



IRRIGATION EFFICIENCY



Sponsored by Nebraska Public Power District
in Partnership with its Wholesale Utility Customers

ENERGYWISESM
Use less. Spend less. Do more.

With the EnergyWise Irrigation Efficiency program, Nebraska Public Power District and participating local electric utilities are seeking to help irrigators utilize water and electric energy in the most efficient and cost-effective manner possible.

Irrigation efficiency programs may offer:*

- Financial incentives to defray improvement costs associated with energy efficiency improvements to irrigation systems. (Payments of up to 20 cents per kilowatt-hour saved.)
- Incentives that cover the cost of pump efficiency tests up to \$350.

**Irrigators should check with their local electric utility to find out what is available through their utility's EnergyWise program.*

Irrigation that makes dollars and 'sense'

Irrigation is the lifeblood of many Nebraska farms. With irrigation, crop yields during dry years can more than double.

Push a button, and water flows.

Unfortunately, some irrigation systems are inefficient which adds unnecessarily to costs.

For example, a 10 percent decrease in an irrigation system's efficiency, depending upon many factors, may translate to an extra

several hundreds of dollars spent each year. Moreover, sometimes as much as half of the water delivered through the systems does not benefit the crop.

Many water districts have implemented, or are planning to implement, comprehensive restrictions on the amount of water that can be used for irrigation. Now, more than ever, irrigation efficiency needs to be investigated.

While energy prices and rainfall



are beyond anyone's control, irrigation operating costs can be managed better by investing in energy efficient technologies and practices.

Many irrigators have found

that making energy efficiency improvements to their irrigation systems not only saves energy and water but also can lead to improved productivity.

What can be done?

- **Convert a high-pressure system to low-pressure.**
- **Rebuild or replace an inefficient pump.**
- **Convert gravity irrigation to center pivot or sub-surface drip irrigation.**

QUESTIONS TO ASK

- **Are there opportunities for me to improve system application efficiency or uniformity?** More than likely, yes! Visit your local irrigation contractor for options.
- **Could improperly using a choke valve cause my irrigation system to use tens of thousands kilowatt hours each year unnecessarily?** Yes. Surprisingly, many pumps operate at 75-80 psi and use a choke valve to supply pivots designed for 40 psi.
- **Is my pump too old?** The average life of a pump before it needs refurbishment or replacement is 18 years.
- **Could improving my system's efficiency reduce the amount of water I need to pump?** Yes. Saving water means saving money!
- **Would I be able to convert my delivery system to a lower pressure?** 20-25 psi pivots are not uncommon.
- **Should I be using an end gun booster pump for low-pressure pivots rather than designing the main pump to produce enough pressure for the end gun?** Considering the limited amount of time the end gun operates, it is usually wiser to use a booster pump on low-pressure pivots.
- **How large are my mainlines?** Larger mainlines reduce friction loss.

To begin to answer these questions: Have your irrigation pump tested by a quality irrigation pump service contractor to determine the overall pumping plant efficiency.



For guidelines or more information about the EnergyWise programs, please go to www.nppd.com.

With specific program questions contact Cory Fuehrer at 402-362-7390 or crfuehr@nppd.com.