairy and swine manure and organic waste diversion from landfills.
- Requirements related to capacity credits for zero emission vehicle infrastructure, including expanding credit generation opportunities to sites shared by multiple fleets.
- Miscellaneous changes to harmonize the rule with California and Oregon’s clean fuel program requirements.
- Various updates to improve clarity and readability, correct errors, streamline reporting and registration requirements, and make other improvements to program implementation.

This rulemaking is separate from the changes to the Clean Fuel Standard set under [House Bill 1409](#), which will strengthen the program’s carbon intensity requirements. Passed during the 2025 legislative session, the new law requires a 45% reduction in carbon intensity by 2038, up from the previous requirement of 20%. The annual carbon intensity reduction target for 2026 and 2027 is set in statute, and Ecology expects to announce a rulemaking to incorporate targets for 2028 onward in the upcoming months.

7. Identify the method(s) for the public to comment on this proposed action for this assessment.

Ecology has conducted engagement, focused on connecting with overburdened communities and vulnerable populations, for the purpose of the environmental justice assessment of this rule. The engagement began in early 2024 and included virtual public meetings, comment

periods, and other targeted outreach, details of which are shared on our rulemaking website and email distribution list. Ecology held an environmental justice-specific public webinar on September 26, 2024.

8. Create/provide an Ecology webpage with information about this proposed action.

Provide link here: [WAC 173-424 - Washington State Department of Ecology](#)

Section 2: Notification that an Environmental Justice Assessment has been Initiated

This section instructs Ecology staff to notify OFM about the initiation of the action.

Section 3: Identify Affected Tribes

This section summarizes preliminary planning for Tribal Consultation. Ecology must offer consultation with Tribes on significant agency actions that affect federally recognized Tribes' rights and interest in their tribal lands.

Preparing for Tribal Consultation

1. Is the proposed action likely to have any local or regional impacts to federally reserved Tribal rights and resources, including but not limited to, those protected by treaty, executive order, or federal law? Choose one of the following:
☒ Yes
☐ No
☐ Unsure
2. List any federally recognized Tribes that are expected to be affected by the proposed action. If it is determined during consultation that Tribes do not wish to be included, then do not include them.

The CFS program applies statewide, and this rulemaking has the potential to impact all federally recognized Tribes with lands and territories in Washington. As of September 2025, no Tribes have registered in the CFS.

Tribes may generate CFS credits for producing or supplying low-carbon non-regulated fuels such as electricity and alternative jet fuel, provided they register for the CFS as an opt-in fuel reporting entity and pay an annual fee. Tribes may also apply for "capacity credits," or credits awarded for electric vehicle charging infrastructure that does not get utilized for fueling, provided the charging stations meet the eligibility criteria in the rule. Another CFS

credit revenue option for Tribes is “advance credits,” which provide funding to Tribes and other public entities for transportation electrification or hydrogen projects to receive a more rapid return on investment. While not directly within the scope of this current rulemaking, Ecology staff are developing methods internally to increase Tribal engagement and reduce barriers to participation in the program.

Tribes may also be indirectly affected through the construction of alternative fuel infrastructure and production facilities by non-Tribal entities on or near Tribal lands or territories. The CFS does not regulate or oversee clean fuels construction and development projects, and any such projects would be analyzed through separate environmental and regulatory reviews at the time they are proposed.

Tribal areas and members living near clusters of dairy farms may be affected by amended biomethane rules in the CFS. For example, the Yakama Indian Reservation is located near a cluster of large dairies in the greater Sunnyside and Yakima area and could be affected if dairies increase operations due to CFS credit incentives for captured biomethane from anaerobic digesters. The construction of an anaerobic digester at a dairy farm may result in increased air emissions and water quality impacts, depending on the pollution control mechanisms of the anaerobic digester, its location in proximity to neighboring residents and water sources, and numerous other factors. Similarly, Tribes located near major transportation corridors and cargo routes may also be affected by new refueling depots for zero-emission heavy-duty trucks and other “hard-to-decarbonize” sectors.

Specific impacts to Tribes from these potential projects are currently unclear, as Ecology’s analysis of expected growth in these projects is speculative and not based on specific construction projects or facility expansions known to occur because of changes made in this rulemaking. The alternative jet fuel facilities currently under development in Washington were all proposed prior to the announcement of this rulemaking on December 18, 2023. Anaerobic digester construction and zero-emission vehicle infrastructure development may increase due to changes in this rulemaking, but the rate of that increase, as well as the locations of specific projects and the details of their expected environmental impacts, are unknown. The only role of this rulemaking is to provide a potential additional funding mechanism, in addition to other public and private investment, for the project to occur.

3. If it is determined at any other point in the process of the assessment that Tribes have self-identified as being potentially impacted by the action, then include them in the assessment and offer consultation.

No Tribes self-identified as being potentially impacted by the action.

4. Describe plans to offer consultation to identified Tribes.

Ecology held two Tribal forums during the rule development period to engage directly with Tribes, describe the goals and objectives of the rulemaking process, and answer questions and receive comments. Notices were provided to the Chairs and Natural Resource Directors of all federally recognized Tribes located in Washington. Ecology also sent official notices to Tribes offering to engage in government-to-government consultation on this rulemaking's announcement, proposal, and adoption filing dates.

Section 4: Offer Consultation

This section directs Ecology staff to offer consultation with Tribes on significant agency actions that affect federally recognized Tribes' rights and interests in their Tribal lands. Ecology extended invitations to Tribal Chairs and Natural Resource Directors for government-to-government consultations at each stage of rulemaking. No Tribe asked for a consultation related to this rulemaking.

Section 5: Summary of Tribal Consultation & Engagement

Tribal Forums

Ecology held two Tribal Forums on February 15, 2024, and April 25, 2024, to discuss the rulemaking with Tribal representatives. Several Tribal representatives attended the February 15 meeting, and three representatives attended the April 25 meeting.

Questions and discussions revolved around the general policies and implementation of the Clean Fuel Standard, as well as potential credit revenue generation opportunities for alternative fuels. Attendees did not directly identify any harms or benefits to Tribal rights and interests during the meetings.

1. Describe potential impacts related to Tribal rights and interests that are not in Tribal lands?

Ecology did not identify any potential impacts related to Tribal rights and interests that are not in Tribal lands.

2. Summarize recommendations from Tribes to:
 - a. Mitigate or eliminate potential harms from the action

Not applicable, as there were no recommendations from Tribes related to mitigating or eliminating potential harms from this action.

- b. Equitably distribute benefits from the action

Not applicable, as there were no recommendations from Tribes related to equitably distributing benefits from this action.

3. Describe how consultation, engagement, and analyses of impacts to Tribes has informed the development of the action. If it has not, explain why.

No Tribes responded to Ecology's request for consultation or provided comment on this rule. As this rule is effective statewide, Ecology's analysis of potential impacts has been focused on Washington generally, and any impacts to Tribes are considered within Ecology's analysis of statewide impacts.

4. Describe any plans to continue consultation or engagement with Tribes related to this action.

There are no current plans to engage with Tribes related to this action, but we will respond to any future requests for consultation or engagement.

Additionally, we plan to offer Tribes and Tribal representatives opportunities to engage in the upcoming (separate) rulemaking to implement House Bill 1409, which will strengthen the program's carbon intensity requirements, through participation in public hearings, submitting comments, and offering additional opportunities for government-to-government consultation. Ecology staff are also available to meet virtually with Tribal staff to discuss participation in the CFS or answer other questions they have about the program or this rulemaking.

Section 6: Identification of Overburdened Communities & Vulnerable Populations

This section identifies overburdened communities and vulnerable populations, as identified in the [definitions of RCW 70A.02](#), who will be affected by the action.

Identify Overburdened Communities and Vulnerable Populations

1. Identify the geographic area(s) anticipated to be affected by the action.

The CFS applies across the state and most of its main targeted impact – reducing greenhouse gas emissions from transportation – is not associated with any specific geographic areas of Washington. Some of the rule amendments related to CFS credit incentives for zero-emission vehicle fueling infrastructure, biomethane capture facilities, alternative jet fuel production, and other low-carbon fuel projects may impact specific geographic areas of Washington. All these projects involve some form of facility

construction that may result in environmental impacts on neighboring communities. For example, the construction of an anaerobic digester at a dairy farm may result in increased air emissions and water quality impacts, depending on the pollution control of the anaerobic digester, its location in proximity to neighboring residents and water sources, and numerous other factors. So, while there may be impacts in specific areas and communities, the program's incentives broadly apply to all low-carbon fuels consumed in the state.

Ecology's analysis of these impacts is speculative in nature, as no specific projects have been proposed yet in connection with the changes made in this rulemaking. Funding for these projects is often supplemented through, or primarily provided by, state tax credits, federal and local incentives, and private investment, separate from CFS credits. A detailed analysis of geographic-based environmental impacts would be prepared at the time the specific project is proposed, as directed by existing laws and regulations governing project-based environmental review. As a preliminary analysis, however, Ecology has prepared brief statements about potential impacts below:

Zero-Emission Vehicle Fueling Infrastructure

The adopted rule expands "capacity credits," or incentives for the unused capacity of zero-emission vehicle (ZEV) fueling infrastructure, for heavy-duty vehicles in Washington. Rules that previously allowed credit access only to public charging sites now open eligibility to "shared" sites that are used by two or more privately-owned vehicle fleets. This expansion of heavy-duty charging infrastructure incentives is in accordance with several recommendations in Washington's Transportation Electrification Strategy, which identified methods of increasing zero-emission vehicle adoption in Washington to help the state meet its greenhouse gas emission limits and other environmental targets.

While the buildout of shared heavy-duty electric truck charging remains in its early stages, most sites are expected to be focused on drayage trucking, which involves short-haul routes between ports and nearby warehouses. Charging sites will likely be situated in areas near major roadways and transportation corridors. For example, one site recently opened in Washington [near the Port of Tacoma](#) to support the electrification of drayage trucks², and another under development is a ZEV charging depot [near SeaTac Airport](#).³ Other entities have expressed interest in locating charging sites near the Ports of Seattle and Tacoma.

