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WON FROM THE WAVES

THE DUTCH OFFSHORE INDUSTRY
A PIONEER IN THE ENERGY TRANSITION

BALANS PUBLISHERS

■ The Dutch offshore industry is characterised by high-tech workhorses at sea, such as the tug Retriever (1982) of Heerema Marine Contractors.





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PREFACE

The IRO is celebrating its fiftieth anniversary. A perfect occasion to invite maritime historian Joke Korteweg and the former executive director of the Maritime Museum Rotterdam, Frits Loomeijer, to write a book about the Dutch offshore industry, from the perspective of the suppliers and contractors.

It didn't just become any book. It is a wonderful volume to read and for looking at the photos; it gives the reader a good impression of the important social significance of this industry, which is constantly changing. This book gives great insights into an industry that is continuously developing, renewing, adapting and innovating. Looking back over the past fifty years, we can say with justification that they have been pioneers in the energy transition.

A look back at and a deeper analysis of the last half century in the offshore industry show us that the energy transition is not something that has only become topical recently. Over the past centuries there has been a continuous transition. From peat to coal, from oil to gas and, in the last decade, the development of generating electricity using offshore wind.

The Dutch offshore construction industry ranks among the top five in the world. The presence of a centuries-long maritime tradition in the Netherlands has undeniably played an important role in this. In the early 1970s Dutch companies, some family-owned, were in a position to turn the opportunities that arose in this industry into bold business ventures.

That achievement is something to be proud of. Entrepreneurial qualities, such as having a long-term vision in an ever-changing energy market, but also the ability and willingness to invest in this capital-intensive sector are important elements in the success of the Dutch offshore industry. The role of knowledge and educational institutions has also been of great importance.

Because the IRO is the Association of Dutch Suppliers in the Offshore Energy Industry, I believe this book gives a good view of the entire industry. As far as I am concerned, the fiftieth anniversary of the IRO is a worthy occasion to congratulate all entrepreneurs and employees in this industry. It is an industry that may sometimes seem a collection of extremely disparate entities but is in reality a chain of economic value.

In light of these lessons from the past, I am willing to claim that the Dutch offshore industry is ready to take on its challenging role in the energy transition that we are facing in the coming decades. Entrepreneurship, flexibility and focus on innovation are crucial.

Rotterdam, November 2021

Pieter van Oord, chairman of the board IRO

PROLOGUE

The Origins and Diversity of the Dutch Offshore Industry

The extensive and diverse group of companies working with offshore energy is called the 'offshore industry'. Initially this term was mainly used to refer to the offshore oil and gas industry, while today it refers to all industrial activities at sea. This book focuses specifically on the companies that provide products or services to the offshore energy industry. More than four hundred of these are united in the IRO, the Association of Dutch Suppliers in the Offshore Energy Industry.

Stakeholders in this industry, when asked about the characteristics of the Dutch offshore industry, often mention things that have to do with a certain mindset: perseverance, decisiveness, daring to travel anywhere, problem-solving ability, flexibility, openness to partnerships and reliability. Others believe that corporate structure is a determinative factor in success. The core of the industry consists of family businesses that are not primarily guided by stock market developments or short-term prospects. Continuity is paramount for them, paired with the courage to invest capital on a large scale without shunning risks.

'The Dutch offshore companies are like road builders at sea. They're good at complex operations in difficult locations.'

Bas Buchner, director Maritime Research Institute Netherlands (MARIN) (2020)

In conjunction with a knowledge and educational structure that stimulates innovation and maintains expertise, these characteristics have caused the Netherlands to rank as one of the five top countries in the offshore industry for many years now. Still, few outsiders know this industry. So who are these companies and what do they do? How did they start? What is their significance for the maritime sector and for the daily lives of 17.5 million

people in the Netherlands? And what does the future hold for this neglected piece of Dutch glory? Those are the questions this book will be answering. The prologue provides an overview of the historical development of the offshore industry and the diversity in it.

THE EMERGENCE OF THE DUTCH OFFSHORE INDUSTRY

Offshore is a term that originated in the United States. In 1895 the first offshore boom took place in a bay near the Californian village of Summerland near Santa Barbara. Wooden piers with drilling towers stretched from the coast into the water. Exploration was hardly necessary, because the oil was bubbling at the surface. Although the United States remained important for the offshore industry, oil discoveries were starting to happen in seas and lakes all over the world. In the early twentieth century Lake Maracaibo (Venezuela) and the Caspian Sea (bordering Russia, Kazakhstan, Turkmenistan, Iran and Azerbaijan) were important offshore mining areas. The structures used for drilling oil developed steadily. From 1927 concrete platforms were being used and in 1934 steel was being used in offshore structures for the first time.

