



Your partner at sea

 **Navantia**



ABOUT US

Navantia is a Spanish state-owned company 100% owned by Sociedad Estatal de Participaciones Industriales (SEPI) and reporting to the Spanish Ministry of Finance and Public Administrations. It is a technology company that exports to over 20 countries and has more than 5,500 professionals



Navantia is the number one Spanish company in its field and a leading worldwide company that provides:

- Design and construction of hi-tech military and civil ships
- Design and construction of offshore wind-turbine and oil & gas structures
- Design and manufacturing of command, control, communications and computer (C4) systems
- Repairs, overhauls and conversions of military and civil ships
- Support to the lifecycle of its ships and systems
- Propulsion plants, including diesel engine, gearbox and steam turbine manufacturing

Navantia delivers competitively priced projects and supports national security programs working closely with the Spanish Ministry of Defence and with over 20 other countries such as Australia, Norway and Turkey.

In recent years, Navantia has been involved in a diversification process and is now a leading supplier in the offshore wind market, building fixed jacket structures, floating spars and electrical substations for offshore wind farms throughout Europe.

Navantia is firmly committed to the following key factors:

- Engineering and design capability which, together with its extensive experience, provides low risk solutions to clients.
- Lean management implemented in all processes and throughout the organisation, thus shortening delivery deadlines and improving productivity.
- Technology transfer and co-production programmes with different collaboration structures, where it has extensive experience.
- Significant investment in R&D&I and the development of new technologically advanced products.
- Providing support to the Spanish Navy, for whom Navantia has recently delivered the F-100 frigates, Juan Carlos I LHD, Meteoro Class OPVs, Cantabria Combat Support Ship, Galicia Class LPDs and Segura Class minehunters. This solid platform has enabled Navantia to provide proven solutions to other navies.
- The provision of comprehensive and customised solutions adapted to each client's needs (design, construction, systems, lifecycle support, overhauls, simulators and training programmes, etc.).

Navantia also stands out because of its significant export track record and active internationalisation policy. Its commercial activity is carried out in over 20 countries, with offices around the world and Navantia Australia Pty.

Corporate social responsibility forms part of Navantia's strategic policy. The company is committed to sustainability, quality, environmental respect, training, employee wellbeing and industrial improvement.



GEOGRAPHIC PRESENCE

Navantia has production centres strategically located in three geographic areas of Spain. Our centres are equipped with a wide range of docks and slipways, enabling the construction and repair of all ship sizes through innovative processes adapted to new market requirements



Ferrol estuary. Navantia has facilities in Fene and Ferrol, which build highly sophisticated state-of-the-art large military ships (frigates, aircraft carriers, amphibious and support ships) and repair all types of ships, especially LNGs. The Fene shipyard specialises in building structures (jackets and spars) for offshore wind farms. The turbine factory is also located on this estuary.



Cartagena. This shipyard has modern facilities for building small specialized military ships (minehunters and submarines), and repairing all medium to small ships, focusing especially on luxury yachts. The diesel factory is co-located in the bay and the systems centre specializing in integrated platform management systems.

Bay of Cádiz. Navantia has facilities in Cadiz, San Fernando and Puerto Real and a work centre in the Rota Naval Base. San Fernando specialises in offshore patrol vessels, fast patrol ships, and landing craft. Puerto Real has the largest dry dock in Spain where large commercial ships are built. Cadiz has infrastructure and equipment to perform repairs and conversions of large ships, especially cruise liners. Lastly, the San Fernando system centre develops C4 systems and manufactures naval guns.



AROUND

THE WORLD

Navantia has reinforced its position as a benchmark in military shipbuilding in the world and is a strategic asset of Spanish industry





In the last few years, Navantia has significantly broadened its presence in international programmes. Navantia's involvement in these programmes is preceded by the success achieved in the programmes with the Spanish Ministry of Defence. That successful relationship has enabled the company to commit to other countries' programmes with the guarantee of having sound well-proven products incorporating state-of-the-art technology, thus minimising risks related to systems engineering, design and construction processes.

