



Rolls-Royce

Designing a new level  
of performance



design and ship technology

# Setting standard for future ship design

A well-designed ship is a result of collaboration, experience, innovation and state-of-the-art equipment. Founded on core values of reliability, integrity and innovation, Rolls-Royce designs ships as well as major systems on board. This unique concept of integration assures you performance second to none.

Rolls-Royce offers a range of ship designs comprising offshore service vessels, coastguard vessels, fishing vessels and a wide range of merchant vessels. The Rolls-Royce design type UT for offshore operations, launched in the mid 1970s, has become the world-leading design range for offshore service vessels. Today's expanding markets in the subsea sector has resulted in vessel designs for rougher seas and equipment for deeper operations.

Furthermore, the Rolls-Royce design type NVC has been acclaimed in the fishing and merchant shipping sectors, maximising continuous profitability for owners and operators. Merchant vessels operating today in Emission Control Areas have to meet new standards for reducing environmental impact whilst increasing efficiency. Our new design concept for merchant vessels is a transformational development for merchant shipping, offering significant reductions in fuel consumption and emissions, as well as enhanced performance at sea.

Our products strike a harmonious balance between performance and ownership costs – all backed by a truly international customer support network assuring lifetime support and low life-cycle costs.



The Rolls-Royce designs, types UT and NVC, are tested in model tanks to maximise speed and sea-keeping according to the clients' requirements.

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## Experience and advanced technology



Design principles

Rolls-Royce designed vessels, types UT and NVC, are in operation all over the world – under the toughest conditions known to man. Working closely with operators and crew members on these vessels has yielded invaluable feedback. These experiences form a vital base of knowledge, which enables our designers to develop optimal vessels.

Hydrodynamics is at the very heart of the Rolls-Royce ship design. The analyses and test results include all components vital to the hydrodynamic characteristics of a vessel, such as the manoeuvring, stabilisation and propulsion systems, as well as the hull form. Understanding and solving hydrodynamic challenges

constitute key technology areas for future innovations within ship design. We use advanced calculation programs and tank tests to estimate and verify ship motion in different sea conditions. Many of our new designs have a wave piercing bow design that will enable the vessel to cut through waves in extreme weather conditions, while maintaining constant speed, reducing fuel consumption and enhancing safety and crew comfort.

Rolls-Royce designs, types UT and NVC, have won wide acclaim for their sea worthiness, innovative arrangements and cost efficiency. For instance, the first ever type UT vessel built in the mid 1970s is still operating safely and at a profit for

its owners. In addition to this, our naval architects were involved in the design of a majority of the offshore vessels in the North Sea fleet.

Rolls-Royce is also a major supplier of ship equipment. Our approach to integration enables delivery of complete system solutions – from concept and feasibility studies to ship design, equipment selection, procurement, systems engineering and integration.

## Optimised for the mission and the environment

Our primary objective is to create a vessel in perfect harmony with the elements in which it will operate. To achieve this, we keep a strong focus on the overall economy, reliability, safety, and environmentally sound designs. Each of these factors is vital to developing profitable ship design for the operator.

Our pool of in-house expertise in all design disciplines, and a vast range of ship equipment, makes us exceptionally skilled in balancing all these crucial factors to create an optimised vessel. Despite the complex combinations of optimal hull form, minimum ship motion, safe operation, tailored ship equipment and system solutions, Rolls-Royce designs simple and highly functional solutions. A proven major benefit for shipyards and operators.

New regulations and operational requirements ensure a constant development of vessel designs and equipment. Rolls-Royce



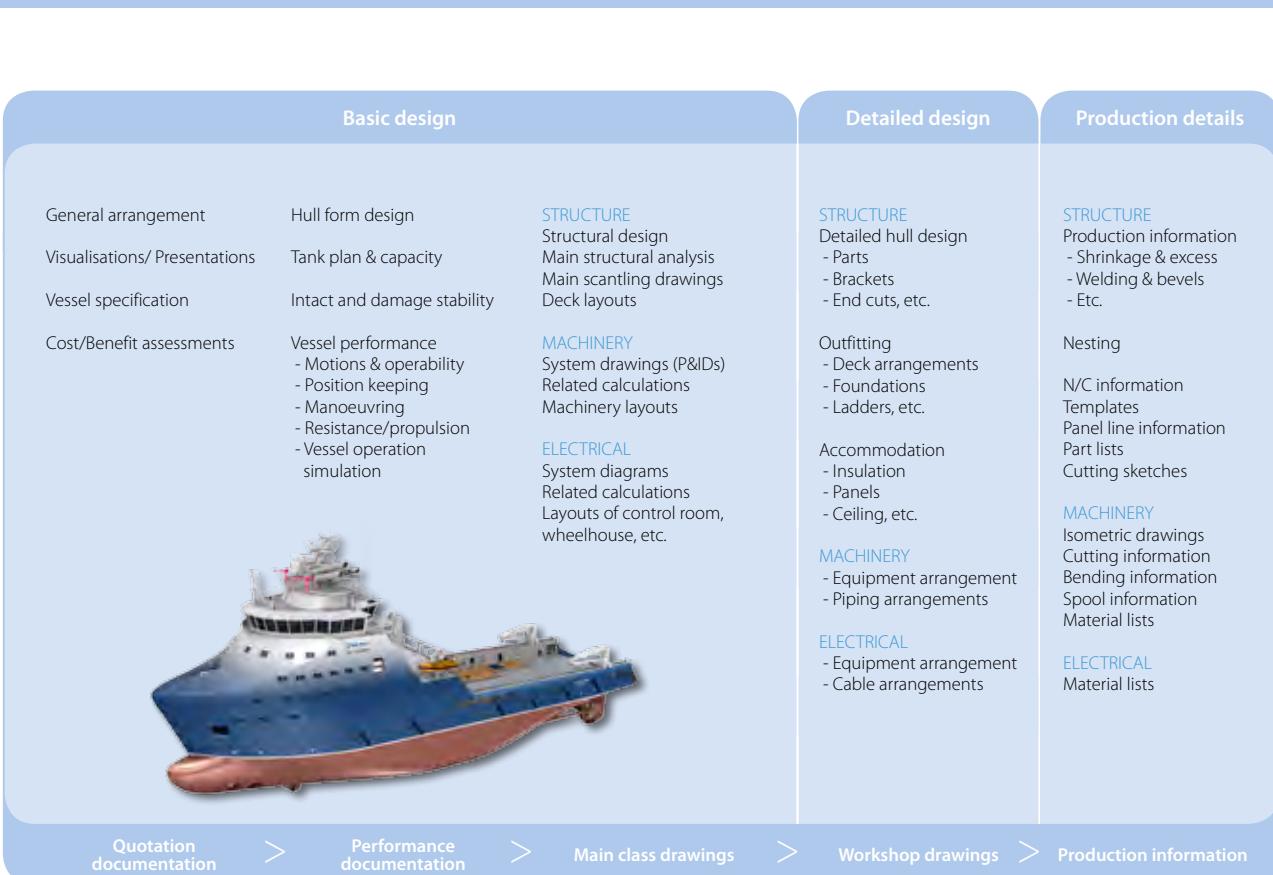
is already a major player in marine gas engines, efficient propulsors and advanced deck machinery, ensuring an optimum solution for any operation. Our solutions are based on the latest technology and close customer cooperation throughout all projects. The result is proven reliability and profitability for your operation.

But, first and foremost, decades of experience has taught us to avoid compromising requirements specified by the shipowners, shipyards, operators and crew. Our success is not worth much unless all parties involved are comfortable with the result. For us, the best reference is that customers keep coming back.



Rolls-Royce designs simple solutions for complex offshore, merchant and fishing vessels with high functionality – a well-proven major benefit for shipyards and marine operators.

## The design process



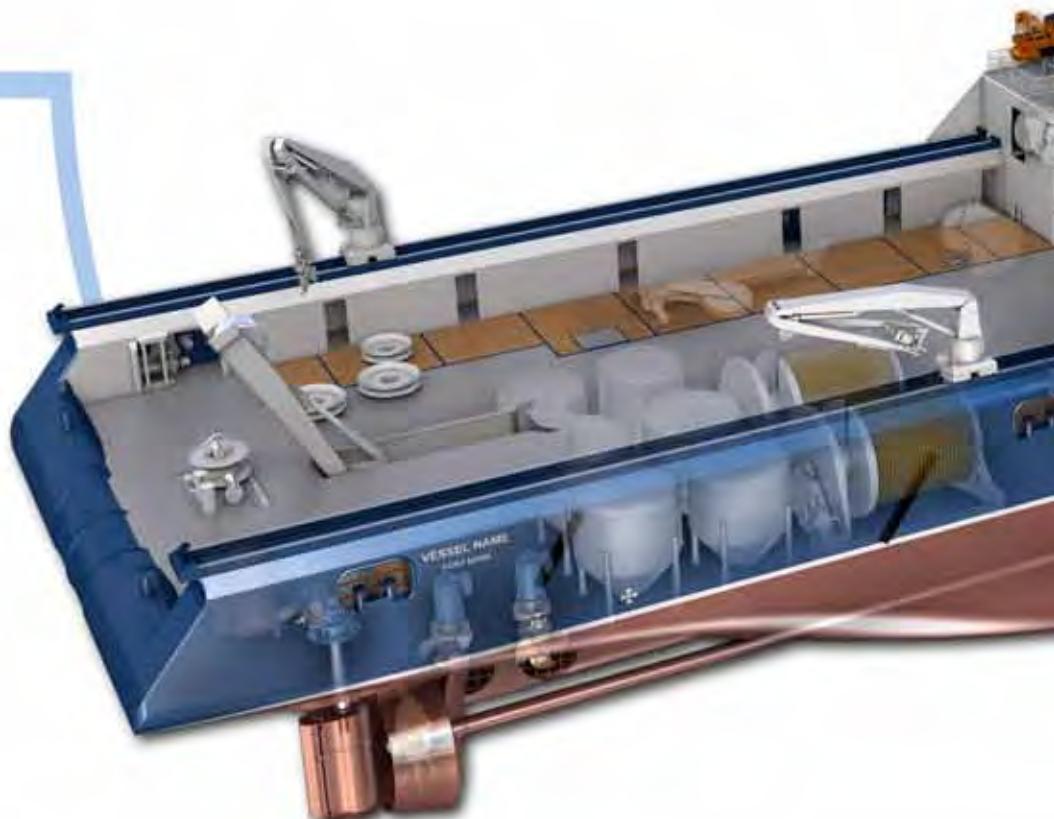
Rolls-Royce is able to provide a well-founded structure for ship design. We have the skills to deliver a basic design, including the main class drawings, and follow a project all the way to the yard with detailed drawings for production. We can also assign engineers to the shipyard to ensure knowledge transfer and thus cut construction costs. Choosing a Rolls-Royce design will result in lower costs for customers in all project phases.

