IDAHO POWER®
An IDACORP Company

# ELIMINATING ENERGY WASTE FROM WASTEWATER

**Wastewater Energy Efficiency Cohort Success Story and Energy-saving Tips**

**Wastewater treatment plants are generally among a community's largest energy consumers, with pumps, motors, and other equipment operating 24 hours a day, seven days a week. Nationally, the energy used by municipal water and wastewater treatment plants, on average, accounts for 35 percent of a municipality's energy budget. More importantly, electricity costs range from 25 to 40 percent of a typical plant's operating budget (NYSERDA 2008).**

COHORT-WIDE • YEAR 1

**2,561,177**

**KILOWATT-HOURS SAVED**

## WHAT IS A COHORT?

Idaho Power's Wastewater Energy Efficiency Cohort (WWEEC) is a two-year collaborative of workshops with peers and experts — who coach rather than lecture — sharing organizational and technical energy-saving ideas. Energy-management software is used to benchmark and forecast energy use. The coaching, support and peer learning environment identifies low- and no-cost ways for participating plants to save energy and money.

# ELIMINATING ENERGY WASTE FROM WASTEWATER

## Wastewater treatment plants can save energy and money and earn cash incentives.

In January 2014, Idaho Power created the WWEEC to bring together city employees who run wastewater treatment plants to help reduce energy use through a series of innovative workshops and other techniques. Eleven treatment plants, representing 10 Idaho cities — Blackfoot, Boise, Caldwell, Hailey, Jerome, Ketchum, Kuna, Meridian, Nampa and Pocatello — came together for five workshops held between January and September 2014. Each workshop built on the one that preceded it. Topics included everything from an introduction to Idaho Power's energy efficiency programs to small group discussions where operators brainstormed process improvements.

Additionally, expert consultants and cohort graduates discussed:

- New ways plants can adjust their controls for maximum efficiency
- Significant energy savings through lighting upgrades
- Writing performance-based specifications to obtain more efficient equipment
- Incorporating energy goals into future plant improvements
- Presentations from other wastewater operators on unexpected energy savings success

**"It was the first time in my career that I have sat down with colleagues from other communities and brainstormed ideas for improvement. More importantly, it provided us with the opportunity to, as a group, develop and implement these ideas."**

**~ Royce Davis, Plant Manager — Lander Street Wastewater Treatment Plant, Boise, Idaho**

**"We had a two-pronged goal for the cohort. We wanted to train and encourage participants to identify, implement and maintain improved energy management practices in their own plant and to share information and learn from each other."**

**~ Chellie Jensen, Idaho Power Senior Engineer**

LANDER ST. • YEAR 1

**1,267,300**

**KILOWATT-HOURS SAVED**

Idaho Power wanted to get the right people from all the treatment plants — plant operators, plant superintendents, maintenance managers, city engineers and public works directors — in the same room at the same time to foster dialogue and collaborative learning that can't come from one-on-one or web-based training.

In addition, attendees included representatives from the following:

- City sustainability coordinators
- Idaho State Department of Environmental Quality
- U.S. Environmental Protection Agency
- Engineering design firms
- U.S. Department of Agriculture, Rural Development

These organizations bring expertise, collaboration and support on regulatory compliance and a shared vision for partnering on better capital planning, plant design and improving energy efficiency.

**"It's been exciting to report to our city council and citizens that we've reduced operational expenses by cutting our average monthly power usage by 23 percent at our wastewater treatment plant … The program is well worth the time we've invested in it."**

**~ Robyn Mattison, Former Public Works Director — City of Ketchum, Idaho**

**" The level of treatment wasn't affected, but we reduced our energy consumption for that process by about 15 percent."**

**~ Mick Mummert, Wastewater Superintendent — City of Ketchum, Idaho**

KETCHUM • YEAR 2

**354,724**

**KILOWATT-HOURS SAVED**

# WHY THE COHORT WORKS

## Wastewater treatment plants offer a unique opportunity for cooperative learning.

**Non-competitive industry.** Because these are city-run facilities, they're not competitors, so they're not worried about sharing their thoughts, experiences or successes, which a private company might consider confidential.

**Common needs.** They have similar goals and processes, so one person's experiences can be applied and benefit all participants.

**Large energy users.** A wastewater treatment plan is often a city's largest single-point energy user, which makes it a good candidate for identifying energy-saving opportunities.

