



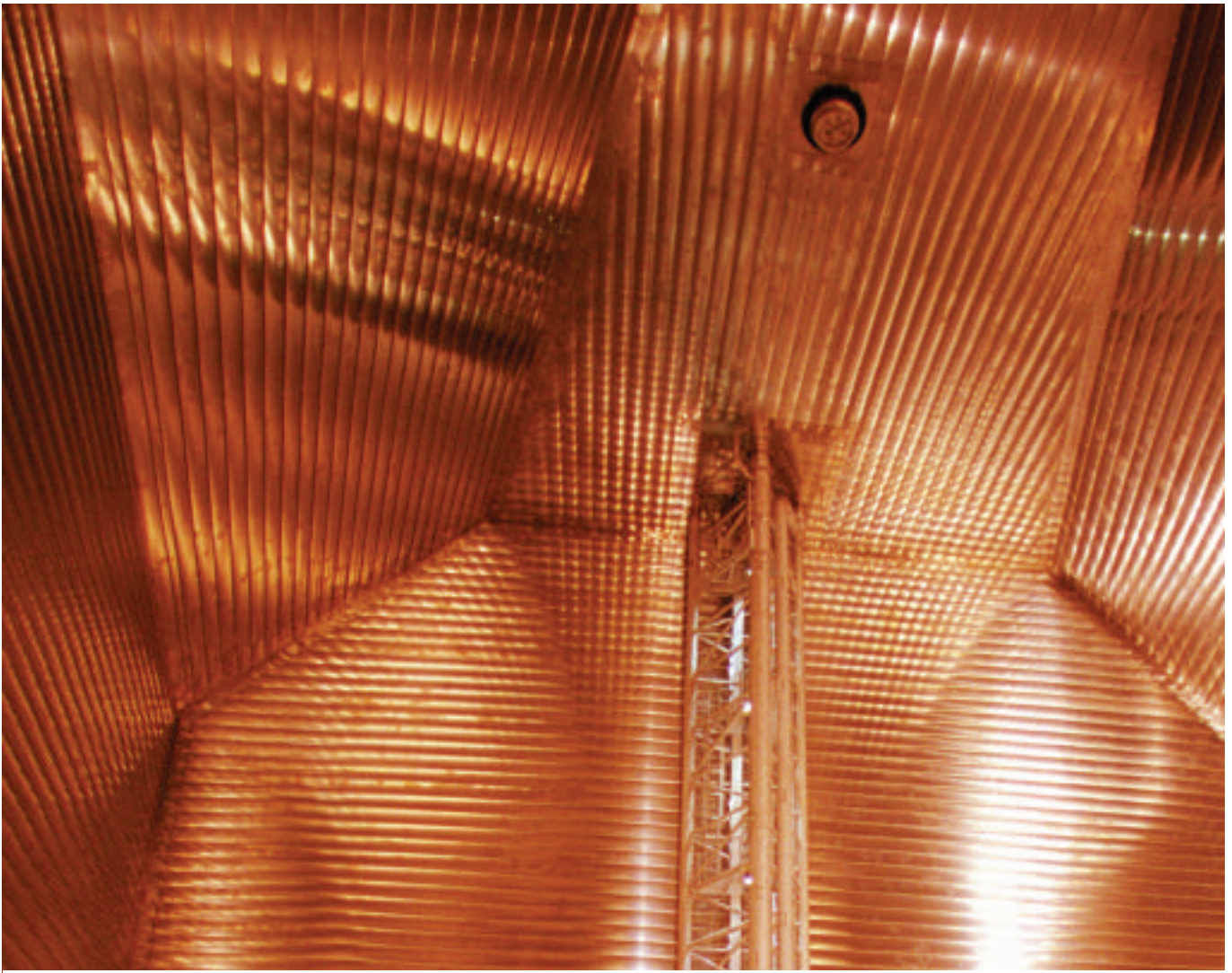
Due diligence

# Go Confident.

DNV serving the Energy Industry



MANAGING RISK



Increased confidence



The energy industry is one of the **most complex and exciting industries** in the world. It is characterised by very large investments, major technological challenges and significant complexity in terms of commercial and political stakeholders. The nature of the industry is one of **enormous potential returns** but also one of **enormous potential risk**; financial risk to the owner and the investors, health and safety risks to workers and contractors, and sometimes profound risks to host communities and the environment.

DNV offers the **whole range** of energy and process-related services. We provide world-class expertise in **technology, operations, management** and **risk assessment**. But even more importantly, we combine our know-how into a professional service concept designed to safeguard and improve the performance of your business. Through our world-wide organisation we provide **global impact**, supporting you **all the way** from **strategic considerations**, through construction and operations to **decommissioning**.