All ships are individually designed for their tasks, based on operational demands, classification requirements and overall vessel performance. Close cooperation from the start of a project ensures that consideration is given to all aspects and that the clients' valuable experience becomes a vital part in the work on a vessel's design. A vessel designed by Rolls-Royce means that customers can benefit from customised tank solutions, deck design, cargo

facilities, comfort on board and superbly low levels of noise and vibration.

Rolls-Royce supplies optimal solutions in terms of ship design and equipment on board – which are synonymous with maximum performance and ultimate reliability.

## System solutions for offshore vessels



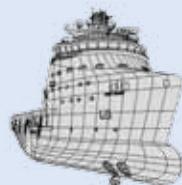
A vessel designed by Rolls-Royce is far more than just a hull design. It is a turnkey vessel with all major systems fully integrated – comprising well-proven products optimised to the individual ship and its specific operation.

As offshore oil and gas field activities take place in increasingly deep water,

with the emphasis on subsea work, the challenges grow. The vessels and applications become more complex and need specialised systems to perform more demanding tasks in harsh weather conditions. Rolls-Royce has the insight and technology to provide you with cutting-edge system solutions and equipment for propulsion, dynamic

position and automated deck operations, that will make a difference to your offshore operation.

Safer deck operation systems have been continuously developed in close cooperation with owners and operators, and are optimised for extreme working conditions to meet strict regulations.



**Design and  
ship systems**



**Cranes**  
• Cargo rail cranes  
• Heavy lift cranes



**Launch and recovery  
systems**



**Propulsion  
systems**  
• CP/FP propellers  
• Reduction gears  
• Diesel and gas engines



**Manoeuvring  
systems**  
• Steering gear  
• Rudders



Today, our winches and launch and recovery systems set the standard in the offshore sector. Deep-water anchor-handling requires powerful winches and our low-pressure high-torque driven winches are legendary worldwide for their operational properties and longevity. Rolls-Royce also designs deck machinery with heave compensated solutions with

fibre rope for ultra-deep water operations. Reliable and accurate manoeuvring is essential for the performance of precision offshore tasks. Rolls-Royce is the world's leading designer and manufacturer of propulsion and thruster systems, providing optimal thrust and efficiency for dynamic positioning, manoeuvring and propulsion.

It is our continuing goal to maximise the value, efficiency and safety of our customers' operations through development of technically advanced products, integrated into complete systems and supported by a comprehensive global service network.



#### Thruster systems

- Azimuth thrusters
- Tunnel thrusters



#### Power electric systems



#### Deck machinery

- Tow and anchor handling winches
- Anchoring and mooring winches



#### Safer deck operation systems

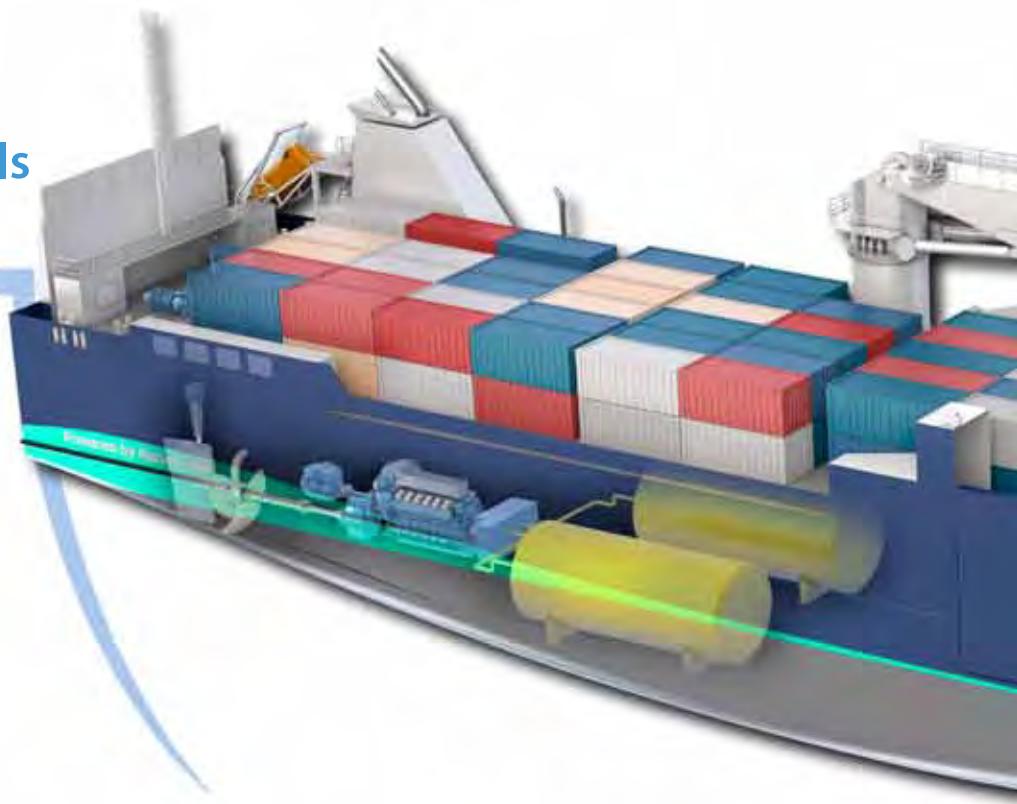
- Anchor handling
- Cargo handling



#### Automation systems and control

- Monitoring and control
- Bridge controls
- Switchboards
- Consoles

## System solutions for merchant vessels



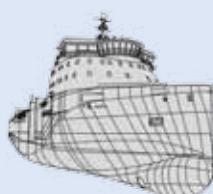
In addition to designs for merchant vessels, Rolls-Royce meets the growing requirements for fully integrated systems with innovative and competitive solutions that deliver low life-cycle cost and less environmental impact. We provide a wide range of equipment, comprising engines, reduction gears, propellers, rudders, steering gear,

stabilisers, thrusters and deck machinery, seamlessly integrated with our automation and control and power electric systems.

As many merchant vessels operate in Emission Control Areas, exhaust emissions are of prime importance. The pressure is high to optimise performance

and minimise the power requirement in actual sea states. Rolls-Royce has designed a new bow form which gives significantly better performance in a seaway, minimised speed loss, reduced impact and, therefore, less risk of hull plate deformation in the forebody in high seas.

An effective way of cutting exhaust



**Design and ship systems**



**Thruster systems**

- Azimuth thrusters
- Tunnel thrusters



**Propulsion systems**

- CP/FP propellers
- Reduction gears
- Diesel and gas engines



**Manoeuvring systems**

- Steering gear
- Rudders



**Waterjet propulsion**



emissions is to switch to LNG fuel and a number of Rolls-Royce designs, ranging from ferries to coastal and short sea vessels are already in service meeting future IMO requirements for both NOx and SOx emissions with our gas engines. Our Promas propulsion system features a CP propeller integrated into the rudder with a hubcap and bulb to increase

the propulsive efficiency, reducing fuel consumption and therefore emissions. Due to the excellent low load, variable speed performance of the Rolls-Royce gas engines and cutting-edge technology, such as the hybrid shaft generator system, efficient operation is possible without compromising functionality over the vessel's entire operating profile. As a

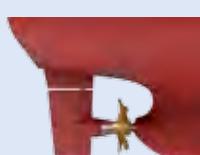
dedicated system integrator, Rolls-Royce ensures all proprietary equipment functions coherently and safely.

Our solutions are based on the latest technology and close customer cooperation throughout all projects. In addition, you can benefit from our Global Support Network, located worldwide.



