

Universal Permanent Magnet Motor for PCPs

Reduces Noise Emissions 38%, Energy Usage 9.74%, Saves \$5K in Electricity and \$38K in Annual OPEX

Objectives

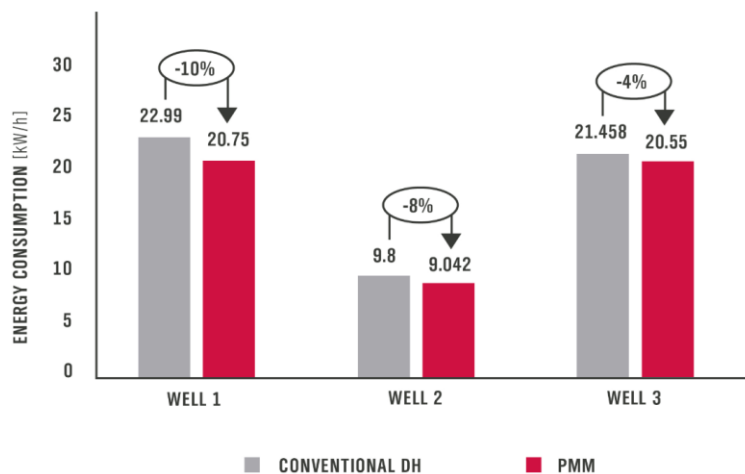
- Reduce overall decibel (dB) levels for a three-well PCP (progressing cavity pump) system operating in an area with strict noise-pollution restrictions. The proposed solution must also not intervene with existing surface equipment.
- Improve energy efficiency and maintenance costs of the conventional PCP system, requiring regular maintenance and upkeep.

Our Approach

- Following a thorough review of the physical attributes of the PCP well environment and its annual OPEX needs, Weatherford Artificial Lift specialists proposed the Universal Permanent Magnet Motor (PMM) for PCPs for its ability to produce high amounts of torque and pumping power without loud engines.
- The team also selected the beltless, direct-drive system for its virtually maintenance-free design and power-range rating from 20 to 114 hp.

Value to Customer

- The installation of the PMMs successfully lowered noise levels of the three wells by 21% (from 60.59 to 47.91 dBs) on well 1, 38% (from 74.06 to 46.17 dBs) on well 2, and by 46% (from 73 to 38 dBs) on well 3. This reduction allowed the system to continue operation in the strictly monitored area.
- The PMM system reduced energy consumption by 9.74% (from 22.99 to 20.75 kW/hr) on well 1, by 4.21% (from 21.46 to 20.56 kW/hr) on well 2, and 7.73% (from 9.8 to 9.04 kW/hr) on well 3 for a cumulative annual energy savings of \$5,000 when compared to the conventional PCP systems.



- The cooler-running, beltless PMM systems required zero interventions related to surface equipment maintenance since its installation in 2020, saving the operator \$38,081 in annual OPEX costs.



Weatherford Universal PMMs for PCP are mounted directly to the rotor, for cooler-running, lower-noise operations and reduced maintenance costs. PMMs supply up to 2,641 lbs/ft of torque at frequencies as low as 5 Hz and shaft speeds as low as 30 rpms.

LOCATION

Romania

WELL TYPE

Vertical, Oil Producer

LIFT TYPE

Progressing Cavity Pump

PRODUCTS/SERVICES

- Permanent Magnet Motor, PCP
- Artificial Lift Solutions

