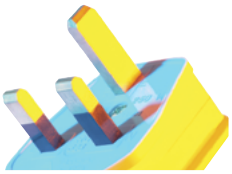
How much energy is being used on your farm?

Equipment used in modern agricultural practices reduces labor, but consumes fuel and energy in the process. The first items that probably come to mind are diesel fuel being used in tractors or the monthly electrical bill. These are obvious and recurring expenses that may be several hundred or even thousands of dollars depending on farm size.

When analyzing energy use on the farm, it helps to think about different enterprises that are present. Iowa farms are diverse. Consider your own farming enterprises.

- What crops (corn, soybeans, alfalfa, pasture, others) are grown and in what quantities?
- Is there a livestock operation? Different animal species such as swine, beef, dairy, or poultry can have vastly different energy requirements depending on housing, environmental, and other needs.
- Think about how energy is being used within each enterprise. For example in contrast with corn or soybeans, tillage and planting is required only once every three to four years for alfalfa, however, multiple annual harvest operations are required.

Energy use within individual farming enterprises is beyond the scope of this publication, but will be covered in more detail within later publications in this series along with ideas for more efficient energy use.



Iowa agriculture's energy consumption

How do you compare to the rest of the state? Annually, Iowa agricultural producers spend nearly a billion dollars on energy for crop and livestock production. Figure 1 illustrates where the dollars are spent.

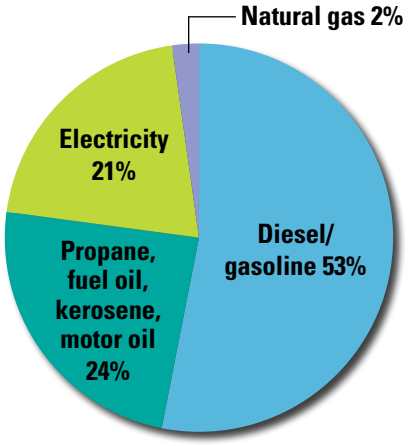


Figure 1. Energy expenses for Iowa agriculture. (Source: USDA Census of Agriculture 2007)

How do we compare to other states?

Agricultural producers in other states also are taking steps to reduce their energy use. As you can see in Figure 2, the energy use on farms in Wisconsin and Nebraska differs slightly from Iowa. Although electrical use is roughly equal, it's a larger percentage of total use in Wisconsin perhaps because of dairy. Natural gas and electricity are used on some irrigation wells in Nebraska. Iowa's somewhat greater propane use may be because of corn drying or perhaps heating of swine farrowing and nursery operations.

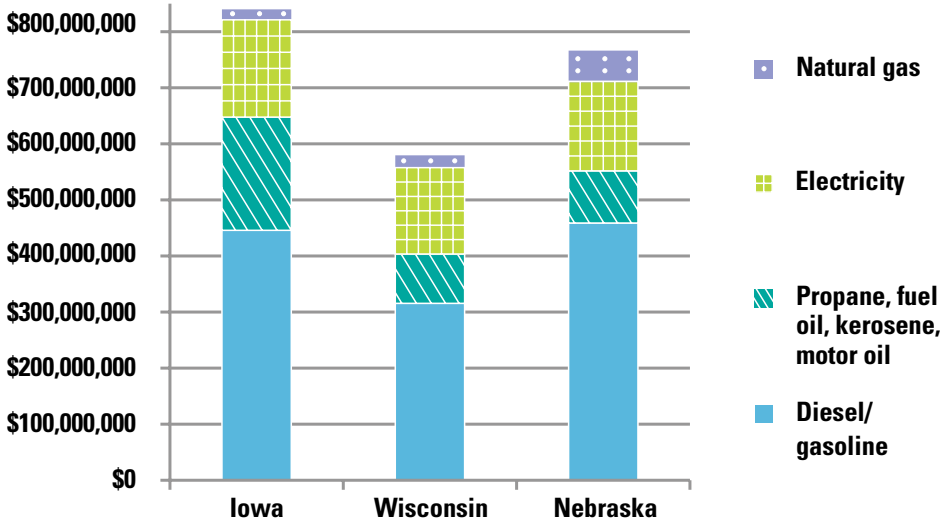


Figure 2. Energy expenses for Iowa, Wisconsin, and Nebraska by different energy sources. (Source: USDA Census of Agriculture 2007)

IOWA STATE UNIVERSITY
Extension and Outreach

PM 2089a November 2009




Energy costs are on the rise

From 1990-2008, we have watched the significant rise of energy costs. And agriculture producers have felt the effects.

