

# Idaho Conservation Success Profile

## Rexburg Bench Energy Project

### Project Quick Facts

2011 Financial Assistance .....\$582,250  
 Number of 2011 Contracts .....12  
 Acres Treated.....5,267  
**Project Location:** eastern Idaho, Madison County  
**Resource concerns addressed:**  
 Energy and Water Conservation  
**NRCS Program Used:**  
 EQIP Cooperative Conservation Partnership Initiative



Housing for variable frequency drive

The Rexburg Bench Energy Project is helping Madison County producers save power and ground water using technology to deliver irrigation that more accurately matches crop needs. Twelve local producers cut their energy use by installing variable frequency drives on irrigation pumps in 2011, the first year of the three year project.

The Madison Soil and Water Conservation District partnered with Rocky Mountain Power and the Natural Resources Conservation Service to offer this project that helps farmers purchase these drives. Most of the funding comes through the NRCS Cooperative Conservation Partnership Initiative (CCPI). Rocky Mountain Power contributes in-kind services and funding for incentives.

### Project Benefits

- Soil**
- Less soil erosion resulting from excessive irrigation
- Water Quantity**
- Water use is more closely matched to crop needs so less water is used and less water is wasted
- Plants**
- Plant health improved by matching water application better with plant needs
- People**
- Reduced energy bills for producers
  - Streamlined irrigation water management for producers
  - Reduced power usage for Madison County as a whole



Producer Ryan Crapo is taking part in the project. He noted that the variable frequency drive on his pump cut in half the demand charges associated with system start-up. “When the system comes on more slowly it doesn’t draw as many amps,” he said.

In an area irrigated by deep wells – most are between 300 to 1,000 feet deep – producers often hook multiple pivots to one well to save the expense of drilling additional wells. When the pump is running, all the pivots linked to that well are on, using water and energy that may not be needed. Installing a variable frequency drive allows for adjusting the pump speed based on water needs resulting in less energy and water use. Because of the scale of these irrigation systems, even a small percentage in energy savings is significant for both the participant and the county as a whole.

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irrigation pump

“In the past, if two pivots were tied to one well and one pivot broke down, the extra water was diverted into someplace like a canyon, which was a waste of water,” Crapo explained. “Now the pressure can be adjusted for just one pivot and less water is wasted.”

Project partner Rocky Mountain Power evaluates potential energy savings by conducting pump audits for project applicants. Rick Rumsey performs these audits through the Irrigation Energy Savers Program for Nexant, a consultant to Rocky Mountain Power. Rumsey noted that the power company sees the Rexburg Bench Energy Project as an effective way to promote energy efficiency.

“The producer sets the system at the pressure they want, like 60 psi as an example, and the variable frequency drive maintains that pressure. This means less energy is used, but it also means the system does not have to be monitored as closely by the producer,” said Rumsey.

In addition to saving energy and water, Ryan Crapo found the variable frequency drive pumps can save wear and tear on the system. “Because the variable frequency drive allows water to be delivered at consistent pressures, there is less stress on irrigation system and mainlines are protected from blow-ups caused by overpressure. The consistent pressure can expand the life expectancy of the system,” said Crapo.



“Producer participation is high in this project not only because people really want to save energy, but the variable frequency drive gives producers so much more flexibility in their irrigation management,” said Ken Beckmann, NRCS District Conservationist.

CCPI is a special initiative that provides technical and financial assistance for projects where landowners work together to address regional conservation concerns. Applications were ranked based on projected savings for both water and power. The Rexburg Bench Energy Project runs for two more years: 2012 and 2013.