Containerships’ first LNG-fuelled vessel under construction in Wenchong Shipyard, January 2018.
Containerships is a full-service logistics company providing safe, fast and environmentally friendly door-to-door container transportation in the Baltic Sea, North Sea and the Mediterranean. We offer both standard and customised containers and a complete coverage of logistic solutions by vessels, trucks, rail and river barges.

We are an international, yet local logistics company, with roots in Finland. With our highly professional staff, special equipment and efficient operations in co-operation with selected partners we provide seamless and on-time logistic chain from door to door. Altogether, we employ more than 500 people in Europe, Russia, Turkey and Northern Africa.

Sustainability is highly important to us and we take it into account in all our actions. One of the most important projects regarding sustainability is starting to use Liquefied Natural Gas (LNG) as a fuel in our vessels and trucks. In this brochure we tell you more about what this means in practice.
Containerships’ approach to LNG

New requirements set by SECA challenge shipping companies

Shipbuilding project of the LNG vessels

Implementation of the newbuilds

Northern Europe’s seaways connected with LNG

EU is co-funding Containerships’ LNG investments

Bunkering of the LNG

The whole supply chain with LNG technology

Containerships & G-Volution - Trucks converted to dual-fuel

Environmental aspects in logistics supply chain

Strong partnership looking forward to greener logistics

Future-proof solutions

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CONTAINERSHIPS’ APPROACH TO LNG

Due to presently implemented (1/2015) regulations concerning Sulphur emissions (SoX), Containerships decided to carry out immediate necessary changes to current vessels and utilise scrubbers and marine gas oil as main compliant solutions. Simultaneously, it was decided to go for future investments.

In fuel technology solutions, there were various alternatives for the company. LNG became the number one choice in an early stage of the project. LNG does not only tackle the Sulphur emissions but also reduces significantly Nitrogen (NoX) and Particulates emissions and creates a remarkable reduction in CO2 emissions.

Even though LNG is a relatively new fuel source for vessels and trucks, Containerships believes that LNG’s breakthrough is very close. Sufficient distribution infrastructure in both areas – terminals and land – is well under development.

Containerships’ investments to LNG reach up to MEUR 200. While many others decided to wait and see, we decided to learn and do.

Kari-Pekka Laaksonen | CEO | Containerships plc

OTHERS DECIDED TO WAIT AND SEE, WE DECIDED TO LEARN AND DO.
NEW REQUIREMENTS SET BY SECA
CHALLENGE SHIPPING COMPANIES

SECA (Sulphur Emission Control Area) came into force in 1.1.2015 reducing the Sulphur emission to 0.1% in the restricted area. As a short-term solution, it practically meant that the shipping companies had to change from heavy fuel oil (3.5% Sulphur) to marine gas oil (0.1% Sulphur) or install scrubbers to wash the exhaust emissions.

Together with its partners, Containerships decided to invest in five scrubbers, of which one was installed to Containerships’ own vessel and four to the partners’ vessels. One of our long-term partners is Langh Ship. Langh Ship has been a forerunner in developing the scrubber technology and they have innovated and built one of the first operative closed loop scrubbers.

After SECA came into force, the intermediate solutions were either scrubbers or marine gas oil. Containerships analysed several different long-term solutions including LNG, electric, and alternative fuels such as biofuels. After investigation, LNG was chosen as a long-term solution for the vessels. It tackles all the known emission constraints and also enables to build a platform for the future with possible biofuels.

Kari-Pekka Laaksonen | CEO | Containerships plc

AFTER INVESTIGATION, OUR LONG-TERM SOLUTION WAS LNG.

Multi-purpose container vessels equipped with SOx scrubbers

Langh Ship
SHIPBUILDING PROJECT OF THE LNG VESSELS

The first four Containerships vessels to use LNG as main fuel are currently being built at Guangzhou Wenchong Shipyards in China. The project started in 2012, and the building agreement with the shipyard was signed in summer 2016. The vessels will be completed in 2018, and funds for their building have been received from the EU’s Connecting Europe Facility (CEF) programme.

The LNG that the vessels will use as main fuel clearly fulfils the SECA requirements. The main engine and one of the auxiliary engines also fulfil the IMO Tier III requirements without exhaust post-processing. These vessels will be the first container ships to have two-stroke DF engines as well as vertical interior tanks between holds.