# ence in business decisions

Companies that plan to acquire, invest or provide project finance often commission **independent** expert consultants to provide **due diligence services**. At DNV, we provide our customers with an improved understanding of the risks based on our deep technical and business expertise combined with practical experience in devising technology solutions for the energy industry. So you can go confident in your investment decisions.

THE BUSINESS LIFECYCLE

# DNV Group - assisting companies in the energy industry along the entire life cycle to safeguard and improve business performance

PROJECT PHASES:



DNV ENERGY DELIVERIES:





# Due Diligence

Due diligence is an investigation or audit prior to an investment, divesture, selling transaction. It confirms that all material facts are correct and therefore reduces the probability of unnecessary harm to either party or entity involved in the transaction.

Companies considering acquiring, investing or providing project finance often commission independent expert consultants to carry out due diligence services. DNV provides engineering and business expertise leading to an improved understanding of the investment risks.

## Acquire

Due diligence services are conducted by DNV Energy teams comprising business and technical experts that jointly will gain a comprehensive understanding of the project. We provide a multi-disciplinary service that pools resources from various areas depending on the scope of work.



or invest with confidence





## Benefits

Due diligence services provide expert advice to clients considering making project investments, acquisitions, restructuring, sales or divestures.

No bank or financial institution is willing to finance a project without knowing everything that could pose a risk for their investment. Prior to final decision making the investor needs to scrutinise all aspects of the project so that measures can be taken and the risk priced accordingly.

Individuals and organizations who benefit from due diligence include investors, researchers, entrepreneurs, corporate investment and funding groups, venture capitalists, investment bankers, corporate merger and acquisition teams, agencies and companies evaluating internal R&D and technology development, insurance companies, as well as lawyers and other professionals who have disclosure obligations.

### VALUE TO CLIENT:

- ▶ Informed decision making.
- ▶ Independent analysis.
- ▶ Reduced risk and avoidance of hidden pitfalls
- ▶ More accurate valuations.
- ▶ Improved negotiating position.
- ▶ Enhanced time and resource utilization.
- ▶ Identification of alternative or complimentary technologies

This exercise may be executed by an external party such as DNV. Enabling the following options:

- ▶ proceed with the transaction as initially planned
- ▶ cancel or “walk away” from the transaction
- ▶ negotiate specific indemnities
- ▶ change the terms of the transaction

# Our Services

## SELLER/ BUYER DUE DILIGENCE

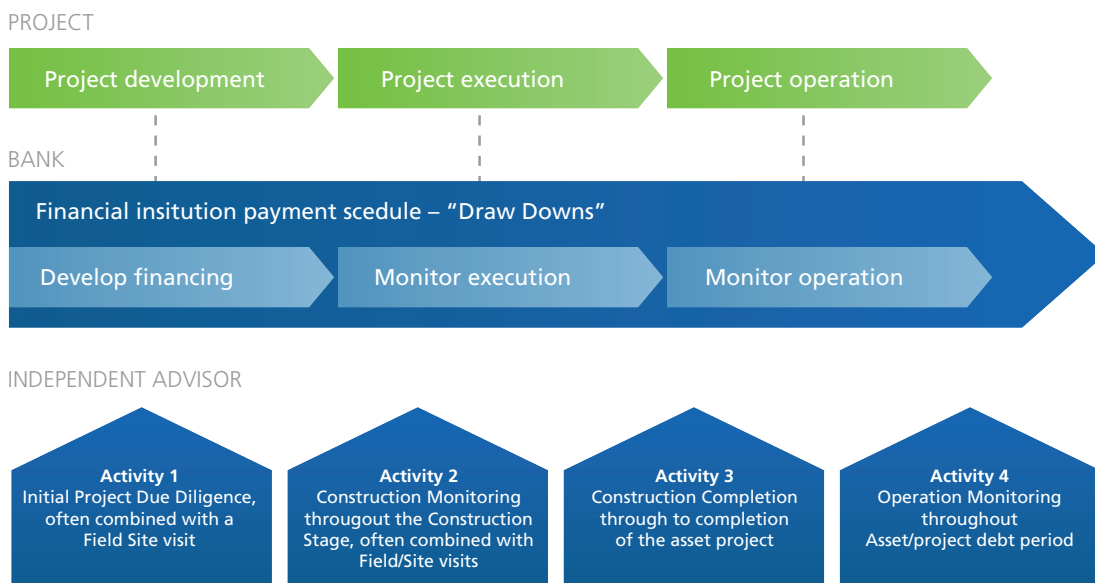
DNV carries out due diligence on assets on behalf of the seller or the buyer of the assets. Seller due diligence (SDD) has become increasingly common over the past decade. In the UK, and increasingly in Europe, it is now an accepted constituent of corporate finance processes. A seller commissions a due diligence report to assist in the preparation of information for prospective purchasers and investors, and to reveal any matters which would be identified by the purchaser's due diligence, so that these can be addressed by the seller. Seller due diligence also avoids multiple bidders conducting their own due diligence simultaneously and is generally beneficial in facilitating the sale process. SDD/BDD is generally carried out directly for the companies selling/buying assets or shares within a joint venture