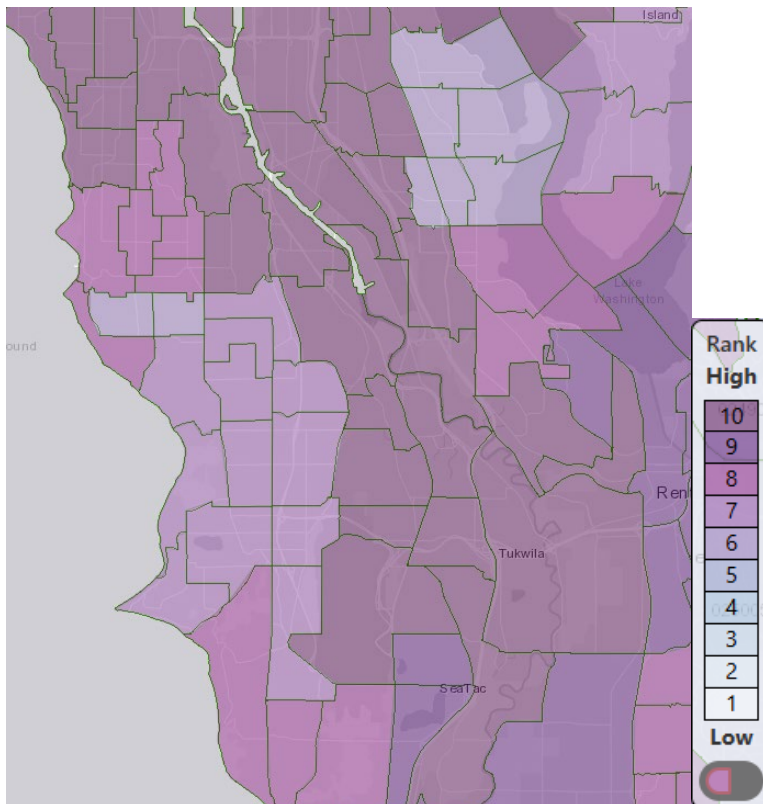
Residents living and working near these areas often experience disproportionate harm from diesel pollution and other health risks from heavy-duty transportation. The Duwamish River

² <https://www.nwseaportalliance.com/newsroom/northwest-seaport-alliance-announces-inaugural-incentive-program-zero-emission-drayage-0>

³ <https://www.cleantrucking.com/infrastructure/charging-infrastructure/article/15750325/zeem-solutions-building-seatac-area-charging-depot>

Valley, for example, contains numerous census tracts ranked “10” on the “Diesel Exhaust PM2.5 Emissions” layer of the Washington [Environmental Health Disparities Map](#) – indicating some of the most severe health harms from diesel pollution exposure in the entire state (see Figure 1). Residents of these areas are also exposed to significant noise from diesel-fueled heavy-duty trucks.

Figure 1: NOx pollution near Seattle-Tacoma International Airport



Source: [Washington Environmental Health Disparities Map](#)

Should charging sites like the one near Sea-Tac Airport help accelerate the transition to zero-emission trucks, this will likely have a significant health benefit for people working and living near areas like the Duwamish River Valley. In addition to the climate benefits, switching from diesel to electric or hydrogen-fueled trucks also produces substantial air quality benefits (as zero-emission trucks do not release any air contaminants) and a decrease in noise pollution.

Biomethane Capture and Dairy Digesters

The CFS rule allows credit generation for dairy and swine manure captured in an anaerobic digester and refined into biomethane for use in the transportation system, either as a feedstock (for producing hydrogen, alternative jet fuel, or other alternative fuels) or as a direct fuel for natural gas-powered vehicles. A single-digit number of dairy digesters, located mainly in Whatcom, Skagit, and Yakima counties, were constructed in Washington before the start date of the CFS program – primarily to generate electricity to sell to local and regional utilities, although one dairy has sold fuel to report in California’s Low Carbon Fuel Standard program.⁴ Another RNG project is under development in Sunnyside.⁵

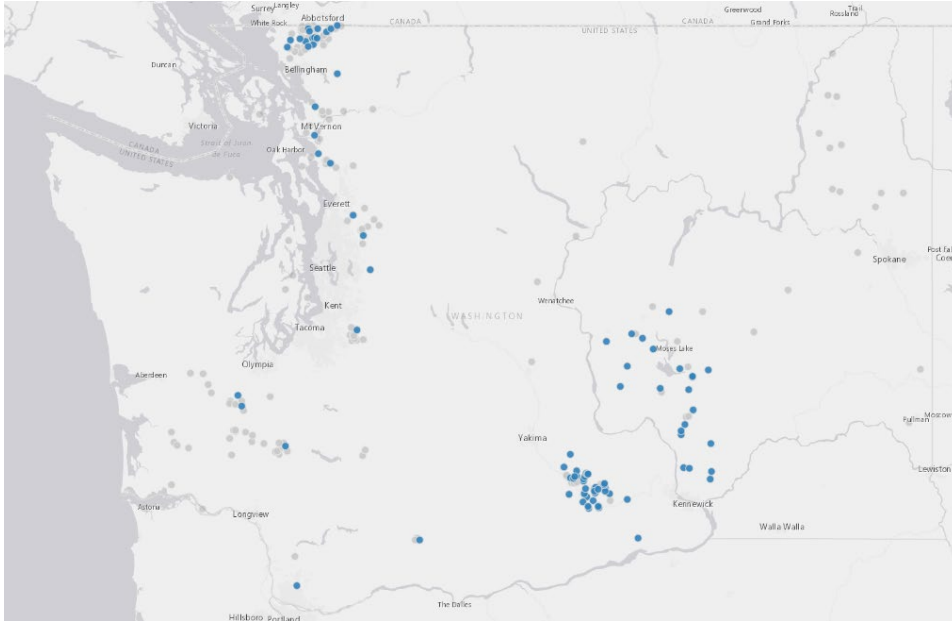
The inclusion of amended rules for avoided methane crediting, combined with the expected increases in CFS credit prices resulting from House Bill 1409, has renewed interest in digester construction from the dairy and renewable natural gas industries. It is premature to predict specific impacts from the amended avoided methane crediting periods established in rule, given that most digester projects take several years to develop and the new crediting periods have not yet gone into effect. If the amended rules result in increased digester construction, we expect most projects to be in areas with a significant amount of large, concentrated dairy farms (see Figure 2). The below map of licensed dairy milk farms⁶ in Washington, filtered for “large” dairies, illustrates where these projects are more likely to occur:

Figure 2: Location of large dairies in Washington

⁴ Via the EPA AgSTAR database: <https://www.epa.gov/agstar/livestock-anaerobic-digester-database>

⁵ <https://pacificag.com/sunnyside-rng/>

⁶ Via the “Washington Licensed Cow Milk Dairy Farms” map via Washington Spatial Data: https://geo.wa.gov/datasets/26add7da921d4aa68ccb50ce191c6182_0/about

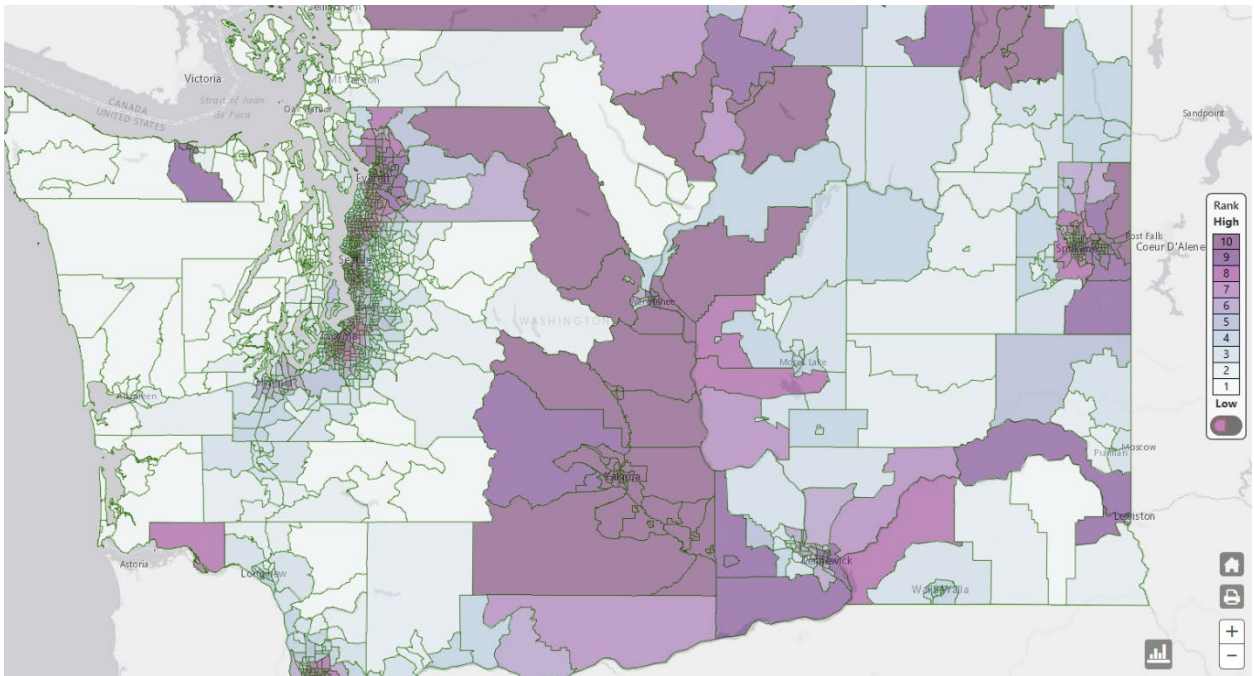


Source: [Washington State Geospatial Data](#)

As demonstrated on the map, the areas with the highest concentration of dairies and therefore where we may assume future digesters are likely to be built, include the greater Lower Yakima Valley region (in particular, Sunnyside and its surrounding communities) and northern Whatcom County, near the Canadian border. Although not as concentrated, significant anaerobic digester construction may also occur in other areas of central Washington northeast of Yakima (including Grant/Franklin counties) as well as Skagit Valley. These conclusions are speculative given that no specific projects have been announced yet and any decision to build digesters would be at the discretion of private entities who participate in the CFS.

Using the Washington Department of Health’s [Environmental Health Disparities map](#) filtered for PM2.5 and ozone pollution, some of the areas most prime for dairy digester development are also at significant risk for PM2.5 and ozone pollution (see Figure 3). This pollution could potentially be exacerbated by increases in the manure management practices that are best suited to biogas digesters.

