Quick introduction to recommended best practice from

Joint Industry Guideline

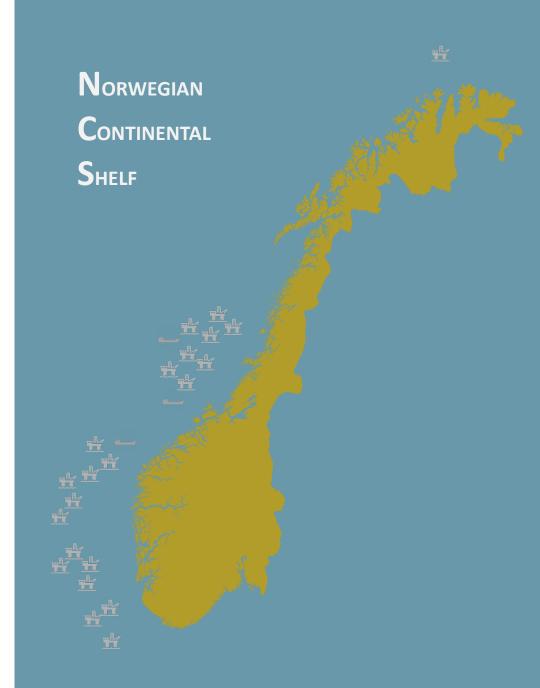
Standardised Supply Chain Behaviour – Topside projects

Version 1.0 – April 2019

For further details about intentions and recommendations, see complete guideline chapter 4







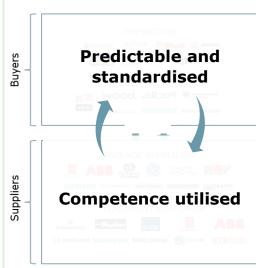
STANDARDISING SUPPLY CHAIN BEHAVIOR TO INCREASE COMPETITIVENESS ON NCS

Current situation OPERATORS AkerBP NEPTUNE Shell SREPFOL Lundin SPIRIT Buyers CONTRACTORS* wood. aibel WorleyPersons PACKAGE SUPPLIERS* Suppliers **EQUIPMENT SUPPLIERS*** MRC Global (I) BEL VALVES (SEE SYSTEM) • Unpredictable, diverse buyers Ineffective collaboration Waste Inefficient processes Squeezed margins

*Examples of representative companies



Desired situation



- Standard solutions
- Key supplier(s) expertise
- Smart design as driver
- Changes to standard solutions based on cost/benefit
- Transparent risk
- Sustainable margins
- Cost efficiency and competitiveness

RECOMMENDATIONS AND MAIN MILESTONES IN THE SUPPLY CHAIN PROCESS

Significant milestones to optimise and ensure predictability in the supply chain

Increase use of industry
STANDARD
DELIVERY



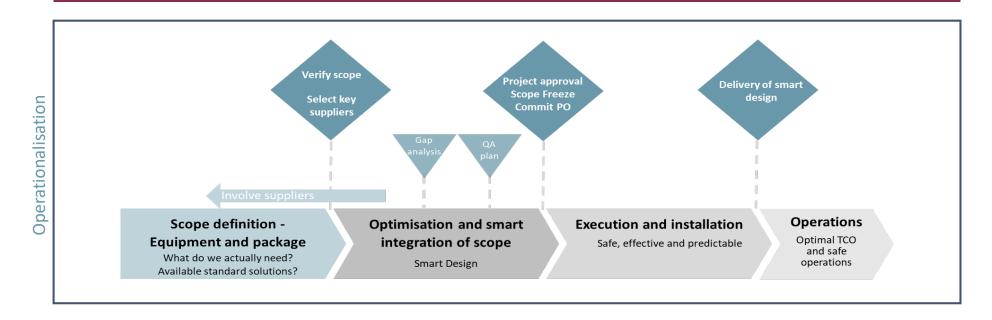




Better and earlier use of SUPPLIER EXPERTISE

ALIGN DRIVERS across the supply chain

Change operator and contractor CULTURE



RECOMMENDED PRIORITIES FOR KEY TARGETS GROUP FOR GUIDELINE BEST PRACTICE - OPERATORS AND CONTRACTORS

PROJECT MANAGEMENT

- Prepare execution strategy in accordance with best practice for study/FEED phase prior to issue of purchase orders
 - Early involvement of key suppliers of equipment and technology
 - Ensure efficient utilization of competence across companies engaged in the project