After World War II the Gulf of Mexico became the centre of oil extraction in the United States. They drilled up to 17 kilometres off the coast. Between 1947 and 1959 a specialised offshore industry developed here with equipment that formed the basis for everything that would later be used in the North Sea: from (semi-)submersible platforms, also known simply as submersibles or semi-submersibles, to jack-up rigs, oil pipelines for transporting oil and supply ships for transporting goods and people to the platforms. A large diving industry also developed around the offshore industry.

From the outset offshore drilling for oil led to social unrest everywhere. Landowners claimed rights, fishermen feared losing their source of income, bathers and coastal residents saw the horizon polluted with piers or drilling rigs. In the United States the protests peaked in 1969 at the 'Santa Barbara blowout'. A blowout means that oil sprays along or through the borehole. Such a 'gusher' is usually stopped only after a lot of time and effort, and after millions of litres of crude oil have ended up in the ocean. They also frequently cause fires that are difficult to control. In California this incident not only led to major lawsuits, but also to the establishment of a Coastal Commission: a forum in which interest groups such as fishermen, landowners and



📌 Wooden drilling towers on the coast near Summerland in California replaced bathers. The photo was taken around 1910.

environmentalists were given a voice. As a result of such incidents, more and more attention was paid to safety aspects in the offshore industry.

The offshore boom initially passed Western Europe by unnoticed. This changed when natural gas was found in Slochteren in the Dutch province of Groningen in 1959. Although gas was not considered commercially interesting at the time, scientists suspected that there were significant oil and gas reserves under the adjacent North Sea, which could be recovered in the future. Not only the Netherlands, but also other countries on the North Sea took note of this possibility and wanted to secure their own share in it.



📌 Conditions in the North Sea require storm-proof equipment. This picture shows that the placement of the bottom of the platform at least 20 meters above sea level is by no means a luxury. This unmanned platform was built in 2009 for the NAM and was placed in the L9 gas field north of Vlieland.

First of all, a legal problem had to be solved: which countries were entitled to any undersea stockpiles? A first step in determining this had already been taken in 1958 with the United Nations Convention on the Continental Shelf held in Geneva. A treaty was signed that gave coastal states sovereign rights to their part of the Continental Shelf. The Continental Shelf was described as follows:

the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas.

OIL AND GAS

The first oil in the Netherlands was discovered in 1928 in Corle, a hamlet in the municipality of Winterswijk in the eastern province of Gelderland, though this was not an economically recoverable quantity. In 1943 the first extractable oil field in the village of Schoonebeek in the province of Drenthe was drilled. In 1947, after World War II, Shell and Esso decided to set up a new company for the exploration and extraction of oil: the Dutch Petroleum Company (NAM). A year later, the NAM extracted the first oil from the Schoonebeek field. Production stopped in 1996 for economic reasons, but in 2011 the field came back online.

There was also an interest in natural gas. In 1948 the NAM found natural gas in Coevorden for the first time, and in 1959 the famous Groningen field was drilled near Slochteren. This field is one of the largest natural gas fields in the world. In the initial period large quantities were extracted annually from the gas field. As a result of the 1973 oil crisis the government changed its policy. The extraction of gas from small offshore as well as onshore fields was given priority as part of the so-called 'small fields policy' of 1974.

The oil companies suspected that the Dutch oil and gas fields extended under the North Sea. In 1959 the NAM began seismic research into the seabed. Four years later the first exploratory drilling followed, and in 1975 the NAM was granted a permit to extract offshore gas.

