Competitiveness of Deepwater Technology

Roundtable hosted by

International Energy Agency (IEA) Gas & Oil Technology Collaboration Programme (GOT) and FINEP, Brazil

Rio Oil & Gas Expo, 27 Oct 2016

Reduce break-even costs

Unlock resources

Ensure long term social license to operate
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Technology Footprint over the Hydrocarbon Pathway (Pore to Process® Approach)

Well Construction:
- Bit Technology Improvements

Reservoir Characterization:
- Reservoir Compartmentalization Studies, including In situ Fluid Measurements
- Advanced Geophysics Technologies to Improve Reservoirs Illumination (Seismic DNA)

Production and Processing Systems:
- HyFleX™ Tree (All Electric option)
- Subsea VFD (Enabling Long Tie Backs)
- Compact Separation
- Water Treatment for Disposal
- Gas Compression
- All Electric Systems
- Standardization

SURF (Subsea 7 Alliance):
- Risers
- Flowline Systems
- Bundles
- Life of Field & Remote Intervention

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Technology Footprint over the Hydrocarbon Pathway (Pore to Process® Approach)

P&A:
- Riserless Open-Water Abandonment Module (ROAM)

Intervention (Helix Alliance):
- SenSEI
- Multiple Application Rejection System (MARS)
- Intervention Risers Systems (IRS 15K)
- Remote Intervention (AUV)

Monitoring:
- Well Watched FLUX
- Multiphase Meter (MPFM)
- AquaWatcher
- CIMV (CI Metering Valve)
- Real Time Supervisory System (FRIEND™)
Working in Collaboration…

- Technical Specs defined in collaboration
- Project Objectives aligned
- Technical Solution based on Value Added
- Fit-for-Purpose Technologies

- Performance
- CAPEX to OPEX
- Rental
- Services
- Long Term

- Anticipate Production
- Increase Production
- Increase Recovery

- Reduced Uncertainties

- Fit-for-Purpose Technologies
- Standardization

- Fit-for-Purpose Technologies
- Less Contingencies

Collaborative Approach to Unlock New Projects

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Collaboration to Align and Drive Production and Performance

Performance based compensation

- Joint Project governance
- Long term contract
- Schlumberger investment
- Joint FDP:
  - 9 X Production increase
  - 6 X Reserves increase

- Effective field redevelopment model
- Commercial Model: Co-investment (Cost Recovery + Profit Sharing)
- Fit-for-Purpose deployment of key technologies

Source: Casabe Mature-Field Revitalization Through an Alliance: A Case Study of Multicompany and Multidiscipline Integration - SPE-0110-0052
Final Remark

CAPEX&OPEX value-added solutions
Fit-for-Purpose Technologies
Continuous monitoring
Synergic Optimization
Less qualifications
Joint-Technology Projects with Alliances
Longer Tie Backs
Integrated scope
Holistic Approach

INDUSTRY COLLABORATION

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