

North America Expected to Continue Its Dominance in Artificial Lift Market

In the U.S., 96% of oil wells require artificial lift from the very beginning, according to *Research and Markets*.

By Ariana Benavidez

Associate Editor

About 2 million oil wells are in operation worldwide, and more than 1 million wells use some form of artificial lift, according to SPE International. In fact, 96% of oil wells in the U.S. require artificial lift from the very beginning, according to *Research and Markets*.

About 80% of U.S. oil wells are stripper wells, with a majority of those stripper wells lifted with sucker-rod pumps. “Of the nonstripper, higher volume wells, 27% are rod pumped, 52% are gas lifted, and the remainders are lifted with ESPs [electric submersible pumps], hydraulic pumps and other methods of lift. These statistics indicate the dominance of rod pumping for onshore operations. For offshore and higher-rate wells worldwide, the use of ESPs and gas lift is much higher,” according to the Society of Petroleum Engineers.

The artificial lift market size is projected to grow at a compound annual growth rate of 9.6% between 2014 and 2019, according to a December 2014 *Markets and Markets* report. “The market was dominated by North America in 2013, which is expected to continue its dominance through to 2019. Strong growth has been projected for the artificial lift market in the next five years, as the need for better production and increased recovery from mature fields continues to spur demand,” the report stated.

Moreover, in April 2015, *Research and Markets* reported that the global artificial lift pump market will grow at a compound annual growth rate of 8.95% between 2015 and 2019. “Advances in technologies are the important trend emerging in the market. Incorporation of new technology in artificial lift pumps through continuous R&D will help the market to grow in the future,” the report said. “Deferment of investment decisions is one key challenge hindering market growth. The price of oil has nearly halved in 2014 leading to reduced revenues and inventory write-off [and] forcing oil exploration companies to reduce and postpone major investment decisions.”

Following is a sampling of technologies and services offered by key players in the artificial lift market.

AccessESP

AccessESP is a private Houston-based provider of rigless electric submersible pump (ESP) conveyance solutions. The company, formerly known as Artificial Lift Co. Ltd., rebranded itself as AccessESP in August 2014.

AccessESP has combined two technologies into a solution that simplifies the conveyance of ESPs without the use of a rig. With the company’s offer-

ing, operators can increase the value of their ESP wells with reduced intervention costs, minimized lost production and fullbore access to the reservoir, according to the company's website.

In October 2014, AccessESP introduced its fourth-generation, rigless ESP conveyance system, the Access375. The system incorporates a single-section, permanent magnet motor and is one-fifth the length and weight of a conventional induction motor. This one-piece design eliminates the need for tandem and triple motors. Access375 is built for challenging offshore and remote locations. Benefits of this technology include "fullbore access to the reservoir, compatibility with all major ESP providers' equipment (including VSDs [variable speed drives] and pumps), and live well ESP installation and removal using conventional slickline, coiled tubing or a wireline tractor," according to a company press release.



AccessESP's side pocket downhole wet connect is shown. (Image courtesy of Access ESP)

The company installed the first rigless ESP conveyance system in Nigeria in the Ukpokiti #4 offshore well for Shebah E&P Co. Ltd. in October 2014. AccessESP's 190-hp system was deployed through 4.5-in. tubing on conventional 0.125-in. slickline to a depth of 5,900 ft and took less than 15 hours to install. Additionally, the company performed a successful through tubing, rigless replacement in January 2015, replacing the 190-hp system with an Access375 250-hp system.

Baker Hughes Inc.

Baker Hughes' artificial lift products and services include electrical submersible pumping (ESP) sys-

tems, progressive cavity pumping systems (PCPs), horizontal surface pumping systems, gas-lift systems, power supply and control systems, and monitoring and automation services.

The systems can be used in various challenging environments, including:

- Deepwater subsea fields;
- Mature fields;
- Unconventional oil plays;
- Heavy oil deposits, including extreme-temperature steam-assisted gravity drainage projects; and
- High-pressure/high-horsepower, high flow rate wells.

Baker Hughes is the only ESP system provider that designs and manufactures the complete ESP system including the pump, motor, seal, surface control system and power cable, according to the company's website. Centrilift extreme performance ESP systems are designed for harsh downhole conditions

and are durable enough for environments where gas, heat, abrasives, viscosity and corrosive elements jeopardize performance. The systems lower operators' total cost of ownership by decreasing operating expenses and reducing downtime to maximize total fluid recovery, according to the company.

One of the company's newest technology innovations, the FLEXPump series of ESP pumps, maximizes production and ultimate reserve recovery from low-flow rate mature oil fields and unconventional resource plays in which the production index declines rapidly, according to the company. FLEXPump technology can extend the ESP system operating flow range, lower hydraulic thrust, extend pump runlife and enhance ESP system efficiency.

Moreover, operators incur extra cost as they change artificial lift methods when production rates decline. The FLEXPumpER pump has the industry's widest operating range (2,900 bbl/d to 50 bbl/d) for a single pump, eliminating the cost associated with changing artificial lift methods as the production rate declines, according to Baker Hughes. The pump design has advanced turbulence mitigation technology to increase pumping efficiency and reduce gas locking.