The 2009 prices have flattened or even decreased, but the question lingers: How long will that last? Do you want to be caught off guard if prices start to soar again? (See Figure 3.)

How do I get started saving energy?

- Keep a log of the amount of energy used on your farm.
- Consult with a professional such as your local extension or energy provider.
- Consider a farm energy audit.

Farm energy log

A farm energy log is no different than tracking your spending to increase savings or counting calories to lose weight. It is important that the amount of energy used is tracked in addition to the cost. This is a simple procedure. You can start now or consider gathering past bills and entering old data. See sample energy log (Figure 4).

	January	December
Electricity		
kwh		
price per kwh		
Total		
Diesel		
gallons		
price per gallon		
Total		
Gasoline		
gallons		
price per gallon		
Total		
Propane		
gallons		
price per gallon		
Total		
Natural gas		
cubic feet		
price per cubic feet		
Total		
TOTAL ENERGY COST		

Figure 4. Example of a farm energy log.

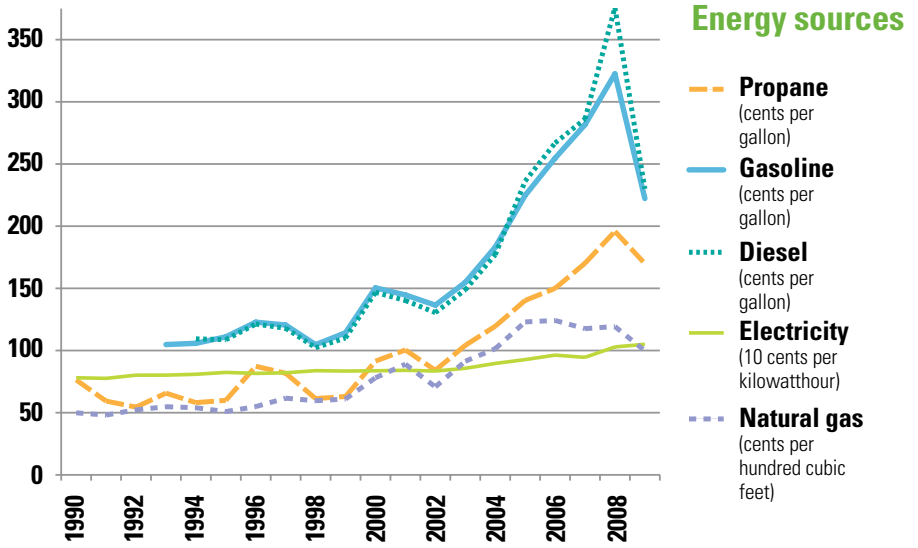


Figure 3. Energy sources and costs since 1990. (Source: Energy Information Administration)

Consult a professional

Iowa State University Extension is in the process of updating and developing energy efficiency materials for producers. In addition, your local extension professionals can provide assistance with enhancing the value of Iowa's agricultural industry, which includes energy savings. Your energy provider also offers assistance and resources to reduce energy use.

Farm energy audit

A farm energy audit will identify energy conservation and efficiency improvements within an agricultural production system (crops or livestock) and the various components of that system. If you are interested in an audit, contact your utility provider for more information and available assistance programs.

Farm Energy Conservation and Efficiency Initiative

ISU Extension is working to enhance the efforts of farm energy conservation and efficiency with funding by the Iowa Energy Center. Extension and the Iowa Energy Center are cooperating with Iowa Farm Bureau Federation, Central Iowa Power Cooperative (CIPCO), the Iowa Association of Electric Cooperatives, Consumers Energy, Alliant Energy, MidAmerican Energy, Office of Energy Independence, USDA and other statewide partners in this effort .

This publication is part of a series of farm energy conservation and efficiency educational materials being developed through this initiative. The purpose is to increase farmers' awareness of opportunities for improving efficient use of farm energy. The initiative also will help farmers explore alternatives to reduce farm energy demand and to improve their farms' overall profitability in a rapidly changing energy environment.

For more information, go to www.extension.iastate.edu/store. See especially the topic environment – energy.

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