

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 electric 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.

- What crops (corn, cotton, others) are grown and in what quantities?
- Is there a livestock operation? Different animal species such as dairy or poultry can have vastly different energy requirements depending on housing, environmental, and other needs.

### Florida Agriculture's Energy Consumption

Total agricultural production costs, include items such as seed or livestock purchased, fertilizer, chemicals, energy (e.g., fuel, electricity, etc.), labor, rent taxes, and other associated costs. Currently, energy costs represent approximately, 6% of farm production costs. Annually, Florida agricultural producers spend nearly a billion dollars on energy. Figure 1 illustrates what percentages of various energy inputs are used on Florida farms.

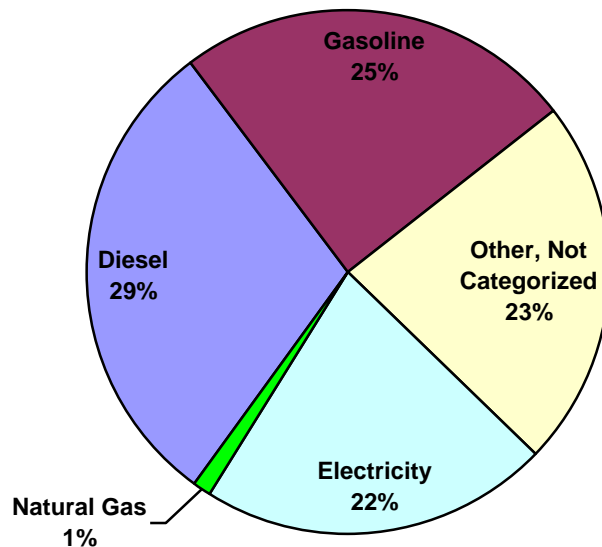


Figure 1. Energy Use in Florida

Typically, the largest energy consumption on farms result from motors (irrigation being the largest motor application), lighting, and on-site transportation.

## 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 California and Kansas differs slightly from Florida. Natural gas and electricity are used on some irrigation wells in Iowa or because of corn drying. On-farm diesel use in California is typically associated with the fruit and nut industry.

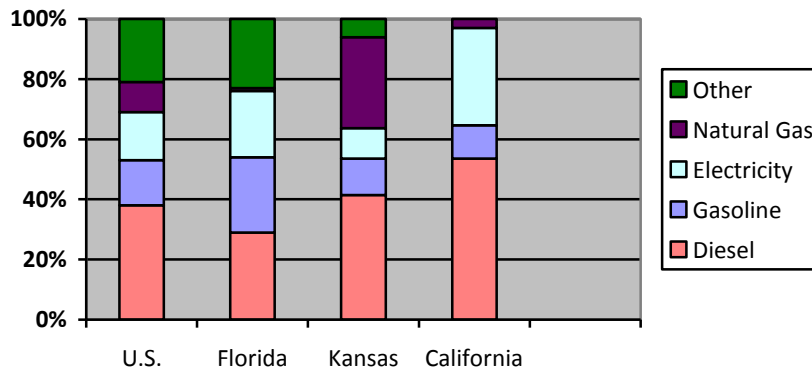


Figure 2. Energy Comparison

## Energy Costs Are on the Rise

Agriculture, a typically resilient sector, has been hard hit disproportionately by the recent energy price increases due to energy's relatively high share of agriculture production costs and the inability of farmers to pass along these costs.

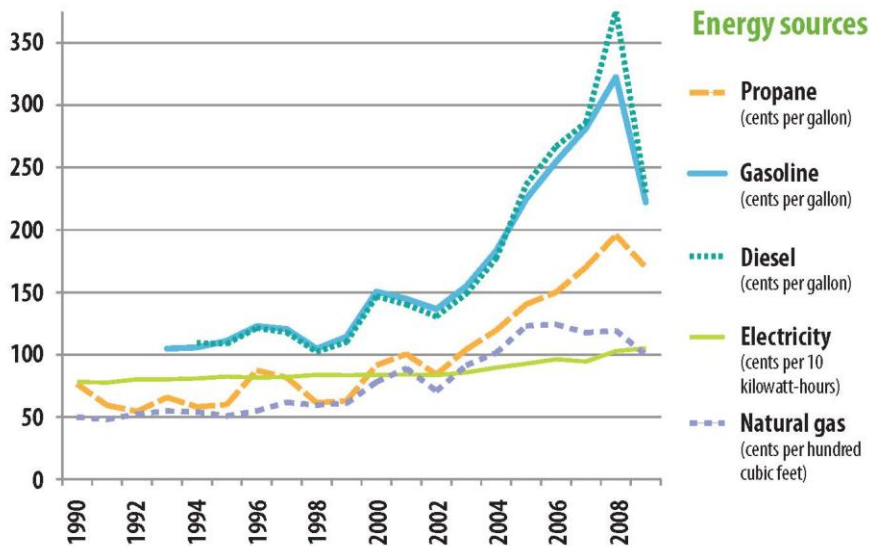


Figure 3. Energy sources and costs since 1990. (Source: Energy Information Administration)

## Farm Energy Log

It is important that the amount of energy used is tracked in addition to the cost. This is a simple procedure. Gathering past bills and entering data can assist in calculating a baseline for a Farm Energy Audit. See below an example of a Farm Energy Log (Figure 3).

### How Do I Use an Energy Log?

For each category, review past bills, receipts and invoices to complete and calculate the total energy cost.

#### Electricity

From your electric utility bill, enter the number of kWh used and your total cost for electricity. The form will automatically calculate your cost per kWh.

#### Diesel, Gasoline, Propane

Depending on the time of year and the amount used, you may not enter information for every month. Keep it simple. Only enter this information when you receive a bill. At that point, you can record gallons used and total cost.

#### Natural Gas

Many farms are not on a natural gas line. This item may not be relevant to your farm. If you are a natural gas customer, record your use similar to electricity. Enter the cubic feet and the cost.

#### Total Energy Cost

Your monthly total energy cost can be calculated. To the far right of this form, year-end total use and cost for each energy input will also be calculated.

	January	February	March	Total
<b>Electricity</b>				
kWh	4750	4314	4980	14044
Price per kWh	\$0.1000	\$0.0948	\$0.0900	
Total Cost	\$475.00	\$408.97	\$448.20	\$1,332.17
<b>Diesel</b>				
Gallons		892		892
Price per Gallon		\$2.35		
Total Diesel Cost		\$2,096.20		\$2,096.20
<b>Gasoline</b>				
Gallons				
Price per Gallon				
Total Gasoline Cost				
<b>Propane</b>				
Gallons	613		834	1447
Price per Gallon	\$1.30		\$1.22	
Total Propane Cost	\$796.90		\$1,017.48	\$1,814.38
<b>Natural Gas</b>				
Cubic Feet				
Price per Cubic Feet				
Total Natural Gas Cost				
<b>Total Energy Cost</b>	\$1,271.90			\$5,242.75

Figure 3. Farm Energy Log Example

A Farm Energy Log Sheet is available for landowners in an excel spreadsheet format in Section V., Economic Benefits section of the FOTG.

## Farm Energy Audit

A Farm Energy Log can assist energy auditor when they conduct a 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. A Farm Energy Audit involves the collection of data on current energy use, such as the Farm Energy Log, and where changes can be made to reduce energy consumption thereby lowering costs.

## REFERENCES

- NRCS, WNTSC, Technical Sheets
- American Council for Energy Efficient Economy (ACEES), “On-Farm Energy Use Characteristics”, March, 2005.
- Iowa State University, University Extension, “How Much Energy is Being Used On Your Farm.”

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