Producing energy from renewable resources is not a new idea, but during the last few years, it has become a topic of high profile in America. Environmental advocates have promoted energy from renewable resources for some time. However, the economic practicality was not linked with the concept, and the topic had little substance to drive it. More recently, the very high price of crude oil and the more real evidence of global warming have allowed the topic to gain economic significance and public awareness. The goal of finding an efficient renewable energy source seems to have taken on a daily immediacy across the U.S.

Renewable resources for energy now have become business-opportunity areas in the U.S. and in Oklahoma. Bioresource fuels are now essential and strategic components of a secure economy and diversified energy policy. Under the president’s new energy policy proposal, the production of renewable and alternative fuels, particularly ethanol, will rise to 35 billion gallons by 2017 and will displace 15 percent of projected annual gasoline use. Developments in the biodiesel industry also will play a critical role in replacing fossil fuels. Biodiesel has great potential as a renewable fuel source. The Biodiesel Lifecycle Inventory Study published jointly by the U.S. Department of Energy and U.S. Department of Agriculture in 1998 indicated about 3.2 units of fossil energy and U.S. Department of Agriculture and U.S. Department of Energy, as estimated by the National Biodiesel Board, as of Jan. 31, 2007, there were 105 companies producing biodiesel with a total production capacity of 864 million gallons per year in the U.S. In addition, 77 biodiesel plants are currently under construction and are scheduled to be completed within the next 18 months. There is growing interest in biofuel production in Oklahoma. Currently, there are two large-scale, commercial biodiesel production facilities in Oklahoma: Earth BioFuels Inc. in Durant, Okla. (10,000-gallon-per-year production capacity), and Green Country Biodiesel Inc. in Cheyenne, Okla. (2.5 million gallons per year).

Two other production facilities are under construction: Best Energy Solutions LLC in Tulsa, Okla. (1 million gallons per year), and High Plains Bioenergy in Guymon, Okla. (30 million gallons per year). A number of small operations also are trying to produce biodiesel to meet their own fuel needs. The mission of the FAPC is to help develop successful value-added enterprises in Oklahoma. In line with this mission, FAPC faculty and staff are exploiting ways to expand current resources and facilities to meet the needs of the Oklahoma agricultural and food industries and entrepreneurs in the field of biofuels. Biofuels areas of focus at the FAPC are sweet sorghum processing for the generation of ethanol, oil and oilseed processing for the generation of biodiesel, animal by-products processing for the generation of biodiesel, and food manufacturing waste stream conversion to the best energy end product for the particular application.

Laboratories are being equipped, faculty-level scientists are involved with research and development programs to support this work, and staff members are being trained and directed toward this bioenergy core area. Workshops and training programs have been offered and will be offered in the area of bioenergy as appropriate to educate and train FAPC clients and stakeholders.

FAPC faculty and staff are excited about this area of work and are sure the discoveries at the center and the support offered by the FAPC will contribute to the continued success of the food industry and the success of this young biofuel energy industry in Oklahoma.

The FAPC oil/oilseed group has offered a workshop on biodiesel and has set up two lab-scale biodiesel production systems that are designed to test several feedstocks that are readily available in Oklahoma. The same systems also will be used for workshop demonstrations and student training.

A second two-day biodiesel workshop will be held June 12-13, that will discuss biodiesel production techniques, feedstock options, glycerine purification, and quality standards and will include demonstrations on biodiesel production and quality tests. More information and registration material may be found at www.fapc.biz/pages/biodieselworkshop.htm.

Interest in oilseed processing also exists in Oklahoma. To provide technical support to these initiatives, a pilot-scale screw press will be available at the FAPC for extension, training, and research needs in the fall of 2007. Purchase of a thin film evaporator is being pursued and will be used to purify glycerine, a byproduct of oilseed processing. Pilot-scale oil-refining and biodiesel-production equipment and facility retrofit will be pursued at the FAPC.

In addition, an analytical laboratory that will be capable of carrying out standard biofuel quality tests is being established. Other bio-energy activities will be highlighted in this feature section in every upcoming issue of this magazine. Be looking for these articles.

FAPC faculty and staff are practicing continuous improvement as they see new industry trends and needs.

Please contact the FAPC for assistance or to share your ideas.