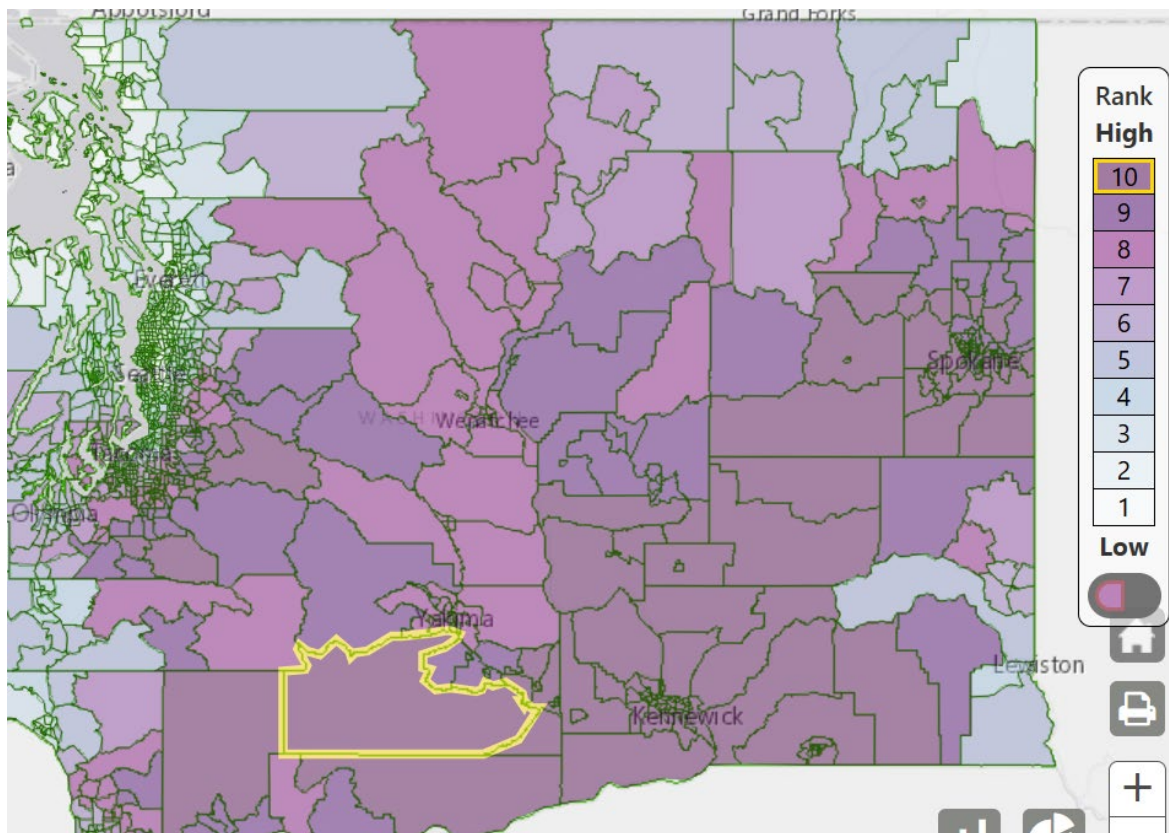
Figure 3: PM2.5 and ozone pollution in areas with dairy digesters



Source: [Washington Environmental Health Disparities Map](#)

These maps show high concentrations of PM2.5 and ozone pollution in areas near the Sunnyside RNG project (see Figure 4). The Environmental Health Disparities Map doesn't track other potential pollutants such as ammonia (potential precursor to PM2.5) and volatile organic compounds (potential precursor for ozone) that could be released from these facilities.

Figure 4: Location of Sunnyside RNG project in relation to census tracts with high levels of PM2.5 and ozone pollution



Source: [Washington Environmental Health Disparities Map](#)

Alternative Jet Fuel Production

As of this rule’s adoption date, there are two alternative jet fuel production sites under construction in Washington: the Twelve E-Jet Fuel plant in Moses Lake and the SkyNRG production plant (known as “Project Wigeon”) in Walla Walla. While both facilities were proposed before Ecology announced rulemaking on alternative jet fuels in December 2023, amendments in the adopted rule – such as changes to carbon accounting procedures for “hard-to-decarbonize” sectors – will likely benefit both entities. A government-run fuel research and development center is also under proposal at Paine Field in Everett.⁷

While Ecology is not aware of other planned projects, future facilities to provide alternative jet and alternative marine fuels will likely be located near areas with significant agricultural and waste feedstocks and/or zero-carbon electricity including fuel types such as hydrogen, renewable diesel, and electricity generated from biogas. Many areas of central and eastern Washington may fit these criteria, although facilities can be built anywhere statewide.

⁷ [Sustainable aviation fuel center gets funding boost | HeraldNet.com](#)

However, we do not expect facilities to be constructed in King, Pierce, or Snohomish Counties, as tax credits in state law only apply for production facilities located in counties with populations lower than 650,000 residents.

2. When applicable, using the [Washington State Department of Health's Environmental Health Disparities Map \(EHD Map\)](#), identify the EHD Map rankings for all census tracts likely to be impacted by the action.

As this rulemaking is a statewide action, all census tracts in the state may be impacted, including those ranked 9 and 10 on the EHD map. The Clean Fuel Standard is a statewide, market-based program that grants credits or deficits to regulated entities based on the carbon intensity of fuels used in Washington. The program is not currently structured to assess environmental impacts based on where fuels are consumed.

Private entities may develop fuel production or distribution infrastructure in Washington based on various business and economic considerations, which may include compliance with the CFS or credit opportunities available under the program. While these projects will likely have specific environmental impacts, including potential harms to vulnerable populations and overburdened communities, such impacts would be identified and assessed at the time that specific projects are proposed by permitting authorities. Such reviews include, but are not limited to, the following:

- Dairies are subject to pollution discharge permits overseen by Ecology, nutrient management plans overseen by the Washington State Department of Agriculture, and numerous other regulations. Digester construction is regulated through air quality permitting review by Ecology and local clean air agencies, State Environmental Policy Act (SEPA) review overseen by Ecology, and other reviews.
- Biofuels or alternative jet fuel production facilities are subject to SEPA and land use permitting reviews.
- Commercial zero-emission vehicle charging and refueling infrastructure construction is often subject to local permits and regulations.

3. From the rankings identified in question 2, are there any census tracts ranked 9 and 10?

☒ Yes

☐ No

If yes, describe.

While the impacts of the program are statewide, many of the areas mentioned in the above section rank a 9 or 10 on the EHD map. Census tracts near the SeaTac Airport, Port of Seattle, and Port of Tacoma – which are expected to be affected by alternative jet fuel and

heavy-duty zero-emission truck incentives – are nearly all ranked a 9 or 10 on the map. These areas are particularly affected by the “Diesel Exhaust PM2.5 Emissions” and “Proximity to Heavy Traffic Roadways” layers of the map – meaning they will particularly benefit from the transition to zero-emission vehicles and low-carbon fuels.

Separately, the Lower Yakima Valley region, which may have an increase in dairy digester construction and methane capture operations because of rule amendments and other developments in the CFS program, contains a high amount of census tracts with high ranks on the map. In particular, the area scores highly on the “PM2.5 Concentration,” “Ozone concentration,” and “Wastewater Discharge” layers, environmental impacts that are both associated with dairy and feedlot operations. The adopted rule contains provisions allowing the suspension of CFS credits for dairy operations that violate laws and regulations related to air quality, water quality, nutrient management, and other environmental standards, as a strategy to safeguard against negative environmental impacts from biomethane capture.

4. Please describe additional cumulative health considerations relevant to this action.

Health impacts from this action relate to the decrease in greenhouse gas emissions and air pollution from transportation, as well as the construction or expansion of alternative fuel and feedstock production.

Reducing the carbon intensity of transportation fuels used in Washington will decrease climate change impacts from transportation, Washington’s highest-emitting sector. Coupled with other decarbonization policies, the CFS Program is intended to decrease the occurrence and intensity of wildfires, extreme heat, natural disasters, and numerous other health risks exacerbated by human-caused climate change.

At a more local and immediate level, the increased use of zero- and low-carbon fuels often creates air quality benefits through the reduction of emissions of nitrogen oxides, particulate matter, and other air contaminants. Transportation emissions are often concentrated in areas near ports, railyards, warehouses, and other cargo and freight hubs, which are often located near overburdened communities and vulnerable populations. Ecology has taken these co-benefits into account during rule development. For example, the proposed rule increases access to capacity credits for heavy-duty electric and hydrogen-powered trucks, which is expected to increase deployment of these vehicles by incentivizing the development of more infrastructure for refueling these vehicles.

Other health considerations include:

- Expansion of alternative fuel production leading to new facilities built in or near communities.
- Air pollution from transport of renewable fuels.

- The use of anaerobic digesters on dairy and swine farms and associated impacts on air and water.
- The effects of conversion of non-agricultural land for agricultural use, deforestation, and increased demand for use of crops as biofuel feedstocks instead of food.

Many of these considerations encompass issues that are outside of the scope of this rulemaking and Ecology's authorities under the Clean Fuels Program Law (RCW 70A.535). However, Ecology has taken steps within its rulemaking authorities, when appropriate, to address these concerns.

The proposed amendments ensure that credit incentives claimed in the Program from dairy biomethane are resulting in new, additional environmental benefits. The amended rules require that anaerobic digesters must create a *new methane reduction benefit* to receive the highest number of incentives. In other words, the digester must abate methane that was being released into Washington's atmosphere before the start date of the Clean Fuel Standard program, meaning any incentives offered by the program are going to the reduction of methane emissions that otherwise would not have occurred. Existing digesters that do not meet this requirement may receive credits to help defray operational expenses, but at a lower level and for a reduced period. The rules also require dairies to follow local, state, and federal environmental regulations to participate in the program, and Ecology may suspend the entity's generation of avoided methane credits if it is found to be in violation of environmental standards, such as rules regarding wastewater discharge.

Ecology intends to monitor the relationship between the expansion of dairy feedlots and the production of biomethane via anaerobic digesters. Entities reporting dairy biomethane in the CFS program must provide details on herd sizes as part of the fuel pathway application process. While analyses from California (which has over 200 dairy digesters, more than 20 times the number of dairies in Washington) have shown mixed results, Ecology has very limited data from Washington given the lack of dairy biomethane pathways in the CFS program so far. Collecting data through the fuel pathway application process will help Ecology make a future determination, if appropriate, whether avoided methane credits cause unintended impacts to herd sizes.

The impact of biofuel production on land use, deforestation, crop sustainability, and food production has also been a key topic in clean fuels programs. Biofuel markets are global in scale, and feedstocks often come from a variety of sources and geographic regions. Washington biofuel producers and out-of-state importers are required to identify the origin of feedstocks during the fuel pathway application process and annual reporting. Biofuel sustainability considerations were not included in this rulemaking due to capacity and timing considerations. However, Ecology staff have closely tracked recently adopted amendments in California's Low Carbon Fuel Standard program that aim to reduce adverse impacts of biofuel production. Ecology continues to follow academic studies and research

on these topics and may consider changes in a future rulemaking, such as company-wide caps on biomass-based diesel fuels derived from virgin crop oils or indirect land use change values, which account for land conversion effects within the carbon intensity determination process.

5. Identify areas likely to be impacted by the action that are at or above the 80th percentile (in state) for the “People of color” and “Low income” socioeconomic indicators. You can do this by looking at the EHD map rankings for these individual indicators (rank 9 or higher roughly approximates those census tracts at or above the 80th percentile), and/or by downloading the appropriate data on these indicators from the Washington Tracking Network or the Census Bureau’s American Community Survey 5-year estimates and running additional analysis to determine percentiles.

As this rule applies statewide, all census tracts at or above the 80th percentile for these socioeconomic indicators may be affected by this rule.

Many communities located near Washington-based dairy farms that may construct anaerobic digesters to participate in the CFS program rank above the 80th percentile for the “people of color” and “low income” indicators. The following analysis is speculative, as it is unclear how many farms will install digesters because of this rulemaking action. However, the most concentrated cluster of large-scale dairy farms in Washington is located in the greater Sunnyside region, which ranks highly in both categories (see Figures 5 for dairy locations and Figure 6 for population living in poverty).