The building and bunkering of LNG-fuelled vessels is expensive, but the solution is much more environmentally friendly than using HFO as fuel and washing exhaust emissions with a Sulphur scrubber. An open loop Sulphur scrubber does not remove Sulphur, soot and other harmful substances entirely, and some of this ends up in waterways. The use of LNG means such emissions are not generated at all.

The goal is to create an EU-wide infrastructure for LNG distribution. However, it cannot be created if there are no LNG users. For as long as there is no generally used infrastructure, LNG can only be adopted as fuel by vessels that operate on standard routes and can build their own infrastructure in a port. Containerships acts as a forerunner in this field. There are still many things to learn, but someone has to lead the way.

Kati Keto | Sea Division Project Manager | Containerships plc
The production of the first LNG-fuelled vessel, M/S Containerships Nord, started in December 2016. It was followed by the construction of the second one, M/S Containerships Strom, in March 2017.

M/S Containerships Nord was launched in November 2017 and M/S Containerships Strom in January 2018. In total there will be four new vessels that all have been in production since September 2017.

All four newbuilds will be delivered to Containerships during 2018. The first vessel will be delivered at the end of June, followed by one vessel in every eight weeks. All vessels will be in operation in the beginning of 2019.

All new vessels will be scheduled to serve Containerships’ main long legs between Finland, Russia, UK and Holland. The bunkering will take place in Rotterdam and is carried out by Shell.”

Kari-Pekka Laaksonen | CEO | Containerships plc

"ALL FOUR LNG VESSELS WILL BE DELIVERED DURING 2018."
Containerships’ newbuild LNG vessels will be operating in the North Sea and Baltic Sea, serving both company’s eastbound and westbound traffic. Our major main legs are between Finland and Russia and Holland and UK. The new LNG vessels will connect these regions with regular calls.

Naturally, the new bigger vessels will require higher productivity on ports. The number of lifts per hour has to be higher in order to keep port call time on a reasonable level. Regarding the port infrastructure, no special requirements are given except slightly deeper vessel draft. All our major ports fulfil this requirement.

The new vessels can be utilised exactly by the same services and products as the current ones, but they are physically larger and offer better capacity and efficiency.

Frédéric Leca | COO | Containerships plc

Facilitating environmentally friendly options
www.portofhelsinki.fi/LNGsafetymanual
EU IS CO-FUNDING CONTAINERSHIPS’ LNG INVESTMENTS

DOOR2LNG is a joint project between Containerships and its key partners. The project has received funding of MEUR 17 from EU’s Connecting Europe Facility (CEF) program. The funding is divided across Containerships and the project partners. Partners are RST in Rotterdam, PD Ports in Teesport, Multi-link Terminals in Helsinki, and Nordic Hamburg, which is the technical ship management partner in the new LNG vessels.

DOOR2LNG project is building more environmental-friendly logistics infrastructure between TEN-T core ports of Helsinki, Teesport and Rotterdam. The project consists of two parts. Firstly, upgrading current vessels in the routes to four newbuild LNG-fuelled vessels. Secondly, developing infrastructure at ports by removing bottlenecks and investing in container and cargo handling capacity. The project is improving efficiency of the whole door-to-door logistic chain and clearly reducing emissions (SOX, NOX, PM and CO2) in maritime transport.

Main purpose of the EU funding is to ensure that usage of LNG as a maritime fuel can be further expanded. Even though LNG is a competitive fuel, financial investment on new technology at the beginning is always high.

Antti Laukkanen | Project Responsible | Containerships plc

EU IS CO-FUNDING CONTAINERSHIPS’ LNG INVESTMENTS
Containerships and Shell have signed term contract for ship-to-ship bunkering of LNG. All four LNG-powered vessels will be bunkered by Shell bunker vessels in the port of Rotterdam by the LNG bunker vessel Cardissa (capacity of 6,500cbm) or the LNG bunker barge (capacity of 3,000cbm) that will come under long term charter in 2019.

