

Electricity comes out ahead of natural gas

Key Points

- Moving to electric irrigation wells from natural gas looks wise.
- Lift rates should be considered while figuring breakeven costs.
- Electricity appears a viable option for at least several years ahead.

By **KAY LEDBETTER**

PRODUCERS who irrigate crops can make converting their watering systems to electricity pay at current natural gas prices, says a Texas Cooperative Extension specialist.

Steve Amosson, Extension economist, Amarillo, Texas, says that while several factors must be considered, the conversion of irrigation systems to electricity clearly would be the most economical thing to do at this time.

"It appears to pay to convert to electricity at the lighter lift rates, 200 feet, when natural gas prices reach \$4 per thousand cubic feet, and at the deeper lift rate, 500 feet, when gas prices exceed \$5 per thousand cubic feet," Amosson says.

Currently, natural gas prices are about \$8 per thousand cubic feet, and many producers, especially on the High Plains and Panhandle regions, are looking at a 500-foot lift to bring water to the surface from their irrigation wells.

"While we expect these rates to come down somewhat, the probability of them going below the breakeven is questionable," Amosson notes.

Current advantages

Multiple advantages of electricity are:

- lower irrigation motor prices
- lower lube, maintenance and repair costs
- longer useful motor life

At 500 feet, the electric motor is expected to last for 15 years and cost \$6,600, compared to a natural gas engine that costs \$20,000 with a 12-year lifespan, Amosson says. The \$5-per-thousand-cubic-feet breakeven includes the cost of conversion, which is expected to be around \$9,000. However, it does not include the cost of line extension fees that may be required if three-phase electricity has to be run to the pivot system, Amosson says.



AHEAD OF THE CURVE: For 50 years, Margaret, Texas, farmer Tom Smith depended on natural gas engines like this one to power all his irrigation wells. However, he has been converting all his irrigation pumps to electric motors to lift water for 2007. A Texas A&M study agrees that's the way to go.

While the line extension fee varies, he figures a cost of \$15,000 would add another \$1 per thousand cubic feet to the breakeven figure, making it \$6 per thousand cubic feet at the 500-foot lift, still well below the current natural gas prices.

"At \$8 natural gas, we would anticipate being able to recover the conversion costs and that of a new motor in three to four years," he says. The addition of the line extension fee would make cost-recovery time a little longer.

Looking at the natural gas futures, Amosson says the outlook indicates gas prices may fall some, but not enough in the next several years to keep electricity from being the most viable option. He is,

nevertheless, looking at the possibility of combining electricity with a wind-powered electric irrigation system.

"We're in the final stages of completing the analysis looking at the feasibility of wind-electric hybrid systems," Amosson says.

Did the math

From 1956 through 2006, Margaret, Texas, farmer Tom Smith had irrigation wells whose pumps were powered by natural-gas engines. That seemed the way to go during the 1950s drought, when multitudes of farmers were going to irrigation in the Greenbelt Region near Vernon, Texas. However, Smith had Waggoner & Son Electric Inc. convert all

of his natural-gas irrigation wells to electric motors for 2007. He put the pencil to it, and the 91-year-old producer decided electric was the way to go in the New Year and beyond.

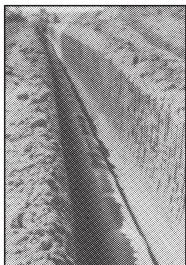
Like Amosson, Smith also is interested in the feasibility of wind-electric hybrid systems.

Margaret neighbor H.L. Ayers Jr. did experiments some 25 years ago, using his own on-farm wind turbines to supply electric power for his irrigation systems, as well as his barn.

Fuel was relatively cheap back then. Ayers may just have been well ahead of his time.

Ledbetter is with Texas A&M Communications in Amarillo.

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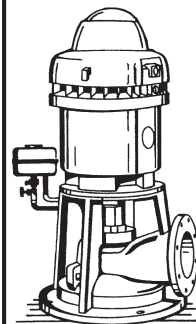
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