INTELLIGENT ENGINEERING

EPConsult Energies

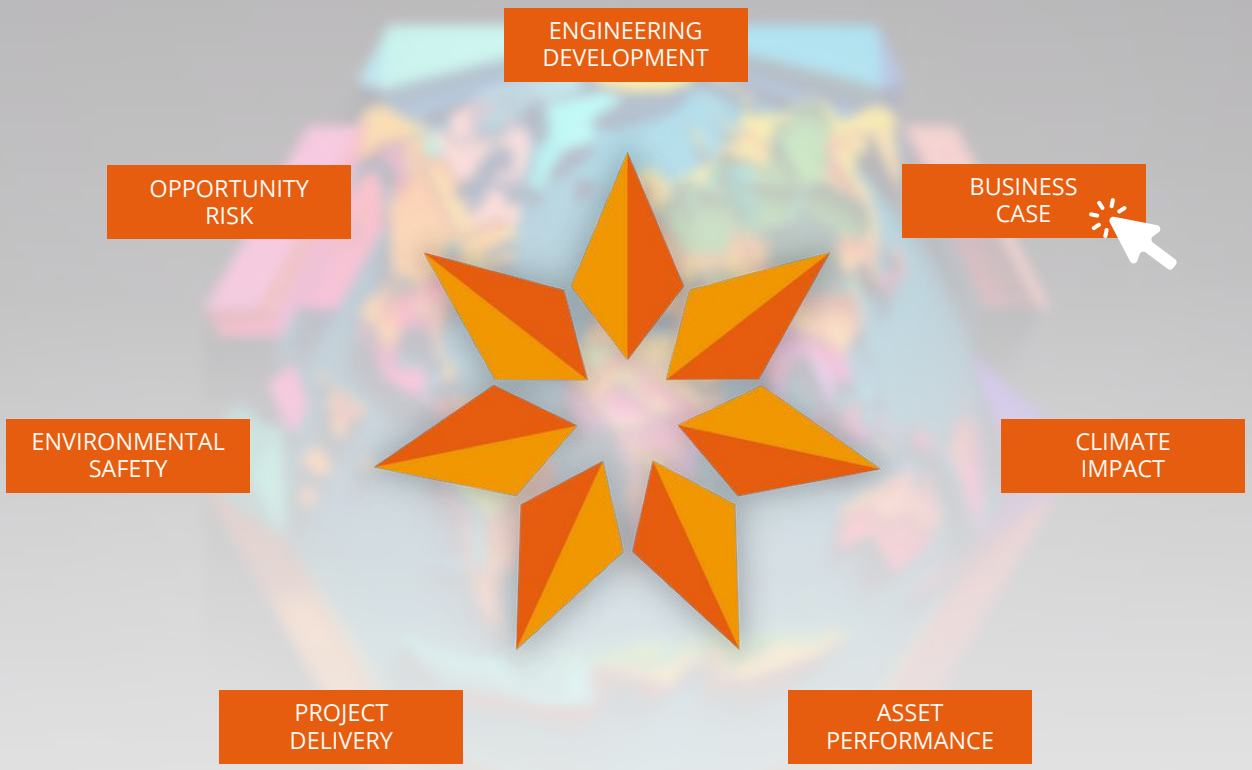
EPCONSULTENERGIES.COM

EPConsult Energies

EPConsult Energies (EP) is an independent engineering consultancy for energy with over 20 years of experience.

Founded by Martin H. Larsen, EP provides technical consulting and engineering studies for oil, gas, and renewable energy companies, as well as industry organisations and government agencies.

- Broad commercial experience
- Deep technical engineering expertise
- Agile and collaborative
- Innovative culture
- Strong core values
- ISO 9001:2015 Quality Management System



United Nations Global Compact · energy institute · INTELLIGENT ENERGI · DANISH-UK ASSOCIATION · renewableUK · GREEN POWER DENMARK

WIDE RANGE OF SERVICES

Our top-tier analytical expertise aids clients in optimising development concepts, preventing crises, ensuring compliance and enhancing profitability.