Within its expansion and diversification policy, Navantia has reinforced its international presence by opening five commercial offices in Turkey, the Middle East, Latin America, India and Norway.

This internationalisation process was further reinforced in 2012 with the incorporation of Navantia Australia Pty Ltd. Navantia's productive relationship with the Australian Navy began with contracts to design the Hobart class Air Warfare Destroyers, design and co-manufacture the Canberra class Landing Helicopter Docks, build 12 landing craft and provide shipbuilding management services. The recent contract to build and maintain two Supply class Combat Support Ships strengthens this collaboration and provides a sound platform to support future Royal Australian Navy programmes. Navantia Australia provides through-life support for all its designs offering maximum operability and enhancements to meet future capability.

Navantia Australia currently has corporate offices in Sydney and Canberra, a naval engineering and design centre in Melbourne, provides platform system design and shipyard management services at the Osborne Naval Shipyard in South Australia and has through-life support centres at the Garden Island Defence Precinct in New South Wales. Of the approximate 130 employees, over 70% are Australian nationals and the remainder are expatriates.



OUR WORK

Navantia provides end-to-end solutions to its clients. From design and construction to lifecycle support, including the integration of its own systems



ENGINEERING CAPABILITY. Navantia counts on excellent in-house engineering capabilities which enable it to offer technological independence to its clients and provide a fast and flexible response.

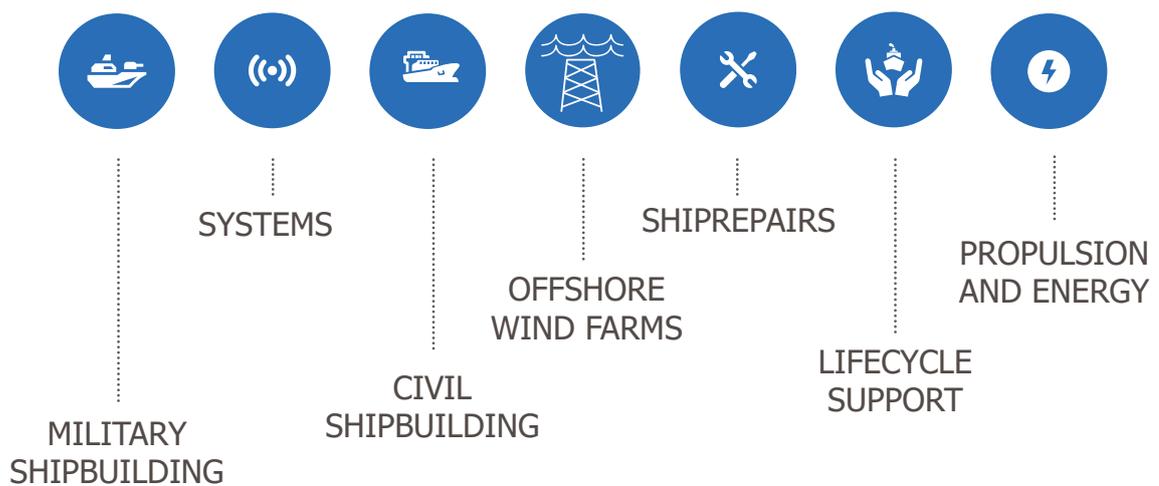
INNOVATION. Navantia nurtures R&D&I investments, anticipating the future by improving its current products with innovative solutions and investing in the development of new products to maintain leadership in the industry.

CLIENT FOCUS. Navantia stands out because it is a client-focused company that works closely with its clients to meet their most demanding requirements and adapt to their specific needs.

END-TO-END SOLUTIONS. Navantia provides end-to-end solutions that include not only platforms but also systems, training and lifecycle support; as well as the portfolio of consultancy services to shipyards, providing a customised solution and meeting all the needs of each client.

TECHNOLOGY TRANSFER. Navantia has extensive experience in international technology transfer programmes for complex projects, which allows it to minimise risks in an effective way.

