

SkyNRG

Please see the attached document for comments from SkyNRG regarding the Washington Clean Fuel Standard (CFS) rulemaking.



June 7, 2024

Adam Saul
Climate Pollution Reduction Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Proposed Rulemaking for Chapter 173-424 WAC – Clean Fuels Program (CFP)

Dear Mr. Saul,

SkyNRG Americas (“SkyNRG”) is eager to provide comments on the impending rulemaking of Chapter 173-424 WAC – Clean Fuels Program (CFP) to the Washington Department of Ecology (“Ecology”) following the May 2nd and May 8th public meetings.

As we approach the formal comment period in Fall/Winter 2024, we offer our availability as a resource and subject matter expert to provide insights and expertise to help inform Ecology about the potential implications and opportunities for integrating sustainable aviation fuel (SAF) into the state’s CFP. SkyNRG is currently developing a SAF production facility in Eastern Washington, Project Wigeon¹, based on the state’s promising policy landscape for SAF. The implementation of ESSB 5447 into the CFP will play a critical role in the success of our project, so we are pleased to have the opportunity to share our perspective on the rulemaking topics Ecology raised in the public meetings.

SkyNRG Background

Since 2009, SkyNRG has been a global leader in SAF, scaling up demand and production capacity for the industry to meet its 2050 net zero commitment. SkyNRG has supplied SAF to over 40 airlines across the world and is now developing dedicated production facilities to support the shift from fossil jet fuel to SAF both in Washington State and Europe.

As road transportation modes continue to electrify, aviation’s share of the state’s emissions inventory will materially increase through 2035 and beyond. The aviation sector is one of the most difficult industries to decarbonize due to unique operational and safety requirements that necessitate energy dense fuels, highlighting the critical role of low carbon liquid fuels for the future of the sector. Given the growing share of aviation’s emissions, SAF is an essential contributor to the state’s goal of reducing GHG emissions by 95% by 2050.²

SkyNRG will be among the US first producers of SAF and renewable diesel (RD) on a commercial scale from cellulosic feedstocks such as biomethane, often referred to as renewable natural gas (RNG). Together with our existing technology partners, our production process converts RNG to SAF and RD at an integrated clean fuels production facility. SkyNRG’s plans necessitate withdrawing RNG from common carrier pipelines on a mass balance accounting basis, similar to

¹ <https://skynrg.com/project-wigeon/>.

² <https://ecology.wa.gov/air-climate/climate-commitment-act>.



how RNG can be used for the production of renewable hydrogen and biomethane-based compressed natural gas (CNG), liquified compressed natural gas (LCNG), and liquid natural gas (LNG), all of which are eligible for credit generation under the CFP. Further, ESSB 5447 specifically enables the use of biomethane (RNG) through indirect accounting to produce SAF and RD in the CFP.

SkyNRG has selected Washington as the location for our first U.S. project based on several factors, including the state’s CFP and ESSB 5447, which establishes a tax credit for in-state production and use of SAF. The details of how these policies are implemented are critical to the success of our project and we address the importance of each below.

Mass Balance Accounting of Biomethane

Ecology has noted that it will address book-and-claim accounting in its rulemaking. Book-and-claim accounting and mass balance accounting are two chain of custody (CoC) models. These terms are often used interchangeably, though there are differences between these models. In the context of biomethane/RNG, SkyNRG prefers the use of mass balance accounting which utilizes sustainability declarations designed to trace the flow of materials across a complex value chain allowing for the mixing of sustainable materials with non-sustainable materials based on established standards and auditable bookkeeping.³ Per the International Organization for Standardization (ISO), book-and claim is a CoC model in which “the administrative record flow does not necessarily connect to the physical flow of material or product throughout the supply chain.”⁴ In book-and-claim systems, the supply and demand are not physically connected, and bookkeeping is done in registries that are typically not connected, although a central authority ensures that the number of credits issued and traded matches the sustainability claims. This can lead to certified and non-certified materials flowing freely through the supply chain, with neither traceability nor any physical connection between the final product and the certified supply. SkyNRG plans to adhere to a mass balance accounting approach with sustainability declarations that trace the volumes of RNG across the supply chain demonstrating that the mass balance rules are followed. More info on robust tracking systems for mass balance accounting is detailed in the Documentation section below.