**Deck machinery**

- Anchor and mooring winches

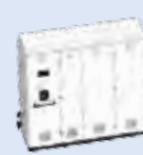


**Promas**



**Stabilisers**

- Folding fin stabilisers
- Non-retractable stabilisers



**Power electric systems**



**Automation systems and control**

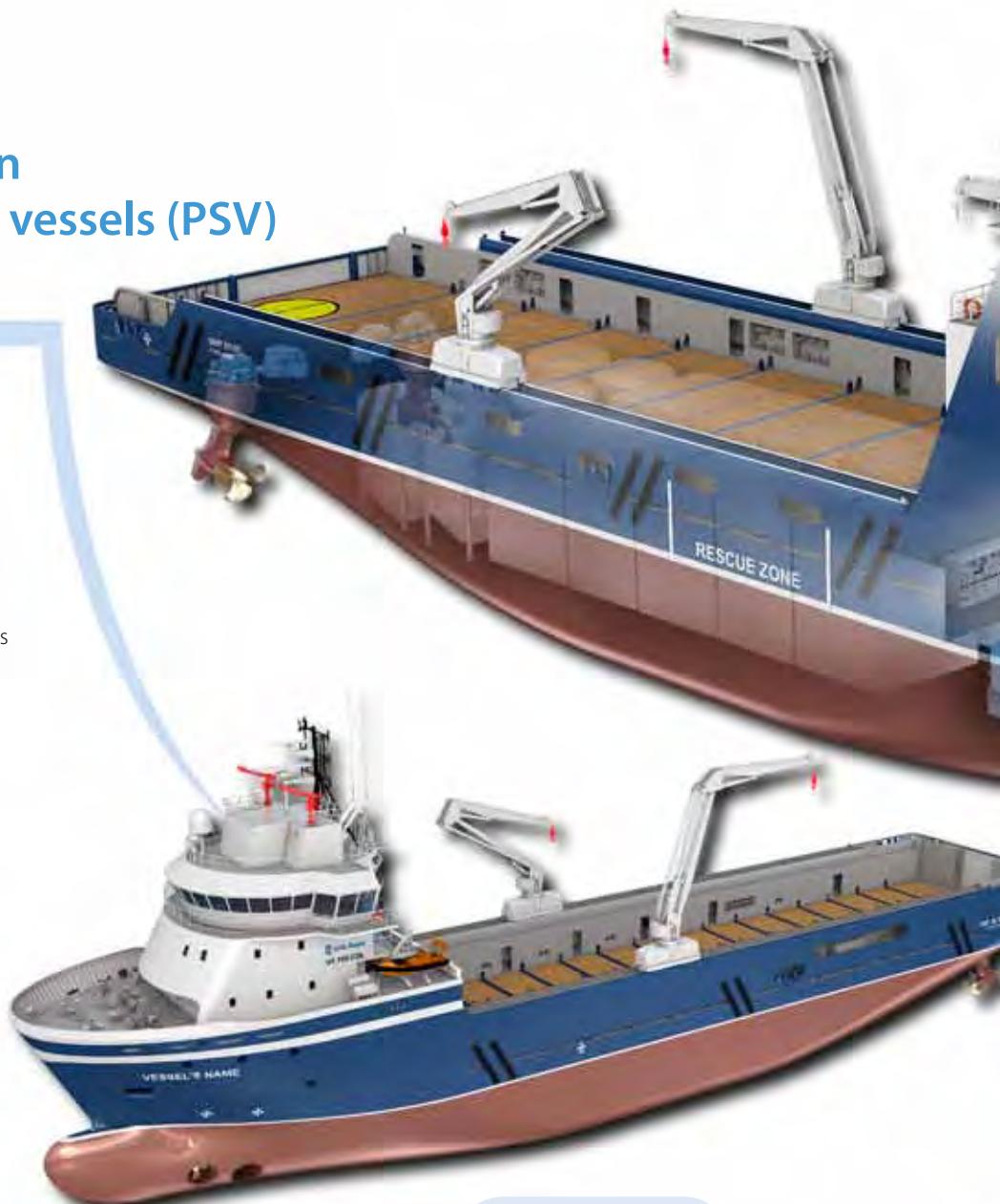
- Monitoring and control
  - Bridge controls
  - Consoles

## Rolls-Royce design – platform supply vessels (PSV)

The UT 700-series is recognised as a worldwide benchmark within the offshore industry. So far, more than 700 UT-vessels have been built or are under construction around the world.

The UT range of platform supply vessels provides excellent motion characteristics and optimised operational costs versus cargo capacity. These also enhance supply capacity on a modest draught. Furthermore, the design is construction-friendly.

Rolls-Royce offers a broad range of PSVs, from small vessels with the most up-to-date features to larger complex vessels. A typical operation for a platform supply vessel is the transport of pipes, cement, liquid and cargo to and from mainland and offshore installations. These vessels can also double up as rescue and stand-by vessels etc.



### ▲ PSV

UT 755 CD is a medium-sized platform supply vessel with a deck area of approx. 650 sq.m. The UT 755 is one of the most popular PSVs ever constructed, and more than 200 vessels of this model have been built or are under construction. It has become the reference to the industry when it comes to efficient and optimised vessels for offshore service duties. The CD version is delivered with a diesel electric machinery system and azipull or US thrusters, or as a diesel mechanic version with conventional shaftlines.

### The UT 755 CD is designed with the following capabilities:

- Pipe carrier
- DP 2 service
- ROV service
- Subsea service
- Safety/Rescue services
- Fire-fighting (FIFI)
- Oil recovery services
- Safer deck operations
- Cargo rail cranes

### Some references:





▼ **PSV**

UT 771 WP is a medium-sized platform supply vessel which undertakes supply duties between land bases and offshore installations. The model is specially designed for medium to long passages between its destinations, and has an optimised hull form that delivers excellent sea-keeping, high

speed under rough weather conditions and large cargo capacities. The model is designed for diesel electric medium or high speed machinery and azipull propulsion system. The cargo deck area of 800 sq.m is well protected and has a deckload of 10 t/sq.m.



◀ **PSV**

UT 776 WP is a large platform supply vessel which undertakes supply duties between land bases and offshore installations. The UT 776 WP is an optimised construction based on the very successful UT 776 CD/CDG. The PSV has excellent sea-keeping performance, optimised speed and manoeuvrability and excellent DP 2 capabilities. The vessel is specially designed for services to installations in deep waters far from the land bases. The hull form has a proven track record as the most fuel-efficient PSV in the market. The model can also be delivered with lean burn gas engines. The cargo deck area of over 1 000 sq.m is prepared for utilisation of the ASFA system for automated fastening of cargo. The propulsion system is based on a diesel/gas electric generating system with azipull propulsion system.

**The UT 776 WP is designed with the following capabilities:**

- Pipe carrier
- DP 2 service
- ROV service
- Subsea service (prepared for moonpool)
- Safety/rescue services
- Fire-fighting (Fifi)
- Oil recovery services
- Medium or high speed diesel engines
- Lean burn gas engines
- Safer deck operations
- Cargo rail cranes

**The UT 771 WP is designed with the following capabilities:**

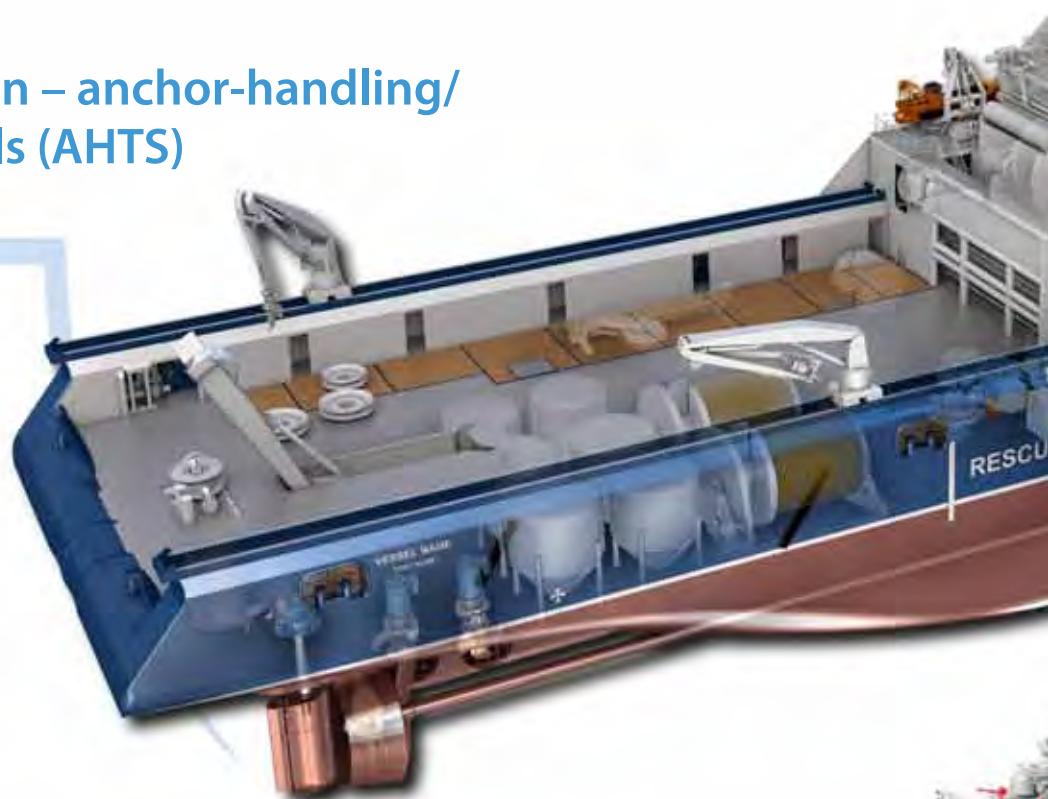
- Pipe carrier
- DP 2 service
- ROV service
- Safety/Rescue services
- Fire-fighting (Fifi)
- Oil recovery services
- Medium or high speed diesel engines
- Safer deck operations
- Cargo rail cranes



## Rolls-Royce design – anchor-handling/tug/supply vessels (AHTS)

Our first designs for AHTS-vessels were based on the acclaimed UT 704 model. This design formed a standard for offshore support vessels when first launched in 1974. Our designs have been under constant development since then, and today more than 200 AHTS of Rolls-Royce design type UT have been built for operations worldwide.

The design for AHTS-vessels range from small and compact vessels to large and powerful ships. They can be fitted with the world's largest winches from Rolls-Royce, providing tremendous pull capacity. In-house production of winches and control systems means complete integration between a vessel's design and equipment for our customers, resulting in highly functional and advanced solutions. Even if the AHTS-vessels are customised for anchor-handling and towing, they can also undertake, for example, ROV services, safety/rescue services and supply duties between mainland and offshore installations.



### ▼ AHTS

UT 759 ICE is an innovative new icebreaking anchor-handler/tug, constructed for demanding operations in arctic environments without additional assistance (Polar 15). The vessel is capable of breaking ice up to 1,5 m at a speed of 4 knots, and are constructed for icemilling and support to oilrigs and shuttle tankers operating in arctic oilfields.

### The UT 759 ICE is designed with the following capabilities:

- Hybrid main engines configuration
- DP 2 capabilities during ice operation
- Accommodation for 55 persons
- Anchor-handling in ice (bollard pull of 250 tonnes)
- Large bulk and cargo capacities for remote operations
- ROV operations through moonpool
- Special towing capabilities in ice



### Some references:





**The UT 730 WP is designed with the following capabilities:**

- Bollard pull of 210 – 250 tonnes
- Anchor-handling and tug duties
- Traditional supply duties
- ROV operations

**AHTS**

UT 790 WP is a large anchor-handler tug supply vessel, constructed for bollard pulls above 250 tonnes. The model is specially designed for demanding anchor-handling operations in deep waters with special attention to stability during operations. The power distribution is based on the popular hybrid system, assuring a cost-efficient operational mode during all kinds of operations. The vessel has either a conventional twin shaftline solution with CP propellers in nozzles or a single propeller in a nozzle and two azimuths for additional manoeuvrability during towing operations. The UT 790 WP is a flexible platform for offshore service operations and can also be equipped with A-frame or a large heave compensated lifting crane.

