



# IMPROVE IRRIGATION EFFICIENCY

VARIABLE FREQUENCY DRIVES DELIVER SAVINGS, CONTROL AND FLEXIBILITY

## PROJECT SNAPSHOTS

### Alpha Nursery—Salem

- 25 hp VFD
- \$4,278 project cost
- \$2,139 Energy Trust incentive
- \$1,497 Business Energy Tax Credit from Oregon Department of Energy
- \$715 annual energy cost savings

### Roselawn Seed—Hubbard

- 100 hp VFD
- \$14,000 project cost
- \$6,755 Energy Trust incentive
- \$4,738 Business Energy Tax Credit from Oregon Department of Energy
- \$2,300 annual energy cost savings

### Hendricks Farms—Stayton

- 50 hp VFD
- \$12,587 project cost
- \$5,118 Energy Trust incentive
- \$4,164 Business Energy Tax Credit from Oregon Department of Energy
- \$1,418 annual energy cost savings

Conventional irrigation pumps operate at a fixed speed designed for maximum water flow. But in settings where flow and pressure needs vary, the one-speed system wastes energy and water. Adding a variable frequency drive, which adjusts pump speed to water flow requirements, can reduce energy costs by 35 percent or more. The technology also allows a single pump to serve a variety of irrigation systems and provides flexibility to change pressures for different pumping requirements.

### Nipping waste in the bud

As assistant manager for Alpha Nursery, Josh Zielinski is always looking for more efficient technologies for the 100-acre ornamentals nursery in Salem. So when he learned that an Energy Trust of Oregon cash incentive would cover half the cost of an energy- and water-saving VFD for one of his irrigation pumps, he couldn't say no.

The 25 horsepower VFD installed in spring 2009 has done more than just save energy and conserve water that was bypassed when there was too much pressure in the

system. It has also given Zielinski and the nursery staff greater control and flexibility. Alpha expects to trim annual energy costs by about \$715. And with the \$2,139 Energy Trust incentive, the nursery should recover the investment cost in less than three years.

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**Before, the pump ran at 100 percent, so the pump controlled me. Now I control the pump. Instead of working around what the pump can do, now the pump works around what we want to do.**

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Josh Zielinski, assistant manager, Alpha Nursery

### Greater efficiency, less pressure

Roselawn Seed's irrigation system was designed in the 1970s, operating with big guns that require high pressure. Since then, the company has converted to wheel lines that operate on much lower pressure. As a result, the line pressure often got high enough to open the bypass valve and the Hubbard farm had to run unnecessary equipment just to keep the pressure down.

In 2009, owner Ed Rose installed a 100 hp VFD that allows the Hubbard, Oregon, grass seed grower to operate a range of equipment at a variety of flows. The VFD will also trim annual energy costs by approximately \$2,300, conserve water and reduce wear and tear on the system. With energy cost savings and a \$6,755 Energy Trust cash incentive, Rose expects to recover the cost of the VFD in just over three years.

### Growing energy-efficient corn

After rebuilding his irrigation pump twice in only 10 years, Kenny Hendricks decided it was time for a change. The pump, mounted 220 feet down a well at his 1,600-acre Stayton farm, serves his cornfields and is sized to meet fall pumping levels. But when water levels only reached 20 feet in spring, excess pressure increased deterioration on the motor and caused pressure spikes.

By adding a 50 hp VFD to the pump, Hendricks is now able to control pressure automatically without relying on a throttling valve. He also expects to extend the life of the pump and reduce annual energy costs by approximately \$1,418. An Energy Trust cash incentive covered 40 percent of the project cost, allowing Hendricks to see a return on his investment in just over five years.



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With the VFD, we can run one line or six. We also use less labor to maintain the system and worry less about high pressure damaging things.

”

Ed Rose, owner  
Roselawn Seed

## GAIN CONTROL TODAY

Make your irrigation system work for you. To find out more about energy-saving improvements and cash incentives for irrigation, call 503.928.3154 or visit [www.energytrust.org](http://www.energytrust.org).