

Bonneville Power Administration & Bureau of Reclamation

**Energy and Water Conservation Opportunities
for Pacific Northwest Irrigation Districts**

HANDBOOK

March 2008



Who?

The Bonneville Power Administration (BPA) and the Pacific Northwest Region of the Bureau of Reclamation offer technical and financial incentives to use federal power more efficiently at Idaho, Oregon and Washington Irrigation Districts.

What?

BPA will pay 15¢ per first year kilowatt-hour savings of Bureau of Reclamation or BPA cost-effective projects. These savings can occur in or out of the Districts at federally powered pumps, such as the pumping plant at the Grand Coulee Dam.

Why?

When less power is used and there is extra power, the region benefits.

- After meeting its Pacific Northwest loads, BPA sells any extra power from the Federal Columbia River Power System in Nevada, Arizona and California. Revenue from out-of-region sales helps keep Northwest rates low.
- For times when BPA does not have adequate power supply to meet its Pacific Northwest loads, BPA must buy expensive power on the open power market from nuclear, coal-fired and natural gas fueled power plants. Energy Efficiency helps keep BPA from going to the open power market.

BPA is also required by the Northwest Power and Conservation Council (<http://www.nwcouncil.org/>) to achieve kilowatt-hour saving targets. Some energy savings goals are specifically tied to agriculture. Irrigation districts will play an important role in meeting the annual energy savings targets for the Pacific Northwest.



Energy efficiency is BPA's least cost resource. Energy efficiency helps keep BPA rates low.

How?

Incentives are available to Pacific Northwest Irrigation Districts, which use Reclamation or BPA power. The district signs a simple Master Agreement contract with the BPA. Through the agreement, BPA is able to provide incentives and a variety of services in exchange for energy savings.

BPA has a significant incentive budget available and wants to invest the funds in Pacific Northwest Irrigation Districts. BPA will assist districts to find then fund kilowatt-hour and water conservation projects at up to 15¢/ kWh.

Possible Measures

BPA provides incentives for custom measures such as the following.

- Custom pump improvements and replacements
- Canal lining
- Lighting retrofits
- VFD controls on pumps
- And, any similar cost-effective, energy-saving project.

On-Farm Measures

BPA also provides incentives for on-farm measures where the Bureau of Reclamation or BPA provides power to the farm. The following measures are eligible for funding.

- New flow-controlling type nozzles for impact sprinklers
- Rebuilt or new brass sprinklers
- New rotating-type sprinklers (replacing impact sprinklers)
- New gaskets for wheel lines or hand lines
- New low-pressure regulators with pivot sprinklers (entire pivot must be upgraded)
- New multiple-configuration nozzles for low-pressure pivot sprinklers
- New “gooseneck” elbows for new drop tubes
- New drop tubes for low-pressure pivots
- New center pivot base boot gaskets
- New multi-trajectory sprays that replace impact sprinklers or low-pressure sprinklers
- New drains for wheel lines, hand lines or pivots
- New hubs for wheel lines
- Cut and pipe press repair for leaking hand lines, wheel lines and portable mainlines
- Rebuilt or new wheel-line levelers
- Motor replacements

Information on deemed measures and rebate offers can be found at http://www.bpa.gov/Energy/N/projects/post2006conservation/pdf/CRC-CAA_Imp-Manual_10-01-2007.pdf (Section 5. Agricultural Sector).

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Deemed Measures: Rebates List				
Customer Account Name		Authorized Applicant and Relationship to Customer		
Address		City	State	Zip
Contact Person		Phone	Cell Phone	
Pump # (Service Location)	Acres Irrigated from this Location	Horsepower	Pumping Lift	Discharge Pressure

	Maximum Rebate*	No.	\$ Total
Sprinkler Equipment			
New flow controlling type nozzle for impact sprinklers.	\$3.00/nozzle ¹		
(a) Rebuilt or new impact sprinklers.	\$3.75/sprinkler ¹		
(b) New nozzle for impact sprinkler replacing existing worn nozzle of same flow rate or less.	\$0.25/nozzle ¹		
New rotating type sprinklers that replace impact sprinklers. (Entire pivot ² must be upgraded. Flow may not be increased.)	\$3.00/sprinkler ¹		
New gasket for wheel lines, hand lines, or portable main line.	\$1.00/gasket		
(a) New low-pressure regulators. (Entire pivot ² must be upgraded.)	\$3.00/regulator ¹		
(b) New rotating type sprinklers that replace low-pressure sprinklers. (Entire pivot ² must be upgraded. Flow may not be increased.)	\$3.00/sprinkler ¹		
New multiple configuration nozzles for low-pressure pivot ² sprinklers.	\$2.00/sprinkler ¹		
New multi-trajectory sprays that replace impact sprinklers. (Entire pivot ² must be upgraded. Flow may not be increased.)	\$2.00/sprinkler ¹		
New sprays that replace low pressure sprinklers. (Entire pivot ² must be upgraded. Flow may not be increased.)	\$1.00/sprinkler ¹		
New drains for wheel lines, hand lines, or pivots ² . (Entire line must be upgraded.)	\$1.00/drain		
New hubs for wheel lines. (Entire wheel line must be upgraded.)	\$6.00/hub		
New "goose neck" elbow for new drop tubes.	\$1.00/goose neck		
New drop tube for low-pressure pivot ² sprinklers (min. 3 feet length).	\$3.00/drop tube		
New center pivot base boot gasket.	\$125.00/pivot		
Cut and pipe press repair of leaking hand lines, wheel lines, and portable mainline.	\$8.00/pipe section		
Rebuilt or new wheel-line leveler.	\$0.75/leveler		
Total Rebate Amount			\$

* Not to exceed actual cost

¹ Rebate limited to no more than two units per sprinkled acre

² Linear moves also included

Note: Other Deemed Measures, such as pump upgrades or VFDs at dairies, are available. Ask.