## Expert guidance, collaboration and powerful software.

Wastewater operators are reluctant to do anything that could risk violating their discharge permit. Persuading operators to make changes, even changes with positive results, requires credibility and trust.

Idaho Power collaborated with industry expert Cascade Energy of Portland, Oregon, (the developers of an award-winning energy monitoring software called SENSEI) to deliver the two-year WWEEC.

SENSEI organizes and illustrates a facility's operational data, including energy usage, and creates real-time reports so participants can act immediately. Idaho Power installed SENSEI in the participating plants before the first workshop to establish baseline data.

Armed with this information, plant managers could see if their actions, such as adjusting a set point, positively or negatively affected their energy use, and how that change compared to their forecasted use.

*(See 'SENSEI in Action' on next page for more detail.)*

Cascade Energy's wastewater coach and their Strategic Energy Management coach visited each treatment plant. They studied each plant's systems, organizational structure and challenges. Each plant looked for energy-saving opportunities in equipment, behavior and team structure. The coaches earned credibility with plant operators by demonstrating a deep understanding of wastewater systems, processes and regulations.

"We learned all decisions have an impact on energy consumption," said Mick Mummert, Wastewater Superintendent for the City of Ketchum. "We learned capital projects are not the only way to save. Small operational changes combined can make a big difference. We would come back from the workshops with all these great ideas, and they made a lot of sense to our management, so we gave them a shot. We were able to break through the mentality that, 'this is the way we've always done it,' to, 'let's try some things.'"

**"The WWEEC was an excellent introduction to cost-effective, sustainable design and operation of wastewater infrastructure. I was very encouraged by the participation of both large and small municipalities in the cohort and impressed by the breadth and caliber of training provided. This program is a win-win for the people of Idaho."**

**~ Chas Ariss, PE, Former Wastewater Engineering Program Manager — Idaho Department of Environmental Quality**

# SENSEI IN ACTION

## Creating a baseline to measure savings.

Data is collected prior to the workshops, and entered into SENSEI (energy management software) to create a baseline for each plant. The baseline includes previous power consumption data and production variables (i.e., loads, flows and weather conditions) affecting a plant's electric usage. The baseline data is used to create a predictive model forecasting the energy plant's future use, conducting business as usual. Energy-saving tactics and strategies are then put in place at the plants. Current consumption and production variables are compared to what the model predicted, providing an accurate picture of the savings each plant achieves by participating in WWEEC.

# RESULTS SHOW THE COHORT WORKS

Idaho Power is encouraged by the program's results. Overall, the cohort saved 8 percent from no- and low-cost energy improvements.

Thanks to the tools and training, Royce Davis, Plant Manager at the City of Boise's Lander Street Wastewater treatment plant said, "Between April 1, 2014 and April 1, 2015, we've cut our energy use by 1,267,300 kilowatt-hours. For Lander Street, that's an annual operating savings of about 17 percent, or $87,000, which should look pretty good in a city budget meeting."

Mick Mummert, Wastewater Superintendent for the City of Ketchum, makes a similar point. "We've lowered the dissolved oxygen target level in the aeration basins, which allowed us to use just one centrifugal blower instead of two," he says. "The level of treatment wasn't affected, but we reduced our energy consumption for that process by about 15 percent."

Every energy efficiency step Royce and Mick have taken has been an operational change rather than a capital improvement. Neither had to purchase new equipment or invest in large retrofit projects to achieve savings. In the future, capital improvements can complement the new efficient operations.

Idaho Power is proud to help cities understand that energy is a manageable cost. They can take lessons they learn from the WWEEC and apply them to other city operations, like clean water supply, park opportunities, fire stations, and more. The benefits of strategic energy management extend across a broader array of city services than just the treatment plants.

## CASH INCENTIVES FROM IDAHO POWER ADD TO THE SAVINGS

**One of the benefits of Idaho Power's energy efficiency programs are the incentives that can be earned.**

**The incentive for each plant is calculated during the two-year cohort. Idaho Power evaluates the energy the plants saved at the end of each year and pays them an incentive for every kilowatt-hour they save, up to 70 percent of their eligible costs.**

**Normally, incentives would be limited to capital improvements and associated expenses. But as part of the WWEEC, the incentive covers operational and maintenance savings, eligible costs (i.e., plant energy meetings) and time spent participating in the workshops.**

# ENERGY EFFICIENCY TIPS FOR WASTEWATER TREATMENT PLANTS

**Idaho Power incentives may reduce project costs by 70 percent on capital upgrades. Making simple operations and maintenance (O&M) adjustments to existing equipment can pay back quickly in reduced energy costs.**

## AERATION SYSTEM

Aeration uses between 40 and 60 percent of the energy consumed in a typical wastewater treatment plant. Improvements can significantly impact total energy use in your facility.