Figure 5: Large-Scale Dairy Farms in the Sunnyside region

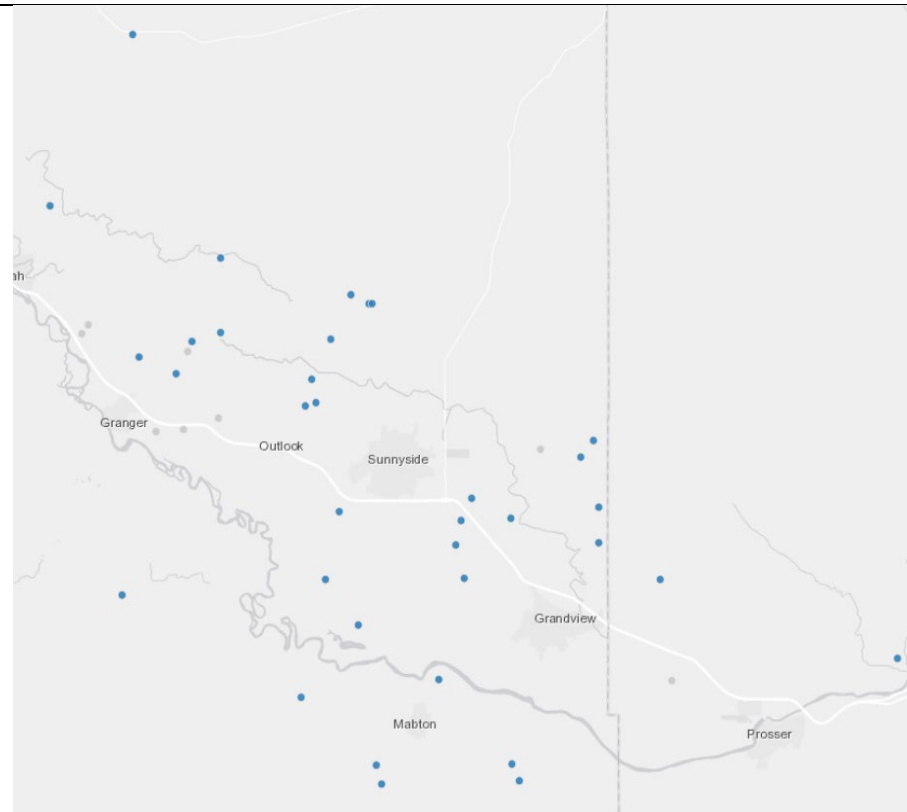
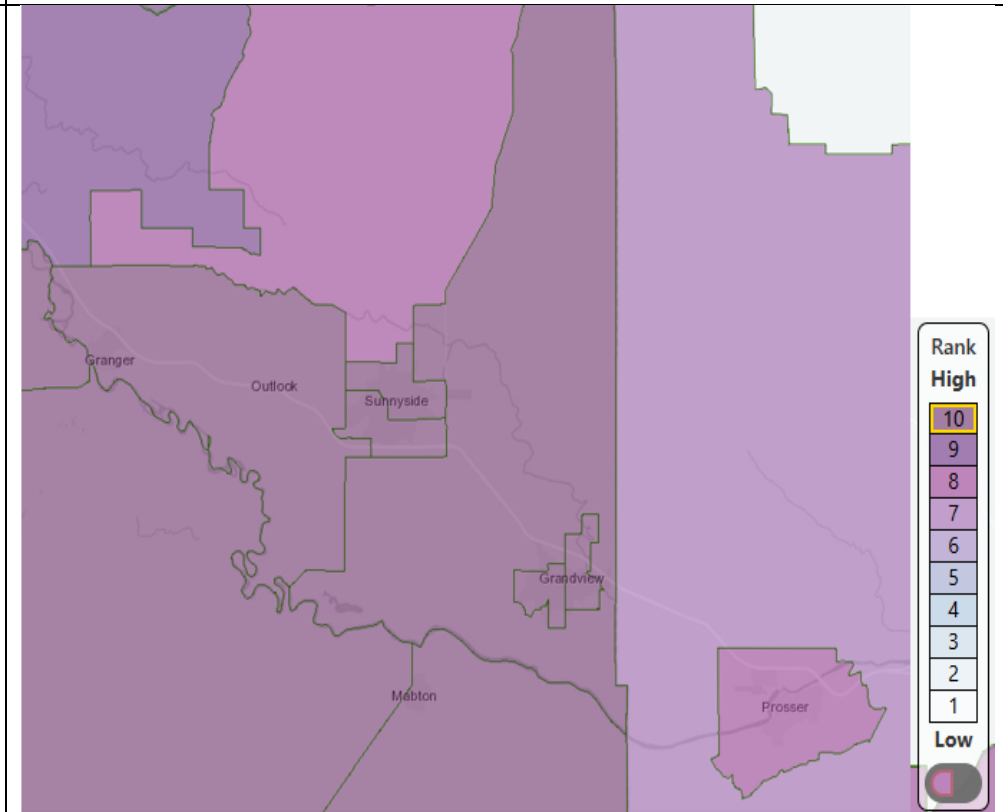


Figure 6: Population Living in Poverty - Greater Sunnyside Region



Several large dairies also operate in Grant County and Franklin County, which also have several areas with “people of color” and “population living in poverty” indicators at the 80th percentile or above. These agricultural communities tend to be lower-income, with larger proportions of people with Limited English Proficiency and undocumented residents – including agricultural workers who are exposed regularly to pesticides and other environmental and health hazards.

The remaining clusters of Washington dairy farms are in the Skagit Valley and northern Whatcom County. The Mt. Vernon and Burlington area has several census tracts that rank above the 80th percentile for both indicators. The remaining areas in both regions rank below the 80th percentile.

6. Using the EHD map and/or data from Washington Tracking Network, identify any other indicators pertaining to socioeconomic characteristics, health disparities, and/or climate and environmental impacts at or above the 80th percentile (in state) that are relevant to this action.

Many areas of the Sunnyside and Lower Yakima Valley region also rank above the 80th percentile in the following categories:

- Concentrations of ozone and PM 2.5
 - Primary Language Other than English
 - No High School Diploma
 - Transportation Expenses
 - Low Birth Weight
7. Identify additional overburdened communities and vulnerable populations that are likely to be affected by the action.

Communities near swine farms may also be affected by this action, as captured hog manure converted into biogas is also eligible to generate avoided methane credits under the adopted rule. Most American swine farms are in the Midwest and North Carolina, and the limited number of Washington hog farms are mostly small in scale – making their participation in the CFS program highly unlikely. The adopted rules also make CFS participation from out-of-state hog farms unlikely in the long-term, as the amended rules will begin requiring injection into a natural gas pipeline serving the Pacific Northwest (which no areas of concentrated hog farming in the US are close to) starting in 2035.
 8. Through community engagement, were additional overburdened communities and vulnerable populations identified who are likely to be affected by the action? Describe additional communities or populations identified, and the reasons they would be considered overburdened and vulnerable.

While the general risks were already identified earlier in this section, representatives from rural farming communities and environmental justice organizations also directly communicated their concerns with rules about avoided methane crediting and dairy biogas.

Representatives shared resources from California, which has experienced a substantial increase in dairy digester operations in recent years as a method of generating credits in the state's Low Carbon Fuel Standard (LCFS) program, and voiced concerns about the environmental and public health impacts of the Washington dairy industry. Resources shared included reports and links claiming negative impacts on rural communities from dairy facility expansion, including increased pollution from larger herd sizes, noxious odors, and higher concentrations of air pollutants such as particulate matter, carbon monoxide, sulfur dioxide, and oxides of nitrogen. Impacts are generally highest near large dairies, as these facilities have the most biogas to produce from manure and refine into RNG – although a direct causal relationship between avoided methane credits, herd sizes, and industry consolidation has not been firmly established. Some participants also provided information about environmental harms caused by Washington-based dairy farms in the Lower Yakima Valley region.

Through community engagement, Ecology staff also heard personal experiences from members of rural overburdened communities about negative environmental and public health impacts from the dairy industry. This firsthand testimony supplemented staff research on the risks and hazards addressed above. Participants also shared alternative manure management and dairy sustainability strategies, as well as their personal experience with facing respiratory issues and contaminated drinking water problems because of dairy pollution.

9. Through Tribal Consultation, were additional overburdened communities and vulnerable populations identified who are likely to be affected by the action? Describe additional communities or populations identified, and the reasons they would be considered overburdened and vulnerable.

No additional overburdened communities or vulnerable populations were identified through Tribal consultation.

Section 7: Summary of Community Engagement

This section summarizes community engagement activities. Community Engagement should be tailored to specifically reach overburdened communities and vulnerable populations.

Community engagement is required for all significant agency actions, but the engagement methods will vary depending on the size, scope, and topic of the project. The level, type, and form of engagement is based on the likelihood that the actions may cause environmental harm or may affect the equitable distribution of environmental benefits to an overburdened community or a vulnerable population.

Summarizing Community Engagement

1. Describe the engagement activities with identified overburdened communities and vulnerable populations.

Ecology's engagement with overburdened communities and vulnerable populations included a public forum held on September 26, 2024, which focused specifically on environmental justice-related issues relevant to this rulemaking, such as avoided methane crediting, the use of biofuels and their effects on land use and carbon sequestration, electrification of heavy-duty transportation, and the production and use of alternative jet fuel.

In addition, Ecology held public meetings, hearings, and comment periods as part of the rulemaking process, including:

- Nine public workshops from February to December 2024 that focused on general rule development and engagement.
- Four informal comment periods.
- A formal comment period between June 16, 2025, and August 1, 2025.
- Public hearings on July 22, 2025, and July 23, 2025.
- Numerous one-on-one meetings and discussions with members of the public and representatives of community and environmental organizations.

All of Ecology's engagement efforts were open to the general public to attend. Two workshops offered at different dates/times were held at each "stage" of the rulemaking process to give interested parties additional opportunities to participate, and recordings were made available online shortly after meetings were held. Throughout these engagement efforts, we received the following written and verbal comments about potential impacts on communities and vulnerable populations:

- Concerns regarding the use of "avoided methane crediting" for biomethane generated from dairy and swine manure, and potential environmental and public health harms (e.g., increased water and air pollution) to communities living near Concentrated Animal Feeding Operations (CAFOs) and other livestock farms.
- Concerns for animal welfare if the CFS would incentivize industrialized dairies or CAFOs.

- “Greenwashing” concerns regarding alternative jet fuel and skepticism about its ability to curb carbon emissions from aviation or improve air quality in communities living near airports and flight paths. Participants who voiced this concern stated that carbon reductions per unit of jet fuel will make little difference without additional regulations on commercial aviation, as any greenhouse gas reduction benefits will be negated by additional flight volume. Participants also claimed that air quality benefits from the use of alternative jet fuel are based on inconclusive, preliminary research.
- Concerns about biofuel production and feedstock sourcing, and the associated impacts on land use, deforestation, food security, and the environment.

