

**Contract No. R004-010**  
**“Renewable Oil Refinery Development for Commercialization”**

Submitted by Energy & Environmental Research Center

Principal Investigator: Chad A. Wocken

**PARTICIPANTS**

<b>Sponsor</b>	<b>Cost Share</b>
Energy & Environmental Research Center	\$ 500,000
North Dakota Industrial Commission	<u>\$ 500,000</u>
Total Project Cost	\$1,000,000

Project Schedule – 12 months  
Contract Date – June 24, 2009  
Start Date – June 1, 2009  
Completion Date – June 30, 2010

Project Deliverables:  
Interim Report: October 31, 2009  
Interim Report: January 31, 2010  
Interim Report: April 30, 2010  
Special Report -- Renewable Oil Refinery Economic  
Assessment: April 30, 2010  
Pilot Plant Design Biddable Package: June 30, 2010  
Final Report: June 30, 2010

**OBJECTIVE/STATEMENT OF WORK:**

The objective of the project is to optimize renewable oil-refining technologies developed by the EERC and advance the technologies toward commercialization with ND grown feedstock. The primary deliverable of the project is a complete, ready-for-bid design of a pilot-scale renewable oil refinery capable of producing diesel fuel, jet fuel, and naphtha. Tesoro expressed great interest in using the completed design plans for construction of a pilot plant at the refinery in Mandan. 3M offered a letter of support stating their interest in using naphtha to produce carbon-neutral, bio-based plastics and consumer goods. It is anticipated that crambe oil will be utilized as a feedstock. Other oil seed crops such as camelina, canola, and soybeans have potential to be investigated with this research. Previous research conducted at EERC has shown that crambe oil has an optimum carbon chain length for diesel production.

**STATUS**

6/24/09