Forsys Subsea and the FMC Technologies / Technip Alliance

Improving industry returns by reshaping the way fields are designed, delivered and operated, for life

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Business Rationale for the Alliance – all about **Costs**!

Non-sustainable cost trends over the last decade

**Cost Distribution Offshore Development (Typical Greenfield)**

- **Installation**: 14%
- **Riser & Flowlines**: 12%
- **Other**: 9%
- **Topside Facility (FPSO/Platform)**: 30%
- **Drilling & Completion**: 30%

* Subsea Production System cost only

Source: internal FMC Technologies estimates
Why FMC Technologies and Technip?
Subsea Industry Leaders

An exclusive Alliance between FMC Technologies and Technip, that unites the skills and capabilities of two subsea industry leaders, reshaping the way subsea fields are designed, delivered and operated, for life.

Market leaders
Recognized leaders with a proven track record in the subsea industry

Complementary business footprint
Each company offers a broad range of services in the subsea value chain

Technology experts with industry-leading skills
Providers of technologically advanced solutions on a global scale

Shared values
A similar vision, core values and commitment to supporting customer success
The Exclusive Alliance
Forsys Subsea – the 50/50 Joint Venture as an enabler to demonstrate the Alliance value

The Alliance for SURF & SPS Integrated Approach

- Subsea Production Systems
- Subsea Separation and Boosting Systems
- Control and Automation Systems
- Subsea Well Intervention
- Subsea Services
- Field Architecture
- Flow Assurance
- Front-end studies
- Life of Field Services
- Joint R&D
- Flexible Flowlines
- Umbilicals
- Pipeline/Flowline/Jumper Installation
- Subsea Equipment Installation
- Platform design, fabrication, installation
- Topsides design and fabrication
How this Exclusive Alliance works

Integrated Approach to Field Design, Delivery and Life of Field

- Seamless transition between project phases –
  - Forsys Subsea personnel transferred into Execution
  - FMC and Technip personnel used in Early Phases
- Integrated EPCI methodology and principles, common set of tools for Project execution
- Elimination of external interfaces through combined SPS and SURF scopes
- Forsys Subsea will pull on all capabilities within parents
What the Alliance offers through Forsys Subsea?

- Optimized subsea architecture
- Reduced contractual and mitigated project risks
- Optimized offshore installation campaigns
- Reduced time to first oil
- Improved robustness of overall planning through early identification of critical interfaces and long lead items
- Improved performance over the life of field
- Joint SPS+SURF R&D and technology application for increased value creation
Forsys Subsea Locations

A global reach positioned near our clients

- Headquarters in London – Largest footprint in Norway
- 7 Operating Centers
- ~320 professionals from FMC Technologies, Technip and Genesis
  - 110 of these in Norway
Value Drivers – Concept Phase
Forsys Subsea – the Front End enabler
The Value of Early Involvement

Rationalize overall field layout, drive standards, development and integration of technology

Potential Savings

0 months 18 months 36 months

Time After Start of Concept Definition

DG0 DG1 DG2 DG3

Exclusive Alliance and Forsys Subsea - A Unique Joint Venture
Concept Design - Optimization

Leverage capabilities of Forsys Subsea

Traditional field development

Integrated technological approach
Changing contractual model towards Design/FEED competition
Capturing the iEPCI value
Delivery
The Exclusive Alliance – Integrated Execution
Risk Management and integrated execution (EPCI)

Mitigation and re-distribution of risks between Client and EPCI contractor

Project risk distribution

- Mitigation of project risk
  - Early involvement of Alliance addressing criticality of technical interfaces and planning of offshore activities
  - Alignment of commercial incentives on contractor side means reduced risks to Client
  - Knock-on effect of delay in scope eliminated/absorbed by contractor
- Redistribution of remaining project risks between Client and EPCI contractor
Company's risk will be reduced by integrated EPCI

Integrated Execution by the Alliance

Ex-works Delivery Installation Execution Installation Completion Post Installation