## PROJECT DUE DILIGENCE

DNV carries out due diligence services for financial institutions involved in financing major projects. In this role, DNV acts as a technical advisor to financial institutions by providing clients with an improved understanding of the project risks/risk mitigations by ensuring that a reasonable approach has been taken with respect to factors such as design, technology, safety, construction, commissioning, budgeting, scheduling, operations and maintenance useful life and decommissioning.

## TYPICAL SERVICES INCLUDE:

- ▶ Independent expert advice on technical or commercial matters
- ▶ Improved understanding of the risks as well as risk mitigating actions
- ▶ Monitoring of the condition, progress or performance of an entity involved in the transaction





## Our approach

DNV regularly acts as an ‘independent consultant’, ‘independent engineer’ or ‘technical advisor’ on behalf of its clients.

With teams that combine business and technical expertise, we help our clients build a comprehensive understanding of business challenges, and provide independent reports, monitoring and advisory services.

DNV Energy covers the total spectrum of due diligence with the exception of legal due diligence. DNV Energy acts as the “Independent Consultant” or “Independent Engineer” to protect the interest of all parties concerned.

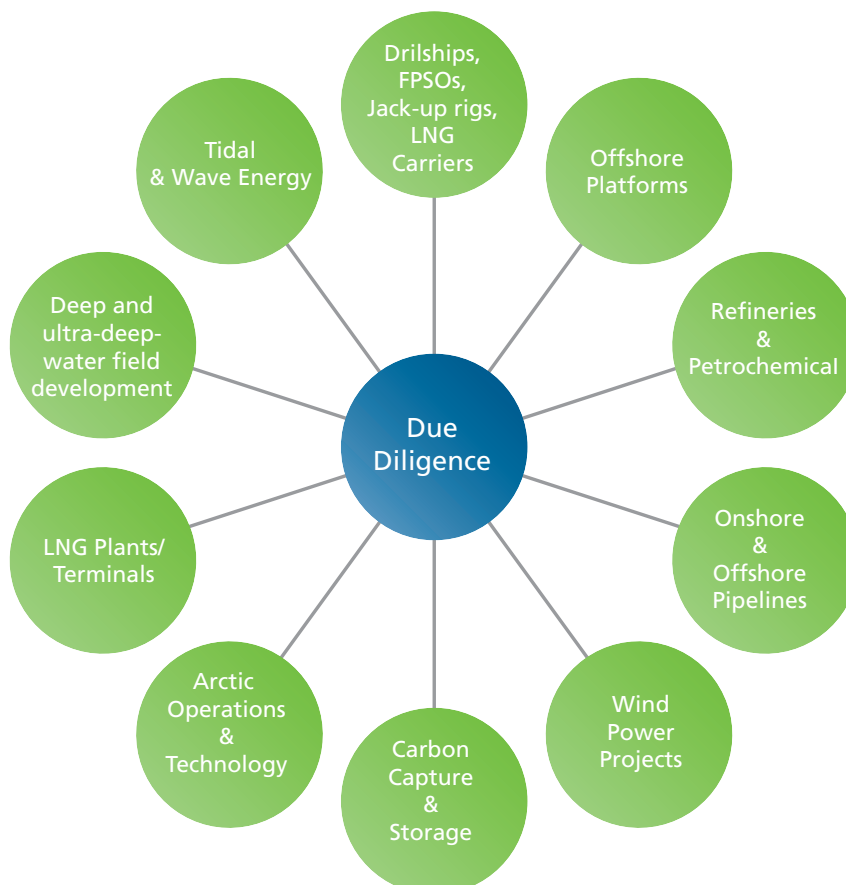
Key areas of competence include:

- ▶ Capital and Operating Cost Assessment
- ▶ Asset Integrity reviews
- ▶ Process Safety Reviews
- ▶ Capacity Management Reviews
- ▶ Operating and Maintenance philosophy reviews
- ▶ Environmental reviews
- ▶ Governance, Risk management & Compliance reviews
- ▶ Review of Decommissioning issues
- ▶ Corporate Responsibility reviews
- ▶ Review of supply chain risks
- ▶ Business continuity plan reviews
- ▶ Economic analysis

## Our experience

DNV is recognized as one of the world's leading international providers of due diligence services to the oil, gas and petrochemical industries. Clients include energy companies, petrochemical companies, investment companies and finance institutions. We have experience with drilling units, light well intervention vessels, fixed or floating oil/gas production platforms and terminals; DNV is also on the forefront on wind power, tidal and wave energy.

## Our Areas of Expertise



## Why DNV

DNV Energy's global in-house business and technical expertise provides with confidence and assurance in any energy related business transaction.

DNV takes on the role as Technical Advisor to a large number of banks and financial institutions that are providing finance to energy projects, such as drilling units, drill ships light well intervention vessels, fixed or floating oil/gas production platforms and terminals, LNG export or import terminals, pipelines, subsea developments, wind turbines, as well as refineries and petrochemical plants. DNV services are to a large extent based on DNV's strong in-house technological base combined with project execution, business and finance understanding.

### GO GLOBAL

The opportunities of the global energy market belong to those who approach them with a comprehensive understanding of risk. Equally important is the ability to implement solutions and uniform standards across geographies.

That's why DNV's global presence is so highly valued by our customers in the energy sector. No matter where you conduct your business, DNV is close at hand and prepared to help. Our international organisation comprises a network of more than forty offices spanning Europe, Africa, Middle East, Asia and the Americas.





# Selected Project Examples

Due diligence investigations are carried out before investments transactions, such as bank funding or equity, investment decisions and divestures. These investigations allow companies to take informed decisions. DNV often acts as an independent adviser conducting due diligence in projects across the energy sector.

## ONSHORE/OFFSHORE PIPELINES

The importance of a complete picture

Designing, constructing, installing and operating pipeline systems are complex challenges. DNV offers the whole gamut of pipeline-related services; DNV can provide the complete understanding by cross-disciplinary approach to identify and manage involved risks and opportunities in any pipeline project.

DNV provided assistance in some of the most worldwide challenging projects:

- ▶ India's first deepwater project,
- ▶ Gorm to Filso Pipeline –
- ▶ Blue Stream – one of the world's deepest trunkline

DNV carried out a major vendor/seller due diligence study in 2008 for a major oil and gas company. The objective of the study was to review and comment on the technical and environmental risks to several major offshore pipelines, platforms, process plants and gas terminals. The due diligence study covered the following areas:

- ▶ Governance and operating procedures
- ▶ Technical review of pipelines and platform assets
- ▶ Technical safety and management review of process plants and gas terminals
- ▶ Environmental assessment of assets
- ▶ Project, CAPEX and OPEX reviews.

## LNG PROJECT - DNV carried technical and commercial due diligence for a LNG Project in Australia.

Description:

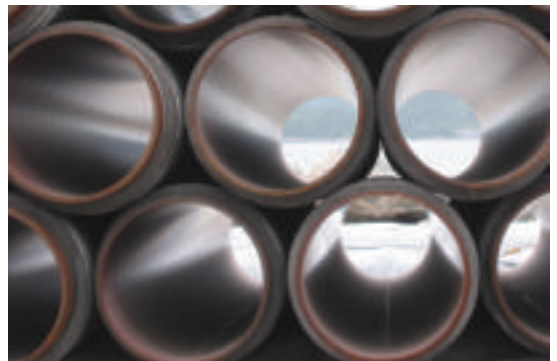
- ▶ Technical and commercial due diligence of the LNG Project, Australia.

Scope of Work

- ▶ Upstream Project comprising gas fields and associated facilities.
- ▶ Downstream Project comprising the LNG plant facilities, LNG export facilities
- ▶ Shipping

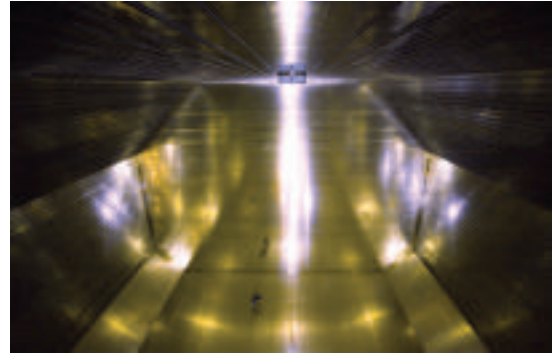
Client:

- ▶ Confidential



### VALUATION OF A LNG IMPORT TERMINAL

- ▶ Client: European energy company (confidential)
- Critical Issue:
  - ▶ What is the value of the LNG terminal operating as an independent business unit in a liberalized market?
  - ▶ How can the value of the LNG terminal be enhanced?
  - ▶ What are the most important value drivers and what is the effect of uncertainty?
- DNV Solution:
  - ▶ Qualitative assessment of the terminal's strategic setting and potential opportunities for adding value
  - ▶ Development of a stochastic enterprise discounted cash flow (DCF) model for estimating economic value and related uncertainty
- Value Delivered:
  - ▶ Independent assessment of the LNG terminal's economic value submitted to the Board of Directors as input to the restructuring decisions



### NATIONAL OIL COMPANY (NOC): DUE DILIGENCE ASSESSMENT

- Critical issues
  - ▶ The reservoirs in this region of the Middle East are technically challenging and as a result have not yet been developed to their true potential
  - ▶ NOC invited a number of International Oil Companies (IOCs) to bid for the operation and future development of the Oilfields to achieve the required output increase
  - ▶ NOC and the IOCs needed a thorough independent evaluation of the risks associated with the ongoing operation of all existing processing, utility and interconnecting assets

#### Value delivered

- ▶ Facilities assessment study covering wellheads, flowlines and the oil/gas processing plants.
- ▶ Identification of risks to personnel, environment and business together with an estimate of asset condition and any specific reliability concerns. Cost estimation of required remediation work, to aid in negotiations with the IOC's
- ▶ QRA of all process facilities to identify and evaluate the major accident hazards
- ▶ Determination if appropriate prevention, control and mitigation measures are installed, and cost estimation of necessary remediation work
- ▶ Discussions of our findings and recommendations with all concerned IOC's



### **WIND POWER PROJECTS**

Wind power projects have become mainstream since the 1980s, and offshore projects are becoming more common. DNV has played a major role all along the way, providing expertise across the entire cycle project life-cycle, including wind resource assessments, energy projections, site evaluation, wind turbine technology assessments, engineering and construction oversight, costs assessments, and other due diligence services to owners and investors around the globe.



### **CARBON CAPTURE & STORAGE**

Global demand for energy is on the rise. Yet the power sector must respond to the worldwide consensus that energy sources must produce less CO<sub>2</sub> in order to maintain the balance of nature.

#### Handling new challenges with experience

Developing a full CCS value chain requires both experience and courage. Advanced, new technology has to be implemented with existing equipment, and the time schedule to do so may be limited. DNV offers a complete set of services to help you ensure the quality and integrity of your assets.



DNV is developing standards and best practices for capture, transmission and storage of CO<sub>2</sub> which currently do not exist in the oil and gas industry, through three significant Joint Industry Projects, that deal with:

- Qualification of technologies for power generation with capture of CO<sub>2</sub>
- Transmission of CO<sub>2</sub> in pipelines
- Qualification of Sites and Projects for Geological Storage of CO<sub>2</sub>

### **TIDAL AND WAVE ENERGY**

DNV has taken an active role in the development of the wave and tidal energy industry from the early stages. In 2005 a set of Guidelines on Design and Operation of Wave Energy Converters was produced by DNV in Conjunction with the Carbon Trust in the UK.

DNV is presently engaged in several ongoing projects with wave and tidal developers, including a preferred certifier role for the Alderney Commission for Renewable Energy.



### **ARCTIC OPERATIONS AND TECHNOLOGY**

Increased oil and gas transport from difficult environments. DNV is a pioneer in cold climate classification.

Bergesen Worldwide Gas, Rolls-Royce Marine, Framo Engineering, DNV, MARINTE K, Gazprom and Gazflot have formed a joint project to develop safe and cost effective operational procedures for ship-to-ship transfer of liquefied natural gas (LNG) in open Arctic waters. The transport chain includes transport of LNG produced onshore in Northwest Russia, by shuttle tankers strengthened for ice conditions, transfer to conventional large LNG vessels in ice-free waters, and then transport to customers. The project involves the investigation of several technical and operational challenges. It assesses challenges in each phase of a ship-to-ship (STS) operation, from the initial approach through mooring/cargo transfer/unmooring and finally separation of the vessels.

With the world's attention turning to the Arctic region, knowledge development is important. DNV Research & Innovation is exploring several areas of Arctic technology.



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