**The UT 790 WP is designed with the following capabilities:**

- Anchor-handling tug (bollard pull above 250 tonnes)
- ROV services
- Subsea services
- Supply services
- Safety/rescue services
- FiFi operation
- Oil recovery
- Heave compensated lifting crane or A-frame



**AHTS**

UT 730 WP is designed for the new and demanding rules and regulations for safe anchor-handling operations with enhanced focus on operability and stability. The vessel is constructed with a hybrid engine/propulsion configuration to secure low emissions and fuel-efficient operations during all conditions. The vessel has increased winch capacity and state-of-the-art handling operability.

**AHTS**

UT 712 CD is a medium-sized anchor-handling tug supply vessel with a bollard pull of 160 – 220 tonnes, depending on engine and propulsion configuration. The vessel is specially designed for duties on medium to deep water fields and, in addition to anchor-handling and tug duties. The vessel is also capable of operating in traditional supply duties.

**The UT 712 CD is designed with the following capabilities:**

- 2 or 4 main engines (bollard pull of 160 – 220 tonnes)
- Anchor-handling and tug services
- Large winch capacity
- Safety/rescue services
- Supply services
- Oil recovery



## Rolls-Royce design – multipurpose service vessels (MPSV)

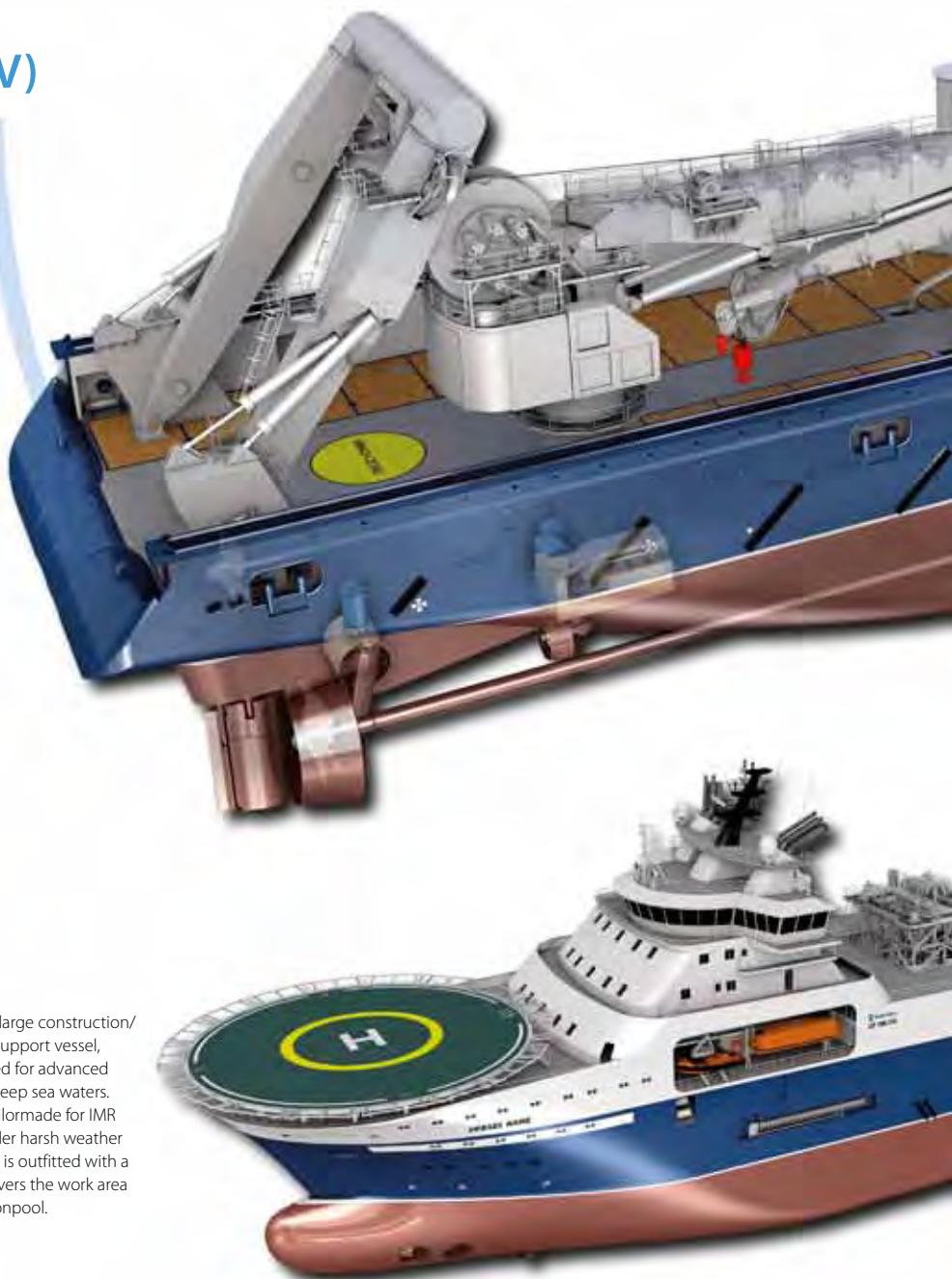
The UT range of multipurpose service vessels is a stable platform for challenging offshore operations and provides excellent dynamic positioning capabilities. A vast range of built-in functions allows customers to meet changing markets without expensive re-builds. The vessels comply with all environmental standards and are construction-friendly in spite of their complexity. MPSVs can be customised to carry out subsea support. The vessels can also undertake well intervention, ROV operations, construction, flexible pipe-laying, cable-handling and normal supply functions.

**The UT 789 CD is  
designed with the  
following capabilities:**

- IMR duties (inspection, maintenance, repair)
- Subsea construction/installation work
- ROV operations
- Trenching

► **MPSV**

UT 789 CD is a large construction/multipurpose support vessel, mainly designed for advanced operations in deep sea waters. The vessel is tailor-made for IMR operations under harsh weather conditions and is outfitted with a hangar that covers the work area above the moonpool.



**Some references:**





◀ MPSV

UT 788 CD is a large multipurpose subsea construction and anchor-handling vessel. The combined diesel mechanic/diesel electric machinery (hybrid) secures a flexible and fuel-efficient operation for the vessel. The vessel is prepared for installation of A-frame or heave compensated offshore crane and can be delivered with a moonpool.

**The UT 788 CD is designed with the following capabilities:**

- Bollard pull of 300 + tonnes
- Anchor handling and tug duties
- Subsea construction/installation work
- ROV operations



▲ MPSV

UT 767 CD is a multipurpose subsea service and support vessel. The diesel electric machinery and the azimuth propulsion system gives excellent manoeuvrability and handling in DP operations. The vessel is designed for DP 3 capabilities, two moonpools, large accommodation, classed under the NPD rules for installations and tailor made for well intervention services.

**The UT 767 CD is designed with the following capabilities:**

- ROV operations
- Subsea construction/installation work (two moonpools)
- Module handling rig
- Subsea well intervention
- Diving support
- Construction



## Rolls-Royce design – other specialised vessels

The UT range also includes other specialised vessels such as seismic, research, cable-laying, emergency response, rescue, well stimulation, well intervention, smaller FPSOs and drilling vessels. These vessels are built for a specific task and are often fitted with the most sophisticated positioning systems available on the market. Rolls-Royce has the expertise and technology necessary to provide clients with a design capable of tackling any offshore operation.

Our customised vessels are all based on well-proven designs and provide excellent sea-keeping capabilities, life-long cost efficiency and, not least, they are construction-friendly despite the vessel's complexity.



### The UT 830 WP is designed with the following capabilities:

- Operates worldwide – especially in arctic areas as well as in temperate areas such as in the Gulf of Mexico and African waters
- Perform seismic survey in above listed areas
- Operate Sikorsky S92 helicopter or equivalent
- Transfer seismic research data safely to commissioned contractor



### ▲ Seismic vessel

UT 830 WP is a medium-sized seismic research vessel designed to operate up to 16 streamers. The combination of RPS class and a hybrid propulsion system offers the highest redundancy in the market.

### Various examples and references:





**The UT 768 WP is designed with the following capabilities:**

- IMR duties (inspection, maintenance, repair)
- Subsea construction/ installation work
- ROV operations
- Module handling

**▼ Subsea construction**

UT 768 WP is a subsea service platform that can be utilised for demanding subsea construction work under challenging conditions in deep to ultra deep waters. The vessel is designed with a diesel electric machinery with azimuth propulsion system, giving excellent manoeuvring and station-keeping capabilities. With two moonpools, the vessel can handle sophisticated construction work under severe conditions. The vessel is equipped with a large accommodation for crew and operators.

**Oil services**

UT 768 WP is a subsea service platform for intervention, production, drilling and testing under challenging conditions in deep to ultra-deep waters. The vessel is designed with a diesel electric machinery with azimuth propulsion system, giving excellent manoeuvring and station-keeping capabilities. DP 3 (full redundancy) is standard on this model. The vessel has a large accommodation of first-class offshore standard and fulfills the DNV class and NPD rules for installation. A version for storage capacity for crude oil is also available.

**The UT 768 WP is designed with the following capabilities:**

- Subsea well intervention
- Slim hole drilling
- Small FPSO/FSO
- ROV – service/working ROVs through moonpools
- Subsea service, maintenance
- Module handling



## Rolls-Royce design – coastguard, OPV and EEZ vessels

Coastguard and EEZ (Exclusive Economic Zones) vessels worldwide are increasingly faced with new challenges. The offshore industry has been a key factor in our design of technology-intensive and multifunctional vessels. Past experience and previous solutions have proved invaluable in creating new standards for coastguard vessels.

The UT range of coastguard vessels is suitable for a variety of tasks, such as patrolling, fisheries protection, emergency stand-by, pollution control, fire-fighting, salvage and towing. The vessels are designed in compliance with stringent environmental standards within specific areas of application. At the same time, the vessels provide optimum performance with regard to speed, fuel efficiency, comfort and ease of construction.



