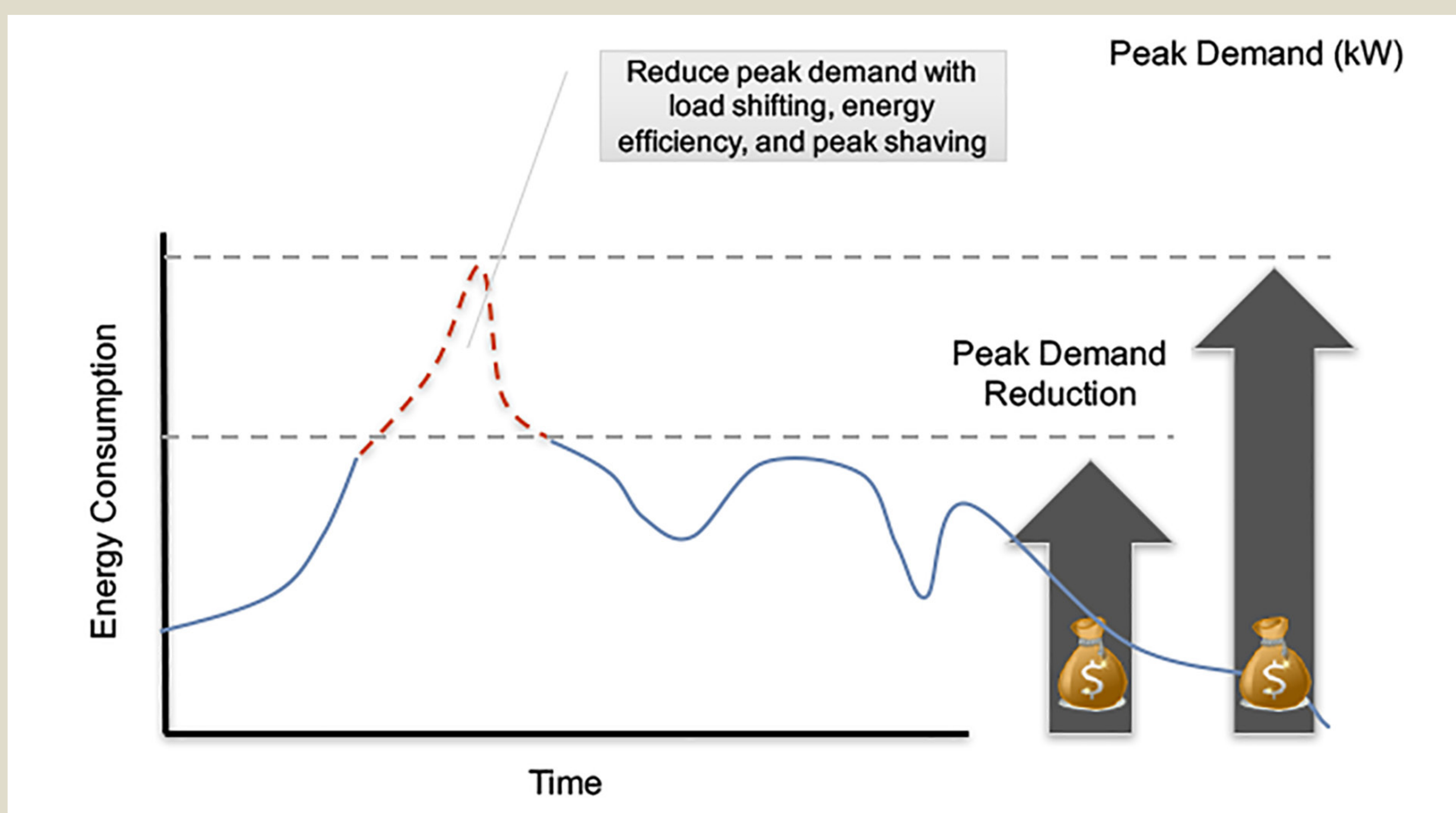


Peak Energy Demand

Energy Demand Management Strategies in Agriculture

Electric energy and particularly electrical motors provide the power to run our economy. Our electric power grid has been designed to provide this crucial resource. Unlike the residential account charges which are based only on total energy usage, commercial accounts are charged for total energy usage and the peak amount of energy, called demand, used over a short time period (typically, the highest 15- or 30-minute peak during the month).

What Are Energy Demand Charges?



The cost for providing electricity is determined by both energy used (kWh) and infrastructure (i.e., generation and distribution) that must be present to meet your energy demand (kW). Energy and demand costs are lumped together for smaller users, but demand charges for larger businesses, including some farms, are charged separately. Users subject to demand charges can manage and lessen electric costs by knowing how these charges are assessed. (Source: Hanna, M., and Harmon, J., (2009). *Electric Savings: Understanding demand and 3 phase motor use*, Iowa State University Extension.)

Why Are Demand Charges Important?

As agricultural operations have become more sophisticated and automated, the electrical demands of many farms has increased, requiring enhanced needs for high-quality power to operate electric motors and equipment. The demand for electricity in agricultural operations can be highly variable with long periods of low to medium activity and relatively short peaks of high activity. On some farms, the resulting demand charges can be nearly 50% of the farm's monthly electricity bill.

Project Overview: Assessment of Potential Energy

Account Summary	Amount Due
Previous Balance	3,145.00
Payments/Adjustments	-3,145.00
Balance at Billing on Sep 09, 2014	0.00
Toledo Edison	1,436.61
FirstEnergy Solutions Corp - Consumption	1,683.20
Total Current Charges	3,119.81
Amount Due by Sep 30, 2014	\$3,119.81

\$1436 for demand charges on this farm, this is 46% of the total bill.

Demand Management Strategies in Agriculture

The overriding goal of the agricultural energy management program is to install advanced energy metering systems in agricultural facilities to track electric peak demand and monitor power quality to gain knowledge about energy usage in agricultural facilities and, in turn, the manner by which farmers can implement energy management strategies and make investments in equipment to minimize associated energy costs.