



Pump Efficiency Guidelines

Sponsored By:



Pump Efficiency Program (PEP) Guidelines

The EnergyWisesSM Pump Efficiency Program (PEP) offers financial incentives for testing and refurbishing/replacing eligible electrically powered irrigation pumps to improve overall pumping efficiency. The refurbishment/replacement incentive is based on the electrical demand (kW) readings before and after the pumping system is improved, the number of acres irrigated with the system, and the average amount of irrigation for a system in a particular county. PEP will also pay up to \$350 for the cost of a required pre-improvement pumping system efficiency test for eligible electrically powered water pumps that are 20 horsepower or larger.

Customer Eligibility

Eligibility extends to all customers of Nebraska's electric utilities participating in the EnergyWisesSM Pump Efficiency Program (PEP) whose pump is primarily used for pumping water for agricultural production. **Pre- and Post-Improvement Pumping System Efficiency Tests must be conducted to qualify for pump refurbishment/replacement incentives.** Efficiency will be expressed in terms of "Overall Plant Efficiency" or OPE. Customers with questions regarding eligibility should contact their local electric utility prior to committing funds for improvements.

Incentives are available to any eligible electric irrigation pumping account holder for refurbishing/replacing inefficient pumps 20 HP or greater. To apply for a PEP incentive, customers should follow the steps outlined below:

1. First, the customer contacts the local utility to confirm eligibility and obtains a copy of the PEP Pump Test form, which will be used to record test results for both the Pre- and Post-Improvement Pumping System Efficiency Tests. The local electric utility will inform the customer whether they are eligible for up to \$350 for reimbursement of costs to have the Pre-Improvement Pumping System Efficiency Test performed. Participating electric utilities also reserve the right to limit the number of incented Pre- Improvement Pumping System Efficiency Tests.

The results of the Pre-Improvement Pumping System Efficiency Test must include the overall pumping plant efficiency (OPE), power input (kW) to the pumping plant, an estimated cost of improvements, and an estimate of the annual energy savings from a pump refurbishment/replacement.

2. Next, the customer should forward the Pre-Improvement Pumping System Efficiency Test results to their local electric utility for review. Note: The Irrigation Pump Test Form provides an area for the utility to identify estimated incentive based upon the estimated electrical demand reduction after results of an actual pre-improvement pump test are known. **Final incentives are only determined after an actual Post-Improvement Pumping System Test is provided to the electric utility.**
3. The customer has the pumping system work performed.

4. A Post-Improvement Pumping System Efficiency Test must be conducted after the refurbishment or replacement. This pump test is usually performed immediately after the improvements are made by the irrigation pump contractor performing the improvements. The results of the test must include a calculation of the overall pumping efficiency (OPE), power input (kW) to the pumping plant, and the estimated energy savings resulting from the refurbishment/replacement. This information is necessary to verify the results of the improvement to the pumping system.
5. The customer submits a copy of the Post-Improvement Pumping System Efficiency Test and a copy of the invoice(s) associated with the improvements to the local electric utility so that the final incentive amount may be calculated and provided to the customer.

Pumps System Eligibility Requirements

Incentives are available for pump bowl/impeller retrofit or replacement, and other actions involving the pumping system taken to improve pump efficiency or reduce electrical energy demand (kW).

Eligible pump retrofit/replacement projects include:

- Refurbishment/replacement of the entire pump, or bowl(s) and/or impeller(s)
- Refurbishment/replacement of pump in conjunction with other energy-saving measures
- Well cleaning that reduces draw down

The pumping system must be operational before improvements are made. The PEP will not provide an incentive for replacement of a broken or inoperable pumping system.

6. A valid Pre-Improvement Pumping System Efficiency Test must be performed before improvements are implemented regardless of whether or not a test incentive of up to \$350 is being sought. A copy of the Pre-Improvement Pumping System Efficiency Test results must be submitted before the utility can complete and provide an estimated incentive. Final incentives are only determined after an actual Post-Improvement Pumping System Test is provided to the electric utility.

A Post-Improvement Pumping System Efficiency Test must be performed after project completion and within twelve (12) months after the application is approved, unless there are extenuating circumstances and the local utility has approved an extension. Regardless of the timing, no incentive will be paid until a Post-Improvement Pumping System Efficiency Test is submitted.

Only one pumping system, with one discharge point, is allowed per PEP incentive application. Projects involving multiple wells are not eligible for PEP incentives.

Please note: any agreement for pump refurbishment/replacement service work is a business arrangement solely between the customer and the pump service provider. Neither the local utility nor any other party is responsible for guaranteeing the services of the pump service provider.

The performance and results of the efficiency tests are the sole responsibility of the pump test company and/or the company performing the pump refurbishment/replacement service work. Any agreement for pump testing that the customer enters into is a business arrangement solely between the customer the company testing the pump.

Incentive Calculation and Payment

Incentives are based on the estimated annual energy savings calculated from the electrical demand (kW) reduction resulting from the improvements, the number of acres irrigated with the system, the average system flow rate as determined by the 2010 NPPD Irrigation Energy Source Survey, and the adjusted net irrigation requirements as identified in the 2006 University of Nebraska-Lincoln Net Irrigation Requirements Report. Incentives will be limited to no more than 50 percent of the project implementation cost.

The potential incentive is calculated as:

Incentive (\$\$\$) = (Pre-Improvement Test kW – Post-Improvement Test kW) x # of acres irrigated x adjusted net irrigation requirements (kWh/acre/county) / average system flow rate x incentive rate

Incentive rate = \$0.20 / kWh

The local electric utility and Nebraska Public Power District reserve the right to audit post-retrofit pump tests at their discretion using an independent pump tester.