### ▼ Rescue/OPV vessel

UT 527 CD is a multi-field, stand-by rescue vessel, which can be adapted for coastguard service. The vessel has a speed of about 22 knots and a high bollard pull to tow drifting vessels. Large capacity for survivors and a stern slipway for recovery of smaller boats.



### The UT 527 CD is designed with the following capabilities:

- More than 20 knots
- EEZ patrol
- Fishery control
- Oil recovery
- Tug (more than 100 tonnes bollard)
- Salvage/Rescue
- Aft slipway for recovering of smaller crafts and lifeboats
- Fi-Fi
- Helicopter deck

### Some references:



**◀ Coastguard/OPV vessel**

UT 512 CD is a coastguard vessel suitable for a variety of tasks, such as patrolling, fisheries protection, emergency standby, salvage, pollution control and towing.

**The UT 512 CD is designed with the following capabilities:**

- 20 knots
- EEZ patrol
- Fishery control
- Oil recovery
- Tug (more than 100 tonnes bollard)
- Salvage/Rescue
- Fi-Fi

**The UT 515 CD is designed with the following capabilities:**

- 20 knots
- EEZ patrol
- Fishery control
- Oil recovery
- Tug (more than 200 tonnes bollard)
- Salvage/Rescue
- Fi-Fi

**► Coastguard/OPV vessel**

UT 515 CD is a coastguard vessel, capable of tasks featuring towing, salvage work, coastguard patrolling and emergency stand-by.



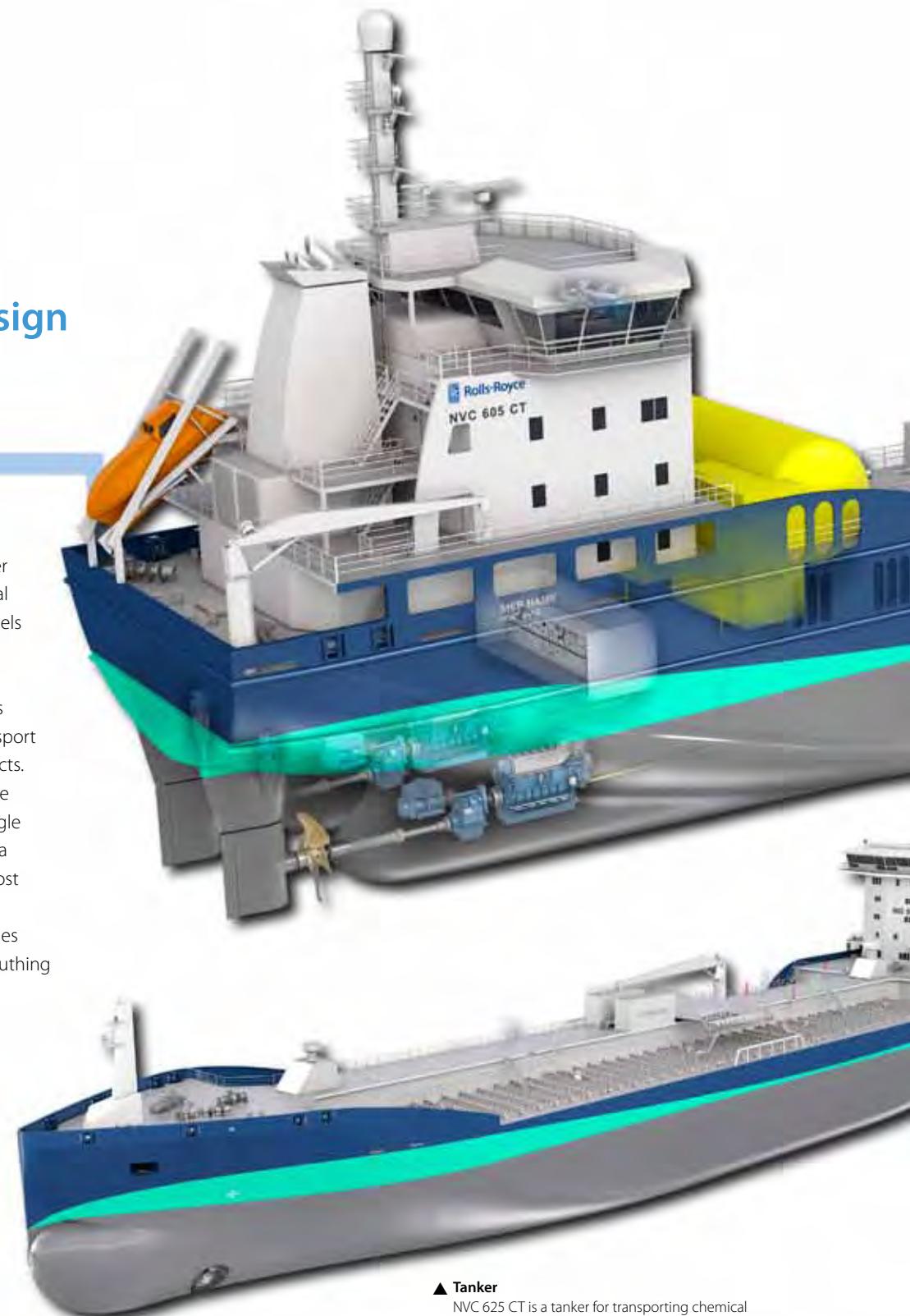
## Rolls-Royce design – tankers

Rolls-Royce offers a wide range of tankers, from small efficient bunker barges and stainless-steel chemical tankers to large sophisticated vessels for bow loading.

The NVC range of tankers provides safe, reliable and economical transport of chemical and petroleum products. The design incorporates propulsive redundancy from the simplest single screw propulsion alternative with a "take-me-home" device, to the most comprehensive systems with two totally independent propulsion lines including twin screw or twin azimuthing propulsion.

**The NVC 625 CT is  
designed with the  
following capabilities:**

- 25 000 TDW
- 28 250 cu.m cargo capacity
- 10 000 NM endurance
- Service speed 14.5 KN

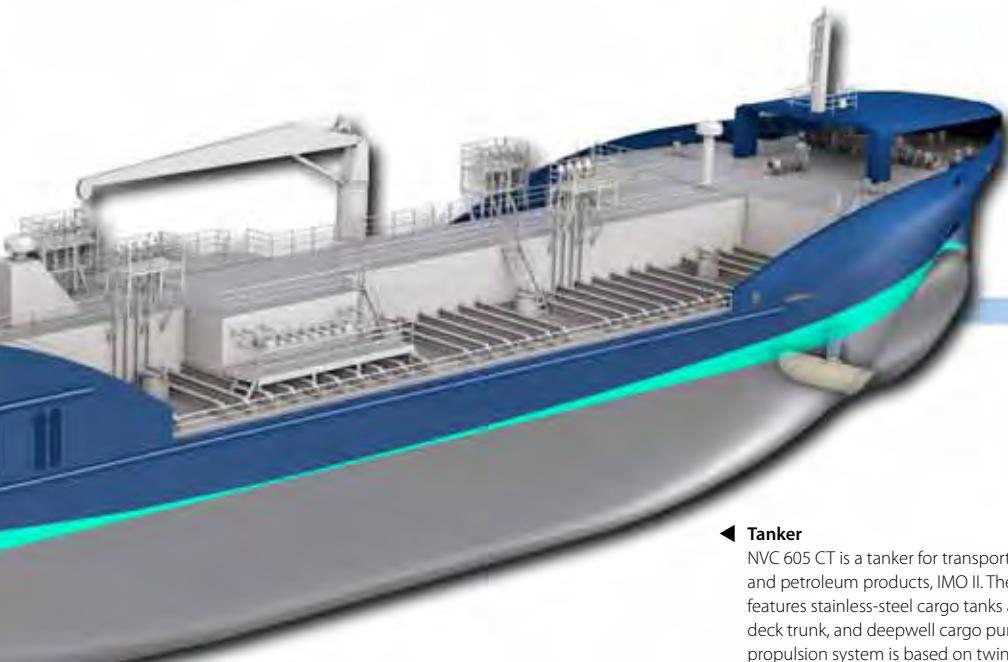


**▲ Tanker**

NVC 625 CT is a tanker for transporting chemical and petroleum products, IMO II. The vessel features stainless-steel cargo tanks and a closed deck trunk, deep well cargo pumps and an inert gas generator. The propulsion system is based on single screw diesel mechanical driven propeller. Designed with high focus on low fuel consumption, optimal performance in seaway, redundancy and safety.

**Various examples and references:**





#### ◀ Tanker

NVC 605 CT is a tanker for transporting chemical and petroleum products, IMO II. The vessel features stainless-steel cargo tanks and a closed deck trunk, and deepwell cargo pumps. The propulsion system is based on twin azimuthing gas mechanical driven pulling propellers. Designed with high focus on sea-keeping performance, redundancy and safety.