SHIPYARD 4.0. Navantia is involved in a transformation process aimed at adapting to the new market environment. As part of the overall European strategy of the Industry 4.0 project, Navantia is working on Shipyard 4.0 with the technology and facilities that will enable it to take a leap in its industrial evolution, guaranteeing its competitiveness and continuing to provide high quality in its products. A new shipyard for the 21st century.



MILITARY SHIPBUILDING

Navantia has reinforced its position as a benchmark in military shipbuilding in the world. It works closely with its clients, adapting to their requirements and providing a comprehensive service to deliver fully operational ships: design, construction, systems integration, training and maintenance throughout the lifecycle





- F-100 frigates
- F-310 frigates
- AWD destroyers
- ALFA 3000 light frigates
- ALFA 4000 light frigates
- AVANTE combatants
- AVANTE multimission ships
- AVANTE patrol vessels
- AVANTE fast attack crafts
- Combat Support Ships/AOR
- LHD/aircraft carriers
- ATHLAS LPDs
- LCM landing crafts
- Minehunters
- Submarines

FRIGATES/DESTROYERS

The company is the leader in the international market providing well-proven products, state-of-the-art technology, thus minimising risks related to systems engineering, design and construction processes.

ALFA FAMILY OF LIGHT FRIGATES/CORVETTES

The light frigate and corvette line includes Navantia's know-how and experience in high performance military ships, with the versatility and flexibility of the AVANTE family. These ships have enormous versatility and combat capability; at the same time, they are designed for a broad spectrum of missions: support to operations involving special forces, patrol, and search and rescue operations.

AVANTE FAMILY

The AVANTE family provides a broad range of naval solutions covering a wide variety of missions, from coastal protection and surveillance, maritime traffic projections, healthcare assistance, pollution control, transport of troops and provisions, search and rescue operations, rapid interventions and diver support.

COMBAT SUPPORT SHIPS

Their mission includes providing supplies and operational logistics support to the fleet and logistics support to expedition forces on strategic projection missions and non-warlike operations, including humanitarian aid in natural disasters and pollution control.

ATHLAS FAMILY OF AMPHIBIOUS SHIPS

The ATHLAS family includes LPDs and LHDs able to meet the requirements of any navy. They are multi-purpose and can carry out air operation, amphibious, vehicle transport, loading and troops, and humanitarian aid missions.

LANDING CRAFTS

Their main mission is to transfer a landing force from LPDs and LHDs a shore quickly and safely.

MINEHUNTERS

These glass reinforced plastic ships include a number of features that give them very low acoustic and magnetic signatures and high shock resistance. Their manoeuvrability is excellent thanks to their Voith Schneider propellers and dynamic positioning system.

SUBMARINES

The company has extensive experience in transfer of technology (TOT) programmes and co-production with partners abroad, with which it has exported submarines to Chile, India and Malaysia.



SYSTEMS

Navantia Sistemas is the centre of excellence for the design, development and integration of complex high-technology C4 systems. It provides Navantia with the system expertise that differentiates our company from other conventional shipyards





COMBAT MANAGEMENT SYSTEMS

The company designs, develops and integrates combat management systems for the Spanish Navy ships (SCOMBA and CDS) and for the international market (CATIZ). The system is highly flexible and is scalable to meet the requirements of any size and type of ships. As Navantia is technologically independent of the OEMs this allows the integration of different weapons and sensors with the aim of providing end-to-end solutions to our clients.

INTEGRATED PLATFORM MANAGEMENT SYSTEM (IPMS)

Navantia's IPMS is designed to control and monitor all of the on-board systems and uses the in-house developed SIMPLEX/COMPLEX tools. The IPMS not only provides a high degree of automation with a resulting significant reduction in ship's crew work load, but also incorporates state-of-the-art features such as an integrated damage control system, stability calculation, personnel location, condition based maintenance and direct connection with shore-based maintenance support staff.

INTEGRATED COMMUNICATIONS SYSTEM (NAVCOMS)

Navantia's NAVCOMS is designs and supplies integrated internal and external communications systems, managed by the in-house HERMESYS integrated communications control system using state-of-the-art IP technology.

FIRE CONTROL SYSTEM (DORNA)

DORNA is a well-proven product developed and manufactured by Navantia to manage any guns from 7.62 mm to 125 mm.