- **Upgrade your blower technology.** Up to 75 percent of the lifecycle cost of a blower system is attributable to energy use. Technology is evolving and blowers are increasingly energy efficient and can now operate more efficiently over a wider range of air flow rates. Newer high-efficiency turbo blower technology uses high-speed motors and air-bearing technology and typically use variable-frequency drives (VFD) to operate with dissolved oxygen (DO) sensor feedback. The typical payback for this upgrade is two and a half to seven years. Additionally, consider different capacity blowers to match diurnal air demand, as well as lower air demand during initial years of operation.
- **Add VFDs with sensor control for blower systems.** This will adjust the speed of the blower to system demand, reducing energy use when oxygen demand is lower instead of using discharge throttling. The typical payback is two to six years.
- **Upgrade from coarse bubble diffusion to fine or ultra-fine bubble diffusion.** This increases the efficiency of oxygen transfer and reduces blower load while maintaining proper DO levels for approximately 30 percent savings.
- **Install automated DO controls** This reduces aeration energy by up to 40 percent compared to manual sampling control systems. Systems that rely on manual DO sampling often operate at levels that are much higher than necessary. Installing a DO sensor with integrated aeration control allows levels to be maintained within a narrower band, thereby reducing blower load.
- **Add DO probes to different zones of the aeration basin.** This provides more accurate DO readings and optimizes aeration for each zone.
- **Install systems that use mechanical mixing.** This allows the aeration system to cycle on and off in response to process control parameters.
- **Retrofit mechanical mixers with VFDs.** This adjusts the speed of the mixer motors to match the process needs in real-time. The typical payback for this upgrade is two to seven years.

- **Adjust controls to allow staging of systems that have multiple blowers.** This optimizes blower staging based on real-time system requirements.
- **Adjust the position of DO probes.** This provides more accurate assessments of DO levels.
- **Optimize DO set points** to allow for blower system flow reduction.
- **Find and reduce airflow restrictions.** Clean intake air filters, fix sticking check valves, eliminate throttling valves and fix leaks in blower airflow piping to decrease the pressure in the blower system.
- **Clean and check calibration of equipment regularly.** Look at DO probes twice a month and airflow meters and pressure sensors annually.
- **Clean aeration basin diffusers** to maintain proper pressure drop and maximize oxygen transfer efficiency.
- **Fix air piping leaks.** For exposed pipes, apply soapy water to create bubbles. For underground pipes, look for air bubbles surfacing through soil during or just after rain events.
- **Minimize inlet air temperature for blowers.** Consider piping intake outside the building.
- **Monitor blower performance.** Check air flow and pressure against blower curve to determine if units are operating efficiently.
- **Lower DO set point to the lowest possible setting.** This results in proper treatment. Use a Supervisory Control and Data Acquisition (SCADA) system to observe diurnal DO trends to tune the DO control system.
- **Lower blower output pressure.** Fully open the air valve to the highest demand aeration zone; then, balance other air valves to obtain a uniform DO set point concentration across the remainder of the aeration basin. Check and tune the settings annually. Use the most-open valve control strategy for plants with centrifugal blowers and more than three aeration basins.
- **Check the diffuser air flow rate.** If it exceeds the manufacturer's recommendation, add diffusers or reduce the air flow through the diffuser to restore the oxygen-transfer efficiency.
- **Check the submerged depth of the mechanical aerator.** This needs to be set to produce the maximum mixing and aeration at a lowest-amperage draw.
- **Stage the unit operation to match DO demand.** If different capacity units are available, program the operation to match diurnal air demand. Take excess units off line.
- **Consider installation of a cascade aeration system for post aeration applications.** If topography is favorable, this design provides re-aeration of the effluent as it flows over the steps, without the need for electricity, for 100 percent savings.

## PUMPING/MOTOR SYSTEMS

### Lift Stations, Return Activated Sludge; Waste Activated Sludge (WAS); Trickling Filter and Aeration Basin Recirculation

Pumping accounts for about 14 percent of the energy used to maintain a typical municipal wastewater treatment facility. Improvements in pumping technology can substantially reduce facility energy use.