"Make Good" Responsibility*

Delivery to Client

Start of warranty to Client

Start of warranty to Client

Company will bear no risk for interface VO risks such as:
- Knock-on effects from delay in internal Alliance deliveries; and
- Physical interfaces / malfunctions between Alliance equipment
Case Studies

Exclusive Alliance and Forsys Subsea - A Unique Joint Venture
Case Study
West Africa

Optimization of Layout:

- **SPS** – Replace Manifolds and supports by ILTs
- **SURF** – Remove 50% of flowlines and risers using a heated PiP vs conventional PiP, eliminate PLETS at end of flowlines
- **Installation** – Remove Manifold installation, Install flowlines continuously, Install less flowlines and risers
- **Execution** – Integrated FMCTI/Technip execution, reduction of risk
- **Schedule** – Shortened offshore installation, Improved first oil date

Value Creation:
~30% CapEx Reduction
Case Study

Gulf of Mexico

Optimization of Layout:

- **Installation** – Move to Reel-Lay
- **Flowlines/Risers** – Combine Gas Injection and Gas Lift
- **Hardware PLEM** – Transfer Manifold functionality
- **Hardware SPS** – Optimization of functionality with design for installation approach to reduce manifold complexity
- **Execution** – Integrated FMC Technologies/Technip execution, reduction of risk
- **Schedule** – Shortened offshore installation, Minimized interruption to Drilling, Improved first oil date

- **Additional opportunity** – HIPPS with reduction of Production Flowlines size & quantity

Value Creation:

~30% CapEx Reduction
Beyond
Forsys Subsea - Life of Field Services & R&D

Exclusive Alliance and Forsys Subsea - A Unique Joint Venture
Forsys Subsea Life of Field Services
From raw data to field performance

Performance = Volume * Quality * Up time  
= Flow assurance * Asset integrity  
= OPEX * decision time  

Value | Area for optimization (Design phase) | Area for improvement (Life of Field)  
--- | --- | ---  
**Volume** | Planned production | Production issue | Production Upside  
**Uptime** | Planned shutdown | | Unplanned event  
**OPEX** | Budgeted OPEX | | Unplanned OPEX (RiskEX)  
**Decision time** | Time to event | | Time to measure, detect, analyze, interpret and set options  

* These services can also be offered to assets where parents are not OEM suppliers
Life of Field Services
Reshaping the way fields are delivered, designed and operated, for life

- **Higher Volume**
  - Flow assurance & operability engineering
  - Production management, upgrade & de-bottlenecking

- **Increased Uptime**
  - Real time surveillance of the entire field
  - Robust Asset Integrity services

- **OPEX Reduction**
  - Data management and digital collaboration
    *Combined FMC/Technip/Forsys expertise & advisory services on production, uptime & Opex*
  - Operability engineering
    *Robust Asset Integrity Services
    Cost-effective interventions

- **Accelerated Decision Time**
  - +5% production
  - +2 points uptime
  - - 30% OPEX
  - To be demonstrated
    *BP reports* operating cost reduction of 5-25% resulting from digital services

*BP Technology outlook, Nov. 2015*
Forsys Subsea R&D Framework

Sustainably revolutionize the way Subsea fields are Designed, Delivered & Operated, for Life

- Providing Superior LoF performance
- Step change in Field Economics
- Enabling new field architectures
- Integrating for greater efficiency

R&D Portfolio Management

- Front End – Subsea Architectures
- Front End – Equipment & Installability
- Life of Field – Asset Integrity
- Life of Field – Production Enhancement

Exclusive Alliance and Forsys Subsea - A Unique Joint Venture
Key Takeaways

The exclusive Alliance and Forsys Subsea is established to address the fundamental cost challenges of the industry

Forsys Subsea will support the client in early phase engineering, life-of-field and R&D

FMC Technologies and Technip will execute the integrated SPS & SURF projects drawing on the full set of execution capabilities within their organizations

The exclusive Alliance brings forward a broad and unique value proposition including both technical, commercial and operational benefits to the clients beyond what can be offered in the marketplace today
More information for investors and media

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