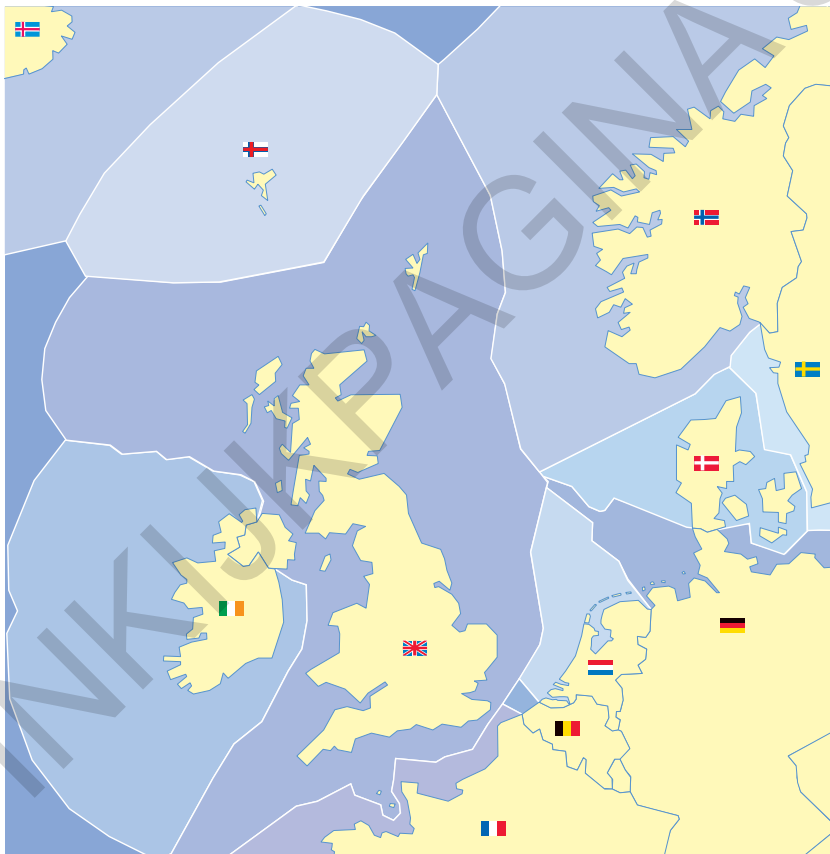
According to the 1810 Dutch Mining Act the Dutch state owned all underground supplies, including those under the seabed. However, the government was not in any hurry to explore the potential of the North Sea. Starting in 1968 several rounds of permit applications were organised, but it was not until 1974 that the Den Uyl government (a five-party coalition government including social democrats, Christian democrats, Roman Catholics, Christian progressives and social liberals) formulated stimulation of the Dutch offshore industry as government policy. A year earlier the first oil crisis had made it painfully clear how dependent Europe was on oil from the Middle East. Countries such as Norway and Great Britain were already developing their own offshore industry.

► This photograph from 1951 is emblematic of the overlap of peat and oil extraction at the beginning of the oil era. The 'nodding donkey' pumpjack in the background is announcing the arrival of an energy transition, although peat is attempting to stand its ground as a fuel.



Over time more and more countries ratified the treaty. The Netherlands signed it in 1966.

As a follow-up to the Geneva agreements, it was necessary to establish a fair distribution of the North Sea region among the coastal states. These still did not have any clarity what treasures were hidden under water. The division caused much disagreement; each country wanted as big a share as possible. It was not until 1969 that an agreement was reached whereby Great Britain, the country with the largest coastline, was granted 46.7 percent of the North Sea area. The next biggest allotments fell to Norway, the Netherlands (with 10.7 percent), Denmark and Germany.



📌 The entire North Sea is divided into Exclusive Economic Zones (EEZs) extending up to 200 nautical miles (370.4 kilometres) from the coastline. Within this zone a state has the right to exploit the resources available, to fish and to scientific research. The country is also responsible for managing natural resources in this area. The EEZs lie outside territorial waters and often extend beyond the Continental Shelf.

OFFSHORE SUPPLIERS

To this day the American roots determine the character of the offshore industry, including those in the Netherlands. A small number of globally operating energy companies are clients for a large number of contractors and subcontractors. The ‘Big Oil Super Majors’, that is to say, the largest oil companies in the world, have traditionally been at the top. Today there are seven: British Petroleum (BP, British), Chevron (American), Eni (Italian), ExxonMobil (American), Royal Dutch Shell (Dutch-British), Total (French) and ConocoPhillips (American).

With other forms of energy, such as wind energy, the same grouping of suppliers exists around energy companies. They specialise in certain aspects of offshore operations, ranging from seabed research to exploration and production to infrastructure and support. Vertical integration has never been common in the world of offshore energy production.

Because of this structure the IRO is not an industry organisation in the traditional sense. The members are not connected by their products; instead the connecting element is their shared market. Their business activities, however, are very diverse. The IRO uses a division into six domains (see Table 1).

