

Pumping up Energy Savings

Project Profile: Tailings Pumps Variable Frequency Drive

J.R. Simplot Company

Facility Description
<p>Simplot Phosphates, LLC is a phosphate mine and milling facility located approximately 12 miles north of Vernal, Utah. Phosphate ore is mined and processed at the Vernal facility, then transported as slurry via a 94-mile pipeline to Simplot's chemical plant in Rock Springs, Wyoming. Simplot employs approximately 150 people from Vernal and the surrounding communities. As part of its commitment to the local community to increase energy efficiency, Simplot Vernal saved over 10 million kWh in 2015, compared to their 2006-2009 energy baseline period.</p>
Project Description
<p>Pumping is one of the most important operations for Simplot because it transports the mined phosphate ore in Vernal to the processing site in Rock Springs. To reduce energy needs for pumping, Simplot developed a new pumping facility with energy-efficient variable frequency drives in Vernal in 2014.</p>

Project Quick Facts
Location: Vernal, Utah
Market Sector: Mining and manufacturing
Energy Efficiency Project: Install variable frequency drives on tailings pumps
Annual Energy Savings (kWh): 2,100,000
Annual Electrical Cost Savings: \$112,000
Total Project Cost: \$534,000
Utility Incentives: \$305,000
Payback Period: 2 years
Project Benefits: Reduced pumping costs and energy consumption



New Tailings Pumps with Variable Frequency Drives

(Photo courtesy of Tyrell Clines)

Project Rationale

Simplot needed a new pumping facility for the tailings impoundment to support its expanded operations. The company installed new pumps using the latest energy-savings technology – variable frequency drives installed on motor systems. These drives can adjust pumping speed as needed, which reduces energy waste and streamlines operations. As a result, Simplot saves up to 2.1 million kWh in energy consumption and \$130,000 in electrical costs per years.

Operation Details

Simplot installed two 1,400 horsepower motors with variable frequency drives, which are programmed to adjust pump speed based on demand. With an efficiency incentive of \$305,000 provided by Rocky Mountain Power, the simple payback period for this project was reduced to two years.



Elk enjoying the reclaimed mine area
(Photo courtesy of Andrea Olsen)



Environmental Stewardship

Simplot is committed to being a sustainable business by continuously improving its performance and reducing operating costs. Energy is a critical component of the company's sustainability efforts as demonstrated by the company's three pillars: Respect for Resources, Spirit of Innovation, and Passion for People. A U.S. Department of Energy's Better Plants member, Simplot has a goal to reduce its energy intensity by 25% over 10 years from their 2006-2009 levels, also known as "25x10" goal by improving energy management within their operations and implementing cost effective energy efficient best practices. Simplot maintains a corporate energy department of five employees and each facility has a designated energy champion who leads efficiency efforts to meet the 25x10 goal. In both 2012 and 2015 the Utah Industrial Energy Efficiency Challenge recognized J.R. Simplot Company - Vernal facility, for its leadership in industrial energy efficiency.

For More Information

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