2. What actions were taken to help address barriers to meaningful engagement?

Rulemaking notices in Spanish, Vietnamese, Chinese, Korean, Ukrainian, and Russian were posted to Ecology’s website and were directly sent to subscribers of Ecology’s “Rules and SIP Updates” and “Clean Fuels Updates” email distribution lists following the announcement, proposal, and adoption stages of rulemaking. Live translations and accessibility services were also made available to meeting and workshop attendees upon request.

Ecology held two virtual workshops or hearings during each stage of rulemaking to accommodate interested parties’ schedules and allow flexibility for attendance. In addition, staff frequently invited workshop attendees and other interested parties to meet and discuss rulemaking topics throughout the rule development and the formal comment period. Ecology held numerous one-on-one or small group meetings with interested parties, including representatives of environmental justice and community-based organizations, throughout the rulemaking process in response to these offers. These meetings were primarily held virtually for between 30 minutes and one hour. Ecology staff and interested parties used the time to discuss concerns, ask and respond to questions, and provide clarity about the rulemaking process.

3. Identify overburdened communities or vulnerable populations potentially affected by the action who were not engaged and explain why not.

While Ecology heard concerns about avoided methane crediting and dairy digesters from environmental nonprofits and community-based organizations, Ecology received limited engagement from agricultural workers, individuals with Limited English Proficiency, and other members of rural communities that may be directly affected by the action. Multiple factors may explain the limited engagement from directly impacted populations, such as the technical nature of the CFS program and Ecology’s rulemaking process, a lack of resources to perform direct, in-person community engagement, and temporal overlap with other environmental justice-focused rulemakings and programs.

4. Summarize recommendations from members of overburdened communities and vulnerable populations to mitigate or eliminate potential harms from the action and/or equitably distribute benefits from the action.

Ecology received recommendations from members of overburdened communities and vulnerable populations about several aspects of the rule, which are summarized below by subject. Background information has been provided for context, as many of these issues involve highly technical issues related to the lifecycle carbon accounting of alternative fuels. For a discussion on how Ecology considered these recommendations for the final rule, please see Section 9.

Avoided Methane Crediting (AMC)

Background: We received recommendations to eliminate or reduce the ability for fuel producers to receive “avoided methane credits” (AMC) for biomethane, also known as renewable natural gas, that is captured from dairy and swine manure and injected into a pipeline for use as a transportation fuel or feedstock. AMC is a controversial framework⁸ because of its disputed carbon accounting assumptions, association with large-scale livestock operations, potential environmental and health impacts on frontline communities living near dairy and swine farms, and other factors. Large livestock manure capture facilities are most prevalent in California, benefitting from large dairy herd sizes, ideal climate conditions and manure management practices that are better suited for dairy biomethane production, and higher credit prices in California’s LCFS program, although several California-based project developers and operators have expressed plans or interest in expanding to Washington’s CFS program.

Under this framework, producers of biomethane from dairy or swine waste receive the highest credit incentives, or lowest assessed carbon intensities, in the program⁹ per unit of fuel reported. The reasoning behind this system is as follows:

- Methane is an incredibly potent short-lived climate pollutant,¹⁰ and capturing it before it is released into the atmosphere has an enormously positive environmental impact.
- Anaerobic digesters that capture livestock manure for use as biogas have significant capital and operational costs and are often economically unfeasible without the combination of CFS credits and other incentives.
- Livestock operations are not subject to direct emissions regulations or targets regarding reducing or capturing methane and will continue to release methane into the

⁸ [How California climate credits reward factory farms out of state - The Washington Post](#)

⁹ Biomethane produced from dairy and swine manure has a carbon intensity value of –150 gCO₂e/MJ under WAC 173-400, Table 8 (Washington Temporary Fuel Pathway Codes). This is the only fuel type to receive a negative carbon intensity score. Approved livestock manure pathways in California’s LCFS have received values as low as –630.72 gCO₂e/MJ.

¹⁰ [Short-lived Climate Pollutants - Center for Climate and Energy Solutions](#)

atmosphere for the foreseeable future, unless adequate incentives (including a significant amount of CFS credits) are granted to make methane capture profitable. This fact distinguishes livestock-derived biomethane from other sources of captured biomethane, such as landfills and wastewater treatment plants, that are subject to direct regulation and have different construction and operational costs for methane capture.

Recommendations Received: Ecology received one informal comment letter recommending that avoided methane crediting be eliminated, and that dairy and swine biomethane be granted the same carbon intensity score as biomethane derived from landfills and wastewater treatment plants.¹¹ The letter stated that capturing methane in an anaerobic digester does not address emissions from enteric fermentation, which emits more methane than manure. The letter also argues that utilizing liquid manure management, which produces more methane on average than dry manure or other alternatives, is an optional choice by dairy operators. The commenter argued that dairy operators should not be rewarded for reducing emissions from a higher-polluting and optional form of manure management.

Additional commenters have said that avoided methane crediting contributes to increased dairy herd sizes, resulting in additional adverse impacts related to air quality, wastewater runoff, odors, and other environmental factors. Depending on the price of CFS credits and other economic considerations, a dairy operator could be incentivized to increase herd size and facility capacity to maximize an additional revenue stream from biomethane production. There is some anecdotal and data-based evidence for this effect in California,¹² which has a more favorable environment for dairy biomethane production due to hotter, drier climate conditions that allow for the use of more productive digester systems, as well as a more robust clean fuels credit market. However, the California Air Resources Board (CARB) has also performed research on this topic. CARB found that while dairy herd sizes are increasing, they do not believe LCFS incentives are the cause, attributing increased herd sizes at dairy facilities with anaerobic digesters to general industry consolidation with larger dairies and macroeconomic factors, rather than the existence of avoided methane credits.

Commenters and workshop attendees also expressed concerns about upstream and downstream effects of producing dairy biomethane, such as increased emissions from transporting and burning biomethane, food production and land use impacts, and negative impacts from the construction of digesters, pipelines, and other fuel infrastructure.

¹¹ See Friends of Toppenish Creek public comment letter, dated October 3, 2024: https://scs-public.s3-us-gov-west-1.amazonaws.com/env_production/oid100/did200118/pid_209489/assets/merged/ly0ai9vij96_document.pdf?v=46964

¹² For example, see Fingerman and Martin, et al. *Risks of crediting carbon offsets in low carbon fuel standards: lessons learned from dairy biomethane*. (November 2025). *Energy Policy*, Volume 206. <https://www.sciencedirect.com/science/article/pii/S0301421525002459>

Some recommended that if Ecology retained avoided methane crediting in the rule, it should add safeguards such as:

- Requiring dairy farms with anaerobic digesters to account for digestate (the runoff from the digester) in an updated Nutrient Management Plan (NMP).
- Conditioning pathway approval on compliance with federal, state, and/or local environmental laws and regulations.
- Prohibiting herd size expansion during the avoided methane crediting period.
- Prohibiting farms from claiming a new crediting period if they can show an increase in biogas production.
- Including additional upstream and downstream greenhouse gas emissions from biomethane production within Ecology's lifecycle carbon intensity assessment.

Amendments to Book-and-Claim Accounting for Biomethane

Background: Ecology also adopted changes to “book-and-claim accounting” for biomethane reported in the program. “Book-and-claim” is an indirect carbon accounting method that allows fuel producers to separate fuel volumes from their environmental attributes. It was designed to account for logistical constraints in the pipeline system that make tracking the “deliverability” of biomethane virtually impossible, as the renewable gas is immediately commingled with fossil gas following injection into a common carrier pipeline.

Recommendations: Environmental groups have criticized this practice as a modified “carbon offset” system, allowing fuel producers to claim local benefits and state incentives for methane emission reductions that occur out-of-state or across the country. These groups have advocated for Ecology and other agencies to add guardrails around book-and-claim. Suggested provisions would encourage more region-based production to support more localized methane capture and RNG production, and establish a method of tracking gas flow from the point of methane capture to the fuel production facility.

Alternative Jet Fuel

Background: Rulemaking commenters and meeting attendees have also voiced opposition to incentives and tax breaks granted for the production and use of alternative jet fuel (AJF) in Washington. AJF refers to various fuels produced from nonpetroleum sources that can be used in existing aircraft and produce similar performance to petroleum-based jet fuel.

Recommendation: Representatives from a community-based environmental organization have urged Ecology to end CFS credits for AJF. Meeting attendees and commenters have asserted that AJF allows airlines, fuel companies, and others to engage in “greenwashing” that overstates potential environmental and public health benefits from using these fuels. They claim this strategy disregards more concrete steps to reduce aviation emissions, such

as limiting the number of flights offered, investing in zero-emission aircraft technologies, or setting an industry emissions cap.

Participants also provided data about the limited number of current feedstocks available to meet airlines' AJF production goals. They also claimed that scaling up feedstock production would lead to devastating effects, such as deforestation, food and water scarcity, and labor abuses. Commenters and meeting attendees also claimed that AJF does not substantially reduce health impacts for Washington residents living near airports and flight paths, which are more likely to be lower-income and people of color.

Biofuels

Background: Various workshop participants and commenters expressed concerns about biofuel production and its potential negative impacts on land use, deforestation, and food security and have disputed the carbon intensity scores granted by Ecology and other state regulators for production of these fuels. Biofuel production may cause adverse climate impacts if natural, carbon-sequestering ecosystems are cleared to establish croplands in response to biofuel demand. The CFS contains indirect land use change (ILUC) values, based on scientific studies and research, that adjust the carbon intensity of certain biofuels upwards to account for this effect.

Recommendation: Meeting participants and commenters from non-profits representing the environment or overburdened communities have shared resources claiming that Ecology's ILUC values heavily understate the adverse land conversion effects of biofuels. Some of these comments stated that biofuels actually *increase* carbon emissions compared to the baseline. These commenters have advocated for Ecology to adjust ILUC values further upward or eliminate credit incentives for biofuels production.

5. Describe any plans for ongoing engagement with overburdened communities and vulnerable populations related to this action.

There are no current plans for ongoing engagement about this action. However, Ecology plans to conduct engagement during the upcoming (separate) rulemaking to implement the revised annual carbon intensity standards under House Bill 1409. Members of overburdened communities are also encouraged to contact Ecology staff with any questions or concerns, or to set up a meeting to discuss the program in more detail.

Section 8: Potential Environmental Benefits & Harms from Action

This section summarizes anticipated benefits and harms from the potential action, and to assess impacts on overburdened communities and vulnerable populations. The level, type, and

form of engagement is based on the likelihood that the actions may cause environmental harm or may affect the equitable distribution of environmental benefits to an overburdened community or a vulnerable population. Answers to the questions in this section may have helped in strategizing our approach to engagement.

Identify Potential Environmental Benefits & Harms from Action

1. Describe the anticipated benefits (direct and/or indirect) from this action.

The adopted rule establishes third-party verification requirements for the CFS program. The new standards, which require fuel pathway holders to engage independent experts and consultants to verify the environmental attributes of fuels reported in the program, are modeled after similar programs in California and Oregon. Ecology anticipates that the third-party verification program will increase the credibility of environmental and decarbonization benefits from alternative fuels claimed under the CFS. The amendments will likely increase program participants' confidence in data reported in the CFS, leading to a healthier credit market. Third-party verification may indirectly benefit overburdened communities and vulnerable populations by better ensuring that the CFS program is creating verifiable greenhouse gas and air pollution reductions in Washington.