Table 1 IRO Members by Category

DOMAIN	ACTIVITIES
Engineering & Consultancy	Consultancy and engineering firms specialising in offshore activities
Construction & Fabrication	Construction of offshore structures
Plant & Equipment Supply	Delivery of supplies to offshore installations
Contracting, Transport & Installation	Contractors for offshore projects, transportation and installation of structures
Exploration & Production	Exploratory research for the offshore industry and energy production
Personnel & Health, Safety and Environment (HSE)	Health, safety and environmental aspects for the offshore industry

VAN BEEST: A TYPICAL OFFSHORE COMPANY

An example of a typical Dutch offshore company is Van Beest in Sliedrecht, which has been a member of the IRO since as early as 1978. The company has 200 employees worldwide and 900 distributors in 90 countries. It wants to be the leading manufacturer of shackles for attaching to cables and chains in order to hoist items. In 1922 the company started as a forge and made products for the dredging industry. The family is still the sole shareholder. In 1974 the company introduced Green Pin as a quality brand. This was needed because strict American quality standards were and still are applied in the offshore industry. In 1989 a branch was established in Germany and in 1999 a distribution office was opened in the United States. Van Beest acquired companies in France, Spain, Norway and Germany. A few decades ago offshore work accounted for half of Van Beest's production, but in 2019 it had fallen to 30-35 percent. On the other hand, the exact proportion cannot be determined because it is unclear who their customers are after delivery to distributors. Van Beest consciously serves other industries to protect themselves against the consequences of an ever-threatening offshore crisis.



■ The size of the shackles produced by Van Beest varies from a few centimetres to the size of a full-grown man. A unique drop-forging process creates a toffee-like effect. If there is too great a tensile force on the shackle, it will first deform and stretch before it breaks. As a result, wear and tear can be detected before accidents occur and the strictest offshore safety requirements can be met. In the picture staff can be seen using Jumbo shackles on a ship equipped with a Huisman crane. Crane specialist Huisman and Jumbo, which specialises in heavy transport, are among the larger IRO members. Like the smaller Van Beest, they are global players in their field.

Like many classifications, Table 1 is somewhat artificial. Some companies consider themselves to be in several domains. What makes grouping offshore suppliers complex is that many companies do not work exclusively for the offshore industry; many products or services are also supplied to customers on land. The percentage of offshore work can vary considerably per year, depending on the market.

Thus, although it is not easy to place the offshore suppliers in predefined boxes, it is possible to give an overview of the industries in which the Netherlands has excelled over time. Table 2 shows eleven categories with a brief description. The versatility is remarkable. It should be noted, however, that some industries may or may not have experienced a temporary peak, may have disappeared or may have adapted to the circumstances. Characteristic of the offshore industry is that there are a few large players in every domain, supported by a large number of smaller specialists. Everyone knows each other and, thanks to tight relationships, they function as an effective group.

One can see that some industries adapted to the changed circumstances in the development and production of plant equipment, where the focus shifted from the oil and gas industry to wind energy. The installation companies are another example. They are increasingly engaged in dismantling platforms, not infrequently the very same platforms they had installed themselves. This is evidence of flexibility. People who know the offshore industry well rightly call this one of its most important characteristics.

This book is about an industry that knows better than anyone what it means to venture and win in the middle of the energy transition. It is an industry which has become disproportionately large in relation to the size of the Netherlands and its Exclusive Economic Zone (EEZ) in the North Sea. Offshore companies have faced many dangers in the past half century to win offshore energy. Of course, monetary gain plays a role in this, but more is needed, as the director of an offshore company nicely put it:

‘Passion for the sea plays a very strong role. You must have a certain kind of madness.’

Rolf de Vries, CEO Bluestream Offshore in Den Helder (2020)

‘Diversity is and remains our strength.’

Henk Breman, CEO Breman Machinery (2020)

Table 2 Key Domains Within the Dutch Offshore Industry (1971-2021)

DOMAIN	ACTIVITY
Steel Companies ('Fabrication')	Producing topsides for platforms in the oil and gas industry
Installation	Installing and dismantling platforms/wind turbines
Pipe Laying	Laying pipes on the sea floor for transporting oil or gas
Subsea Rock Installation	Covering pipes on the sea floor with stone using stone dumpers or flexible fallpipe vessels
Drilling	Drilling wells for the oil and gas industry
Soil Survey	Exploration of seabed prior to drilling
Transportation	Transporting (heavy) offshore structures
Shipbuilding	Building ships for the offshore industry
Installation and Pipe-Laying Equipment	Developing and producing tools for laying pipes and installation activities
Floating Production, Storage and Offloading (FPSOs)	Building and operating/leasing floating production platforms for the production of oil and natural gas
Supply Vessels (suppliers)	Supplying drilling platforms with goods (and people)