DEVELOPMENT PLANNING

- Field Development
- Feasibility Studies
- Conceptual Design
- Schedule, Cost Economics
- Value Engineering
- Opportunity Framing

HSE & RISK ASSESSMENT

- HSSES Seven/Seven
- Safety Case Development
- Hazard Identification Studies
- Quantitative Risk Assessments
- Emergency Reports
- Environmental and Social Assessments & Permitting

ASSET INTEGRITY & PERFORMANCE

- OPEX Optimisation
- Asset Life Management Plan
- Integrity and Performance
- Life Extension Studies
- Abandonment & Decommissioning

BUSINESS ADVISORY

- Acquisition and Divestment
- Exploration and Appraisal
- Non Operated Ventures
- Lenders Decision Support
- Technical Due Diligence
- Expert Witness

OPPORTUNITY MANAGEMENT

- Business Risk & Opportunity
- Project Risk & Opportunity
- Risk Management Systems
- Crisis Management
- Enterprise Risk Management

PROJECT DELIVERY

- Project Management
- Quality Management
- Project Controls
- Project Auditing
- Delivery Management System

AVAILABILITY & RELIABILITY

- Failure Modes & Critical Analysis
- Fault Tree Analysis
- Reliability, Availability & Maintainability
- Risk Based Inspection
- Reliability Centered Maintenance

WORKING FOR DECADES WITH A WIDE VARIETY OF CLIENTS ACROSS THE ENERGY INDUSTRY GIVES US A UNIQUE EDGE IN SOLVING PROBLEMS AND CREATING SOLUTIONS FOR THE SECTOR'S TOUGHEST CHALLENGES.

EP's references include high-end project services, specialist engineering and risk assessment services, in subjects such as::

- Concept engineering selection
- Technical and commercial due diligence
- Development planning
- Opportunity and risk management
- Production performance & asset integrity
- Environmental, safety and social impact
- Project delivery

WORLDWIDE PROJECT EXPERIENCE

ADNOC · Danish Energy Agency · TotalEnergies · Ørsted

Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping · Scottish Enterprise · TotalEnergies · MAERSK · European Energy · enlight · Navitas Petroleum · INEOS · dulas · SWECO · Shell · ExxonMobil · North Star · TechnipEnergies · EnQuest · eni · bp · equinor · wood. · UKRI Innovate UK · MODEC · SAIPEM · Llywodraeth Cymru Welsh Government

EXPERIENCED SPECIALISTS

Our team of engineers focuses on finding the best solutions for clients by efficiently integrating the specialist areas of engineering, operations, risk, economics and delivery.

Peter Daniel

Engineering Manager - Conceptual Engineer

Process and chemical engineer with a 25-year track record. Worked on major projects in a management capacity in Russia and Kazakhstan. Previously with Shell International Exploration and Production B.V. Provided consultancy to a number of offshore wind projects, including Orsted (Hornsea 4), ScotWind, and the Government of Bahrain. Worked on a range of feasibility studies and technical due diligence projects, including Sealion FPSO (Navitas), Tamar SouthWest (Isramco/Tamar) and Renewables Strategy for companies such as Tritax.

Rolf J.Meijer

Principal Engineer – Marine Operations

Captain Rolf Meijer Marine Operations Specialist BSc from Amsterdam Nautical College, Dutch Nautical College SII Master. Accredited DNV auditor for nautical operations. 30 years' experience in marine and port operations with companies ExxonMobil, Shell and as a technical authority in marine engineering for Deutsche Bucht and PdVSA projects. Specialized operational experience in Deepwater Transport & Installation, Inshore and Offshore Loadouts, Heavy-Lifts, Float overs, and Deepwater Installations of FPSOs, FSOs, SURFs, Semisubmersibles, Platforms. Shipyard Management of Semi-submersibles.

Jamie Rowlands

Principal Consultant – Operations and Maintenance

Operations Manager with a track record in executive management roles within global offshore wind operation, service and maintenance sectors, delivering customers maximum uptime and value generation through safe, reliable and cost-efficient technology and maintenance services. Created and executed several strategic entry and growth plans into global offshore wind markets to drive high-value assets and businesses forward.

Joe Gransden

Principal Engineer – Pipeline and Subsea

A Chartered Principal Engineer with more than 16 years' experience, responsible for projects involved in the design, construction, and technical integrity of structures for oil, gas, and renewables. Interim pipeline regimes, establishment of pipeline management system to MAPD, PIMS, ERP, RBI. Engineering and installation/construction of subsea structures, pipelines, piping, jumpers, umbilicals, cables and risers to assess material selection.

Justin Mason

Principal Engineer – Electrical Engineering

Principal Consultant, a professional lead electrical engineer with deep technical expertise and strong awareness of related discipline engineering. Broad industry technical insight from an international career over 29 years spent in major projects, close asset support and operations across the renewables, utility and energy sectors and cement industry in challenging environments.

William Venn

Principal Consultant – Safety Engineering

With 30 years in Industry, ten of which have been in operations, William has gained substantial experience throughout the lifecycle of oil and gas projects, both offshore and onshore and in the UK and internationally. William is a safety and risk assessment specialist for oil, gas and renewables projects. He performed Safety, Risk, HAZID and FMEA studies for Southern North Sea Offshore Wind Farm Projects. Also performed several safety, risk and reliability studies for Ineos and TotalEnergies facilities in the North Sea.