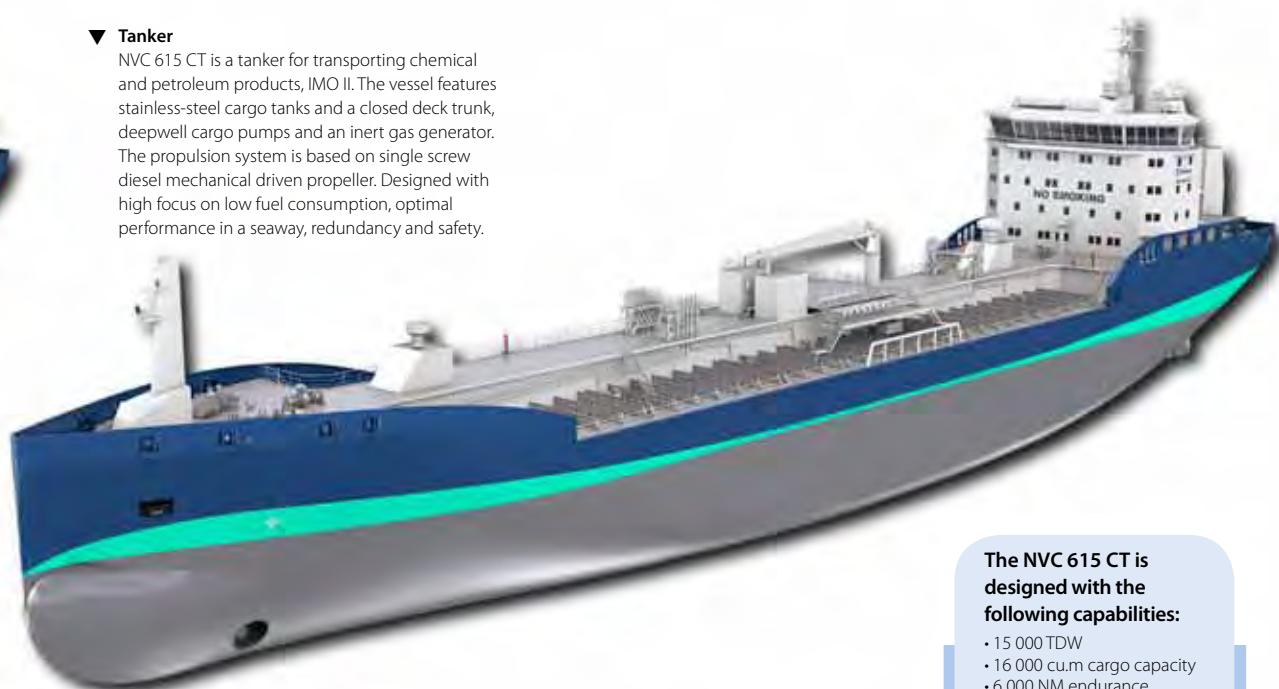
#### The NVC 605 CT is designed with the following capabilities:

- 5 300 TDW
- 6 400 cu.m cargo capacity
- 3 000 NM endurance
- Service speed 14 KN



#### ▼ Tanker

NVC 615 CT is a tanker for transporting chemical and petroleum products, IMO II. The vessel features stainless-steel cargo tanks and a closed deck trunk, deepwell cargo pumps and an inert gas generator. The propulsion system is based on single screw diesel mechanical driven propeller. Designed with high focus on low fuel consumption, optimal performance in a seaway, redundancy and safety.



#### The NVC 615 CT is designed with the following capabilities:

- 15 000 TDW
- 16 000 cu.m cargo capacity
- 6 000 NM endurance
- Service speed 15.5 KN

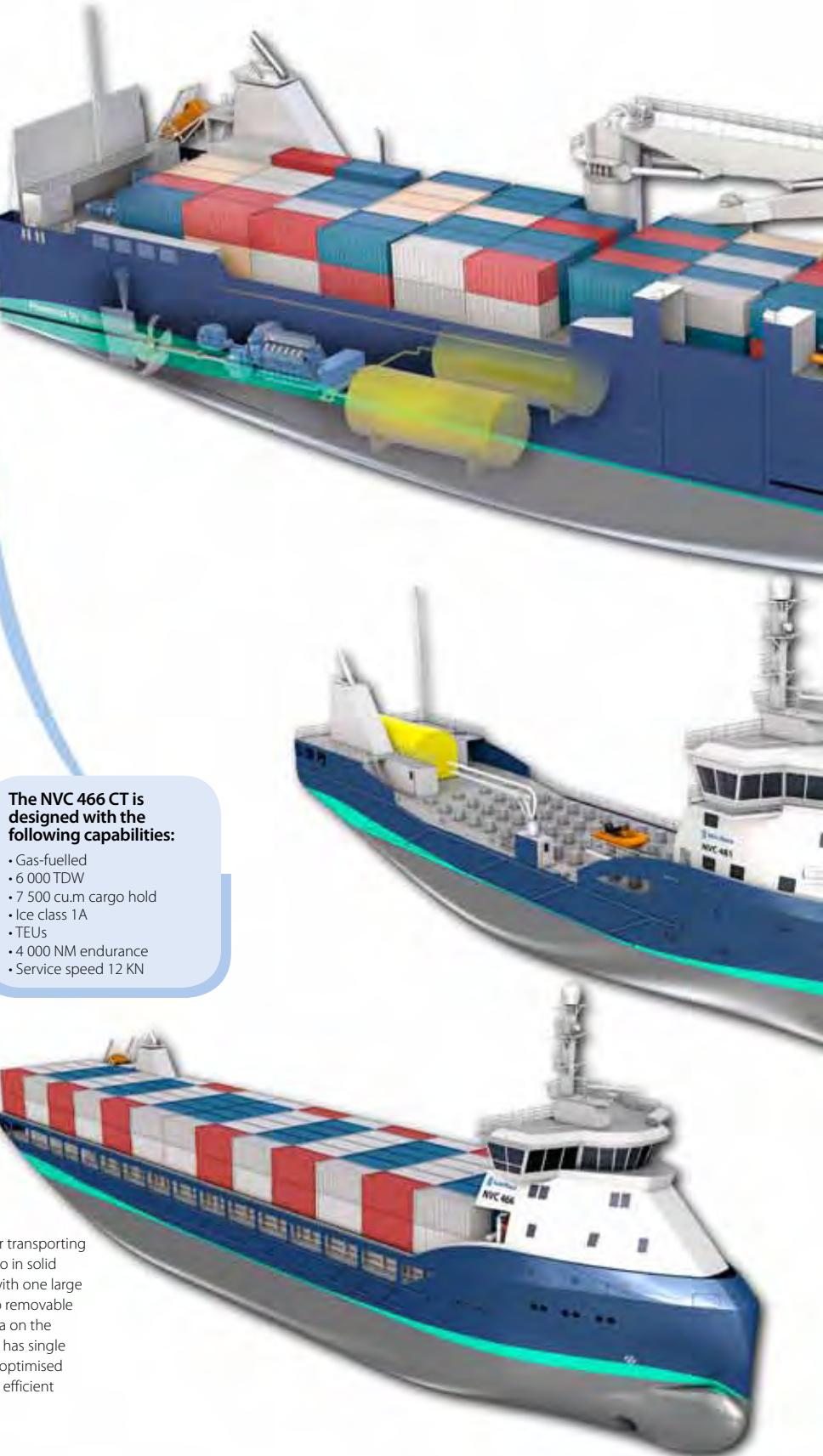


## Rolls-Royce design – general cargo

Cargo carriers from Rolls-Royce are designed with tailored hull lines and propulsion system solutions, ensuring excellent sea-keeping characteristics and lowest possible fuel consumption.

The NVC range of RoRo vessels is well known throughout the world, from vessels designed in 1974 to the latest generation of highly advanced ships specially designed for carrying forest products from the Baltic and the Continent.

Rolls-Royce cargo vessels are designed with cargo handling systems and arrangements to ensure efficient and safe loading and unloading of cargo. High focus on low acceleration due to wave slamming and vessel performance in a seaway, minimises potential cargo damage and provides optimal living conditions for crew.



### ► General cargo/bulk

NVC 466 CT is a general cargo vessel for transporting forest products and other types of cargo in solid and bulk form. The vessel is designed with one large cargo hold with the possibility for two removable bulkheads and an open flush cargo area on the weather deck for containers. The vessel has single screw gas mechanical propulsion with optimised integrated power generation to ensure efficient operation in all modes.

### Various examples and references:





▼ **Forage carrier**

NVC 481 LNG is arranged for efficient transport of fish feed to fish farms. The vessel is equipped with a complete Rolls-Royce gas-fuelled propulsion solution. The vessel will be positioned with the bow towards the fish farm raft by a dynamic positioning system, and the cargo will be transferred over the bow automatically by pressurised air through a telescope crane.



**The NVC 481 LNG is designed with the following capabilities:**

- Gas-fuelled
- 1 450 TDW
- 1 200 cu.m cargo tanks
- 2 000 NM endurance
- Service speed 15 KN

**The NVC 410 is designed with the following capabilities:**

- Gas-fuelled
- 10 000 TDW
- 2 100 lane meter
- 6 400 sq.m deck area
- 250 TEU containers
- 6 000 NM endurance
- Service speed 17 KN

► **Ro-Ro vessel**

NVC 410 is a Ro-Ro vessel designed with twin screw gas-fuelled propulsion system, stabilising fins and a cargo deck configuration optimised for efficient cargo handling. The vessel has a unique flexibility combining fixed decks and hoistable car decks.



◀ **General cargo/RoRo/container vessel**

NVC 405 is a general cargo/RoRo/container vessel, containing four cargo decks, one stern ramp, fixed interior ramps, side door with two cargo lifts, and a deck crane to ensure rapid and flexible cargo handling. The design is suitable for trailers, road trailers, mafri trailers, pallets, cassettes and StoRo with an optimised weather deck for containers. The vessel is also capable of high speed and has a high ice class.

**The NVC 405 is designed with the following capabilities:**

- Gas-fuelled
- 5 000 TDW
- 1 000 lane meter
- 5 000 sq.m deck area
- 4 200 cu.m reefer hold
- 3 500 NM endurance
- Service speed 12 KN