ENGINEERING

- Optimise Functional requirements, Scope of Work and verify solution
- Ensure technical quality in selection of key supplier in collaboration with procurement.
- Conduct GAP analysis between proven Industry standards and customer requirements. Add-on and extra requirements to be based on cost benefit assessment in a Total Cost of Ownership perspective
- Prepare QA plan for safe and efficient follow up and delivery

PROCUREMENT

- Support to project management in preparation of early phase execution strategy and plan
- Contribute to early and fair screening / selection of key suppliers based on request for standard solutions
- Establish common drivers in study and FEED contracts to stimulate Smart Design and early involvement of relevant key suppliers
- Ensure that contracts with key suppliers facilitate effective contribution to smart design and efficient integration of deliveries in the project
- Establish PO in line with best practice

OVERVIEW OF RECOMMENDED BEST PRACTICES

Scope definition - Equipment and package	Optimisation and smart integration of scope	Execution and installation
Initial functional requirements. Early screening of key suppliers/RFI process	Engineering contribution from key supplier(s)	Standard contracts during execution
Initial identification and selection of key supplier	Efficient gap analysis between standard solutions and operator/contractor specifications (Operator approval)	Contract administration
Operator/contractor/key supplier(s) collaboration. Review of standard solutions	Use of standard buying terms	Compliance on QA plan
Verification of scope definition / equipment solution	Consensus on QA plan	Documentation management

Operations

Scope definition - Equipment and package

Initial functional requirements.
Early screening of key suppliers/RFI process

Initial identification and selection of key supplier

Operator/contractor/key supplier(s) collaboration. Review of standard solutions

Verification of scope definition / equipment solution

- Suppliers are invited to propose standard solutions for equipment based on functional requirements that do not include operator and/or contractor specific requirements.
- As early as practically possible key supplier(s) should be selected, in a fair and transparent way, to allow for efficient interaction and collaboration across the supply chain.
- Review of solutions proposed should be conducted in a Total Cost of Ownership (TCO) perspective, including operational considerations.
- Standard contracts should be used where relevant.

Optimisation and smart integration of scope

Engineering contribution from key supplier(s)

Efficient gap analysis between standard solutions and operator/contractor specifications (Operator approval)

Use of standard buying terms

Consensus on QA plan

- Important steps are the gap analysis and QA plan consensus: The gap analysis clarifies and reduces risk, while consensus on QA plan provides predictability and reduces non-value-adding follow-up.
- Standard contracts should be used where relevant, and standard buying terms should be used as basis for purchase.
- Key supplier(s) is compensated for significant engineering contributions, and contractor is incentivised to reduce the total cost of ownership through optimisation and smart integration of scope.

Execution and installation

Standard contracts during execution

Contract administration

Compliance on QA plan

Documentation management

- Having conducted gap analysis and agreed on QA plan, a sound foundation for predictable and efficient execution is created.
- By acting in accordance with the agreed QA plan, non-value-adding follow-up is minimised.
- During execution operator and contractor contract administration should work integrated with the project management team to support progress and overall project results.

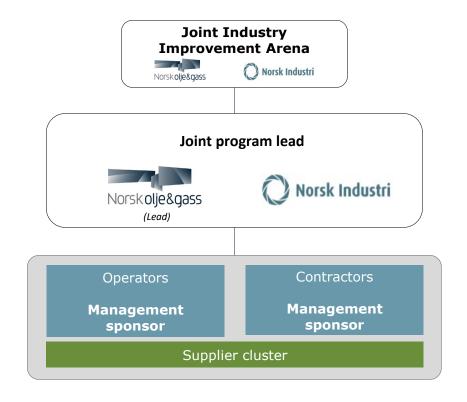
Operations

- The intention is that successful deliveries from the previous phases will unlock the potential for reduced Total Cost of Ownership (TCO) during operations, including portfolio synergies.
- An understanding of the smart solutions and intentions from previous phases is needed for these to have the desired effect during operations.
- Engagement of operations prior to purchase is therefore essential for full utilisation of the benefits.

JOINT INDUSTRY IMPROVEMENT ARENA TO MONITOR AND DRIVE NCS COMPETITIVENESS.

Joint forces between Norwegian Oil and Gas and The Federation of Norwegian Industries

Scope: Stimulate continuous improvement of competitiveness in the supply chain for topside projects (limited to qualified technology, qualified suppliers)



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