

Introduction

Shipping is a resilient industry. Peaks and troughs in both earnings and commodity demands mean that cycles are often expected and planned for. However, the speed, depth and scale of the changes within the sector with regards to reducing the environmental impact of shipping has taken many by surprise. LNGCs are large capital investments that have long trading lives. Any changes to rules or regulations will usually mean one of two outcomes. Either the owner will have to spend additional sums of capital to bring their vessel up to spec, or the vessel will be laid-up or scrapped. EEXI and CII are both new regulations that could have a detrimental effect on the LNGC fleet and comes into effect in 2023.

EEXI + CII = Possible Problems

The aim of the Efficiency Existing Ship Index (EEXI) is to measure a ship's energy efficiency. Different measurements apply to different kinds of vessels. To enable vessels to comply, DNV GL suggested operators consider such actions as propulsion optimisation, engine optimisation, engine power limitations (EPL) as well as reduced speed. Despite this, the index does not account for different propulsion systems. LNGCs with ST utilise a lot of BOG which can bias the calculated result. The use of BOG is actually a solution to an issue that arises from transporting the cargo. STs produce significant CO₂ compared with other systems. However, to get around this, the EEXI calculation allows for power derived from BOG to be subtracted, 'if approved by the verifier'.

Another issue is with the baseline and reference line for LNGCs. DFDEs running on BOG fall below the baseline and when operating on fuel oil they are significantly above the baseline. These scattered results seem to highlight that the LNGCs are being treated unfairly. The IMO has tried to compensate for this by adding 'with the approval of the verifier' in the MEPC 76 which provides some wiggle room.

Another factor that is impacting all shipping, and its impact will be felt significantly within the LNG sector is the Carbon Intensity Indicator (CII). In order to determine the operational carbon intensity of a ship, owners are to measure and document the actual annual operational CII against the required annual operational CII, to ensure their continuous progress on the decarbonization path. The IMO expects that a phase approach of reducing carbon intensity by -2% per year compared to the 2019 reference line from 2023 through to 2026. There are five ratings, which are categorised A-E. Ships that are rated A or B are to be provided with bonuses from administrations, port authorities and stakeholders (although these 'bonuses' have not been outlined). For vessels that rate a D for three consecutive years, or E will have to submit a corrective action plan.

It would seem that the newer LNGCs with dual-fuel slow speed diesel engines seem to have the best chance of complying under the EEXI and CII in the short and long term without additional aid. So this leaves the question, what about those vessels that will not be compliant? Bureau Veritas (BV) have recently surveyed various owners and charterers and found that the majority of them were far more prepared for the changing regulations than expected.

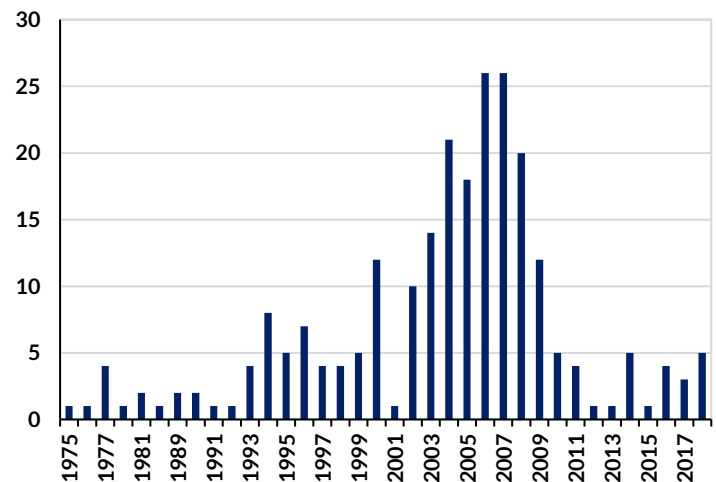
Many owners and charterers have been considering their options with regards to fuels, competitive engines and various technologies that will help them achieve the required emission reduction targets. Slow steaming seems to be the main option, but some vessels have benefitted from other technologies such as air lubrication and energy saving systems that seem to be helping reduce their carbon intensity.

An oldie, but not necessary a goodie

However, despite all the various technical solutions, the older, less efficient ST vessels will find it difficult to justify significant amounts of capital expenditure to enable them to meet new requirements. This sector accounts for around 240 vessels, or around a third of the entire LNGC fleet. Of these vessels, around 50 were delivered before 2000. ST vessels moving at 19.5 knots burn around 180 tonnes of fuel oil equivalent compared with 95-100 tonnes for newer two-stroke vessels. Initially, it would seem that slow steaming will be the best option for these vessels, dropping to 15.5-16.5 knots, resulting in 60% drop in power output. However, this isn't necessarily the easy fix that it first seems. The drop in speed will result in reduced efficiency, and may well cause problems with what to do with excessive BOG.

The case for reduced speed may not be as clear cut from the chartering side either. Owners have a legal responsibility to sail at a guaranteed speed. If there are modifications to that speed, there may be cause for redress, although the owners are also obliged to follow directions from the IMO.

ST LNGC Fleet - Year of Build (No. of vessels)



The end is nigh?

Whilst there are various questions around the vessels speed and the implications on the charterer party agreement, there are also potential concerns about what if a vessel does not reach a suitable CII rating. It is unclear currently on what the impact will be if a vessel receives a D or E rating. Will charterers be reluctant to charter vessels with low ratings?

It would seem that this might not be the case, as there is still a limited number of vessels and demand is set to move in an upward direction in the next few years. However, if vessels are side-lined, the end result will inevitably be either lay-up, conversion or scrapping. Although a mass lay-up or scrapping seems very unlikely - in part because of increased demand for LNG, but also, owners will want their very expensive vessels to trade for as long as possible. It might push some of the older vessels of the fleet to the beaches, and may mean that some of the laid-up vessels will be scrapped as well.

With a limited number of vessels in the fleet and an expanding portfolio of importing countries to serve, it would seem that owners will have little choice but to try and meet the requirements that are expected in the near future.