NAVAL GUNS

The company has extensive experience in the manufacturing, overhaul and maintenance of guns with different calibres, working under licence with industrial agreements with the main OEMs in the industry, such as BAE Systems, Bofors, Oto Melara, and RAD.

PORT SURVEILLANCE AND SECURITY SYSTEM (SVAP)

Developed to provide surveillance and security to docks, coasts and offshore platforms in accordance with the International Ship and Port Facility Security (ISPS) code. It is an integrated modular system with a very low maintenance cost and can function under any weather conditions.

SURVEILLANCE EXPLORATION RECONNAISSANCE AND TARGETING SYSTEM (SERT)

This multi-purpose system, which can be adapted to any type of land vehicles, river craft or maritime vessel to perform surveillance, target detection and identification under different conditions. It is especially useful for advanced artillery observers, cavalry reconnaissance and border control and surveillance.

PORTABLE AIR DEFENCE SYSTEM (SKYDOR)

SKYDOR is used in conjunction with artillery and point defence missiles to protect strategic assets. It is transportable by road or air and can be easily and quickly deployed within minutes.

LIFECYCLE SUPPORT

Navantia Sistemas provides the guarantee and update of the functional features of all its products during their lifecycle to maximise their operability at the lowest cost.



CIVIL SHIPBUILDING

Navantia has extensive experience in civil shipbuilding and in the offshore market. In particular, it has delivered 20 complex units in the offshore sector, including 15 FPU's, three drill ships and one semi-submersible drilling rig, as well as one DP3 accommodation ship for 700 people





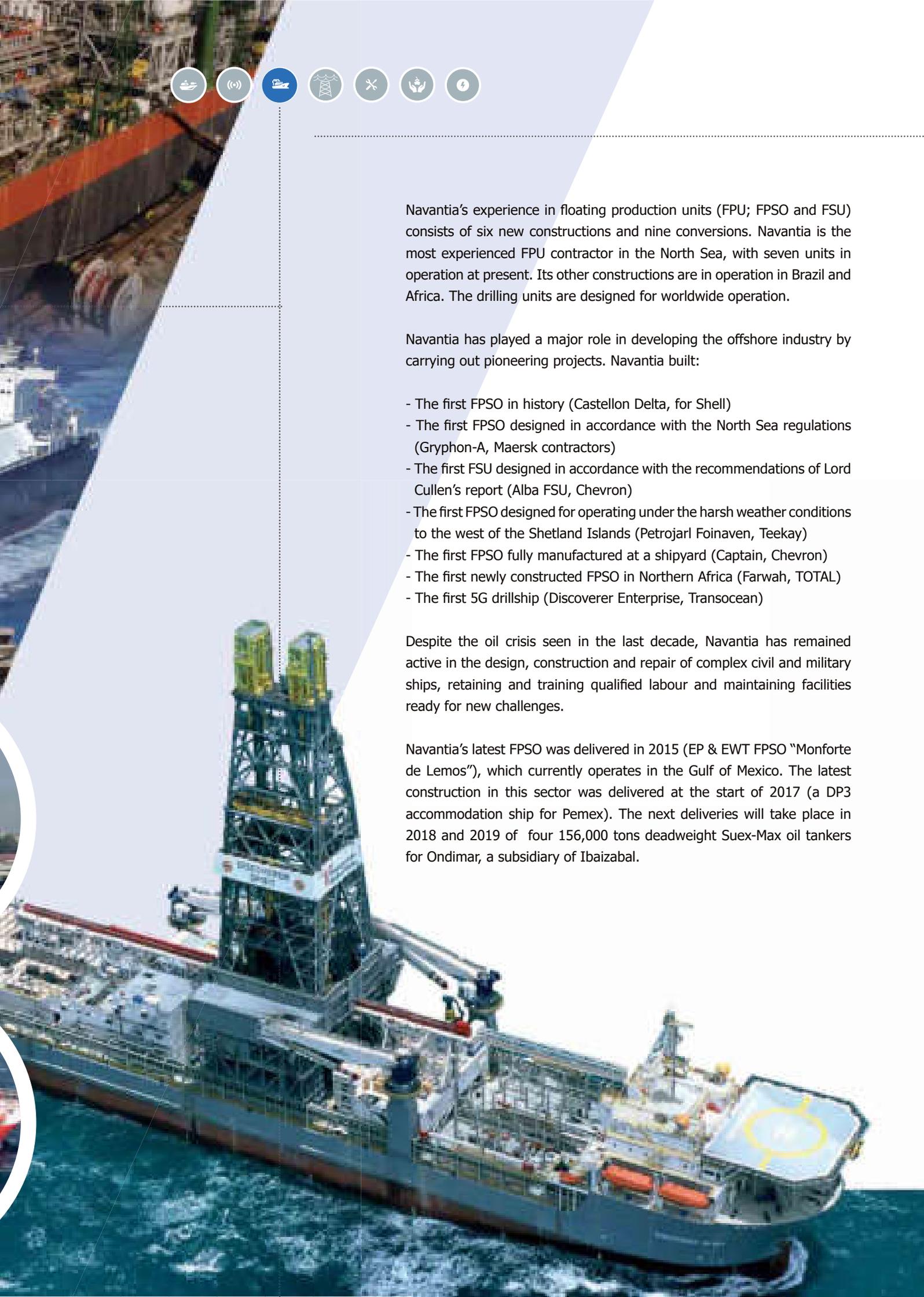
Navantia's experience in floating production units (FPU; FPSO and FSU) consists of six new constructions and nine conversions. Navantia is the most experienced FPU contractor in the North Sea, with seven units in operation at present. Its other constructions are in operation in Brazil and Africa. The drilling units are designed for worldwide operation.

