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**on Draft 2021 IEPR Volumes I, II, IV, and Appendix**

*Additional submitted attachment is included below.*

December 21, 2021

California Energy Commission  
Docket Unit, MS-4  
Docket No. 21-IEPR-01  
715 P Street  
Sacramento, CA 95814-5512

Submitted via email to: [doCKET@energy.ca.gov](mailto:doCKET@energy.ca.gov)

Re: Docket number 21-IEPR-01 - Draft 2021 IEPR

**Oberon Fuels Comments on Draft 2021 Integrated Energy Policy Report (Draft 2021 IEPR) Volumes I, II, IV, and Appendix**

Thank you for the opportunity to comment on the Draft 2021 Integrated Energy Policy Report (IEPR) Update. Oberon Fuels supports this update to the IEPR as an important step for addressing California's energy needs and future policy paths.

*Background on Oberon Fuels and DME*

California-based Oberon Fuels (Oberon) is an innovative company that has focused for over ten years on dimethyl ether (DME) transportation fuel, a powerful molecule that can be used to decarbonize transportation in three ways: 1) as a diesel fuel replacement, 2) as a blend with propane to reduce its carbon intensity, and 3) as a hydrogen carrier to power fuel-cell electric vehicles.

With initial DME production coming online in 2013, Oberon produced the first fuel-grade DME in North America and supplied DME for global vehicle demonstrations with partners such as Volvo Trucks, Mack Trucks, and Ford. In May 2021, Oberon began producing the first-ever renewable DME (rDME) in the United States, and the only current commercial production of rDME in the world. As part of a \$6 million project funded in part by a \$2.9 million grant from the California Energy Commission (CEC), Oberon is converting waste methanol into rDME at its upgraded facility in Brawley, California. It is the first time this feedstock has been used to produce rDME at commercial scale. In addition to waste methanol, other potential feedstocks include: biogas from dairy waste, food wastes, agricultural waste, as well as excess electricity and CO<sub>2</sub>, resulting in ultra-low carbon to carbon-negative DME. DME produced under this CEC grant will be used to blend with propane to reduce its carbon intensity in transportation applications.

In addition to having introduced a new renewable fuel, Oberon during the past two years created 21 full-time, living wage jobs, including the hiring of nine new onsite personnel at the Brawley facility - something for which we are especially proud given that we were able to do so during the extremely challenging COVID-19 pandemic when the historically

economically disadvantaged Imperial Valley region was experiencing 27 percent unemployment.

In June 2021, Oberon and Los Alamos National Laboratory teamed up for a U.S. Department of Energy (DOE) funded project to scale-up steam reforming technology to produce renewable hydrogen (rH<sub>2</sub>) from renewable dimethyl ether (rDME), an innovative approach to increasing the global renewable hydrogen supply. This collaborative effort is funded by DOE's Technology Commercialization Fund, which supports mature, promising energy technologies with the potential for high impact. It is also part of DOE's "H<sub>2</sub>@Scale" initiative to accelerate development of a hydrogen economy by funding advanced-technology research, development and demonstration projects with industrial partners.

A tremendous advantage of rDME in the hydrogen economy is that this renewable fuel has the potential to overcome the two largest barriers to widespread hydrogen adoption today: 1) the lack of cost-competitive, sustainable production, and 2) the lack of energy-dense storage and transport. DME is a hydrogen-rich molecule that can be produced from waste and/or renewable resources using Oberon's modular production technology. Furthermore, because DME handles like propane/liquefied petroleum gas (LPG), it requires minimal modifications to the existing global LPG distribution network and leverages the expertise of its existing workforce.

#### *Comments on Draft 2021 IEPR Appendix: Assessing the Benefits and Contributions of the Clean Transportation Program*

The IEPR's Appendix has four recommendations. Oberon strongly supports all four:

- Prioritize technologies with the greatest market potential for transportation sector growth and broader economic benefit.
- Continue to prioritize equity and clean transportation access for all Californians and ensure maximum benefit to communities most impacted by transportation-related air quality impacts.
- Support projects and technologies that contribute to a simple and seamless consumer vehicle refueling experience.
- Support projects that have the greatest potential for reducing refueling infrastructure costs.

Oberon strongly believes that DME production and transportation demonstration projects can help meet all four recommendations. As a low-carbon intensity liquid transportation fuel, DME can help reduce fossil fuel use in the transportation sector. When produced from California's in-state waste streams, DME supports local and regional agricultural economics and economic development. In all end-uses, DME is well-suited to the challenging medium- and heavy-duty and off-road vehicle sectors, which have outsized benefits from using clean fuels to reduce criteria pollutants and improve air quality in ports, warehouses, and industrial areas and areas of concern for environmental justice. Finally, because DME can be stored as a liquid under moderate pressure, similar to LPG, it eliminates the need for the high-pressure containers that are used for compressed

hydrogen or natural gas or cryogenics, as in the case of liquid hydrogen or natural gas. As such, DME's easy handling properties make the fueling and infrastructure for storing, transporting, and deploying this renewable fuel relatively simple and inexpensive.

The 2021 IEPR should ensure continued funding for pilot and demonstration scale projects to support deployment of zero-emission and negative-emission DME.

### *Conclusion*

The fact of the matter is that for every gallon of Oberon's renewable fuel used on the road displaces a gallon of highly polluting fossil fuel. Displacing fossil fuel and contributing to a cleaner tomorrow is embedded in Oberon's overall mission and sustains our workforce. With that in mind, we believe the 2021 IEPR Update would greatly benefit by expressly recognizing this important attribute about DME and other alternative low-carbon, liquid fuels, given that these fuels will most likely have integral roles to play in California's transformative clean energy future for decades to come.

Thank you for consideration of our comments. Please do not hesitate to contact me with any questions at 202-680-0459 or [david.mann@oberonfuels.com](mailto:david.mann@oberonfuels.com).

Sincerely,

A handwritten signature in blue ink that reads "David Mann".

David Mann  
VP, Regulatory and Governmental Affairs  
Oberon Fuels