Recognition under ESSB 5447 of biomethane (RNG) as an eligible feedstock for SAF and RD using indirect or mass balance accounting (referenced as “book-and-claim accounting” in the CFP) is crucial to our decision to site in the state as SkyNRG sees RNG as one of the only widely available, economic, and sustainable feedstocks that is produced in Washington. Biomethane resources are diverse and extensive, produced both in the state and across the nation in large volumes, and widely distributed through common carrier pipelines via the existing gas grid infrastructure. Mass balance accounting is the only feasible means of accessing this type of feedstock due to the manner in which biomethane is delivered to customers in Washington and throughout North America.

Book-and-Claim – Biomethane

³ <https://www.iscc-system.org/certification/chain-of-custody/mass-balance>.

⁴ <https://www.iso.org/obp/ui/#iso:std:iso:22095:dis:ed-1:v1:en>.



During the May 2nd and May 8th public meetings, Ecology announced its intention to create rules regarding the deliverability, additionality, temporal matching, and documentation of biomethane. To ensure the success of the program with newly implemented requirements around biomethane production, SkyNRG recommends the following:

Deliverability

As Washington considers program changes to align with the California Low Carbon Fuel Standard (CA-LCFS) and Oregon Clean Fuel Program (CFP) requirements, the concept of mass balance accounting is especially important. In February of this year, SkyNRG provided comments to the California Air Resource Board (CARB) on the proposed rulemaking for its LCFS program. Among the issues addressed with CARB was SkyNRG's concern over geographic and deliverability requirements for biomethane (RNG), which could materially restrict RNG availability rather than expanding it. Specifically, CARB has proposed a requirement demonstrating that eligible biomethane (RNG) is carried through the common carrier pipelines that physically flow within California or toward end use in California. This was an effort to harmonize book-and-claim policies for low carbon intensity (CI) electricity and biomethane (RNG), and to direct biomethane (RNG) to sectors that are difficult to decarbonize (like aviation). However, we argued that this would have the opposite effect and limit growth of SAF due to the limit of in-state produced RNG. Applying these geographic and deliverability limitations would almost certainly stifle investment in biomethane resources, limit SAF production to crop based feedstocks that are grown out of state and reduce opportunities for the state to achieve its climate goals.

While SkyNRG is planning to include anaerobic digestion on site at our project to produce RNG, this would only provide a small percentage of the overall RNG volume needed. As a result, making use of mass balance accounting for RNG from diverse and geographically widespread suppliers is key to securing the volumes of RNG needed as feedstock to produce SAF at our production facility. As Ecology aims to incorporate SAF into its regulatory framework, we strongly encourage **not** imposing narrow geographic or deliverability requirements on biomethane for the production of SAF. To produce SAF at scale, SAF producers must be able to leverage methane capture opportunities in the state and around the country.

Additionality

SkyNRG aims to assist in the expansion of additional RNG capacity by securing long-term contracts for RNG production from landfill gas capture and anaerobic digestion. Utilizing stringent sustainability criteria, the company will strive to contract RNG projects that add additional RNG capacity to the gas supply while also capturing methane that would otherwise be released into the atmosphere. However, given the large volumes of RNG that our production facility plans to utilize as feedstock for SAF, the bulk of our RNG is likely to be sourced from existing landfills as this is currently the largest source of RNG available, both from in-state produced RNG as well as nationwide supplies. Most of the landfills that have the opportunity to capture this biogas and inject it as RNG into pipelines are already doing so. Therefore, we are concerned that placing strict guidelines around sourcing new additional RNG capacity could severely limit our ability to economically source sufficient volumes of RNG for the production of clean fuels. We urge Ecology to carefully consider the impacts that such restrictions could have on the feasibility of RNG to SAF projects.