- **Install VFDs on pumps that move varying volumes of fluid.** When less pump flow or pressure is required, pump speed and accompanying energy use is reduced. Adjust the speed to match pumping demand in real-time instead of throttling valves. For example, a speed reduction of 80 percent with a VFD results in approximately 44 percent pump energy savings.
- **Replace worn or inefficient pumps with high-efficiency pumps.** Properly designed pumps use less energy and operate with less maintenance and downtime.
- **Install different sized pumps in new plants or during plant expansion.** As flows change (seasonally or during initial years of operation), controls can bring different pump combinations online to match pumping need.
- **Decrease friction loss.** Improve piping and valves.
- **Upgrade standard-efficiency motors with premium-efficiency motors.** When motors need replaced, premium efficiency motors can save from 10 to 15 percent energy use for that motor.
- **Trim the impeller on oversized pumps that operate at constant flow.** This is a lower-cost alternative to making larger capital investments in pumps, motors or control technology. However, trimming more than 9 percent of the diameter results in too much efficiency loss.
- **Determine pump system efficiency over the range of pumping requirements.** Then, stage pumps for optimum energy use.
- **Adjust basin fluid levels to decrease pump head and reduce pump load.** Wet-well levels can be raised in pumping stations to maximize suction pressure and reduce pump head.
- **Identify and adjust poorly calibrated valves.**
- **Reduce flow or pressure head.**
- **Fix piping and pump leaks** (packing and seals).
- **Eliminate air from pipelines.** Check and flush air-release valves.
- **Flush scum and sludge piping periodically** to reduce headloss.
- **Install pressure gages at pump on suction and discharge piping.** This helps monitor pump operation. Mark normal suction and discharge pressures on gage faces to facilitate quick checks.
- **Monitor pump performance.** Check the flow and total head (discharge pressure minus suction pressure) against the pump curve to determine if units are operating at the most efficient point on the curve.
- **Calculate wire to water (W2W) efficiency.** Use flow, total head and measured kilowatt (kW) of the pump and motor. W2W efficiency = [(GPM)(Head in feet)/5310]/[measured kW]. Efficiencies should be at least 55 percent for raw sewage pumps, 60 percent for RAS and recycle pumps and 65 percent for secondary effluent and reclaimed water pumps.
- **Monitor pumps and motors for excessive vibration and amp draw.** This detects plugging and excessive wear. Clean and check clearance between the impeller and volute. Replace the impeller and/or wear rings if necessary.
- **Turn off VFD controls on equipment that does not need automatic standby.** Its electronics and cooling systems use energy and increase electrical room heat loading even if the motor is off (e.g., blowers and pumps needed only for seasonal peak loads or irrigation pumps used only during the summer). Put an energy-savings tag on the breaker explaining why it is off, so others will not turn it back on.
- **Measure motor amp or kW draw under normal operating conditions.** Compare the data with the motor nameplate data to determine the percent of motor loading. Upsize or downsize the motor to achieve 75 to 100 percent loading range.
- **Green rewinds are a cost-effective way to boost energy efficiency.** Rebuild worn motors to the efficiency of the original specifications with a Green Rewind. When using a qualified shop, receive incentives. Visit greenmotors.org to learn more.

## LIGHTING

Lighting and building systems account for 8 percent of the total energy use at a typical wastewater treatment plant. Modern lighting technologies offer better performance and efficiency. Lighting upgrades and behavior improvement also have a quick payback and increase the comfort and safety of employees working in the space.

- **Turn off unneeded lights.**
- **Switch to more efficient bulbs and fixtures.** LEDs combine high efficiency with excellent performance and long life in an increasingly affordable package. Savings can be as high as 80 percent.
- **Install daylight controls to turn off indoor fixtures when adequate natural light from skylights or windows is available.**
- **Install motion or vacancy sensors to control lights in seldom-occupied pumping stations or other isolated areas.**
- **Biannually, check that daylight and occupancy sensors for indoor and outdoor lights operate correctly.**
- **Paint surfaces white or light colors to better reflect light and increase brightness.**
- **Upgrade exit signs to LEDs for an energy savings of up to 90 percent.** LEDs can last up to 25 years.

## BUILDING HVAC SYSTEM

Efficient heating, ventilation, and air conditioning (HVAC) systems can reduce energy use by 10 to 40 percent. Regular maintenance of a HVAC systems can help make the most out of your energy use.