Martin H. Larsen

Managing Director – Structural Engineer

A leading international O&G and Renewables technical consultant and Managing Director of EPConsult Energies, specialising in project management and project delivery with over 25 years of projects and consultancy experience. Significant experience with structural and marine engineering, asset integrity and performance, HSE and risk management. Lead Consultant for Orsted HOW-04 Offshore Installations Interfaces study. Previous Lead Consultant for other Orsted, Energinet, European Energy, Ineos, TotalEnergies studies.

Nick Cowlan

Principal Consultant – Naval Architect

Chartered Naval Architect and Floating Systems Engineer. Key strengths include hydrodynamics, hydrostatic, stability analysis, metocean data analysis, hull design stress analysis, buckling & fatigue analysis, structural testing, and technical specification, floating assets with regards to Structural welding procedures and specification, design, and plan approval of Offshore code and Classification Rules, mooring, soils, and asset management assurance for Semi-sub and FPSO installations.

Majbrit Høyer

Principle Consultant - Power Systems

Principal Power Systems Engineer with significant experience with power cables and power systems. Her experience within the energy sector includes technical advisory to the Danish Energy Agency for the North Sea Energy island, >10GW offshore wind power, grid connection, power and gas distribution, biogas, and micro scale off-grid solar systems. Her most recent experience includes, Grid connection authority liaison and project development for offshore Wind Power in Taiwan.

Roy Evans

Principal Consultant – Commercial Risk

Experienced Professional with an impressive record of risk, change, and programme management in several roles, including project delivery and corporate operations in offshore renewable energy, real estate, and construction. Previously Head of Corporate Operations for The Crown Estate and a board member on the Crown Estate Risk Committee. Led the development of the Round 3 Offshore programme and Pentland Firth Wave and Tidal. Before joining The Crown Estate, he was a Partner at a leading UK Cost Management Consultancy where he undertook several due diligence reviews.

David Price

Principal Consultant – Asset Integrity

Experienced consultant with more than 30 years' experience in the energy sector worldwide, including offshore projects in the Middle East, Kazakhstan, North Sea and The Philippines. His expertise covers asset management, integrity and performance management, OPEX reviews and shut-down /turn-around projects. David comes from an engineering manager position at Shell International Exploration and Production. David is currently part of a team providing OPEX review for Danish Oil Pipe.

NORTH SEA ENERGY ISLANDS

DEA | SWECO

The Danish Energy Agency is planning an Energy Island in the North Sea, which will deliver 3 GW of power generated by floating offshore wind in 2030 and be scaled to 11 GW in 2033. Green hydrogen production will be generated from 50% of the power.
EP's scope involvement includes:

- Engineering Package comprising conceptual design for the island, construction, power intake, and hydrogen facilities.
- Tender Package compilation of engineering package comprising functional requirement specification and conditions of contract
- Risk Management for programme implementation and project risk reserve estimation
- Risk Analysis, making use of risk register and expected monetary value (EMV), event trees and decision risk assessment.
- Operations and Maintenance specification and scope development for future Island operations
- Programme Management Office (PMO), incl. interfaces, planning and cost, and reporting to the Danish Energy Agency

THE BALTIC PIPE PROJECT

ENERGINET

The involvement of EP in this international Gas Infrastructure Project transmitting gas from Norway, via Denmark and into Poland included:

- Handover planning and handover checklists planning
- Commissioning planning and commissioning procedure
- Readiness Reviews for Commissioning and Handover
- Design Basis for Gas Compression Plant
- HAZID and HAZOP Reviews for gas compression upgrade,
- QRA Gap Analysis Study
- RAM analysis review
- SIMOPS review for gas plant tie-in scope
- Pipeline construction management
- Gas plant operations and maintenance manual

COMPETENT PERSONS REPORT

TRACS INTERNATIONAL

EPConsult Energies and TRACS International significantly contributed to the NEO UKCS Reserves Audit and Competent Persons Report for 2021 and 2022. Our team excelled in facilities engineering, flow assurance, operations, maintenance, and comprehensive financial review of CAPEX, OPEX, and ABEX costs. The project spanned multiple offshore fields in the Central and Northern North Sea, with our insights playing a key role in the development of the report and reserves reporting for NEO's UK operations.
EP's contributions were:

- Expertise in multiple sectors, including facilities engineering and cost reviews.
- Managing an extensive portfolio of North Sea assets.
- Crucial insights for NEO's Competent Persons Report and Reserves Reporting

RISK ASSESSMENT - DEVELOPMENT CONSENT ORDER

ORSTED

The Hornsea Project, Four Offshore Wind Farm project, is the world's largest offshore wind farm project. It comprises 180 wind turbines, taller than the Eiffel Tower, along with a complex network of cables, platforms and converters. To support the Development Consent Order (DCO) process, EP prepared an Offshore Installations Interface report to estimate and assess the interface risks between the Hornsea Project Four and the nearby oil and gas installations, infrastructure and shipping activities. The scope also included information-tracking service to monitor field operational changes.

