

DOCKETED

Docket Number:	21-RPS-02
Project Title:	Renewables Portfolio Standard 10th Edition Guidebook Update
TN #:	241606
Document Title:	Peterson Power Systems Comments
Description:	N/A
Filer:	System
Organization:	Peterson Power Systems
Submitter Role:	Public
Submission Date:	2/22/2022 10:07:17 AM
Docketed Date:	2/22/2022

*Comment Received From: Peterson Power Systems
Submitted On: 2/22/2022
Docket Number: 21-RPS-02*

Comments of Peterson Power Systems

Additional submitted attachment is included below.



February 22, 2022

California Energy Commission
Docket Unit, MS-4
Docket No. 21-RPS-02
715 P Street
Sacramento, CA 95814

Dear Commissioners and Staff:

The California Energy Commission's Renewable Portfolio Standard Eligibility Guidebook ("the Guidebook") was formally adopted by the Energy Commission on April 21, 2004. Since its release and adaptation, it has been revised eight times and is currently in its ninth edition. It was last revised in January 2017.

The Guidebook describes the eligibility requirements and process for certifying eligible renewable energy resources for California's Renewables Portfolio Standard (RPS) and describes the process used to verify compliance with the RPS. California's RPS has a target of obtaining 50 percent of the state's electricity from eligible renewable energy resources by 2030.

While the Guidebook briefly addresses Biodiesel in Chapter 2: Energy Resource Eligibility Requirements, the Guidebook fails to address Renewable Diesel (more commonly known as "HVO" or Hydrotreated Vegetable Oil).

Hydrotreated Vegetable Oil (HVO) is a renewable fuel made from feedstocks including virgin and recycled vegetable oil; fat fractions from food wastes; algae and municipal waste and sludge. These fats and oils undergo hydrotreating, which can take place at most existing refineries.

It should be noted that on August 12, 2020, Reuters reported that U.S. refiner Phillips 66 plans to convert its Rodeo, California crude oil refinery into a renewable fuels plant using cooking oil and food wastes as feedstock. Phillips 66's proposal would cost up to \$800 million to produce 680 million gallons a year of renewable diesel beginning in 2024.

Projected environmental and economic benefits of the Rodeo Renewed conversion outlined in the draft EIR include:

- Reducing stationary criteria pollutant emissions by more than 50%, including 80% in sulfur oxides, 33% in nitrous oxides and 20% in particulate-matter emissions

PETERSON POWER SYSTEMS

Since 1936

2828 Teagarden Street ✂ P.O. Box 5258, San Leandro, CA 94577 ✂ Telephone (510) 895-8400 ✂ petersonpower.com

Customer First | Integrity | Excellence | Teamwork | Fun



- Cutting water usage at the facility by 160 million gallons per year
- Creating more than 500 construction jobs, to be filled using local union labor
- Preserving more than 650 family-wage jobs, including full-time employees and contractors
- Helping California meet regional demand for renewable and conventional transportation fuels while assisting the state in achieving its environmental goals, including carbon neutrality by 2045.

Similarly, on March 2, 2021 Marathon Petroleum announced its intentions to convert its Martinez, CA refinery to a renewable fuels facility. The Martinez refinery is scheduled to begin the conversion this year and complete in sometime in 2023. Upon completion, the refinery will produce up to 730 million gallons per year of renewable diesel (HVO).

Marathon Petroleum estimates its conversion of the Martinez facility from petroleum refining to renewable diesel production will reduce the facility's manufacturing greenhouse gas emissions by 60%, total criteria air pollutants by 70% and water use by 1 billion gallons every year. From a socio-economic perspective, the project expects to create more than 500 construction jobs to be filled by local union labor and preserve hundreds of full time family wage jobs.

HVO can be used in existing diesel engines without modification and is compatible with existing diesel infrastructure and stations¹. HVO meets California Air Resource Board (CARB) motor vehicle fuel specifications under Title 13, California Code of Regulations (CCR), section 2281 et seq., and meets the aromatic, sulfur, and lubricity standards, of ASTM specification D975-12a.1.

As a "drop in" alternative to diesel fuel, HVO provides significant carbon reductions when compared to diesel fuel and as such has a potentially significant role to play in the decarbonization of California's Electrical grid. HVO's benefits are already being realized by the transportation sector as a means of sector decarbonization.

Peterson Power Systems was a pioneer in the advocacy and use of HVO for temporary and portable generation applications in PG&E's service territory. Our work began during the 2019 fire season where we supplied HVO (to the maximum extent possible) in support of PG&E's Public Safety Power Shutoff (PSPS) temporary generation program.

HVO utilization was again maximized in 2020 and 2021 replacing fossil diesel and resulting in a less intensive carbon index and superior emissions profile for PG&E's PSPS temporary generation program. In addressing PSPS mitigation in future years, the CPUC has set HVO as the standard and has encouraged maximizing its use in recognition of HVO's superior carbon footprint and emissions profile when compared to fossil diesel.

