

PowerSave System Cut Projected ESP Electrical Consumption by 37 Percent, Increased Production

CHALLENGE

Producer needed to reduce monthly power bill to lower OPEX.

SOLUTION

Replace failed ESP with a PowerSave ESP system.

RESULTS

- Reduced monthly ESP kilowatt consumption by 37%
- Saved \$1,701 USD per month in power costs, generating an annual OPEX savings of \$20,418 USD for the well
- Reduced the risk of running an ESP in 5-in. casing with a SlimLine design while increasing production by 11%

Driving Down OPEX

An established producer in Park County, Wyoming needed to replace a failed electrical submersible pumping (ESP) system. They wanted to select a replacement ESP that would be just as reliable as the previous system while also reducing their monthly electrical costs. They asked their existing ESP supplier to submit estimates for monthly electrical consumption on a new system, then requested the same estimate from Novomet.

Conditions and Details

The new ESP was expected to produce an average of 1,990 BFPD (316 m³/d). The existing supplier suggested using its slimmest 338 series pump with a 375-series motor for the job. They estimated the system would consume between 120 and 131 kWh per month. At the local cost per kWh, that would translate to a monthly power bill of between \$4,536 and \$5,443 USD. Pre-job modeling from Novomet suggested the producer could reduce monthly electrical consumption by at least 30% with a [PowerSave high-efficiency system](#). With clear OPEX advantages, the producer decided to run the PowerSave ESP system.



Truck loading crude for transport from a group of tanks serving a small field in Wyoming.

Park County, Wyoming

Because Novomet offers a SlimLine 3.19-in. (81-mm) version of the PowerSave system, we were able to run our ESP deeper than the planned ESP setting depth of 3,542 ft (1080 m). The extra clearance afforded by a narrower outside diameter enabled us to install the Novomet ESP below the perforations in the 5-in. casing. We installed it at 3,707 ft (1130 m), putting the intake below the production zone 165 ft (50 m) deeper in the well.

Results

The PowerSave ESP outproduced the planned 1,990 BFPD by 11%, maxing out at 2,250 BFPD (357 m³/d). The system consumed only 79 kWh per month. Taking the average of the previous supplier's estimated range (126 kWh/month), this is a savings of 37% on electrical consumption each month.

The producer's monthly ESP electrical bill was just \$3,288 USD with the PowerSave ESP, saving an estimated \$1,701 USD each month

over the previous supplier's average estimate of \$4,989 USD. Using PowerSave technology enabled the producer to reduce their lifting costs from \$0.08 USD per barrel to just \$0.05 USD per barrel. This savings enabled the producer to extend the economic life of the well and increase reserve estimates.

About the Technology

The PowerSave ESP system combines proprietary pump-stage design, precision parts manufactured using powder metallurgy, and advanced permanent magnet motor (PMM) technology to lower ESP power consumption by 30% or more when compared to the next most efficient competing systems.

It is not unusual to see electricity savings of 50% or higher depending on the equipment being replaced. While reducing ESP electrical consumption is an effective way to lower OPEX, it has the added benefit of reducing carbon emissions. To learn more, visit novometgroup.com/powersave.



PowerSave high-efficiency ESPs are being used to extend the economic life of wells in Wyoming drilled as early as 1887.