For questions, please contact [place sticker here]

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Deemed Measures Application

General Information

This irrigation program has been developed to encourage energy-efficient equipment and design in irrigation systems. It is an opportunity for irrigation customers to receive a financial rebate and lower their electric bills.

Through this program, you may qualify to receive a rebate for a portion of the cost to install a new, more efficient system or to make energy-efficient improvements to an existing irrigation system. This program helps you pay for energy-efficiency features in your irrigation system and encourages you to use electricity in an economically efficient manner.

Deemed Measures rebates are designed to help cover a significant portion of the costs of repairing and replacing specific components that typically help the irrigation system use less energy.

Rebates are for the purchase of specified replacement parts and components for your existing irrigation system. To participate, replace or repair those parts designated in the Application, submit required paperwork, and receive the rebate shown. The rebate varies by the sprinkler component or part incorporated in your sprinkler system. The rebate may not exceed the invoice amount for the measure, and shall not exceed the amount listed on the form. Labor, if included, must be shown in per measure cost.

For example, if your invoiced cost for all new flow-control nozzles is \$2 apiece and the cost of all new gaskets for your irrigation system is \$1.50 apiece on 40 acres with two hand lines, each a quarter of a mile long, you would receive an rebate of \$192

$64 \text{ nozzles} \times \$2 = \$128$ plus $64 \text{ gaskets} \times \$1 = \$64$ for a total of \$192

In this example, payment for the nozzles is based on the invoiced amount since it is less than the rebate listed. Payment for the gaskets is based on the rebate listed because the invoiced amount is more than the maximum rebate allowed.

Rebate Application Process

1. Review sprinkler parts covered to determine which apply to your system.
2. Determine the quantity needed to replace existing and worn sprinkler parts on your system. Purchase and install them on your irrigation system.
3. Receipts or invoices itemizing the sprinkler parts must accompany each application.
4. Complete this application and mail it to the address given.
5. Your rebate will be sent to you after you have satisfactorily complied with the terms of the program.

APPLICANT AGREEMENT *Please Initial*

	This system is used for irrigation of agricultural crops or pasturage.
	The designated sprinkler parts have been purchased for the sprinkler system at the specified metered service location.
	An itemized receipt or invoice identifying the new equipment purchased accompanies this rebate application.
	I, the undersigned, am authorized to make this application for rebate funds.
	I will provide whatever additional documentation needed to verify the application for funds.

I, the undersigned, declare that I am the authorized Applicant and have read the terms and conditions which apply to the program, and agree to the same.

Applicant's Signature _____

Date _____

Address: _____

What Projects Have Been Funded or Discussed?

1. A&B Irrigation District Pump improvements
 - Six pumps
1. East Columbia Basin Irrigation District
 - Saddle Gap Pump Station, new pumps & controls
 - Canal to pipeline conversions, three lateral canals (part of a multi-year lateral canal water conservation program)
3. Falls Irrigation District
 - On-farm deemed savings measures (sprinkler equipment and motors)
4. Greater Wenatchee Irrigation District
 - Pump station replacement
5. Quincy Columbia Basin Irrigation District
 - Exterior lamp retrofits
 - VFD controls on 150-hp pump
 - VFD controls for pump station with two 1500-hp pumps
 - Canal lining



What Technical Support Is Available?

Support is available through BPA's Technical Service Providers. BPA is willing to fund, in part or in whole, project identification, development services, and implementation. Cost sharing of services with an irrigation district depends on cost, nature of the work to be performed, and the expected savings.

To learn more about the consultants who currently have Master Agreement contracts to provide technical support in agricultural, visit the following link:

http://www.bpa.gov/Energy/N/pdf/Agriculture_Tech_Services_Consultants.pdf

To learn more about these vendors and their measures, visit the following link.

http://www.bpa.gov/Energy/N/projects/industrial/pdf/Tech_Services_Consultants.pdf

BPA is willing to fund any technical contractor of a district's choice, provided the total cost remains under \$10,000.

BPA staff is available to irrigation districts. Our construction project managers and engineers have strong backgrounds and experience in irrigation. Their technical expertise and BPA's administrative support are available to irrigation districts during project development and implementation.

What are the Technical Services?

Under BPA's Master Agreement contract, BPA consultants can provide the following services:

- Assess pump performance
- Assess system losses
- Assess on-farm water use and crop suitability (plan and implement Scientific Irrigation Scheduling)
- Work with individual users to improve on-farm water efficiency
- Evaluate system operation
- Evaluate opportunities for reducing energy and/or water consumption
- Develop plans, specifications and estimates for cost-effective projects

And, the all-important Measurement and Verification (M&V)

- Implement M&V plans, required by BPA for incentives on custom projects

Additional Information

Additional information on BPA's agricultural programs and resources is located at:

<http://www.bpa.gov/Energy/N/agriculture.cfm>

Information on BPA's Energy Efficiency Programs is located at:

<http://www.bpa.gov/energy/n/index.cfm>

