Corn ethanol plants continue to cut their energy use while at the same time producing more ethanol per bushel of corn, the Nebraska Corn Board noted in reviewing a national study conducted by the University of Illinois at Chicago and published in the scientific journal Biotechnology Letters.

“This underscores the importance of using current data when it comes to estimating the life cycle analysis of ethanol production,” said the Nebraska Corn Board’s Randy Klein. “Using outdated data just doesn’t work, nor does the assumption that today’s estimates will be valid tomorrow. The ethanol industry continues to develop, which is why one cannot label today’s ethanol industry as mature.”

The study, conducted by Dr. Steffen Mueller at the Energy Resources Center at the university, examined energy use and ethanol output for dry mill ethanol facilities. More than 85% of the ethanol produced in the U.S. comes from dry mill facilities.

For the study, the researchers surveyed 90 of the 150 dry mill ethanol plants operating during 2008. Results were compared to a 2001 survey conducted by BBI International on behalf of the U.S. Department of Agriculture.

In 2001, ethanol plants used an average of 36,000 Btu of thermal energy and 1.09 kWh of electrical energy, per gallon of ethanol. They also produced 2.64 gallons of ethanol per bushel.

Ethanol plants in 2008 used an average of 25,859 Btu of thermal energy and 0.74 kWh of electricity per gallon of ethanol produced—that’s 28% and 32% less than 2001, respectively. Ethanol per bushel of corn, meanwhile, increased 5.3% to 2.78 gallons per bushel.

According to the survey, many older dry mill ethanol plants installed energy efficiency retrofits during that time period.

“Like corn farmers, who continuously strive to produce more corn with fewer inputs, ethanol

plants get more efficient and productive over time," Klein said. "Regulations and fuel standards should not be implemented without taking that into consideration."

The survey also showed that a dry mill corn ethanol plant in 2008 produced 5.3 pounds of dried distillers grains and 2.15 pounds of wet distillers grains per gallon of ethanol produced. On a per bushel basis, that is 20.7 pounds of total distillers grains produced per bushel of corn converted into ethanol.

Ethanol plants also, on average, sourced corn within a 47-mile radius from the plant.