Conversion from Gas Lift to UHS ESP™ at the offshore well in the Caribbean

Offshore field in the Republic Trinidad and Tobago, the Caribbean

Complicating factors

- Conversion from the Gas Lift
- Unstable inflow
- Gas content at pump intake above 30%

Results

- Conversion from Gas Lift to UHS ESP™ is considered successful;
- 600 days of stable operation;
- The dependence from gas prices and compressor is eliminated;
- Compressor-based shutdowns are eliminated;
- Free gas content at the pump intake over 25%
- Total cost of ownership has been reduced by 34%

A successful conversion from the Gas Lift to UHS ESP™ has been conducted at the offshore well, located in Trinidad and Tobago in the Caribbean region.

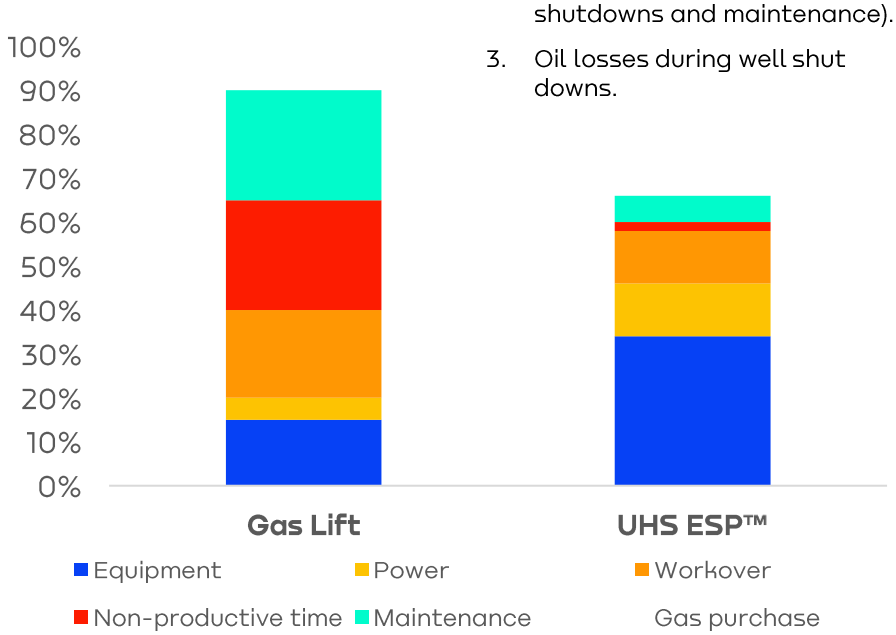
The project was designed to improve well profitability by eliminating costs associated with compressor shutdowns, oil losses, and gas prices.

The client's field is in Trinidad and Tobago. The offshore reservoir is at 3,910ft TVD (1,192m TVD), the operated well is completed with a 7 5/8" API Casing, the oil API is 27.3, and the water cut within 80%. The gas content at pump intake was evaluated at the level above 30%.

The client contacted Lex with the request to conduct the artificial lift method conversion from a Gas Lift to an Electric Submersible Pump.

The reasons behind this request were:

1. Rising gas prices.
2. Compressor reliability (regular shutdowns and maintenance).
3. Oil losses during well shut downs.



Following research and detailed analysis of the well conditions, we recommended installing the **UHS ESP™** system, with a nameplate speed of 10,000 rpm. We proposed installing the wide-range UHS-1000 system designed for NP flow range from 505 to 1385 bblpd, with 1000 bblpd at BEP (80-220 m3/d with 159 m3/d at BEP), with integrated advanced gas handling device, shroud, and Hunter-X sensor with the additional measurements of discharge pressure and temperature.

In April 2020, the Lex field service crew travelled to Trinidad and Tobago to complete pre-installation checks, start-up, commissioning, on-site daily monitoring, and equipment performance reviews.

Based on the client's Total Cost of Ownership savings valuation of 34%, the conversion has been considered successful**. UHS ESP™** stabilized the production and eliminated unexpected shutdowns associated with the gas compressor.

This project has confirmed the feasibility of **UHS ESP™** for the conversion from Gas Lift.