



March 24, 2011

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 09-ALT-1  
1516 Ninth Street  
Sacramento, CA 95814-5512

<b>DOCKET</b>	
<b>09-ALT-1</b>	
DATE	MAR 24 2011
RECD.	MAR 24 2011

*RE: Response to Request for Comments for the Alternative and Renewable Fuel and Vehicle Technology Program, FY 2010-11 Investment Plan, Docket No. 09-ALT-1*

To the Docket:

The Methanol Institute wishes to take this opportunity to offer our support for comments being submitted to the subject docket by the Blue Fuel Energy Corporation focusing on a paper prepared by (S&T)<sup>2</sup> Consultants Inc. titled “*GHG Emissions of Blue Fuel Methanol Production Process.*” This analysis examines the lifecycle greenhouse gas emissions of the production of methanol from the Blue Fuel process, which combines hydrogen produced via electrolysis of water with carbon dioxide from an industrial production process to produce renewable methanol or DME (dimethyl ether). Using the GHGenius lifecycle model developed for Natural Resources Canada, the study demonstrates the potential for significant GHG emissions reductions depending on where/how electric power is provided for the hydrogen production steps in the methanol process.

Blue Fuel Energy has developed a process and a specific project for producing methanol from recycled CO<sub>2</sub> from Spectra Energy’s Pine River natural gas-fired power plant in northern British Columbia, Canada, and hydrogen produced through the electrolysis of water using hydroelectric power from a nearby dam and/or potentially wind power. By producing hydrogen from one of these renewable resources, the process and this specific project offer considerable overall energy efficiency improvements over the entire lifecycle when compared with both gasoline and methanol produced from natural gas.

As the Commission considers its Alternative and Renewable Fuel and Vehicle Technology Program’s 2010-2011 Investment Plan, we urge you to include renewable methanol in your fuels and vehicle technology portfolio. The development of renewable methanol technologies can help the state achieve its policy objectives of: reducing greenhouse gas emissions and petroleum dependence, and increasing alternative and renewable fuel use and in-state biofuels production.

As the trade association for the global methanol industry, the Methanol Institute has enjoyed a long and fruitful relationship with the California Energy Commission. Upon our establishment in 1989, we worked closely with the CEC in its methanol flexible-fuel vehicle demonstration program. While this effort phased out over time, it should be considered one of the CEC’s signature accomplishments, ushering in the dawn of the alternative fuel transportation industry, and demonstrating that there are no technical barriers to the use of methanol and ethanol fuel blends in properly designed vehicles and fueling infrastructure.

We are happy to report that there is a renewed interest in the use of methanol as a transportation fuel. Last year, it is estimated that China use 7 million metric tonnes – 2.3 billion gallons – of methanol as a

transportation fuel running passenger cars on M-15, and bus, truck and taxi fleets on M-85 blended fuels. China has adopted a national fuel blending standard for M-85, and is in the final stages of completing a national standard for M-15. We are also seeing interest in methanol fuel blending in Trinidad and Tobago, Mexico, United Kingdom, Sweden, Iceland, and Malaysia to name a few countries. Here in the United States, we recently saw the introduction of the first of several bills expected to be introduced in the 112<sup>th</sup> Congress calling for an “Open Fuel Standard” requiring automakers to introduce true flex-fuel vehicles capable of operating on ethanol, methanol or gasoline fuels (S. 559, “Securing America’s Future with Energy and Sustainable Technologies Act”). And on the automotive side, companies like Lotus Engineering have continued to push the envelope with the introduction of the tri-flex fuel Exige vehicle demonstrator.

In addition to the important work being done by Blue Fuels Energy, a great deal of international progress is also being made in the commercial development of renewable methanol production technologies. In the Netherlands, Methanol Institute member company BioMCN is currently producing 200,000 metric tonnes per year of biomethanol using crude glycerin waste from biodiesel production as a feedstock. In Sweden, Chemrec is operating plants to turn black liquor from pulp and paper mills into biomethanol and bioDME. In Iceland, Carbon Recycling International is completing construction of a plant to produce renewable methanol from waste CO<sub>2</sub> from a geothermal plant, along with hydrogen produced through the electrolysis of water at this facility. While Range Fuels recently shut down their cellulosic biofuels plant in Soperton, Georgia, they did produce commercial volumes of biomethanol before running into technical issues when switching over to the production of cellulosic ethanol. In addition, the Methanol Institute is now working with Michael Wang at Argonne National Lab and several companies developing renewable methanol technologies to provide input to the GREET model to run a series of methanol simulations.

Methanol is the simplest of alcohol fuels with the lowest amount of carbon and packing the highest levels of hydrogen of any liquid transportation fuel. The factors that first led the CEC to focus on methanol – large and diverse fuel production base, significant environmental benefits, lowest cost vehicle and fueling infrastructure, and consumer ease – are even more apparent today. Not only can methanol be produced from natural gas and coal, but emerging technologies to produce methanol from biomass gasification, waste CO<sub>2</sub>, and renewable resources are rapidly entering the commercial marketplace. And just over the horizon are technologies to capture CO<sub>2</sub> from the atmosphere for methanol production. In his seminal book “Beyond Oil and Gas: The Methanol Economy,” Nobel Prize Laureate and University of Southern California professor Dr. George Olah notes:

*“Methanol is a most convenient way in which to store and distribute energy, a suitable fuel in its own right, and a raw material in the production of synthetic hydrocarbons and their related compounds. The “Methanol Economy” offer a new way in which convenient and safe reversible energy storage and transportation can be achieved in the form of a simple, easy to handle liquid chemical – methanol... the “Methanol Economy,” by recycling excess atmospheric CO<sub>2</sub>, will mitigate one of the major adverse effects on the Earth’s climate caused by mankind, namely global warming”*

Thank you for this opportunity to comment on the 2010-11 alternative and renewable fuel and vehicle technologies investment plan.

Sincerely,



Gregory Dolan  
Executive Director  
Americas/Europe