Ecology's rule amendments also include changes to the use of "book-and-claim accounting" in the program. This practice, which allows fuel producers to separate a physical unit of energy from its environmental attributes, is intended to create flexibility for regulated entities, as deliverability of renewable natural gas and zero-carbon electricity is virtually impossible to track through existing gas pipeline and transmission networks. The amended rules establish a phased-in transition (taking effect in 2030 for electricity and 2035 for biomethane), which requires fuels reported via book-and-claim accounting to be sourced from the Pacific Northwest region. This change will benefit Washington residents by ensuring that program incentives are allocated towards clean fuels and decarbonization investments within Washington or the greater Pacific Northwest region.

The new rules also establish standards for "avoided methane crediting." Under this accounting system, fuel producers receive additional credits for capturing unregulated methane sources – such as cow manure and organic waste that would otherwise decompose in a landfill – and processing it in an anaerobic digester for use as a transportation fuel or feedstock. This practice benefits Washington residents by incentivizing the abatement of methane, an incredibly harmful short-term climate pollutant, from sources that currently lack regulations or policy frameworks for reducing their pollution. The rule allows a maximum of 20 years of avoided methane crediting to help defray the high costs of building and operating the anaerobic digester used to capture biomethane for facilities that break ground between January 1, 2023, and December 31, 2029. The rule gradually limits the avoided methane crediting period for projects that break ground after January 1, 2030, to a maximum of 20 years. The rule phases out avoided methane crediting by December 2040 for biomethane used in natural gas vehicles, and by

December 2045 for biomethane used to produce hydrogen, electricity, alternative jet fuel, alternative marine fuel and renewable diesel.

In addition to the greenhouse gas reduction benefits, the new rules also establish guardrails intended to mitigate potential negative externalities from avoided methane crediting. Dairy farms that are out of compliance with local, state, or federal environmental regulations may have avoided methane credits from the associated fuel pathway suspended until Ecology determines the violation has been remedied, or that the dairy has taken adequate steps to remedy the issue.. In addition, Ecology staff will monitor the relationship between dairy herd sizes and CFS participation.

New rules addressing “hard-to-decarbonize” transportation sectors, such as heavy-duty trucking and the aviation and marine industries, are intended to spur low-carbon fuel production and usage in these areas. Transitioning from diesel-powered trucks to zero-emission electric and hydrogen-powered trucks will create direct air quality, climate, and noise reduction benefits for Washingtonians living near major roadways, ports, and cargo distribution hubs. Many of these high-traffic areas, such as South Seattle and South King County (including Sea-Tac Airport), South and East Tacoma, and Spokane/Spokane Valley are listed as overburdened¹³ and would directly benefit from the reduction in criteria air pollutants from the ZEV transition.

Finally, policies around the use of book-and-claim accounting for alternative jet fuel and the use of electrolytic hydrogen as a feedstock for alternative jet fuel and alternative marine fuel are designed to allow these industries additional flexibility during their early growth stages. The policies delay the transition date for sourcing biomethane for alternative jet fuel until 2046 (as opposed to 2035 for other fuels) and allow fuel producers to claim local zero-carbon electricity used in alternative jet fuel production, thus lowering their carbon intensity score of their fuels. These policy mechanisms will also provide Washington-based alternative fuel production facilities and refueling depots with both regulatory flexibility and additional credit incentives, aligning with state and legislative priorities to support new decarbonization technologies, create jobs, and spur green economic development.

2. Who will primarily benefit from this action?

Renewable fuel project developers, fuel producers and suppliers, zero-emission vehicle producers, transit agencies, and other private entities involved in the production and distribution of alternative fuels will primarily benefit from this action. Washington residents may also benefit from decreased greenhouse gas emissions, improved air quality, reduced noise pollution, more green jobs and economic opportunities, and increased methane capture. Improved air quality and mitigation of climate impacts would likely be felt most by overburdened communities currently disproportionately impacted by poor air quality and

¹³ <https://ecology.wa.gov/air-climate/climate-commitment-act/overburdened-communities>

the impacts of climate change. These benefits will be felt in Washington, but given the suite of climate policies in the state, it is challenging to isolate positive impacts from any one policy.

3. How is the action expected to benefit specifically overburdened communities or vulnerable populations? If there is no benefit, identify potential barriers to benefitting from the action.

With respect to heavy-duty trucking, the rulemaking action expands the use of “capacity credits” for installing zero-emission (electric or hydrogen) fueling infrastructure for heavy-duty vehicles. While zero-emission trucks are increasingly available, a key barrier has been the lack of refueling infrastructure (i.e., heavy-duty charging stations or hydrogen refueling depots) near popular trucking routes. “Capacity credits” allow site developers to generate credits for unused capacity of installed infrastructure before there are enough vehicles charging or refueling at the site to support continued operation on their own, helping address this dynamic. Heavy-duty trucks, especially those in the drayage sector, typically operate near ports, railyards, warehouses, industrial and manufacturing hubs, and other areas of concentrated emissions that are often located in or nearby overburdened communities and vulnerable populations. Replacing diesel trucks with ones that run on electricity or hydrogen will benefit these communities by reducing air pollution and noise pollution.

Increasing the use of alternative jet fuel in Washington will have a health benefit for communities living near airports and flight paths. Sustainable aviation fuel has been demonstrated to reduce emissions of ultrafine particles, sulfur, and soot, all of which have negative human health impacts. The growth of the sustainable aviation fuel industry in Washington also has the potential to create significant clean energy and green economic growth, which may increase in-state economic activity and employment opportunities.

The rule amendments contain various provisions to better ensure the environmental integrity of emissions reductions claimed in the CFS program. Specifically, these changes include:

- Requiring independent, third-party verification of data submitted to Ecology to better substantiate the emissions reductions claimed in the program.
- Amending “book-and-claim” accounting rules to require a phased transition towards renewable electricity and biomethane in the Pacific Northwest, incentivizing regional decarbonization efforts and aligning with Washington’s greenhouse gas reduction limits.
- Establishing fixed timelines for the generation of “avoided methane credits” in the program, creating financial incentives for the reduction of methane – an incredibly harmful short-term climate pollutant – from sources whose emissions are largely unaddressed by other laws, programs, or regulations as of the adoption date of this rule.

Together, these changes will improve Ecology’s ability to verify the integrity of environmental benefits claimed in the program and create more incentives for decarbonization investments in Washington – benefitting the state’s economy and ability to meet its greenhouse gas reduction limits in state law. These greenhouse gas reduction benefits are global in nature and do not create specific location-based health or environmental improvements. Nevertheless, overburdened communities and vulnerable populations will benefit to the extent that the program reduces global greenhouse gas emissions, thus mitigating the risk of extreme weather events and other climate-related harms that disproportionately affect these groups.

In addition to addressing greenhouse gas reductions, this rulemaking has also taken steps to incentivize alternative fuels that reduce air pollution, noise pollution, and other local environmental harms in Washington. Specifically, this rulemaking has strategized ways of incentivizing alternative fuels for “hard-to-decarbonize” sectors like aviation, marine shipping, and heavy-duty trucking that currently lack viable zero-emission alternatives. It has also set guardrails around avoided methane crediting to ensure dairies receiving these additional, high-value credits are acting as good environmental stewards.

4. Describe anticipated harms (direct and/or indirect) from this action.

Potential harms from this action include:

Avoided Methane Crediting/Incentives for Dairy Biomethane

Various environmental harms could result from the expansion of dairy facilities and the use of anaerobic digesters to generate dairy biomethane claimed in the CFS. Potential harms vary depending on the digester technology used, maintenance and upkeep of the digester, facility and herd size, proximity to neighboring communities, and other factors. Specific impacts may include:

- Herd size increases at participating dairies to generate additional biomethane, thereby increasing baseline methane emissions in opposition to the program’s goals, and increasing upstream emissions from factors such as increased feed production.
- Air quality impacts from burning biogas to produce energy, producing oxides of nitrogen (NOx), particulate matter, and other pollutants.
- Increased traffic from large vehicles transporting manure.
- Runoff from digestate (the leftover material from the digester) seeping into nearby waterways, increasing nutrient pollution and harming aquatic ecosystems.
- Increased consolidation of the dairy industry, meaning a higher proportion of dairies are large, as many small- to medium-sized dairies lack the funding and manure levels to make digester construction and CFS program participation economically viable.

Biofuel Production

While Washington does not have any feedstock production facilities, increased crop growth worldwide for use as biofuel feedstocks (or increased feed production to support larger dairy herds) may result in land conversion and deforestation that harms carbon sequestration and contributes to climate change. Increased global production of biofuels may also have harmful impacts on food security, by using crops that would otherwise be used to feed people to produce feedstock for transportation fuels instead, and water and soil degradation, through use of fertilizers and pesticides for growing biofuel crops.

Impacts on Small Dairies

Several interested parties have expressed equity-related concerns about the effects of Ecology's avoided methane crediting timelines on dairies with herds of 1,000 cows or fewer. They argue that the initial proposal of a 15-year maximum crediting period effectively makes any digester project economically unfeasible for these smaller farms, reducing opportunities for small dairy operators to limit their impact on the environment and develop alternate revenue streams.

Effects of Avoided Methane Crediting Periods on Small Dairies

Most dairies in Washington are considered “small,” 88% of Washington dairies have 2,500 cows or fewer, and 75% have fewer than 1,000 cows.¹⁴ Given their high construction and operational costs, anaerobic digesters are often only economical for large dairies with several thousand cows or more – regardless of incentive programs like the CFS. Additionally, anaerobic digesters are usually only feasible for dairies that utilize liquid manure management, which is much more common on larger dairies.

By increasing incentives for alternative fuel development under the CFS program, it is possible that this action may result in increased alternative fuel production and the construction of additional pipelines, refineries, and related infrastructure by regulated entities, which may create potential environmental harms for local communities living near these areas. The specific occurrence, frequency, and locations of these investments are largely unforeseeable given the market-based framework of the program and the existence of other laws, incentives, and policies that influence decision-making by private entities.

5. Who will primarily experience the harms?

Rural communities located near dairy farms may experience harm because of this rule if avoided methane crediting incentives lead to an increase in pollution from dairy farms that participate in the CFS program. Residents of Washington may also experience harm if

¹⁴ See pg. 5 of the December 2024 informal comment submission from the Washington State Department of Agriculture: https://scs-public.s3-us-gov-west-1.amazonaws.com/env_production/oid100/did1008/pid_210089/assets/merged/d20cil07ng5_document.pdf?v=12949

avoided methane crediting inadvertently leads to an increase in methane emissions and diminished effectiveness of the CFS program.

Harms may also be experienced worldwide, to the extent that the CFS program's role in global biofuels markets results in negative impacts on land use and food security.