Ship-to-ship bunkering with all preparations will be done simultaneously with cargo operations. Therefore, LNG fuel will not have any disadvantages in operative efficiency compared to traditional oil burning vessels. Bunkering procedures are based on detailed hazard identification and safety assessments. Port of Rotterdam has been very positive and supportive towards all projects fostering green shipping and usage of LNG fuel including Containerships’ project.

New buildings will have endurance of 14 days with LNG and ships will be bunkered once per round trip. Vessels are designed to use LNG all the time: at sea, in estuaries and in ports.

Pekka Järnefelt | Sea Division Manager | Containerships plc
FUEL SOLUTIONS IN A CHANGING ENVIRONMENT

SHELL LNG. ONE STEP AHEAD.

- **CLEANER BURNING.** Shell LNG can contribute to lower local exhaust emissions and global greenhouse gas emissions. It also supports shipping in meeting current and expected IMO MARPOL Annex VI Sulphur and NOx limits.
- **COST COMPETITIVE.** Shell LNG is cost competitive with alternative compliant fuel solutions.
- **LNG AVAILABILITY.** Shell offers a worldwide LNG marine bunker network and continues to develop key supply locations to serve customers who have committed to LNG fuel as their bunker fuel.
- **LNG EXPERIENCE & EXPERTISE.** Shell is an experienced LNG supplier and works closely with many leading OEMs. Our expertise can help during ship design processes, logistics planning, emissions calculations and other marine transport challenges.

Shell

LNG FUELLING THE FUTURE
Containerships’ main business is to serve its customers in the whole end-to-end supply chain. From sustainability point of view, it is not feasible to concentrate only in emissions generated during sea leg of the journey but the whole chain.

In order to achieve even more sustainable logistics, Containerships invests into its operations also on land side and has over 50 dual fuel trucks in use.

Currently the company operates with LNG-fuelled trucks in Finland, Holland and UK. The development and progress has been fastest in the UK where the dual-fuelled trucks under operation burn approximately 45% of LNG. Containerships’ aim is to have up to 200 LNG-fuelled trucks in operation by 2020. The biggest challenge in order to achieve this goal is the development of LNG-refuelling network.

By concentrating to limit and reduce emissions in the whole supply chain, Containerships and its customers participate together for sustainable future.

Kari-Pekka Laaksonen | CEO | Containerships plc

WE AIM TO HAVE UP TO 200 LNG-FUELLED TRUCKS IN OPERATION BY 2020.

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Many supply chain owners recognise LNG as the cleanest alternative to diesel.

Containerships & G-Volution – Trucks converted to dual-fuel

After Containerships’ decision to adopt the clean fuel strategy based on the end-to-end LNG supply chain, UK was selected as the pilot region for the strategy adoption. This is because UK has the best developed LNG truck refuelling station infrastructure on company’s operational area.

Consequently, Containerships launched cooperation with G-Volution, a company with a history of converting trucks and buses to Liquid Petroleum Gas. Together with G-Volution, Containerships has converted 55 diesel trucks to dual fuel.

As emission regulations tighten worldwide, one of the main focuses in the UK is the decarbonisation of transport. Now many supply chain owners recognise LNG as the cleanest alternative to diesel in the heavy-duty truck sector. The LNG dual fuel conversion project has been co-funded by the UK Government. The funding included also the building of LNG refuelling station at Containerships’ depot in the north of England.

LNG is a cleaner alternative fuel compared to diesel and emits 20% less CO2, 80% less Nitrogen emissions and zero Sulphur emissions. The converted dual fuel trucks run 45% on LNG and 55% on diesel and can operate in diesel only mode if the truck runs out of LNG. As the current refuelling station network consists of 23 installations in the whole country, the dual fuel solution is more solid and convenient in order to ensure reliable distribution to the customers.

Andrew Frost | Managing Director | Containerships UK
Environmental topics are part of daily operations at Containerships. Vessels are instructed to minimise the waste water discharge to sea and especially discharging to Baltic Sea is to be avoided. With the effective route planning and optimizing the vessel loadings, we can utilize the capacity effectively thus reducing the environmental impact per transported container.

We focus on the bunker consumption and actively communicate with the vessels about the saving possibilities. During recent years, Containerships has been able to reduce the CO2 emissions from the vessels significantly, more than 5% from 2015 to 2016.