¹ Users should check with engine manufacturers prior to utilizing HVO or switching operations from fossil diesel to HVO.

PETERSON POWER SYSTEMS

Since 1936

2828 Teagarden Street ✂ P.O. Box 5258, San Leandro, CA 94577 ✂ Telephone (510) 895-8400 ✂ petersonpower.com

Customer First | Integrity | Excellence | Teamwork | Fun



HVO is a premium quality diesel fuel made from renewable raw materials. The fuel has different properties compared to other biofuels, like biodiesel for example. HVO is sometimes confused with biodiesel or FAME (fatty acid methyl ester), they are in fact very different. Created using a hydrotreating process, HVO is a pure hydrocarbon diesel fuel with a similar chemical composition to fossil diesel, which is what allows the fuel to be used as a drop-in replacement.

The two big differences are that HVO does not have the most harmful components of fossil diesel (like aromatics), and it is made from renewable feedstocks instead of crude oil. Other biofuels, like biodiesel, have a chemical composition that differs from both fossil and renewable diesel.

An additional differentiator between HVO and biodiesel is shelf life. Biodiesel blends have been notorious for short shelf lives while HVO has a shelf life at least as long as fossil diesel. This will make it much easier for users to switch to HVO. The significantly increased shelf life is because HVO is made of very stable molecules. It's purely paraffinic with no olefins, aromatics, or other molecules so it does not easily break down (which would in turn raise the total acid number, increase sediments, etc). Neste made their first batches of HVO in 2005 and they still have some of that fuel set aside in their R&D lab in Finland. They test it annually, and all the stability markers for those samples have not changed over the past 16 years.

Diesel generation in California is on the rise. This is not unexpected considering the number of customers effected by PSPS events and California's overreliance on intermittent generation resources. In the Bay Area, the number of non-residential back-up diesel generators has increased by 34% since the passage of SB100 in 2018. In a Cal Matters October 6, 2021 Op-Ed, Cindy Chavez, the chair of the Bay Area Air Quality Management District and a Santa Clara County Supervisor was quoted as saying "Absent new policy directions, the role diesel generation plays in California's energy mix will only increase".

As a leader in the provision of back-up generation to mission critical customers such as data centers, Peterson Power Systems is seeing increased interest from major data center owners in using HVO in place of fossil diesel. As these companies focus on their ESG goals, they are viewing HVO as a way to significantly reduce their carbon footprint and raise their sustainability rankings. It may be an interesting exercise for the CEC's siting division to model HVO vs. fossil diesel in the numerous Small Power Plant Exemption (SPPE) applications currently before the Commission to quantify both carbon and emissions reductions.

A recent publication by Stack infrastructure on HVO in data center applications is worth reading and can be found here: <https://www.stackinfra.com/resources/blog/hvo-as-a-renewable-energy-source-the-answer-for-data-center-backup-generation/?sf159821300=1>

PETERSON POWER SYSTEMS

Since 1936

2828 Teagarden Street ✂ P.O. Box 5258, San Leandro, CA 94577 ✂ Telephone (510) 895-8400 ✂ petersonpower.com

Customer First | Integrity | Excellence | Teamwork | Fun



As California accelerates its decarbonization efforts, we are seeing more and more demand for diesel generators. As the societal trust in the reliability of the grid continues to deteriorate, we will see more deployments of diesel generators. Even microgrids comprised of solar and storage are adding diesel gensets to address durational limitations or solar paired with storage.

We believe that it makes sense to recognize renewable diesel (HVO) in the RPS handbook to maximize (and even potentially incentivize) the use of this 100% renewable fuel. The RPS handbook has not been revised in 5 years. With this proceeding, CA can get this right and include HVO as an RPS qualified fuel.

Due to several factors including, cost, reliability, availability, and significant operational limitations of other technology options, compression ignition engines (also known as diesel generators) remain the industry standard in underwriting the "insurance" necessary to maintain the electrical system and mitigate the potentially disastrous effects of outages at hospitals, wastewater treatment plants, police and fire stations and other critical societal infrastructure.

The diesel generation fleet in California is a significant piece of California's energy infrastructure. The governor recognized this on numerous occasions in the past few years when he called upon existing diesel generators to supply desperately needed capacity during times when the grid was short. This proceeding provides the CEC and the State of California the opportunity to significantly lesson the carbon footprint of the existing diesel fleet and future diesel installations by recognizing the benefits of renewable diesel (HVO). Peterson Power Systems hopes The California Energy Commission will seize this opportunity and we offer our support should you elect to do so.

Respectfully,

A handwritten signature in blue ink, appearing to read "Greg Lamberg", written in a cursive style.

Greg Lamberg
Utility Business Development Manager
Peterson Power Systems

PETERSON POWER SYSTEMS

Since 1936

2828 Teagarden Street ✂ P.O. Box 5258, San Leandro, CA 94577 ✂ Telephone (510) 895-8400 ✂ petersonpower.com

Customer First | Integrity | Excellence | Teamwork | Fun