6. Describe how the action may harm overburdened communities or vulnerable populations? Be as specific as possible.

The expansion of dairy operations because of biomethane credit incentives in the CFS could cause negative air quality, water quality, soil, odor, and other environmental impacts on nearby communities. Many of these rural communities are lower-income, with a large percentage of residents that are undocumented and/or Limited English Proficiency status. While no Washington-based dairies currently participate in the CFS program, evidence from the dairy sector's participation in California's Low Carbon Fuel Standard (LCFS) program has demonstrated various negative environmental impacts from dairy industry growth and consolidation. The California Air Resources Board (CARB), which administers California's LCFS program, has performed research on the relationship between clean fuels incentives and dairy facility and herd size growth. CARB found that while dairy sizes are increasing, there was no direct correlation between the increase in herd size and incentives offered in the LCFS; however, opponents of the policy have criticized CARB's methodology and claimed the agency relies on inaccurate and outdated data.

Conversely, *not* adopting biomethane credit incentives could also harm overburdened communities and vulnerable populations by reducing opportunities to reduce methane, which has an extremely high short-term global warming potential. While dairy farms are subject to various environmental regulations, their methane emissions – both from manure production and enteric fermentation (the natural anaerobic breakdown of food in cows' digestion systems) – are largely unregulated. In addition, there are limited state-level incentives for the construction and use of anaerobic digesters aside from the CFS and limited funding provided under the Climate Commitment Account.¹⁵ Many digester projects are economically unfeasible without avoided methane crediting opportunities, due to their high construction and operational costs. Therefore, eliminating or sharply curtailing avoided methane crediting – in the absence of legislation or direct regulations to address dairy pollution – could also harm Washingtonians by reducing methane capture opportunities and harming the state's ability to meet its greenhouse gas emission limits.

The amended rule is also unlikely to result in significant increases in digester installation, as it establishes shorter crediting periods than previously offered (aligning with CA-LCFS rules for newly constructed digesters, rather than the previous allowance of three 10-year crediting periods). Additional considerations such as lower average credit prices, more

¹⁵ <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.65>

challenging environmental conditions for biomethane production, and the smaller average size of dairy operations in Washington compared to California make a substantial increase in digester installation, like what occurred in California after avoided methane credits became effective in the CA-LCFS rule in early 2019, very unlikely to occur in Washington's program. Any decisions to build new digesters in Washington will likely be influenced by numerous other factors, such as general economic conditions, CFS credit price increases as a result of the strengthened carbon intensity standards under House Bill 1409, and other incentives (such as the Anaerobic Dairy Digester Program offered by the Washington State Department of Commerce).

7. Describe how the action would address environmental and health disparities.

The rulemaking addresses environmental and health disparities by reducing greenhouse gas emissions and air pollution from the transportation sector, Washington's largest source of greenhouse gas emissions and a significant contributor to regional air pollution.

Many of the changes addressing difficult-to-decarbonize sectors are designed to reduce air pollution harms by reducing pollution from vehicles operating on or near freeways, airports, ports, warehouses and logistics hubs, and other areas of concentrated emissions. Communities and people living or working in these areas are often more likely to experience negative health effects from diesel particulate matter, ultrafine particles, and heavy noise from heavy-duty vehicles, airplanes, and ships, as well as other related issues.

For example, amendments to capacity crediting for heavy-duty electric or hydrogen-powered truck charging stations are intended to accelerate deployment of zero-emission vehicles in these weight classes, displacing diesel trucks that emit significant amounts of noise, air pollution, and carbon emissions. While vital to local economies, diesel trucks and other heavy traffic can increase the risk of infant mortality, poor birth outcomes, cardiovascular disease, and cancers,¹⁶ especially for those living in dense urban environments. The increased provision of capacity credits for zero-emission recharging and refueling infrastructure, combined with other local and state incentives, are expected to accelerate deployment of zero-emission trucks that displace diesel-powered vehicles and lead to reduced health disparities for these communities.

Ecology has also added rule provisions that incentivize methane reductions at dairies, thus reducing greenhouse gas emissions from a sector whose emissions are largely unaddressed under Washington's existing climate laws. To reduce the risk of these incentives creating unintended consequences, such as water pollution from increased dairy operations, the new rule requires dairies to be in compliance with applicable local, state, and federal environmental regulations to receive CFS credits. Dairies may be suspended from avoided methane crediting if a regulating agency finds a violation. While these provisions do not

¹⁶ See information from the Washington Tracking Network: <https://fortress.wa.gov/doh/wtn/WTNPortal#!q0=8899>

directly address environmental and health disparities, given that the CFS program has no regulatory authority over the dairy sector, they are intended to reduce the risk that CFS credit incentives create downstream effects that result in increased environmental and health harms for Washington’s rural communities.

Section 9: Options to Eliminate, Reduce or Mitigate Harms and Equitably Distribute Benefits

This section summarizes options identified for eliminating, reducing, or mitigating harms, as well as options for equitably distributing anticipated benefits. The answers in this section should be informed by engagement, answers from the previous subsections, and any legislative or regulatory boundaries that limit possible decision making.

Identify Options to Eliminate, Reduce, or Mitigate Harms & Equitably Distribute Benefits

1. Describe options to reduce, mitigate, or eliminate the identified probable harms to overburdened communities and vulnerable populations; and options to equitably distribute the benefits.

Avoided Methane Crediting

Multiple interested parties recommended that Ecology eliminate avoided methane crediting in the CFS. Ecology decided not to adopt this recommendation because , unlike many commercial and industrial sources of greenhouse gas emissions, methane emissions from livestock manure are not currently regulated under Washington’s climate policy framework.. Other sources of high methane emissions, such as landfills and wastewater treatment plants, are subject to a variety of rules and laws related to methane capture and emissions control and face a much different economic and regulatory environment than dairy farms.

In the absence of direct regulation of methane emissions from livestock, incentives to capture these emissions before they are released into the atmosphere – which would create a significant climate benefit – are important for achieving additional greenhouse gas reductions that will help Washington meet its greenhouse gas emission targets.

Adding avoided methane crediting timelines in the CFS does not preclude other laws or regulations to target methane emissions from dairies and livestock. Currently, CFS participation and manure capture is an entirely voluntary choice by dairies and project developers. The program does not have any regulatory authority over dairies aside from the ability to place conditions on credit generation, similar to other credit-generating fuels reported in the program. The current rule language accounts for potential future regulation, stipulating that any legal or regulatory requirement for methane capture will be factored into the baseline carbon intensity assessment for dairy biomethane. For example, if there

were to be a statewide regulation on methane emissions from livestock adopted in Washington in the future, any Washington dairies participating in the CFS would receive fewer avoided methane credits than they would otherwise, because the requirement to mitigate or capture those emissions exists.

Ecology also evaluated the relationship between herd sizes and avoided methane credits, in response to numerous comments alleging describing a link between the two. As previously discussed in this assessment, data from California demonstrates that while herd sizes are increasing, there is no established link to CA LCFS credits as the cause as compared to other economic or industry factors. In addition, no dairies have participated in the CFS and conditions in California would likely not be replicated in Washington, given differences in the state's climates, scale of the dairy industry, level of CFS credit offerings, and other factors.

However, Ecology plans to collect data and monitor developments in this area further once dairies begin participating in the CFS.

When entities reporting dairy biomethane begin participating in the CFS, they must submit herd size data to Ecology as part of their regular fuel pathway reporting in the program. If Ecology were to consider changes or additional requirements, it would only be once more data is available for staff consideration.

Ecology did not consider accounting for other potential upstream and downstream greenhouse gas emissions associated with dairy biomethane production, such as potential transportation emissions or effects on livestock feed production and land use. While Ecology acknowledges these actions may have environmental impacts, the exact impacts are speculative given the uncertainty about the relationship between clean fuels credits and dairy growth and consolidation. These impacts are not considered within the scope of Ecology's assessment of biomethane carbon intensities and are not currently considered in other clean fuels programs. Ecology may revisit this position when reliable data becomes available, or this issue is studied in other clean fuels programs.

Similarly, Ecology did not consider emissions from enteric fermentation or other dairy operations that are not relevant to capturing manure for producing biomethane. While strategies, regulations, or other policy mechanisms addressing methane emissions from the agricultural sector may be necessary for Washington's long-term climate goals, such efforts are far outside the scope of this rulemaking. Many of the negative environmental and health impacts that dairy production may have on overburdened communities and vulnerable populations are also outside this rulemaking's scope, given that the program has no regulatory authority over the dairy sector.

However, Ecology has added rule language that accounts for potential future regulatory action on methane emissions and its impact on avoided methane crediting, stipulating that the avoided methane baseline used in carbon intensity calculations will be "additional to

any legal or regulatory requirement for the capture or destruction of biomethane.” Ecology has also adopted safeguards, which are discussed below and in question two of this section, intended to ensure that avoided methane credits offered in the CFS are not creating or exacerbating environmental and public health harms on overburdened communities and vulnerable populations.

Eliminating avoided methane crediting at this stage, without an alternative methane capture or greenhouse gas reduction strategy for the livestock sector, would effectively preclude a potential source of greenhouse gas reductions. Aside from a limited pool of grants for anaerobic digesters to be funded beginning next year through the Climate Commitment Act, Washington does not have any alternative incentive programs for livestock methane capture. The state also does not currently have any regulations or strategies addressing greenhouse gas emissions from dairies. In the absence of regulation for livestock methane, providing CFS credits to help make digester projects economically feasible is one of the few methods of reducing methane pollution from the agricultural sector.

Small Dairy Farms

To analyze the effect of avoided methane crediting on small dairies, we looked at data from California, which has the largest state clean fuels market in the country and a robust dairy industry. California’s Low Carbon Fuel Standard has offered avoided methane crediting periods since 2018, and the state’s warm and dry climate allows the use of covered lagoon digesters, which are significantly less expensive to install than the complete-mix or plug-flow digesters required in Washington’s colder, wetter climate. California also offers incentive programs outside the LCFS to support the construction of anaerobic digesters at dairies.

Despite the favorable market conditions and incentives in California, the vast majority of dairies operating anaerobic digesters have herd sizes of 2,500 cows or more. Dairies with fewer than 1,000 cows that operate anaerobic digesters are rare. Of the 124 California dairies listed on EPA’s AgSTAR Livestock Anaerobic Digester Database as of July 2025, only three – less than three percent of the overall dairies listed – have fewer than 1,000 cows. In addition, all three of these dairies started operating their digesters before 2018, which is the year avoided methane credits were first offered in the LCFS, and currently use their captured gas for electricity or cogeneration rather than for the transportation sector. This demonstrates the challenges for small dairies in installing a digester in the first place, and then selling the biogas into the transportation fuel market instead of other potentially more lucrative markets.

The lack of participation among small California-based dairies suggests that longer avoided methane crediting periods in the CFS would not lead to increased digester installation and usage among similarly-sized dairies in Washington, because California has offered avoided methane crediting for several years. Research has shown that the cost-effectiveness of dairy

manure digesters is determined primarily by facility size and that digesters at small farms are highly challenging to operate under most circumstances.¹⁷ Instead of making small-scale projects economically feasible, extending these timelines would likely allow large facilities to generate further revenue and exacerbate existing inequalities between small- and medium-sized dairies and large dairies.