Regarding the land operations, Containerships focuses on using new trucks, monitoring the fuel consumption of drivers and giving guidance and training in the economical driving. During the daily transportation planning activities, we always aim to minimize the empty mileage with optimising the unloading and loading locations. To support the efficient backloading we maintain the container fleet in good conditions, having it continuously upgraded.

LNG is significantly reducing the environmental impacts of transportation operations. The new LNG vessels have a better operational efficiency compared to traditional vessels which gives additional benefits related to environmental impacts. Based on calculations, the reduction of greenhouse gases is more than 30% in the entire supply chain. There are even more significant reductions, over 90%, related to Nitrogen, Sulphur and Particulates emissions compared to traditional supply chain.

Janne Alava | HSEQ Manager | Containerships plc

"LNG IS SIGNIFICANTLY REDUCING THE ENVIRONMENTAL IMPACTS OF TRANSPORTATION OPERATIONS."
Armstrong is a global leader in the design and manufacture of innovative commercial ceiling solutions with production in over 25 locations worldwide. Containerships has taken care of Armstrong's distribution for over 15 years.

Armstrong, as a global company, wants to contribute to green targets, and one of them is to decrease the environmental footprint of the operations and suppliers. Containerships’ LNG strategy supports the target through reducing various emissions such as Greenhouse gases and Nitrogen or Sulphur emissions.

Each of our manufacturing facilities has an annual energy reduction target that contributes to greenhouse gas reduction. The embodied energy associated with our products also includes shipping materials from our manufacturing facilities to our customer’s job sites. The adoption of LNG by Containerships means that the environmental footprint of our products has been minimised, having a direct and beneficial impact for the company, its customers and local communities, Ian Rose, company’s Customer Experience & Supply Chain Director (EMEA) states.

Ian Rose | Customer Experience & Supply Chain Director (EMEA) | Armstrong World Industries Ltd

THE ADOPTION OF LNG BY CONTAINERSHIPS MEANS THAT THE ENVIRONMENTAL FOOTPRINT OF OUR PRODUCTS HAS BEEN MINIMISED.
Dan is busy growing his business, which means regular trips to London. He relies on Hitachi Rail’s intercity express trains to get him there on time. But before Dan buys his ticket, long before the wheels touch the tracks, even before 900 people have worked on building the trains at Newton Aycliffe, Teesport made sure the body shell for that train got where it needed to be.

From the North East, Teesport handles high value project cargoes for customers across the UK.

Our longstanding expertise and engineering capabilities enable us to constantly improve the supply chain.

That’s what we did for Hitachi Rail and that’s what we can do for you.

If you import it, Teesport it.

To see how we can help you call +44 (0) 1642 877 000 or visit www.pdports.co.uk
The whole maritime industry is on a doorstep of a breakthrough of technological revolution. The existing fuel solutions such as heavy fuel oil or marine gas oil will be replaced by new, more sustainable applications. Containerships has taken the first step on the path by investing in LNG-fuelled technology both on sea and land.

With the investments, Containerships is committed to significantly reduce several emissions and our contribution to global warming. We are highly motivated to continue on the more sustainable road, meaning that the use of alternative non-fossil fuels is part of company’s future fuel strategy. The currently built vessels are prepared with technology that allows the use of future fuels such as biogas.

Company’s current planning perspective for the LNG-fuelled vessels is 25–30 years and during this period a significant change in technology used in maritime and logistic industry will take place. Containerships has taken leading and active role in this change.

Kari-Pekka Laaksonen | CEO | Containerships plc

WE ARE HIGHLY MOTIVATED TO CONTINUE ON THE MORE SUSTAINABLE ROAD.
NEW STRALIS NP: THE BEST-IN-CLASS GAS VEHICLE FOR LONG DISTANCE MISSIONS AND ULTRA-LOW EMISSIONS.

Discover the NEW STRALIS NP, the revolutionary gas vehicle for long distance missions. In addition to extremely low CO₂ emissions, and with its completely renewed engine, cab, driveline, CNG and LNG tanks, you can achieve up to 40% saving on fuel costs, minimum pollution and maximum comfort on long distance missions. STRALIS NP is the natural TCO₂ Champion.