SkyNRG is planning to include anaerobic digestion on site at our project to produce RNG. According to Energy Vision, anaerobic digesters have the potential to reduce methane emissions in the U.S. by 13.6% through capturing food waste (7.5%) and manure from dairy and swine (6.1%).⁵ Anaerobic digestion can play a critical role in bringing on new additional RNG resources given that this methane is currently uncaptured and would otherwise be released into the atmosphere. Avoided methane crediting (see section below) encourages the existing capture of this methane and also establishes an economic justification for methane emitters to continue to invest in new RNG production via investment in emissions reduction technologies and additional anaerobic digesters.

Temporal Matching

SkyNRG believes that some level of temporal matching for use of biomethane (RNG) on a mass balance accounting basis over a specified and reasonable time period is best practice. A mass balancing period of not more than three months is used by the ISCC mass balance CoC certification. CA-LCFS and the federal Renewable Fuel Standard (RFS) require quarterly fuel transactions and annual compliance reports to generate credits for book-and-claim accounting of RNG and generation of RINs, respectively. We suggest alignment with these existing regulatory practices.

Documentation

For robust tracking and documentation of RNG, SkyNRG supports the adoption of the M-RETS Renewable Thermal tracking platform⁶, a widely used third-party platform custom built for the tracking of pipeline-injected low-carbon gases. M-RETS built their system with the specific intent of providing regulators with a tool for transparent, robust tracking of gas production and deliveries. Renewable Thermal Certificates (RTCs) effectively create the equivalent of a renewable energy credit for use in the tracking of low-carbon gases. To gain the ability to generate RTCs, a low-carbon gas facility must validate its key technical and operational information, provide third-party engineering support, and optionally provide emissions lifecycle analysis information. The carbon intensity of the gas is thus tagged to individual volumes, which endows the platform's users with the ability to accurately track and account for emissions impacts (such as pipeline transport), along the value chain. The Oregon Department for Environmental Quality has adopted M-RETS Renewable Thermal tracking system for book-and-claim of biomethane (RNG) in its CFP. M-RETS is also used as a tracking system for compliance under the federal RFS.

Book-and-Claim – Electricity

SkyNRG intends to either secure low-carbon energy directly or purchase Renewable Energy Certificates (RECs) for Project Wigeon. However, we have concerns regarding potential restrictions on deliverability and additionality for renewable electricity. Washington State boasts one of the cleanest energy grids and some of the strongest climate legislation in the country. Despite this,

⁵ This additional methane capture (~4700 new anaerobic digesters) would help support the U.S.'s commitment to the Global Methane Pledge to cut methane emissions by 30% by 2030. https://energy-vision.org/wp-content/uploads/2024/05/EV-National_AD_Report.pdf.

⁶ <https://www.mrets.org/m-rets-renewable-thermal-tracking-system/>.



investments are already being put on hold due to potentially restrictive legislation such as the Section 45V Clean Hydrogen Production Tax Credit. Specifically, the current 45V guidance requires hydrogen to be produced from new, clean generation added to the grid within a 36-month timeframe. This essentially eliminates the low carbon baseload energy from hydropower which supports the Washington State grid. Similarly, Ecology's consideration of a requirement for electricity generating facilities to be built on or after January 1st, 2023, or for the electricity to come from incremental efficiency improvements made on or after January 1st, 2023, would create an even greater constraint. To drive the expansion of clean energy development, it is imperative that companies like SkyNRG have the flexibility to purchase RECs from sources beyond Washington State. This approach not only contributes to meeting carbon reduction objectives but also fosters the development of new clean energy focused facilities in Washington.

