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# **Carbon Footprint Reduction, Operation Efficiency and Low Operation Cost by Deploying CoilHose™ as Light Well Circulation System on Marginal Field in Malaysia**

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## **Abstract**

The increased activity for optimizing mature fields and appraisal of marginal fields in Malaysia, is one of the main drivers for the well intervention marked, along with continuous increased energy demand globally. Well intervention activities are one of the main requirements in this segment, along with completion, production, and well abandonment which has the opportunity for additional growth in the same marked.

With increased activity and high focus on the environment, carbon emission reduction is an important part of the operations and campaigns in the oil and gas industry. Malaysian host authorities are one of the main initiative drivers on carbon emission reductions which has been implemented in programs and policy.

The oilfield service companies plays an important part in carbon emission reductions, and both the oil companies and local authorities depends on contribution and technology development to achieve this.

The artificial lift service segment, by service, is estimated to grow at a higher rate in the upcoming forecast. Artificial lift interventions are carried out in the regions with depleted reservoirs, liquid loaded gas wells and/or lack of gas available during the pre-commissioning stage due to platform constraints. Platforms are getting smaller and smaller and deck space including weight distribution has become limited.

Conventionally there has been two main products for well intervention depending on scope of work, Wireline/slickline and Coiled Tubing. Wireline/Slickline is used for mechanical or electrical work, while Coiled Tubing is used when circulation into the well bore is needed. Either fluid or nitrogen.

Over the recent years, a new technology for light well intervention has been developed called CoilHose™. The technology can be compared to as a hybrid between wireline and Coiled Tubing and allows light well circulation into the well through a smaller footprint package. CoilHose™ is a flexible hose instead of a steel tubing (i.e., Coiled Tubing). This new system impacts the space layout, deck weight distribution, fuel consumption and personnel requirements necessary to operate the equipment. Hence it reduces the capital expenditure trend for upstream operators optimizing the production of oil & gas in existing wells, which is one of the main drivers for improvements in the well intervention marked.

This paper highlights the comparison between Coiled Tubing and CoilHose™ with regards to carbon emission during operation, as well as job design, planning, safety, and execution of CoilHose™ technology in Malaysia for effective operation. CoilHose™ technology was deployed, as an alternative to Coiled Tubing, to unload a liquid column to reduce the hydrostatic pressure against the reservoir, allowing the well to start producing. The operation was one of the first deployment at exploration open sea for Nearby Field Development (NFD) and to support marginal field development project. Post CoilHose™ deployment, the well successfully started to flow and well could produce through a well test package to gather reservoir data for evaluation in further field development.

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