Navantia has played a major role in developing the offshore industry by carrying out pioneering projects. Navantia built:

- The first FPSO in history (Castellon Delta, for Shell)
- The first FPSO designed in accordance with the North Sea regulations (Gryphon-A, Maersk contractors)
- The first FSU designed in accordance with the recommendations of Lord Cullen's report (Alba FSU, Chevron)
- The first FPSO designed for operating under the harsh weather conditions to the west of the Shetland Islands (Petrojarl Foinaven, Teekay)
- The first FPSO fully manufactured at a shipyard (Captain, Chevron)
- The first newly constructed FPSO in Northern Africa (Farwah, TOTAL)
- The first 5G drillship (Discoverer Enterprise, Transocean)

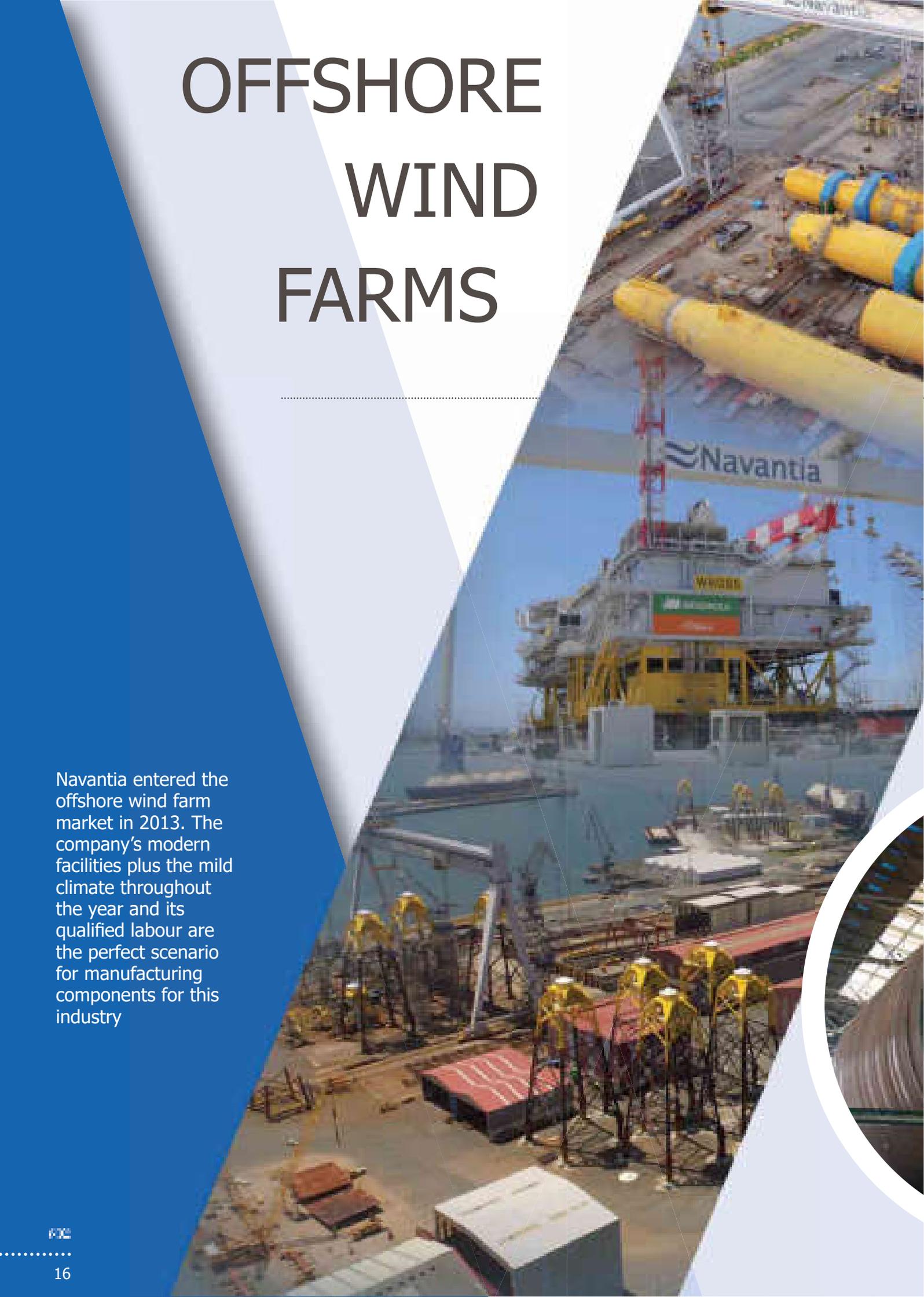
Despite the oil crisis seen in the last decade, Navantia has remained active in the design, construction and repair of complex civil and military ships, retaining and training qualified labour and maintaining facilities ready for new challenges.

Navantia's latest FPSO was delivered in 2015 (EP & EWT FPSO "Monforte de Lemos"), which currently operates in the Gulf of Mexico. The latest construction in this sector was delivered at the start of 2017 (a DP3 accommodation ship for Pemex). The next deliveries will take place in 2018 and 2019 of four 156,000 tons deadweight Suex-Max oil tankers for Ondimar, a subsidiary of Ibaizabal.



OFFSHORE WIND FARMS

Navantia entered the offshore wind farm market in 2013. The company's modern facilities plus the mild climate throughout the year and its qualified labour are the perfect scenario for manufacturing components for this industry





Navantia's products include fixed and floating foundations for this industry, as well as offshore wind farm substations.

In a short period of time, Navantia has reinforced its position in this industry by using two of its shipyards: Fene in north-western Spain and Puerto Real in southern Spain. Those shipyards are among the largest and best equipped in Europe.

Navantia's gantry cranes have a lifting capacity of 1,200 tons and hook heights of up to 85 metres and they can assemble large industrial structures and modules. Moreover, the two shipyards can store up to 100 completed jackets among them, simplifying our clients' logistics needs.

Navantia can realistically manufacture two jackets per week, one at each work centre (Fene and Puerto Real), and simultaneously manufacture several offshore substations.

CONSTRUCTION OF SUBSTATIONS

In 2016, Navantia manufactured the industrial modules for the 400 MW substation for the Wikingier farm (Iberdrola), each weighing 2,500 tons. The project also included building the substation's jacket, whose six legs weighed 2,400 tons. As continuation of that work, Navantia is constructing the substation for the East Anglia One project (Scottish Power), which will be delivered in 2018.

