Climate change has become increasingly influential in determining the standards of many industries, government policies and supranational regulations and shipping is no exception. As discussed in our previous article (see link below), through additions to MARPOL, the IMO has implemented its own regulations with the aim of cutting shipping carbon emissions by as much as 30% by 2030. This article considers the potential legal impact of the requirement, effective from 1 January 2013, that all ships of 400 gross tonnage and above must have a Ship Energy Efficiency Management Plan ("SEEMP") and, save for certain exempted states, new ships (or those undergoing a major conversion) must have an Energy Efficiency Design Index ("EEDI").

SEEMP
The SEEMP is a ship-specific plan aimed at enabling operators to improve fuel efficiency through four steps: (i) planning; (ii) implementation; (iii) monitoring, and (iv) self-evaluation and improvement. The objective is to provide a mechanism for the owners, masters and operators to monitor ship and fleet efficiency and performance over time and to use this to optimize performance. The IMO has also issued a set of guidelines for the development of a SEEMP, “The 2012 Guidelines for the Development of a Ship Energy Efficiency Management Plan”, and model SEEMPs have been produced by various organisations.

Part of the planning of the SEEMP involves goal-setting. Although this will not be public and there is no external scrutiny, the expectation is that a target will be set to serve as an incentive for the proper implementation of the plan. An example suggested is the adoption of a specification of the Energy Efficiency Operational Indicator (“EEOI”). The EEOI is an indicator of efficiency, which approximately translates as the ratio of mass of CO₂ emitted per unit of transport work. By using an EEOI target as a monitoring tool, it is possible to assess how certain variables, such as new energy-saving technologies or more frequent hull cleaning, affect the ship’s fuel efficiency. The objective is that a specific figure will be calculated for each voyage, but the collection of this data is on a voluntary basis only.

Section 5 of the 2012 SEEMP Development Guidelines deals specifically with “Guidance on Best Practices for Fuel-Efficient Operation of Ships”. Unsurprisingly, there is a focus on speed optimization, i.e. the speed at which the fuel used per tonne per mile is at minimum level for that voyage.

The Guidelines also emphasise that the quest for efficiency is one for all stake-holders and not the owners/operators alone. It calls upon all involved parties (designers, ship yards, engine manufacturers, charterers, ports and vessel traffic management services) to consider efficiency measures within their operations. It specifically calls upon charterers and operators to agree charterparty terms that encourage the ship to operate at optimum speed to maximize energy efficiency.

As the global pressure to reduce CO₂ emissions increases and fuel costs remain high, major charterers are already taking a pro-active approach. Rightship has developed its own fuel performance rating system and Cargill, amongst others, has indicated that it will no longer charter inefficient tonnage. Following industry demand, BIMCO has produced slow steaming clauses for time charters and, more recently, for voyage charters.

Work continues on a BIMCO “virtual arrival clause”, under which the vessel proceeds at a reduced speed to enable her to arrive just in time for her load/discharge slot, with arrival (for laytime/ demurrage purposes) being deemed to have occurred at the time she would have arrived if proceeding at full speed. The bunker savings from the reduction in speed can then be calculated and shared as agreed by the parties. Such clauses have already been adopted in the tanker sector. There, however, the charterers may also own and operate the terminals and loading and discharging slots can be pre-agreed with reasonable certainty. It is likely that significant change from current practices would be required before virtual arrival could feasibly become a feature in the dry bulk trade. This is recognized by the SEEMP Development Guidelines which stresses the need for co-ordination of arrival times with the availability of load/ discharge berths and encourages port authorities to change procedures where necessary to maximize efficiency and minimize delay.

There are as yet no prescribed sanctions for breaches of the technical regulations. Individual member states are responsible for enforcement of IMO conventions and may structure various penalties for non-compliance among ships that carry their state’s flag. A proposal that port states could deny entry to non-compliant vessels was dropped during negotiations, so it remains to be seen what teeth the new regulations will have.

Whatever the long-term impact of the new regulations, it seems clear that the current trend is for a reduction in speed, which itself has potential legal implications.
In particular, concern has been expressed that there will be an increase in engine damage if ships’ engines are regularly operated significantly below their design speed. Issues also arise owing to the longer voyage times resulting from slow steaming. Unless appropriate slow steaming provisions are effectively incorporated into the bill of lading, there is potential exposure to third parties for late delivery of cargo or, in the worst case scenario, for deviation arguments to arise. Owners and charterers would, therefore, be well advised to tackle these issues up front and ensure that appropriate clauses are included in the charterparty to address these risks.

