

MICEDD

DEEPWATER DEVELOPMENT

28 - 30 March 2023 | Millennium Gloucester Hotel | London, UK

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Quest Offshore

World Oil®

Key Solutions for Sustainable Offshore Production Systems

Luiz Feijo



Driving Environmentally Sustainable Assets



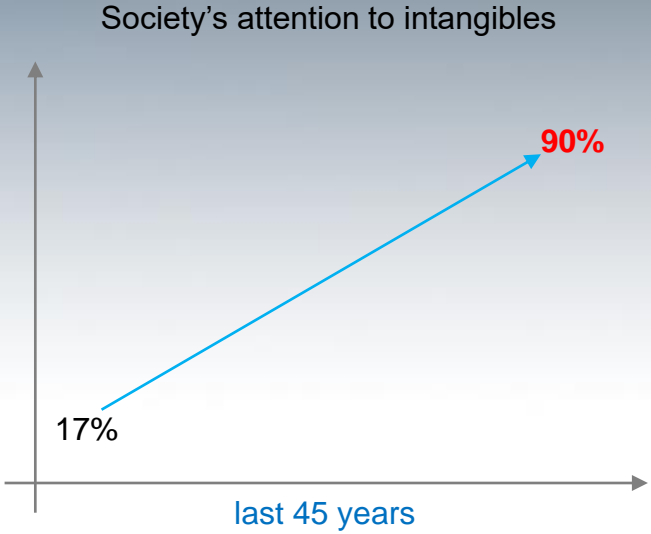
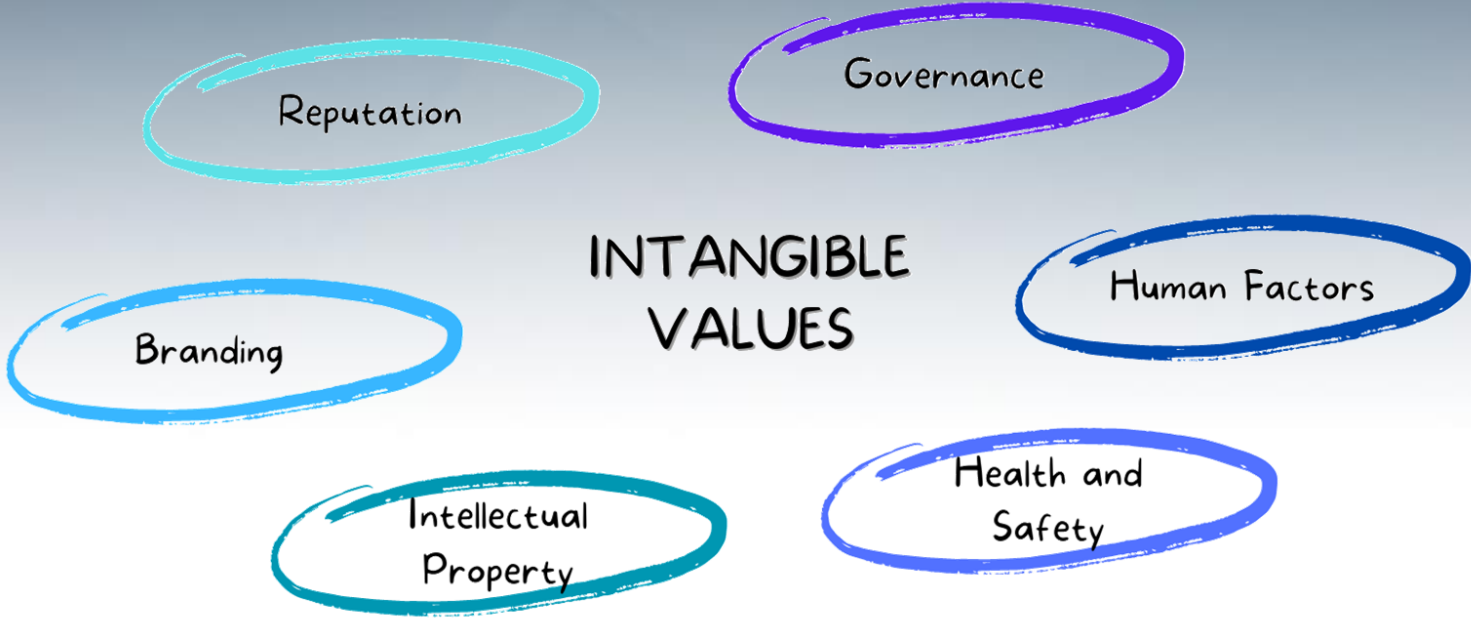
Social
Responsibility



Regulatory
Requirements



Value
Creation



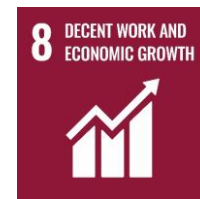


SDGs to be addressed in Offshore Production Assets

Environmental Excellence



Social Responsibility



Governance & Operational Excellence



Mitigating hazards

Oil and Chemical Pollution

discharge, spills

Effluents Discharge

produced water, oily water, sewage

Waste Streams

food, organic, heat

Key Solutions

- **Design aspects:**
 - Proper tank arrangement
 - Efficient drainage systems and additional slop tanks
 - Process systems design to maximize waste heat recovery from heat sources
- **Asset Integrity Management and Maintenance**
 - Structures
 - Equipment & systems
 - HVAC
- **Circular waste management**
 - From source to recycling
- **Operational aspects:**
 - Pollution Management Plan
 - Emergency Response System

ESGs addressed



Mitigating hazards

Air Emissions

Key Solutions

Carbon Capture

- Capturing and reinjecting carbon from wellstream is known technology
 - Direct source capture (post combustion): exhaust, flare
- ▶ Challenges:
- onboard storage
 - disposition other than reinjection

Combined Cycle Power Generation

- Maximizing use of waste heat to generate power, increased use of electric drivers vs. fueled drivers
- ▶ Challenges:
- CAPEX
 - footprint
 - weight

Electrification

ESGs addressed



Electrification

Objective:

Maximize use of electric power relying on higher efficiency of power generation system thus reducing emissions

Current solution:

“All Electric” concept

- Larger power generation plant onboard as single source of power

Other key solutions:



Renewable power

- Renewable units supplying power to oilfield facilities
- Total or partial electrification

▶ Challenges: amount and size of wind turbines



Infield supply

Use of surplus power generation capacity from facilities in the field

▶ Good option for smaller brownfields



Power from grid

▶ Challenges:

- distance from shore
- local infrastructure

Other Aspects

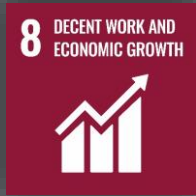
Human Factors

Ship Recycling

Addressing the Elements

- Noise
 - Vibration
 - Ambient temperature
 - Lighting
 - Comfort
 - Wellbeing: rest and recreation
-
- Remaining structural strength and fatigue
 - Hazardous materials
 - Residues: oil, chemicals, NORM
 - Recycling facilities: environmental impact, human aspects

ESGs addressed



Key Takeaways

Key Solutions for a sustainable offshore production system

- As a society, we all need to contribute to a sustainable energy transition
- Current status of supply chain is challenging
- Technology is being developed fast
- Develop your plan, execute, monitor, improve

Count on industry experts to assist with your Sustainability development

Thank you

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