

NEVADA SURE BET PROGRAM

Offered By: NV Energy

Administered By: KEMA Services, Inc

Energy Saving Opportunities in the Mining Industry



Although it may seem that mines can do little in their operation to save energy, nothing could be further from the truth. There are many areas outside of the basic operation that can be changed or retrofitted to save electric energy.

General suggestions that almost any commercial customer can incorporate into their business include:

- Light fixtures in office areas can be changed from T12 lamps and magnetic ballasts to more energy efficient T8 lamps and electronic ballasts.
- High Intensity Discharge (HID) fixtures in truck bays and maintenance areas can be replaced with T5HO (High Output) fluorescent fixtures saving almost half of the energy use.
- Worn out pumps and motors can be replaced with high efficiency motors.

In the mining industry, there are additional areas to consider such as:

- Take a look at all operations. Are there pumps or motors that are no longer needed or can minor changes be made to eliminate a pump or motor? One company was able to change the piping and allow gravity to move the liquid instead of pumping the fluid up and then down to the next level. Consider asking those in the field to look for energy saving opportunities.
- Look into changing operations that are controlled by analog controls. Although analog controls were the latest technology in their day, better technology now exists with digital controls. While changing a

control system may seem costly, the increase in control points and better/smoother equipment operation are only a few of the benefits. Digital controls enable a motor to use only the energy necessary to perform the operation thereby saving energy every hour that the equipment operates. Over the course of a year, this can add up to substantial savings.

- Are all motors operating at optimal efficiency? Sometimes the use of a pump or motor changes over time. Did you know that a variable speed drive (VSD) may be inefficient when the load is near or above 100%? Variable speed drives enable a motor to operate in a way that more closely matches the load demanded, which is a good thing and saves energy. However, if that motor is now required to operate at or above 100% of full load because of operational changes, a VSD may not be the best option. The efficiency of a fully loaded motor with a VSD decreases at high loads but remains a very efficient option at part loads. If the VSD is no longer needed because the motor is operating full out all of the time, consider looking into the efficiency without the VSD or even purchasing a newer energy efficient motor replacement. With the high horsepower motors that are typically seen in the mining industry along with 24/7 operation, the seemingly small increase in efficiency can not only save considerable energy, it can also increase pumping capacity, which may increase mining production. Although it may seem like a losing proposition to replace a good motor or remove a VSD, in reality, calculations may show it to have a winning rate of return.
- If rewinding a motor is an option, make sure to specify high performance/maximum performance rewind and materials to achieve optimal efficiency.

When a process has been in use for many years it is the ideal time to re-think the operation, to look for better solutions, and to evaluate how advances in technology could result in energy savings. Sometimes a simple change in operation can result in energy savings and any incentive that may be available from NV Energy can help improve the rate of return. When the people who work with equipment every day begin to look at that same operation with energy savings and the opportunity for change in mind, then they have truly affected change in business and in the case of energy conservation, change for the better. This change results in wiser energy use for the customer and a reduction in Nevada's carbon footprint.