



NEBRASKA FARMER INCREASES HORSEPOWER AND EFFICIENCY WITH PROPANE IRRIGATION

A PROPANE CASE STUDY

Bud Walvoord is a third generation farmer in Waterloo, Neb., and has been farming with his father and brother since the 1970s. They currently grow 1,200 acres of corn and soybeans on the farm started by Walvoord's grandparents in the 1950s.

When Walvoord's father first began irrigating in the 1970s, he purchased four 1976 Ford propane engines for the task. The engines performed well for many years, but in 2013, Walvoord decided to switch from gravity to pivot irrigation and the old engines had to be retired.

The change in irrigation methods required engines with higher horsepower capabilities. With an eye on cost and fuel efficiency, Walvoord visited farm shows and talked to equipment dealers to learn about the irrigation options available. Walvoord's dealer, Hastings Irrigation Pipe Co., which sells both diesel and propane engines, raved about the efficiency of new propane-powered engines.

MAKING THE UPGRADE

The positive endorsement by his dealer persuaded Walvoord to give the newest technology in propane irrigation a try.

"The new propane engines caught my eye because they were supposed to be much more efficient and we already had the propane tanks on our farm," Walvoord said.

Walvoord purchased a General Motors 4.3-liter propane engine by Power Systems International [PSI]. Hastings Irrigation referred Walvoord to incentives available through the Propane Education & Research Council [PERC] Propane Farm Incentive Program and the Nebraska Propane Gas Association.

Walvoord received \$1,720 from the Propane Farm Incentive Program and an additional Nebraska state incentive of

COMPANY

Bud Walvoord
Waterloo, Neb.

CHALLENGE & SOLUTION

When Bud Walvoord switched to a pivot irrigation system, he needed new engines with more horsepower to replace the propane engines he'd been running since 1976. After considering diesel, he chose a new, fuel-efficient propane engine.

RESULT

- Reduced fuel costs while running engines at a higher horsepower than previous propane engines.
- Increased overall fuel efficiency with new propane engines, compared with previous engines.
- New propane engine maintained a smooth RPM, which is important for pivot irrigation.

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Bud Walvoord

\$750, which reduced his initial upfront costs for the new engine.

"The incentives were very important in encouraging us to try propane-powered engines on our farm. Diesel engines are becoming very expensive with their new emission controls," Walvoord said, "and knowing that propane has an affordable and effective option is critical."

Walvoord was surprised by the ease and speed of the application process.

"At first, I was expecting it to be difficult like government paperwork, but I found the process easy, simple, and quick," Walvoord said. "I got a response back from PERC right away that I qualified."

POSITIVE FIRST IMPRESSIONS

Walvoord installed the engine and immediately put it to work during the 2013 growing season. The new engine's efficiency astounded him. Even running at a higher horsepower, the new engine was more efficient than his older engines.

"When we changed from gravity to pivot irrigation, we knew we'd reduce water use, but we thought we'd have to sacrifice fuel economy," Walvoord said. "With our new engine, now I know we'll be just as fuel efficient — or maybe even reduce fuel use."

Walvoord was also impressed by how smooth, quiet, and consistent his new propane engine ran.

LONG-TERM RESULTS

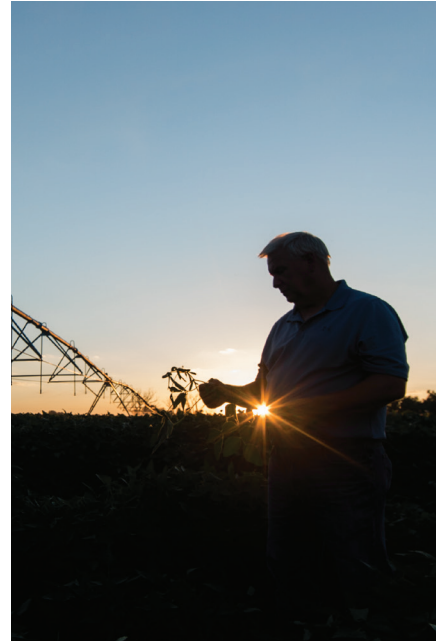
Walvoord was so pleased with the efficiency and performance of his propane-powered engine that he purchased two more GM 4.3-liter engines by PSI for the 2014 growing season.

Walvoord is looking forward to seeing his operation become even more efficient once his two new propane engines are up and running.

"My requirement was for more horsepower, but the new engine is still running cheaper than the previous propane engines," he said.

In addition to reducing his fuel costs, Walvoord is also gratified that his propane-powered engine allows him to be a little more environmentally conscious and emit fewer greenhouse gases.

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FOR MORE INFORMATION

To learn more about propane-powered irrigation engines and the PERC Propane Farm Incentive Program, visit propane.com/agriculture.

Propane Education & Research Council / 1140 Connecticut Ave. NW, Suite 1075 / Washington, DC 20036
P 202-452-8975 / F 202-452-9054 / propanecouncil.org

The Propane Education & Research Council was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.