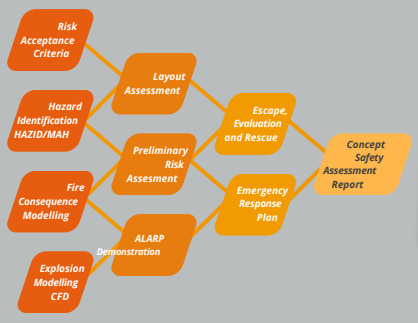
Methodology: Using the UK North Sea regulatory regime combined with solid risk management practices, EP developed a methodology that bridges the offshore wind environmental focus with oil and gas assets, safety and commercial risks, including navigational risk.

HYDROGEN CONCEPT SAFETY

WELSH GOVERNMENT

EP performed an Independent Safety Review for a Small-scale Hydrogen Generation Plant. This involved:

- Planning input to small-scale Hydrogen generation projects for renewable resources in remote sites in Wales
- Safety consideration screening study (HAZID)
- A conceptual review of the required elements for Consequence of Major Accident Hazards (COMAH)
- HSE regulatory requirements assessment and planning



MUMBAI BASIN CONCEPT SELECTION STUDY

ADANI

Comprehensive Concept Selection Engineering Study covering multiple license areas in the Mumbai Basin by new entrants to the O&G business AdaniWelspun – representing two of the largest companies in India. The study included:

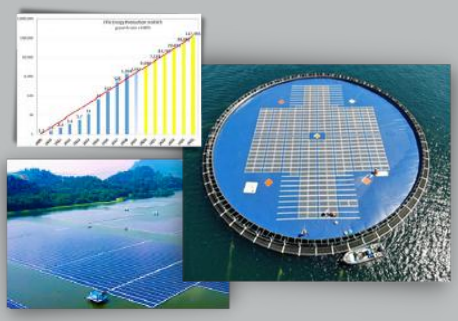
- Facilities engineering and platform design,
- Flow assurance, onshore process modelling and design,
- Cost and schedule estimation, HSE studies, Risk register and Materials take off
- Optioneering and ranking/selection of options
- Additional design phase was completed for selected option to achieve Class IV cost estimate
- Establish key design parameters ahead of FEED.
- PFDs, equipment list, equipment data sheets,
- Operations and maintenance philosophy and corrosion and materials selection report for pipelines.
- FEED SoW to allow fast track tendering for the next phase of the project.

FLOATING OFFSHORE SOLAR PV - MARKET STUDY

MARKET STUDY

EP was requested by DARROW Resources to investigate the current development potential for the application of floating offshore solar PV within the Arabian Gulf region.
To achieve this, EP conducted a study to provide an overview of key technologies and market players in floating PV. The findings served to identify a future scope of work for pre-feasibility studies.

- Currently, offshore FPV projects are only 5MW in size, while in reservoirs and lakes, they can reach up to 2100MW.
- Specific companies which are active in the region were assessed and have the capability to design, construct and install floating offshore PV systems.
- A range of technological solutions and new technology was also assessed with evaluation criteria applied to determine technology maturity and applicability.



FLOATER STUDIES

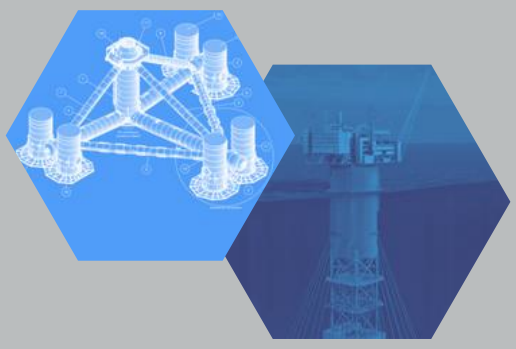
MULTIPLE CLIENTS

EP support clients assuring full integration of the engineering-asset-production-operations solution by performing specialist assignments for floaters across the world.

Locations: North Sea, GoM, West Africa, North Atlantic, Brazil, India

Types of floaters: FPSO, SPAR, TLP, Semi-Sub, CALM, SPM.

Assignments:
Concept selection, technical due diligence, flow assurance, subsea production, peer review, design review, naval architecture, mooring, marine operations, materials selection, production availability, reliability, HSE, maintenance optimisation, integrity management, consequence modelling, safety assessment, and quantitative risk assessment.



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"Innovation is at the heart of our services"

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