Environmental Safeguards

Ecology explored various methods of limiting negative environmental impacts that could potentially occur because of dairy digester construction and dairy herd size expansion. While Ecology's rulemaking authority is relatively constrained on this topic, given that the CFS program does not have any direct regulatory authority over the dairy sector, staff considered various methods to limit credits for dairies that do not comply with environmental standards or cause negative environmental impacts on local communities.

Staff consulted with other Ecology programs that regulate dairies and concentrated animal feeding operations (CAFOs) to determine appropriate thresholds for suspending or rejecting the provision of avoided methane credits. That policy is discussed further in the following section. Ecology staff also considered other mitigation measures that were discussed in public comments and feedback, including requiring dairies that construct digesters to comply with an updated Nutrient Management Plan (NMP) that addresses digestate – the potential run-off from the digester system.

2. Describe methods chosen for this action to reduce, mitigate, or eliminate the identified probable harms to overburdened communities and vulnerable populations; and methods chosen to equitably distribute the benefits. You must consider the following methods, but are not limited to them:

Avoided Methane Crediting Timelines

Ecology has adopted more detailed and specific criteria for entities utilizing the avoided methane crediting framework. The amended rules ensure that the most generous credit offerings are subsidizing an *additional* climate benefit that would not occur in the absence of the CFS program. The rules also require indirectly sourced biomethane to be produced in Washington or injected into the natural gas pipeline network serving Washington, ensuring that the CFS program is incentivizing projects that create in-state or in-region climate, clean energy, and economic benefits.

Under the adopted rules, projects that became operational after the start date of the CFS program in January 2023 (and thus created an additional climate benefit for Washington)

¹⁷ Fingerman and Martin, et al. *Risks of crediting carbon offsets in low carbon fuel standards: lessons learned from dairy biomethane*. (November 2025). *Energy Policy*, Volume 206.
<https://www.sciencedirect.com/science/article/pii/S0301421525002459>

would be eligible for a maximum of 20 years of avoided methane credits as opposed to a prior maximum of 30 years. This amendment aligns the CFS with recent changes to California’s LCFS program. Pre-2023 projects will receive a limited number of avoided methane credits over a shorter timeline, as these projects were operational before the CFS took effect – and, therefore, the methane captured at these sites cannot be directly tied to incentives in the CFS.

The reasoning for this decision is to provide credit incentives commensurate with the high capital investment and operational expenditures associated with livestock digester projects, while at the same time limiting the most generous incentives to projects that create additional methane capture benefits for the state. The establishment of an alternative regulation requiring methane capture from livestock operations is outside the scope of this action, as the Clean Fuels Program law does not grant Ecology authority on biomethane other than to require its acceptance as a feedstock for alternative jet fuel and renewable diesel production.¹⁸ However, the proposed rule language accounts for the possibility of future regulations to limit livestock methane emissions by stipulating that avoided methane credits will be granted only for additional reductions beyond any “legal or regulatory requirement for the avoidance or capture and destruction of biomethane”.

For context, Washington has eight livestock digester projects registered in [EPA’s AgSTAR database](#); seven are biogas-to-electricity projects, and the eighth produces and exports biogas for use in California’s transportation network.¹⁹ No approved dairy biomethane pathways are currently registered in the CFS. The proposed rulemaking therefore does not immediately impact any dairy and swine manure projects or pathways but sends a long-term signal about the parameters of CFS incentives for these projects, so participating entities can make planning and investment decisions accordingly.

Enteric fermentation, or the emission of methane directly from the cow itself – which makes up most of the methane emissions from dairies – is not considered within this framework because the scope of emissions accounting stops at the feedstock of the fuel (i.e., the manure) and not the animal that produced the waste. Emissions from enteric fermentation grow in proportion with increases in herd size and the scale of dairy operations. There is no feasible way to capture emissions from enteric fermentation for use as a biogas, although various efforts – such as changes to livestock feed – are underway to reduce these emissions.

Safeguards for Avoided Methane Crediting

¹⁸ RCW 70A.535.150: <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.535&full=true#70A.535.150>

¹⁹ <https://www.epa.gov/agstar/livestock-anaerobic-digester-database>

Ecology adopted amendments to the avoided methane crediting framework that would allow a dairy to be suspended from avoided methane crediting if a regulating agency with jurisdiction over the dairy finds a violation of local, state, or federal environmental requirements. This provision is intended to incentivize good environmental stewardship among dairies participating in the CFS program. It also attempts to mitigate the risk that credit incentives lead to dairy facility expansion and additional pollution, thus harming rural communities living in areas with concentrated dairy operations. Suspended dairies would be eligible to generate avoided methane credits again only if Ecology determines that the dairy has remedied, or has taken adequate steps to remedy, the violation(s) that initially led to their suspension.

Among other requirements, Ecology's adopted rule would require the dairy to be in compliance with Nutrient Management Plan (NMP) standards under RCW 90.64 to generate avoided methane credits. NMP compliance was one of the guardrails that community members frequently asked to be included in Ecology's adopted rule, if avoided methane crediting were to continue. Other compliance requirements for CFS credits include those involving emissions of air contaminants, discharges to waterways, solid waste management, and other environmental categories.

The adopted rule also requires the dairy to have historically used an anaerobic lagoon to manage and treat waste. Any dairy that introduced liquid or slurry manure management to their farm in the five years preceding the pathway application is not eligible for avoided methane crediting. This provision is intended to ensure that farms do not adopt manure management practices that emit more methane²⁰ solely for purposes of capturing biogas and becoming eligible for CFS credits. In addition, the baseline calculation for avoided methane is premised on the farm using liquid manure management.

Ecology did not adopt direct rules for regulating the herd sizes of dairies participating in the CFS. There are mixed reports about whether incentives in the LCFS Program have led to an increase in herd sizes at California dairies. If such a relationship were established, the effect would likely be less pronounced at Washington dairies given their smaller average sizes and the less favorable climatic conditions for methane production in the state compared to California. Rules to manage herd sizes for dairies participating in the Washington CFS would also likely be logistically challenging and difficult to implement.

As there are no Washington-based dairies that have yet participated in the CFS program, Ecology will collect data about herd sizes through its application process for dairy biomethane pathways. After significant data has been collected, Ecology may adopt rules or standards, if appropriate, regarding herd sizes and their impact on CFS credit incentives.

²⁰ See the following from EPA: <https://www.epa.gov/agstar/practices-reduce-methane-emissions-livestock-manure-management>

Strengthening Environmental Requirements for Indirect Emissions Accounting

Our final rule makes several changes to ensure the credibility of environmental benefits claimed in the program and direct investments to Washington and the Pacific Northwest region. These changes include:

- Starting in 2035, requiring biomethane claimed through indirect, or “book-and-claim,” accounting to be either:
 - Sourced from within Washington, creating methane capture benefits for the state.
 - Injected into a regional pipeline network serving Washington, contributing to the long-term decarbonization of the regional gas grid.
 - Instituting an “additionality” provision for avoided methane crediting to grant the highest incentives for methane capture projects that would not have existed in the absence of the CFS program and capping those credits to a maximum of 20 years.
- Starting in 2030, requiring renewable energy certificates (RECs) claimed in the CFS to be sourced from generation facilities located in the Pacific Northwest that went into service on or after January 1, 2019. This provision supports additional regional renewable energy development and ensures that CFS credit incentives for indirectly sourced electricity create additional environmental benefits for our region.

As the CFS program matures, Ecology will continue to monitor the development of alternative fuel investments related to the program and methods of addressing direct and indirect harms created by these projects.

Ecology is tightening this system by requiring fuels reported through book-and-claim accounting to be sourced in Washington or injected into out-of-state pipelines that flow towards Washington, such as the Williams Northwest Pipeline and the Gas Transmission Northwest Pipeline, starting in 2035.

While these amendments do not directly affect avoided methane crediting, they address environmental justice and equity concerns about clean fuels credits providing generous subsidies for out-of-state or out-of-region projects. California’s LCFS recently adopted a requirement that biomethane reported via book-and-claim be injected into a pipeline that flows towards California at least 50% of the time on an annual basis; after feedback from interested parties that a similar requirement in Washington would be unworkable given differences in the two states’ pipeline systems, Ecology elected to adopt an eligibility requirement based on specific pipelines and geographic locations of methane capture.

3. If the agency determines it does not have the ability or authority to eliminate, reduce, or mitigate environmental harms caused by the action, or address the equitable distribution of environmental benefits, explain why that determination was made.

Ecology did not consider eliminating CFS credit incentives for alternative jet fuel during this rulemaking, as suggested by some interested parties during the rule development phase. Engrossed Substitute Senate Bill 5447, which passed the state legislature in 2023, required Ecology to accept alternative jet fuel as an “opt-in fuel” by December 31, 2023. It also made alternative jet fuel production eligible for state tax credits overseen by the Washington Department of Revenue if Ecology, through the fuel pathway application process under the CFS program, deems the fuel to have a carbon intensity at least 50 percent lower than that of conventional jet fuel. Ecology will verify the claimed carbon emission reduction from alternative jet fuel through its pathway application and verification processes, but it does not have the authority to set emission caps for airlines, limit the number of flights travelling into the state, or implement other options suggested by interested parties.

Many environmental harms associated with agriculture sectors participating in the CFS program are also outside the scope of Ecology’s authorities in this rulemaking. While the amended rules allow Ecology to suspend avoided methane crediting opportunities for dairies that are found to be in violation of local, state, or federal environmental standards, such determinations of violation of environmental regulations would be made by other Ecology programs or different agencies with direct regulatory authority and expertise about dairies and environmental management. The CFS program has no regulatory authority over dairies, and any participation by dairy farms is strictly operational.

Separately, the potential environmental harms from biofuel production are primarily addressed through indirect land use change (ILUC) values which are applied to certain crop-based feedstocks used for fuels reported in the program. The values, which are based on scientific research and analysis, adjust the carbon intensity of biofuels upwards due to the standard land conversion effects associated with the particular feedstock used in fuel production. Another approach to limit potential harms has been recently adopted in California’s Low Carbon Fuel Standard, which has set future limits on credit generation and more rigorous sustainability requirements for certain biofuel feedstocks. Interested parties in Washington are both for and against these new requirements, but they are ultimately outside the scope of this rulemaking. Ecology’s CR-101 filing stated that Ecology would not consider updating ILUC values as part of the rule amendment process, but the agency may consider updating values and adopting sustainability criteria in a future rulemaking.

Finally, we are not currently aware of any specific investments or projects being proposed in connection with this rulemaking. Any future projects will be evaluated at the time they are proposed as these projects are often subject to local, state, and federal regulations. Many potential harms from these actions are not within the scope of the CFS regulation or this proposed action, which is narrowly limited to analyzing and limiting the carbon intensity of transportation fuel production.