

## Elevance Integrated Biorefinery

This project uses Nobel Prize winning catalyst technology to produce fuels and chemicals from renewable natural oils.

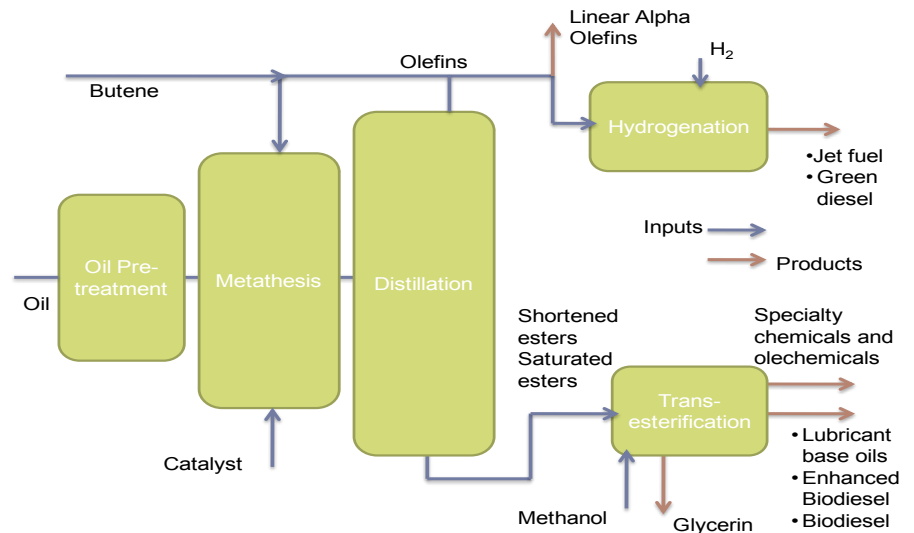
The Elevance Biorefinery process uses novel catalyst developed in the USA to convert renewable natural oils into fuels and chemicals. The funding from the Department of Energy will allow Elevance to carry out research to:

- (a) Generate data specific for high potential US feedstocks to assist in the design of key sections of a Biorefinery which will convert natural oils into fuels and chemicals using the Grubbs olefin metathesis catalyst,
- (b) Develop a non site specific process design and detailed engineering, and
- (c) Perform an analysis of the sensitivity of the economics of the process using algae oil.

### Project Description

Any resulting biorefinery will convert renewable feedstocks sourced from the United States into a wide range of high value products including petroleum replacement specialty wax products, olefins, jet fuel paraffins and specialty chemicals.

High tech research, development, and engineering jobs will be created in the U.S. by this project. The eventual construction and operation of the biorefinery will create additional high paying jobs, enhance the value of raw materials, and reduce greenhouse gas emissions.



*Conceptual project schematic*

The technology will contribute substantially to the energy independence of the United States because it can be retrofitted to existing biodiesel facilities in which significant investments have already been made. Employing the Nobel Prize winning technology will improve the value of the product mix from the retrofitted plants, increasing their profitability and making the jobs they create more sustainable.

The DOE grant will enable Elevance to demonstrate the transformation of the economics of the biofuels business by adding high value specialty chemicals to the product portfolio of existing biofuels plants. By developing an economic path to a fully diversified

biorefinery, this technology has broad application potential across the US.

Moreover, because any triglyceride oil works with the Elevance technology, Elevance will be able to create a commercial pathway for the widespread use of high impact feedstocks such as inedible poultry fat, algae oil, camelina, pennycress, and others, as well as more traditional plant and animal derived natural oils.

### Potential Impacts

This project directly impacts two of the main goals of the American Reinvestment & Recovery Act: high-tech job creation and support the expansion of the renewable energy industry.

Prime	Elevance Renewable Sciences
Location	Bolingbrook, Illinois
Feedstock (s)	Natural oils such as algal oil, and other seed oils and animal fats
Primary Products	Green diesel, biodiesel, alpha olefins, methyl esters for surfactant and other applications
Capacity	TBD
Award Date	December 4, 2009
GHG Reduction	67-77% reduction versus fossil fuel depending on algae oil content
Anticipated Job Creation	Up to 20 at peak design and engineering
Company Point of Contact	Dr. Chander Balakrishnan 866-625-7103 info@elevance.com