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REMOTE POWER: Kenny Adams says he can use generator sets like this one to power multiple fields of irrigation in remote locations. He particularly likes generated electricity for his drip-irrigated cotton fields.

MONEY SAVER: Adams says generator sets can save him about one-third on operating costs when he replaces two or more natural gas engines.

Homegrown power

By **ALAN NEWPORT**

KENNY Adams believes he's found a niche for generator sets in irrigating his cotton crops near Ralls, Texas.

Generator sets — usually a natural gas or diesel engine powering a generator — are often considered an inefficient way of powering irrigation systems. Essentially, they typically lose 10% to 15% of their energy through friction and heat in the process of turning fossil fuel into electricity. However, Adams, who operates several cotton farms in extremely remote locations, has found that four factors make generator sets work for him.

Key Points

- Generator sets power remote pivots beyond the grid.
- Irrigator says the sets are well-suited to drip systems.
- Initial cost is high, but generators allow irrigation where it's otherwise impossible.

1. Farming in remote locations means he has no rural electricity and must rely on natural gas or diesel to irrigate. "It's not cheaper than rural electricity," Adams says, "but I don't have electricity at these farms." Adams says at one of his farms he was considering the price tag to run rural electricity to the location, but when the electrical company shot back a $25,000 estimate, Adams balked. "I said, 'I can put on a generator for that.' "

2. He operates three or four wells on a single generator. He always uses submersible pumps in his low- to moderate-production wells. At one of his three newest generator sets, for example, Adams has a 150-kilowatt generator, powered by a John Deere diesel engine operating three wells. One is a 30-horsepower submersible and the other two are 40-hp submersibles. Together they pump about 850 gallons per minute from about 350 to 400 feet deep. "It's not as economical as it was since fuel has gotten so high, but it's still one-third cheaper than I was running," Adams says about his new set.

3. He uses submersible pumps with generator sets because they are more efficient in his wells. "I used to have wells that pumped 500 to 600 gpm, but since they've fallen off so much, a turbine's not as efficient as a submersible," he says.

4. Adams says subsurface drip irrigation is the best combination with generators, and he is converting many of his farms to this combo. "Drip is the only thing that's paying its way," he says. An exception is one farm where Adams uses a generator set to power two submersible pumps and a pivot. However, he says it's not as efficient as when he operates multiple drip irrigation systems from a generator.

Pros and cons

"There's disadvantages to them," Adams says. "If you get a rain you've got to get there and shut them off. And the initial cost is a killer."

Most of Adams' generator sets cost $27,000 to $30,000 to set up, and then he typically spends that much or more to run wiring to the other well sites and buy the submersible pumps. Nonetheless, he's pleased with the system he's worked out and may yet add some more generator sets to his operation.