



**Compass Energy**

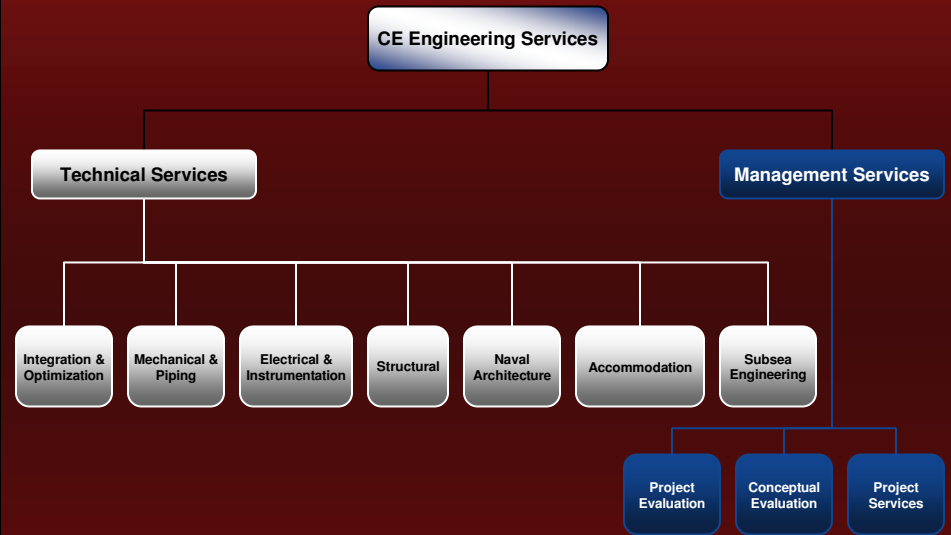
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At Compass, we understand the need for Intelligent Design and Robust Engineering.  
Our years of experience in the offshore oil and gas industry have given us the confidence to Optimize your engineering and Solve your problems.



**Supporting Resources**

- Mathcad
- Hydrostar
- Arianne
- Visual Orcaflex 3-D
- OLGA
- Pipesim
- AUTOCAD
- FEM packages
- Patran/Nastran (FEA)
- Staad Pro (Beam Element Program)

**Mechanical & Piping**

- Generation of P&IDs
- Propulsion plant design
- Piping systems Design
- Engine Room Design
- Design and selection of main propulsion plant and systems
- Design selection of auxiliary machinery and systems
- Sizing and selection of vessel machinery such as water maker, sewage, fire fighting, ballast etc. including the design of system piping
- Design and engineering for machinery upgrading and conversion projects
- Design of pipe works for erection onboard
- Prepare piping isometric drawings based on layout for fabrication and erection.
- Materials planning requirements including valves and fittings

**Conceptual Evaluation**

- Preliminary analysis
- Conceptual design
- Execution strategy
- Engineering/design philosophy and integration into an intelligent system:
  - Mechanical and piping
  - Electrical and instrumentation
  - Structural
  - Naval Architecture
  - Accommodation
  - Subsea engineering

**Structural**

- Structural conversion of Vessels/Rigs
- Structural design of offshore structures
- Mooring design
- Turret design
- General Arrangement
- Finite Element Analysis

**Subsea Engineering**

- Subsea systems analysis
- Subsea architecture
- Flowline analysis

**Naval Architecture**

- Mooring analysis
- Stability analysis

**Accommodation**

- Living Quarters Design

**Integration & Optimization**

- Efficient and economical integration of engineering input
- Ensure that engineering design and systems do not conflict
- Ensure intelligent arrangement of systems

**Electrical & Instrumentation**

- Internal and external Communication Systems
- Electrical Power Systems
- Load list
- Sizing of Electrical Equipment including Motors transformer, batteries,
- Single- line diagrams
- Short Circuit Level
- Harmonic Studies
- Voltage drop studies
- Development of I/O List
- Development of Instrumentation loop design
- Design of Normal and Emergency Lighting and Fixture Locations with Lux Level Reports
- Sizing of Cable
- Functional design and Auditing of control systems
- Cargo control system
- Fire and Gas detection systems
- Communications (PAGA, LAN,)
- Engine monitoring systems
- Refrigeration systems / re-liquefaction
- Production / process systems
- Safety and Shut down systems, ESD
- Design of CCR
- Vessel management System / SCADA (supervisory control and data acquisition)

**Project Evaluation**

- Business strategy
- Project management strategy
- Risk analysis
- Financial analysis and evaluation
- Expert opinion and recommendations

**Project Services**

- Project Management
- Procurement services
- Commissioning