

# Lift IQ Service Delivers 95% ESP Uptime Despite Gas and Solids Production in an Offshore Field

More than 61% reduction in average number of ESP starts per well decreases deferred production and electrical stress on equipment

## CHALLENGE

Maximize ESP uptime and minimize deferred production in gassy wells with significant solids production in an offshore field.

## SOLUTION

Monitor and enhance ESP performance in real time via Lift IQ\* production life cycle management service.

## RESULTS

- Increased ESP uptime from 85% to 95%.
- Reduced average number of ESP starts per well per year from 14 to 5.4.
- Decreased average number of ESP incidents reported per well per year by over 50%.

## Gas and solids reduce ESP uptime

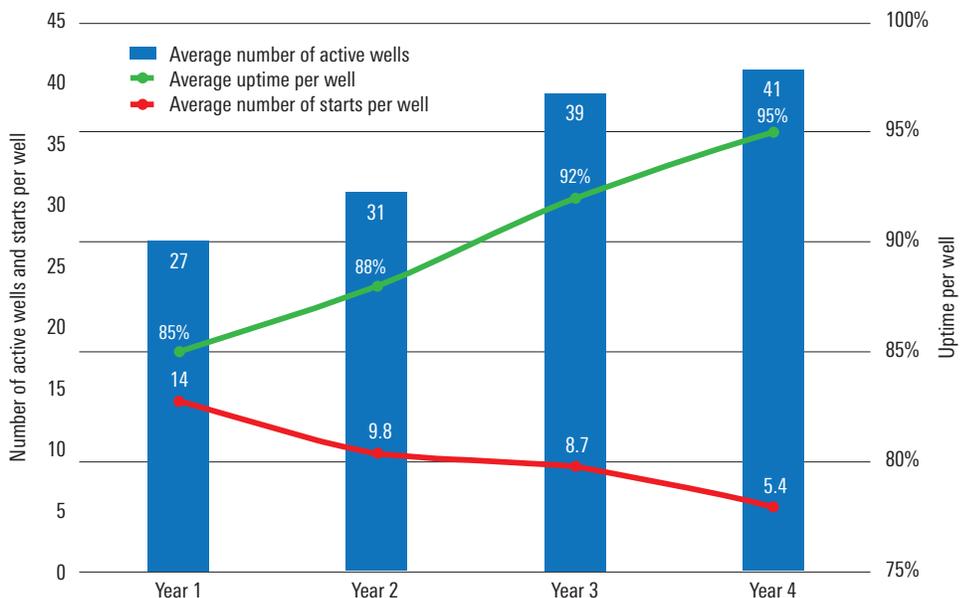
An operator produces more than 40 offshore oil wells with the help of ESPs. In addition to oil, the wells produce significant amounts of gas and solids. Gas accumulation in an ESP can lead to gas lock, preventing liquids production and causing the motor to overheat. Buildup of solids at the pump intake also limits liquid flow and results in overheating.

The operator was experiencing frequent ESP stops and starts, which place extra stress on pump system components and electrical systems, reduce ESP uptime, and require intervention. The stress also leads to damage that reduces ESP system run life. In one year, an average of 14 starts were recorded per well and overall ESP uptime was only 85%, resulting in significant deferred production. A solution to improve performance was required.

## Lift IQ service monitors ESP performance

Schlumberger recommended the Level 2 Lift IQ service, which provides lift surveillance, analytics, and diagnostics in real time to proactively manage system performance and well production. Experienced engineers based at the Schlumberger Artificial Lift Surveillance Center (ALSC) in Scotland monitor alarms and alerts 24/7/365 to prevent or mitigate adverse events, rapidly diagnose probable causes, and recommend remediation measures.

Downhole and surface gauge data from the wellsites is delivered in real time over a secure satellite network. Surveillance engineers use a web-based application to display the running status and condition of all the ESPs.



Lift IQ service increased ESP uptime to 95% while reducing the number of starts per well per year from 14 to 5.4, thereby improving system survivability.

## CASE STUDY: Lift IQ service enhances ESP performance in offshore field

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When an ESP reports a critical or urgent condition that threatens to damage the pump or cause an automatic shutdown, the ALSC engineers can immediately review the data and intervene remotely (e.g., change operating frequency) or recommend changes in pump parameters or operating procedures to the operator's personnel to avoid the adverse outcome. Engineers also make recommendations to maximize drawdown, minimize electricity consumption, and improve overall operating efficiency.

### **Real-time collaboration improves uptime and reduces ESP starts**

Implementing the Lift IQ service improved ESP uptime from 85% to 95% and reduced the number of starts per well per year from an average of 14 to 5.4—a 61.4% reduction. The average number of ESP incidents reported per well per year was cut by more than half.

Over a 4-year period, 497 critical events (i.e., events requiring immediate action)—representing 47% of all events—were immediately addressed, preventing undesirable operation or equipment failure.

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