**EEDI**

The EEDI is intended to encourage shipbuilders to create more fuel-efficient vessels and to stimulate the development of the necessary technological advances to enable this. It establishes a minimum energy efficiency for new ships by way of a formula with a specific benchmark level to be achieved for each vessel type. A simplistic version of the formula is: EEDI = CO₂ emission/transport work, the latter being calculated by reference to the ship’s capacity and ship’s design speed at maximum design load and 75% rated installed shaft power. The lower the EEDI, the more efficient the ship.

Between 1 January 2015 and 31 December 2019, the expectation is that energy consumption will be reduced by 10%, with further incremental reductions totaling 30% by 2024, and that the reductions will be achieved by technological developments in the intervening period.

It does not matter how the ship achieves the required energy efficiency, so long as the EEDI does not exceed the reference line value agreed by the IMO for the relevant ship type. The formula is not universally appropriate as it has been designed primarily for cargo ships and will not apply to all ship types or all propulsion systems. The IMO has stated that it will develop formulae for other ship types in due course.

The formula has already attracted criticism, in particular concern has been expressed that the obvious way of meeting the required EEDI is through reduction of installed engine power, with adverse consequences for the safety of ship manoeuvrability. The regulations expressly require that installed power must be not less than that needed to maintain the manoeuvrability of the ship under adverse conditions and the IMO is working on Interim Guidelines for determination of the minimum power propulsion, with a view to approval of a joint MSC-MEPC Circular prior to 1 January 2013. Absent the development, however, of the technological advances envisaged as justification for the drop in EEDI by 2024, there will obviously be significant pressure to achieve the EEDI targets by speed reduction.

Issues have arisen in relation to application of the EEDI formula to ro-ros (in respect of which it has been said to disregard the fundamental physical principles of powering ships) and ferries, for which alternative frameworks are being considered.

It remains to be seen whether difficulties will also arise with respect to other cargo vessels as the formula is put into practice and to what extent the EEDI will become an issue of contention in shipbuilding contracts. Given the criticisms of the formula, however, it is to be expected that shipbuilders will be cautious to undertake meaningful obligations as to the achievable EEDI, which must be independently verified by class.

Concern has also been expressed as to whether it is appropriate for class societies, having approved a particular ship design, to then be involved in verifying the EEDI as, in these circumstances they may be viewed as having a vested interest in the outcome.

**Sulphur emissions**

Foreshadowing the technical regulations is the regime of Emission Control Areas (“ECAs”), regions where fuel sulphur content is prescribed. On 12 September 2012, the European Parliament voted to amend the EU low-sulphur Directive to incorporate the IMO rules for sulphur emissions. News of this vote has not been received well by the shipping industry, as repeated concerns had already been expressed as to whether there will be a sufficient supply of fuel to allow compliance. Under the IMO regulations, fuel burnt in ECAs must currently contain 1% sulphur or less and, from 2015, this will fall to 0.1% or less. Regions outside the ECAs will have a fuel sulphur limit of 3.5% until 2020, when the limit will be reduced to 0.5%. The European Directive already mandates that vessels cannot burn fuel with a sulphur content above 0.1% in EU ports. The final approval for adoption of the IMO sulphur limits into EU law must be provided at the European Council meeting later this year, but a reversal of the European Parliament vote is unlikely.

In August 2012, ECAs were also declared in North American territorial waters. Canada has not yet begun, however, to enforce its ECAs, and the application of the US ECAs to Alaska is currently the subject of court proceedings resulting from the increased cost of shipping to Alaska. The EU is also considering extending ECAs to new areas, such as the Mediterranean.

Together, these measures present the prospect of higher fuel costs and the fitting of expensive technology, for example gas scrubbers. Owners and charterers entering into long-term contracts should ensure that the costs of compliance and risk of non-compliance with the anticipated changes is clearly allocated in the charterparty terms.

**Comment**

Despite comments made earlier this year by the chairman of the UK Parliamentary Select Committee on Energy and Climate Change, Tim Yeo, that the IMO’s progress on climate change initiatives has been “glacial”, the organisation has shown with successive amendments to MARPOL 73/78 that it is advancing the regime of shipping emissions regulations. The introduction of the EEDI and SEEMP represent only the latest change in an evolving regulatory landscape and there is no doubt more to come.


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