FIXED FOUNDATIONS: JACKET

Navantia has also built 29 jackets and their piles for the Wikingier project (Iberdrola). It also built 42 jackets for the East Anglia project (Scottish Power) and 4 jackets for Nissum Bredning (Siemens).

FLOATING FOUNDATIONS

Navantia has also built five floating spars for Statoil's Hywind project, which will be delivered in 2017.



SHIPREPAIRS

LNG's



Cruise Ships



Mega - Yachts



Navantia repairs any type of civil and military ships at its shipyards located on strategic shipping routes both in the Atlantic Ocean and Mediterranean Sea



CADIZ BAY

DOCKS

LENGTH X BEAM. DWT CAPACITY

386 x 66 M	400,000 DWT
237 x 34 M	60,000 DWT
246 x 41 M (FLOAT.)	120,000 DWT
147 x 23 M	12,000 DWT
130 x 14 M	5,500 DWT
73 x 14 M	1,800 DWT
58 x 9 M	750 DWT

CRANES

UP TO 100 TONS

QUAYS

3 km. DEPTH: 7 TO 9 m

CARTAGENA

SYNCHROLIFT

LENGTH X BEAM X DEPTH

150 x 20.5 x 7.5 M
5,000 T; 62 T/M MAXIMUM

10 PARKING AREAS

DRY DOCKS

LENGTH X BEAM X DEPTH.

DWT CAPACITY

214 x 20.5 x 7.5 M 35,000 DWT

CRANES

TONS

UNITS

<7 T3

<25 T2

UP TO 30 T2

QUAYS

1,300 M. MAX. DEPTH: 7.5 M

FERROL ESTUARY

DOCKS

LENGTH X BEAM. DWT CAPACITY

330 x 50 M230,000 DWT

255 x 38 M 80,000 DWT

205 x 25 M 25,000 DWT

155 x 24 M 20,000 DWT

CRANES

UP TO 100 TONS

QUAYS

2.5 km. DEPTH: 7 TO 12 m

It has three repair centres near those major shipping routes:

- Ferrol estuary (north-east Atlantic)
- Cartagena (western Mediterranean)
- Bay of Cadiz (near the Straits of Gibraltar)

The shipyards are located in areas with an exceptional climate where the work can be performed 365 days of the year and in well-connected cities where the crew can enjoy itself during the repair period.

Navantia's production units have large modern facilities and repair around 200 civil and military ships of all types every year (including LNG ships, oil tankers, cruise liners, yachts, and all types of warships from aircraft carriers to patrol boats).

Navantia's repair centres have twelve dry docks with capacity for VLCCs; a floating dock; cranes with a lifting capacity of over 200 tons; 7,000 metres of mooring quay; a synchro lift with capacity to simultaneously repair twelve ships; and specialised workshops.

The repair area has 600 highly qualified workers as well as support from ancillary industries since Navantia is competitive in high-quality work and delivery schedules.

The service quality provided by this business area is endorsed by the international certifications of its quality, safety and environmental systems: ISO 9001:2008, OHSAS 1800, MARPOL, UNE ISO AQAP/PECAL 2110, ISO 14001 and ISPS.

PRODUCTS

Navantia Reparaciones has the capacity to carry out highly qualified and technically complex work such as ship conversions, ship modernisations, and any types of repairs.

Apart from general overhauls, Navantia is also a leader in specific areas such as:

- Repairs of liquefied natural gas (LNG) carriers
- Repairs and modernisation of cruise liners
- Repairs and modernisation of mega yachts

LIFECYCLE SUPPORT

Navantia provides end-to-end solutions to its clients which include the design, development, production and lifecycle support of ships and complex systems from the moment that they are conceived until the end of their operational life



1
ILS
MANAGEMENT

2
ENGINEERING
SERVICES

3
TECHNOLOGICAL
REFRESHMENT

4
MAINTENANCE
SERVICES

5
SUPPLY
CHAIN

6
TRAINING AND
SIMULATION

Navantia is a leading company in lifecycle support services, with proven technical capacity and extensive experience in carrying out work for the most modern navies around the world.

