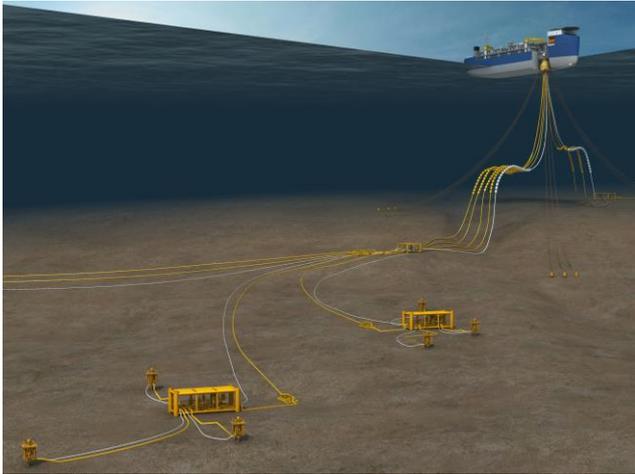




Subsea Field Development



Field Development Engineering

Field development engineering consists of identifying and selecting the most appropriate production facilities for a particular field, based on the available field specific information such as reservoir data, production rates, production chemistry, and seabed information.

The development process is defined by the Field Operator, and will typically include feasibility, conceptual, pre-project, and FEED stages.

Crondall Energy has extensive experience of supporting Operators through this process from first subsea layout to first production. The development of every field will pose particular challenges, such as water depth, HPHT, variable maturity of production information, or perhaps meeting required economic metrics. Crondall Energy applies specialist skills and knowledge to identify innovative solutions to these challenges.

Crondall Energy has all the skills and experience, necessary for the definition of the subsea facilities including an in-depth knowledge of subsea hardware, pipeline and riser engineering and flow assurance. The range of activities which can be performed as part of the

subsea field development engineering include:

- Field layout and flowline routing
- Overall design philosophy, including HIPPS risk based design
- Basis of design for field development
- Thermal management philosophy, including through life temperature and pressure analysis, and design of cooling loops
- Hydrate and wax management philosophy
- Well and manifold arrangements
- Well connection arrangements (single, multi-bore, choke bridge)
- Controls architecture and chemical distribution
- Umbilical definition
- Flowline selection, sizing and configuration
- Pipeline end manifolds, in-line Tees
- Diverless connectors
- Definition and selection of riser system
- Field corrosion protection philosophy
- Outline offshore installation plan
- IMR philosophy
- Project schedule definition
- SURF contract strategy
- CAPEX and OPEX estimates

Benefits

Crondall Energy has the unique ability to assemble a project team of floating production and subsea experts who can work together with the Field Operator to identify and select the most appropriate production facilities for the field.

We support E&P companies through their field development process from first subsea layout to first production