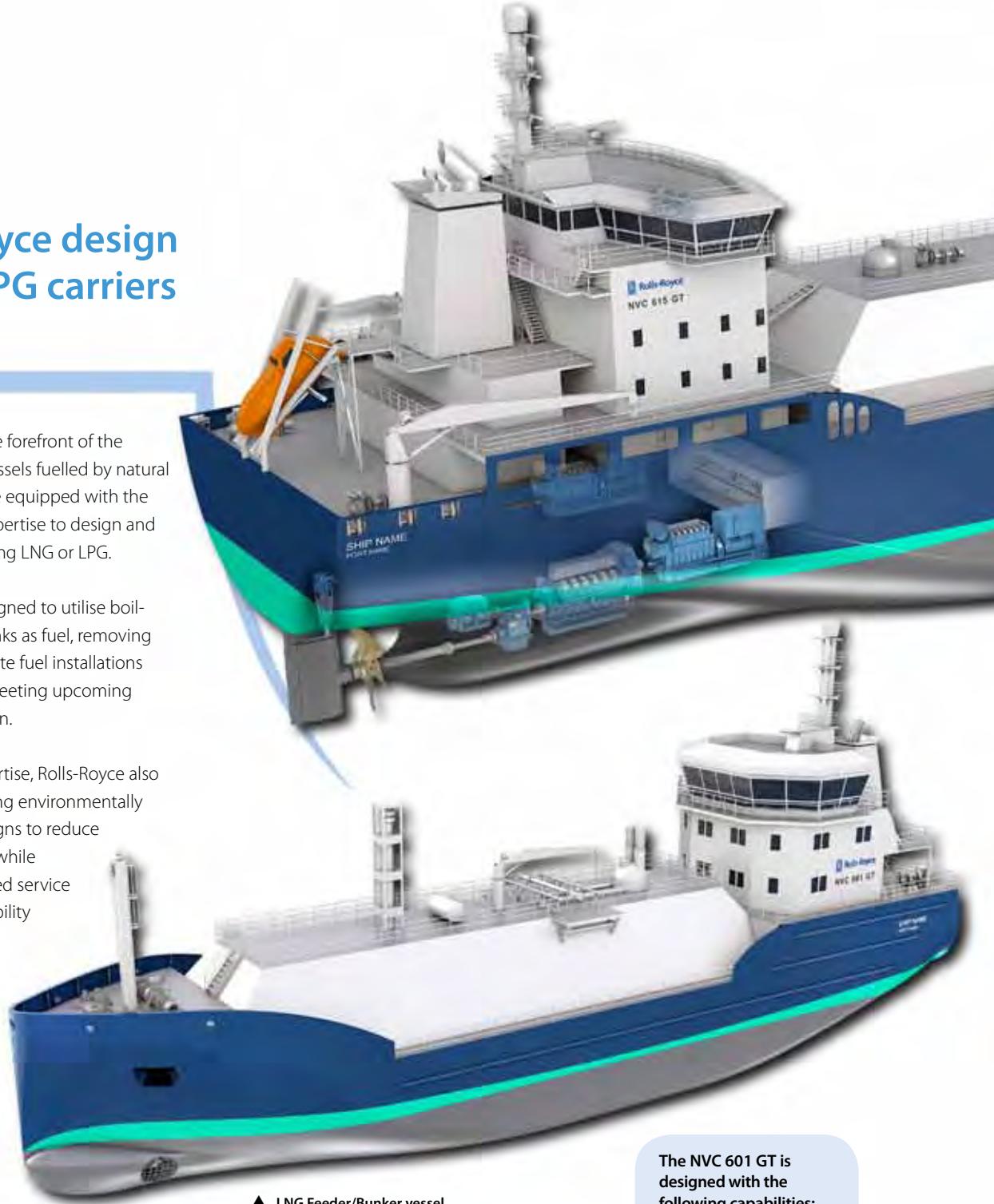


## Rolls-Royce design – LNG/LPG carriers

Rolls-Royce is at the forefront of the development of vessels fuelled by natural gas and is therefore equipped with the knowledge and expertise to design and outfit vessels carrying LNG or LPG.

Vessels can be designed to utilise boil-off from the gas tanks as fuel, removing the need for separate fuel installations and comfortably meeting upcoming emissions legislation.

As well as gas expertise, Rolls-Royce also offers award-winning environmentally friendly vessel designs to reduce consumable costs while maintaining required service speed, manoeuvrability and safety.



### ▲ LNG Feeder/Bunker vessel

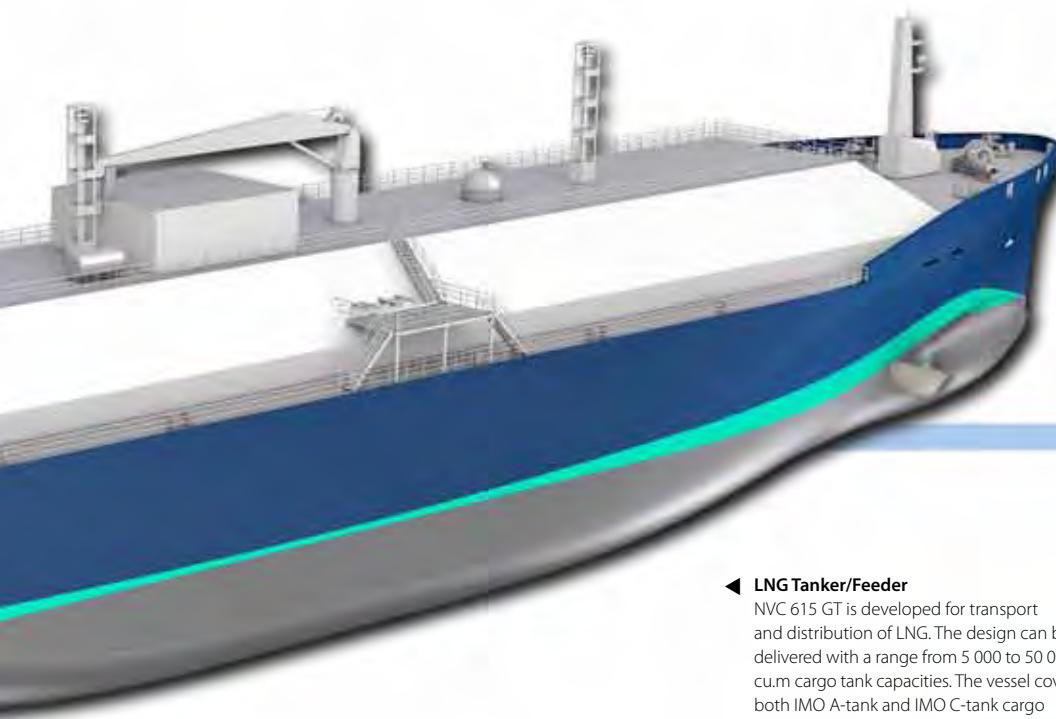
NVC 601 GT is developed for small-scale transport and distribution of LNG to land-based industry and for bunkering of gas-fuelled vessels. The design can be delivered with a range of capacities from 1 000 cu.m to 10 000 cu.m. The cargo hold design is based on both IMO C-tank and IMO A-tank technologies. The design comprises a gas-fuelled propulsion system based on gas supply from cargo holds.

**The NVC 601 GT is designed with the following capabilities:**

- Gas-fuelled
- 700 TDW
- 1 250 cu.m cargo hold
- 2 000 NM endurance
- Service speed 12 KN

### Various examples:

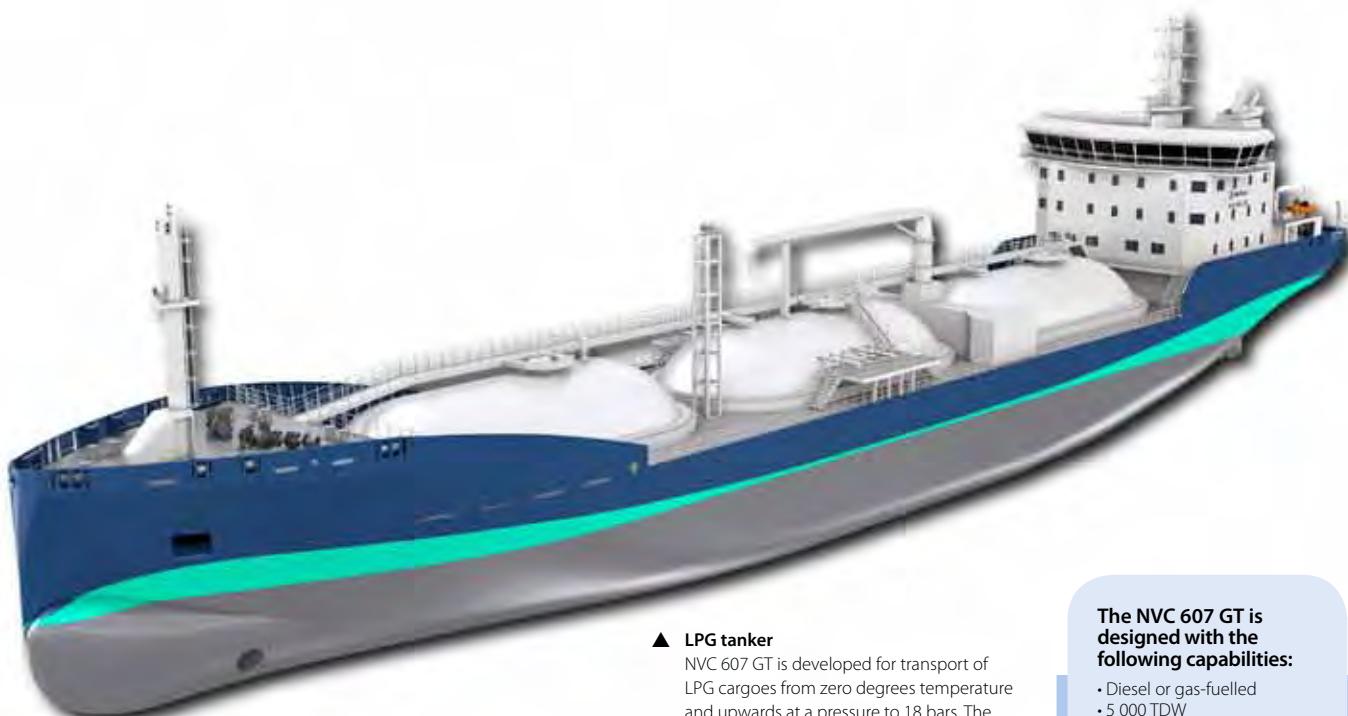


**◀ LNG Tanker/Feeder**

NVC 615 GT is developed for transport and distribution of LNG. The design can be delivered with a range from 5 000 to 50 000 cu.m cargo tank capacities. The vessel covers both IMO A-tank and IMO C-tank cargo tank technologies. The design comprises a gas-fuelled propulsion system based on gas supply from cargo holds.

**The NVC 615 GT is designed with the following capabilities:**

- Gas-fuelled
- 8 000 TDW
- 15 000 cu.m cargo hold
- 6 000 NM endurance
- Service speed 15 KN

**▲ LPG tanker**

NVC 607 GT is developed for transport of LPG cargoes from zero degrees temperature and upwards at a pressure to 18 bars. The cargo carrying system is based on IMO C-tank technologies. The design can be delivered with a range of capacities from 4 000 cu.m to 20 000 cu.m.