- **Install timers on electric unit heaters in process and storage areas and pipe galleries.** They allow no more than one to two hours of operation when employees work in these areas.
- **Evaluate the building control sequence for optimization opportunities.** Implement control strategies, such as setbacks, to reduce HVAC use during unoccupied hours.
- **Clean air filters, coils and gas burners.** Have an air conditioning technician check for refrigerant leaks annually.
- **Repair or install economizers on systems to take advantage of free cooling opportunities.**
- **Inspect duct and pipe insulation for damage and repair or replace.**
- **Program thermostats to an occupancy schedule.** Set a maximum of 68° Fahrenheit (F) heating setting and a minimum 76° F cooling setting for continuously occupied areas. Set a maximum of 60° F heating setting and minimum 80° F cooling setting for minimally occupied areas. Set back temperatures for evenings and weekends; set a maximum of 55° F for heating electrical rooms.
- **Avoid or minimize simultaneous heating and cooling.**
- **Consider using infrared heaters.** These heat surfaces but not the air.
- **Use timers or occupancy sensors to control ventilation systems.**
- **Seal leaks at doors, windows and wall and roof penetrations.**
- **Increase ceiling insulation and wall insulation.**
- **Use waste heat from blower motors, boilers and engine generators to heat buildings water and anaerobic digesters.**
- **Consider recovering heat from wastewater or using wastewater as a heat sink for cooling applications.** This can be paired with heat pumps for heating and cooling.

## DIGESTION AND SLUDGE SYSTEMS

Anaerobic digestion accounts for about 14 percent of the energy used at a typical activated sludge wastewater treatment plant. Improvements applied to digesters can increase the efficiency of digester mixing and often improve digester gas yields. The cost of anaerobic digestion is considerably greater than an aerobic system, however an anaerobic one will be less energy intensive.

- **Adjust existing digester mixing systems.** Use the minimum number of mixers for adequate mixing of influent and a high volume of gas.
- **Optimize mixer speed in systems with VFD-controlled motors** to reduce energy use and maintain a high output of digester gas.
- **Replace mixing systems that do not operate correctly or efficiently with higher efficiency systems.**
- **Upgrade gas lance or draft tube systems to a linear-motion mixing system.** Some facilities constantly operate their circulation pumps and continually pump the contents of the tank to recirculate and mix the contents. Mechanical mixing options can improve mixing, increase the level of volatile solids destruction and reduce energy consumption.
- **Consider replacing a centrifuge with screw press or gravity belt thickener.** A centrifuge is a relatively large energy consumer and the other options are simple slow moving mechanical equipment (screw press) or a gravity belt driven by a motor with a potential for high energy savings.

## ULTRA VIOLET (UV) DISINFECTION SYSTEM

UV disinfection systems can use more energy than necessary to ensure proper disinfection. Improvements can be a cost-effective way to save money and energy.

- **Replace lamps with low pressure, high output lamps** which use up to 50 percent less energy than medium-pressure systems.
- **Install controls to modulate the UV dose based upon flowrate and transmittance.**
- **Clean lamp sleeves and remove scaling.** Systems employing effective sleeve cleaning alone can save up to 15 percent of UV energy consumption.
- **Check that UV intensity meters, percent UV transmittance meters, and flow meters are clean, calibrated, and operating correctly each quarter.**

## PLANT WATER SYSTEM FOR NON-POTABLE USE

Often overlooked, a plant's water system may be using more energy and water than needed.

- **Adjust spray nozzles in clarifiers and aeration basins to reduce demand.** Use quick on, off and adjustable flow nozzles on wash-down hoses; adjust the pump seal-water flow to the lowest recommended setting; and reduce the chlorine gas-dilution water-flow rate.
- **Fix piping leaks.**
- **Eliminate piping restrictions, throttling valves, unnecessary valves and sticking check valves.**
- **Tune the pump control system.** Adjust the pressure set point to the minimum needed.
- **Install an accumulator pressure tank.** This allows the system to turn off when there is no demand.
- **Program the SCADA system to display a total daily usage and to alarm for an excessive use of plant water.**

## ODOR CONTROL SYSTEM

- **Reduce air flow to the minimum needed to control odor and corrosion during warm weather.** This ensures the code-required air changes per hour.
- **Enclose odor sources.** This minimizes the need to treat air for the entire building.
- **Turn the system off during cool weather when odor production is minimal.**
- **Use lower explosive limit monitoring equipment and occupancy sensors to automatically control the system.** Use occupancy sensors to increase air changes from 6 to 12 per hour when the space is occupied.
- **For biofilters, measure air pressure of each distribution pipe at a set standard cubic foot per minute blower flow rate.** This detects piping resistance and determines if the filter media is compacting and needs to be changed.