Its wide service portfolio enables it to deliver solutions for complex projects with the necessary flexibility to meet the clients' requirements and sustainability concept, and provides long-term trustworthy relations. Navantia's technical and engineering capacity, together with its proven experience in complex projects, are the main cornerstones for delivering results to clients.

The priority is to provide effective and efficient solutions which maximise the value delivered to clients and maximise the availability and operability of the navies' ships throughout their operational life, including the continuous modernisation of capacities, features and techniques to support the most demanding navy forces throughout the useful life of the ships and units.

Navantia is your partner at sea. Since it knows that ships' operations cannot be improvised, it tries to conceive, together with the clients and from the initial design phases, the best solution considering the asset's complete lifecycle. Based on the premise of "designing to maintain and maintaining the design", the lifecycle support services go from a comprehensive maintenance solution to on-site technical assistance with the aim of providing the closest client support.

The lifecycle support services include all the company's product range: surface ships, submarines, and systems and equipment designed by Navantia.

The lifecycle support catalogue includes:

- **Maintenance services** (corrective, preventive and predictive), updates and **modernisations**.
- **Training and simulation services** for ships and maintenance of naval bases.
- **Supply chain management** in the increasingly complex global scenarios.
- **Comprehensive management** of the lifecycle support services through performance-based logistics (PBL) contracts.
- **Engineering and lifecycle support**. This includes design responsibility, obsolescence management, technological refreshment, logistics engineering, configuration management, maintenance, software, etc.
- **Software tools** for lifecycle support.

Navantia-ACV wants to accompany its partners and clients throughout the service phase of its units, creating a collaborating and transparent relationship which achieves 100% of the ships' capacity.



PROPULSION AND ENERGY

Navantia provides its clients, through its propulsion and energy units, the manufacturing and supply of diesel engines and generators, steam turbines, gearboxes, shaft lines and other ancillary equipment





MAIN PROGRAMMES

-  F-100 frigates
-  Scorpene submarines
-  Galicia Class LPDs
-  Juan Carlos I LHD
-  Cantabria AOR
-  F-310 frigates
-  S-80 submarines
-  Meteoro Class OPVs
-  Guaiquerí Class OPVs
-  Guaicamacuto BVL
-  Canberra Class ALHDs
-  Hobart Class AWDs
-  Australian AORs
-  TCG Anadolu LPD

Navantia Motores designs and manufactures diesel engines and generators for all types of ships and army propulsion engines. It also provides technical support to the maintenance and comprehensive lifecycle of the engines, and has licences and technological cooperation agreements with MTU Friedrichshafen, MAN Diesel and Caterpillar Inc.

Navantia Motores guarantees the operational reliability and profitability of all kinds of facilities with diesel engines, both in naval and land applications, providing: technical support, preventive maintenance, corrective maintenance, real-time diagnosis, on-call service, supply of parts and kits, quick-action flying units, equipment optimisation, and operation and maintenance personnel training.

Navantia Turbinas, with a roofed area of 60,000 m² and highly qualified staff who can deal with any type of project, focuses its manufacturing activity on the following product lines:

- Manufacturing, assembly and maintenance of the propulsion equipment for ships: gearboxes, rudders, shaft lines, torpedo tubes, coolers for combat systems, etc.
- Manufacturing, assembly and maintenance of equipment for power plants: steam turbines for thermal and nuclear plants, combined cycle facilities, cogeneration, biomass and other applications.
- After-sales service (24h/day anywhere in the world): on-site mechanisation and balancing of rotors, technical assistance, complete operation and maintenance service, parts supply, equipment optimisation and training of operation and maintenance staff.



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Osborne Naval Shipyard**

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**Navantia Australia - LHD
Through Life Support
Team**

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Cowper Street Wharf
Woolloomooloo NSW 2011

**Navantia Australia - AOR
Through Life Support
Team**

Building 94
Garden Island Naval Precinct
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Woolloomooloo NSW 2011

**Navantia Australia - DDG
Through Life Support
Team**

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