**The NVC 607 GT is designed with the following capabilities:**

- Diesel or gas-fuelled
- 5 000 TDW
- 7 500 cu.m cargo tanks
- 11 000 NM endurance
- Service speed 15 KN



## Rolls-Royce design – Passenger vessels and mega yachts

Rolls-Royce has played a leading role in the development of new concepts for specialised cargo and passenger vessels in operation all over the world.

Rolls-Royce designs a wide range of vessel types optimised for purpose and with fully integrated Rolls-Royce system solutions. The NVC-range of designs, well-known throughout the world, includes cruise ferries, Ro-Pax vessels, special purpose vessels and mega yachts.

Our vessels are designed with the highest focus on survivability, redundancy and low emissions to air and sea in combination with low noise and vibration levels and excellent sea-keeping capabilities.

A passenger vessel or yacht designed by Rolls-Royce fulfils the highest requirements and expectations to comfort, reliability and safety.



### Various examples and references:



**◀ Ro-pax vessel**

NVC 253 LNG is optimised for efficient Ro-Ro cargo handling and designed for excellent comfort for passengers and crew. This gas-fuelled Ro-Pax design is designed for efficient year-round North Sea operation. The integrated system solution selected for this vessel ensures optimal performance together with the design.

**The NVC 253 LNG is designed with the following capabilities:**

- Gas-fuelled
- 3 300 TDW
- 1 300 lane meters
- 400 passengers
- 1 800 NM endurance
- Service speed 19 KN

**◀ Mega yachts**

Rolls-Royce combines proven platform design developed over decades in merchant shipping with integrated system solutions to deliver efficient and reliable mega yachts. By working in close partnership with yacht stylists, the perfect balance between technical excellence and luxury is ensured.

**The NVC Explorer type is designed with the following capabilities:**

- Diesel electric propulsion
- Azipull thrusters
- Ice class 1B
- Large yachts II code
- 11 000 NM endurance
- Service speed 16 KN



## Rolls-Royce design – fishing vessels and research vessels

The Rolls-Royce range of fishing vessels is developed to provide optimal fuel consumption, fish handling and working conditions at sea. Safe working conditions are guaranteed on an optimal freeboard, and modern fish-handling solutions are included in the designs. These designs also ensure top comfort for the crew on board, with special attention paid to minimising noise and vibration levels, important when crew can spend weeks to months at sea.

Rolls-Royce designs, types NVC and UT for fishing and research vessels, are based on particularly stable hulls, which are often ice-strengthened. This makes the vessel easy to operate under the toughest conditions, resulting in productive working days. Our designs for stern trawlers range from small and compact wet fish trawlers to large and powerful factory freezer trawlers. The vessels can be arranged with hydraulic or electric deck machinery, depending on customer requirements. The Rolls-Royce range of pelagic vessels consists of all sizes of RSW-cooled bulk carrying vessels in addition to large factory processing freezer trawlers.



**The UT 392 is  
designed with the  
following capabilities:**

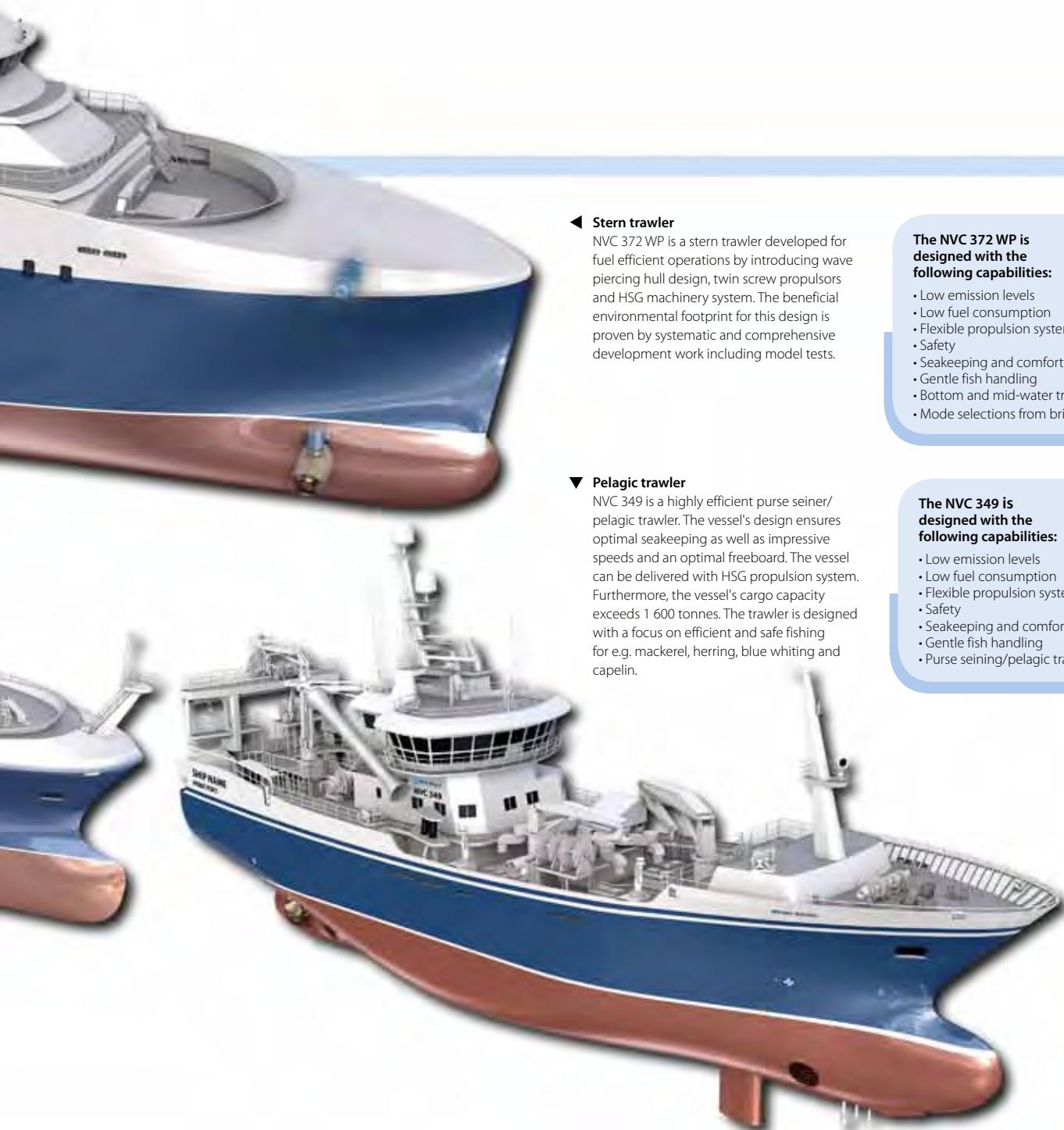
- Low in-water noise level
- ROV operations
- AUV operations
- Seabed operations (6 500 m)
- DP service
- Bottom coring
- Water sampling
- Seismic
- Trawling

**▲ Research vessel**

UT 392 is a multipurpose oceanographic research vessel equipped for deep-water operations worldwide. Utmost attention is paid to minimize in-water noise levels

### Various examples and references:





#### ◀ Stern trawler

NVC 372 WP is a stern trawler developed for fuel efficient operations by introducing wave piercing hull design, twin screw propulsors and HSG machinery system. The beneficial environmental footprint for this design is proven by systematic and comprehensive development work including model tests.

**The NVC 372 WP is designed with the following capabilities:**

- Low emission levels
- Low fuel consumption
- Flexible propulsion system
- Safety
- Seakeeping and comfort
- Gentle fish handling
- Bottom and mid-water trawling
- Mode selections from bridge

#### ▼ Pelagic trawler

NVC 349 is a highly efficient purse seiner/pelagic trawler. The vessel's design ensures optimal seakeeping as well as impressive speeds and an optimal freeboard. The vessel can be delivered with HSG propulsion system. Furthermore, the vessel's cargo capacity exceeds 1 600 tonnes. The trawler is designed with a focus on efficient and safe fishing for e.g. mackerel, herring, blue whiting and capelin.

**The NVC 349 is designed with the following capabilities:**

- Low emission levels
- Low fuel consumption
- Flexible propulsion system
- Safety
- Seakeeping and comfort
- Gentle fish handling
- Purse seining/pelagic trawling



## Global service and support

Our support teams, located worldwide, are committed to helping you manage the vital balance between operational availability and cost. Wherever your vessel is located, Rolls-Royce support is close at hand.

Operational availability must be maintained today in the most cost-effective way. Variable market conditions and increasing competition should not undermine safe ship operations. Therefore, we work closely with our customers to support their fleets, ensuring that they are operating safely and at maximum efficiency, with the goal of virtually eliminating unscheduled downtime.

### A comprehensive menu of service solutions

We are proud of the performance of our systems, and are keen to ensure that they continue to operate at their peak throughout their lifetime. Our services now range from conventional product support, with no impact on ship availability, through to a range of equipment and system support packages with levels of vessel performance and availability agreed, normally within a long-term risk and reward-sharing partnership called MarineCare.

### Single point of contact

As we have progressively increased the breadth of our product range, we have continued investing heavily in the facilities and the talent needed to support them. As multiproduct installations are becoming standard on a growing number of vessels, customers benefit from a single point of contact for support, which is usually the nearest Rolls-Royce regional centre to the vessel's location.

### Reducing through life costs

Reducing operating costs and maximising availability is our objective. This has led us to work closer with a number of our customers in maintenance planning and recommending spares holding. By being involved from the start we have the opportunity to focus on the activities that make a difference, acquiring and pre-positioning service or exchange parts to ensure a smoother overhaul process, saving time spent in dock.

### Committed to meeting different needs

Above all, at the centre of our support philosophy, is recognition that all customers have different and often unique requirements, based on their fleet operations. Whatever the mix of requirements, Rolls-Royce is committed to meeting or exceeding them.

### Product training

At Rolls-Royce we believe that regular training ensures that you will get the most out of a vessel's equipment and systems, and it also ensures that they are operated and maintained efficiently and safely.

Experienced and informed people are a key asset. As technology advances, so must the competence levels of operators and service personnel. We therefore offer a range of tailored training courses and programmes in state-of-the-art facilities equipped with the latest simulators and training aids.

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