## LABORATORY

- **Lower the output of lab fume hood to the required minimum.** Turn off and close doors or damper when they are not in use.
- **Turn off lights, Chemical Oxygen Demand (COD) reactors, spectrophotometers, analyzers and other equipment when not in use.**
- **Turn off muffle furnace at night and on weekends if it is not needed.**
- **Schedule sample cooling and heating.** This consolidates refrigeration and oven use.
- **Insulate water baths.**
- **Operate dish washers only when fully loaded; use energy efficient settings and air drying.**
- **Insulate COD reactors with sand vials.**
- **Use automatic controls,** e.g., thermostats and timers.

## OTHER OPPORTUNITIES FOR SAVING

- **Select the best flux rate membrane for the application** when selecting membrane bio-reactor technology. Keep the design simple and incorporate reduced air scour during backwashing. Include adequate turn down capability for current flows compared to design flows.
- **Consider fractional or low horsepower mechanical agitators to mix anoxic zones instead of aeration blowers.** This practice allows for better management of oxygen concentration because it does not incorporate air into the contents. Simple payback is three to five years.
- **Maximize primary treatment efficiency (especially if using anaerobic digestion of solids) via proper baffling and improved hydraulics.** Primary treatment is the most cost effective method for removing biochemical oxygen demand, so maximizing primary treatment efficiency effectively minimizes secondary treatment costs.
- **Maximize the solids concentration of WAS and primary sludge sent to anaerobic digesters.** This minimizes the heating requirement and maximizes hydraulic detention time.
- **Use a SCADA system to observe trends.** This can include larger motor kW demand and monthly plant kWh per million gallons treated. Then, use the information to tune the controls.
- **Use a SCADA system to operate only the equipment needed.** This will mean that blowers, pumps and mixer outputs will match demands. Program message alerts to tell operators when conditions warrant reduction in equipment or basins.
- **Regularly check for manual overrides** (Hand-Off-Auto switch in HAND position). This will ensure control systems can do their jobs. Fix or tune control systems so manual overrides are not necessary.
- **Fix equipment that is not operating correctly or efficiently.** This includes worn bearings, failed control equipment and sensors or improperly placed sensors.
- **Examine equipment which operates 24/7 or on a fixed schedule.** This includes odor control and ventilation blowers. Adjust the operation to meet the needs and seasonal variation.
- **Rethink standard operating procedures to maximize energy efficiency**.
- **Have a system that operates effectively and efficiently throughout the life of its design, not just at its future design condition.** A flexible operating system helps manage power demand and avoids high billing peaks.
- **Establish an energy management program.** This typically includes an energy champion and energy management team responsible for bench-marking and monitoring plant energy use, auditing plant operation each month for energy efficiency, implementing efficiency measures, updating standard operating procedures to reflect energy efficient operation and developing energy efficiency specifications for equipment purchases. Learn how by joining an Idaho Power cohort!

# BENEFITS OF JOINING A COHORT

The Idaho Power WWEEC brings together professionals who manage wastewater plants, design engineers, energy coaches and state and federal regulators. Cohorts are held over the course of two years, in classrooms and plants across Idaho and eastern Oregon.

## Outcomes include:

- Workshops focused on the technical and organizational needs of wastewater plants.
- Energy management assessments of each plant, identifying existing energy management practices.
- Individual coaching for organizational and technical energy management.
- Identifying energy-saving opportunities in operations, maintenance and capital upgrades.
- Installation and training on energy management informational system software.
- Peer-to-peer communication providing encouragement, accountability and gentle pressure to step beyond the comfort zone. The best energy efficiency ideas often came from the operators themselves.
- Reduced operational expenses by managing electrical use differently.

**Idaho Power is interested in helping you with your capital upgrades and also gauging interest for future Cohorts. If your community would like to reduce energy use and save money on the operation of treatment plants or other facilities, contact Idaho Power at 208-388-5099 or email customprojects@idahopower.com.**

IDAHO POWER
An IDACORP Company

Printed on recycled paper.

CID#57546 / 01-18