While we were not previously familiar with the Green-e® Energy platform, it appears to be a creditable system for purchasing RECs. However, the question remains how Washington will ensure there is enough renewable energy available while keeping purchasing options cost-effective. This is especially challenging if consumers must purchase in-state energy or electricity flowing into the state, as the success of this approach largely depends on Washington's participation in a new or existing Regional Transmission Organization (RTO). Given these considerations, we encourage Ecology to refrain from implementing unnecessary deliverability and additionality requirements until there is a sufficient supply of renewable energy in or flowing to the state.

Sunsetting Avoided Methane Crediting

As SkyNRG works to build SAF production capacity in the state, the company will continue to explore a wide range of biomethane feedstock opportunities from organic waste streams, including food wastes, yard and landscaping wastes, industrial and wastewater sludges, and a variety of animal wastes. Many untapped waste streams are novel as it relates to CFP pathways but nonetheless can readily be converted to transportation fuels including SAF and RD through technologies that are commercially proven and readily suitable for producing low carbon fuels from biomethane pathways.

In its recent rulemaking, CARB proposed sunseting avoided methane crediting opportunities. We believe this phase-out policy is premature and likely harmful to long term goals of methane abatement, especially considering the potential for capturing and productively repurposing emissions from organic waste streams processed through landfill gas capture, anaerobic digestion, and wastewater treatment facilities, all significant and growing sources of biomethane across the nation as well as Washington state. Supporting long-term avoided methane collection crediting also addresses the additionality requirement Ecology is exploring for its upcoming rulemaking, incentivizing the capture of methane that would otherwise go uncollected. To this end, we strongly encourage Ecology, as we have CARB, to avoid making changes in the CFP program that limit opportunities to include avoided methane emissions in CI calculations when considering SAF production from these unique feedstocks. This is critical to both maintain the existing methane collection efforts supported by avoided methane crediting, but also establishes an economic justification for methane emitters to continue to invest in RNG projects.



The GHG emissions reductions resulting from CNG fleets being the default for many medium- and heavy-duty applications are attributed, in part, to incentives of clean fuels programs and has resulted in improved air quality for constituents. SAF is at a similar crossroads. By allowing for avoided methane crediting for biomethane as a feedstock for SAF, there is the potential to see SAF become a significant source of low carbon fuel for aviation, much like the transition in the CNG fleet space has had. Biomethane has continued potential to reduce GHG emissions in Washington, and recognizing its potential as a feedstock for SAF production is essential to the continued scale-up of lower carbon fuels for the aviation sector in the state.

Third-Party Verification

Ecology should align third-party verification requirements with those of existing federal and international SAF regulatory programs. Because SAF producers rely on stacked state and federal incentives to narrow the price gap with fossil jet fuel, they participate in a variety of regulatory programs at all levels of government, including state clean fuel standard programs, the federal RFS program, tax credits under the Inflation Reduction Act (IRA), and the International Civil Aviation Organization's Carbon Offsetting Reduction Scheme for International Aviation (CORSA). As such, SAF producers are already subject to multiple, separate, and overlapping sets of detailed regulations for tracking, verifying, and independently certifying the details of feedstock sustainability and lifecycle assessment.

Given that state clean fuel standard incentives can only be claimed in a single state and not stacked—as a given batch of fuel can only be consumed in one place—we strongly urge Ecology to prioritize alignment with the federal and international incentives that can be stacked by allowing existing certification schemes, such as the Environmental Protection Agency (EPA) Quality Assurance Plans (QAP) under the RFS program, International Sustainability and Carbon Certification (ISCC) CORSA, or the Roundtable on Sustainable Biofuels (RSB) CORSA, to meet Washington requirements. In doing so, Ecology will ensure its verification systems will have the highest degree of quality and accuracy while aligning with widely adopted requirements yet imposing the least additional administrative burden on SAF producers.

Thank you again for the opportunity to provide comments on the proposed rulemaking. We sincerely look forward to an ongoing collaboration with Department of Ecology staff.

Sincerely,

A handwritten signature in blue ink, appearing to read 'John Plaza', is written in a cursive style.

John Plaza
President & CEO
SkyNRG Americas, Inc.