



'TRANSITION TO NET-ZERO SHIPPING IS A COMPLEX CHALLENGE'

Mr. Vijay Arora, Managing Director, Indian Register of Shipping, in an exclusive interview with *Future Fuels* shares how IRS is helping ship owners to face the existing vessel certification challenges and elaborates on the short-, mid-, and long-term measures on path to decarbonisation.

Q. What are initiatives taken by IRClass to help Indian ship owners in the decarbonisation efforts?

IMO's initial strategy on GHG reduction sets a pathway in terms of short-term, mid-term and long-term measures.

Regarding the recent short-term measures adopted by IMO towards GHG reduction from existing ships namely EEXI and CII, IRS is assisting the industry for complying with this new requirement. IRS has prepared a web based electronic tool which will enable the industry for easy calculation and preparation of required technical file/documents.

Also, to develop the understanding on EEXI and CII compliance among Indian ship owners, IRS delivered presentations on EEXI and CII compliance and possible solutions through dedicated training sessions as well as through forums organised by

various industry organisations.

IRS has also initiated efforts towards mid-term and long-term measures, particularly in the field of alternative fuels. In addition to our existing rules and classification notes for LNG fuelled ships, IRS has also prepared Guidelines for Methanol Fuelled ships, Guidelines on "Vessels with Fuel cell power installations" with emphasis on hydrogen fuel cells and Guidelines on Battery Powered Vessels.

IRS has also been involved in the trials conducted on two coastal vessels of Ambuja Cement using 20% Biofuel blend, wherein measurements of emissions, vibration as well as full examination of engines after a trial period of 3 months was completed satisfactorily. No significant impact observed on NOx & Sox whereas CO2 emission was found to be reduced by approximately 7%. Based on experience gained in the use of bio-fuel, IRS is

preparing Guidelines on the use of Bio Fuel which is expected to be completed by Dec 2022. Discussions are also on with another ship owner for conducting trials on seagoing vessels using biofuel.

IRS in collaboration with CSL and KPIT, is working on fuel cell powered technology demonstration project. It will comprise end to end solutions, system / component compliance in marine certification, approval in principle, rule development and validation in new technology areas.

IRS is involved in certification of vessels with Hybrid propulsion (Li-ion Batteries and Diesel Engines) on a series of 23 vessels for Kochi Metro Rail Limited (KMRL) and First Vessel of the series was recently delivered in Jan 2022.

Q. Recently IMO's MEPC 77 session has set target of 2023 for the ships to comply with Carbon Intensity Indicator (CII) and Energy

Efficiency Existing Ship Index (EEXI) certifications. What will be its impact on Indian coastal vessels?

Indian Administration, vide M. S. Notice No. 07 of 2021 has mandated the requirements on EEXI (for ships of 400 GT & above) and CII (for ships of 5000 GT & above) for all Indian Flag ships registered under MS ACT irrespective of whether the ship has coastal or worldwide trading license.

Upon compliance to EEXI requirement, International Energy Efficiency Certificate is to be issued to specified ship types of 400 GT and above certified for international voyage. Upon compliance to CII requirement, Statement of Compliance for Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating for specified ship types of 5000 GT and above certified for international voyage.

Moreover, in order to ensure that vessels registered under RSV and ICV notification also are as energy efficient as international going vessels, Indian Administration vide the above-mentioned M.S. Notice has mandated all EEXI requirements except for the requirement of issuance of IEEC for such vessels (i.e. they will be required to calculate Attained EEXI, comply with Required EEXI and submit EEXI Technical File). Similarly, such vessels will be required to report same data as required by IMO DCS, calculate Attained CII, comply with Required CII and CII rating, except for the requirement of issuance Statement of Compliance for Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating.

Further, in order to have a national emissions inventory from Indian ships, Indian Administration has also mandated collection of fuel consumption data from smaller size ships i.e. below the size to which the said MARPOL requirements of IMO DCS and CII are applicable. However, SOC is not required to be issued to such vessels and the data is reported to Indian Administration and not to IMO GISIS platform.

The above requirements

demonstrate India's commitment to energy efficiency domestic shipping as well as enabling a national maritime emissions inventory which can provide input to future policy development.

Q. Considering the ongoing initiatives for developing eco-friendly fuels, do you think the IMO's CO2 emissions target of 2050 is attainable?

The transition to net-zero shipping is a complex challenge that requires collaboration from all sectors, commitment from industry leaders, and a willingness to share the results of trials and tests. The transition to net zero will have to tackle

- The issues of availability of fuels
- The cost of infrastructure on land
- Scalability of successful pilot projects.

IMO has taken three step approach to deal with decarbonisation. Fuel consumption data is being collected since 2019. Technical and operational energy efficiency measures have been planned to be implemented for all existing ships wherein the reduction targets have to match with the phase 2 of EEDI ships. Also phase 3 of EEDI for new ships has been advanced for certain ship types of higher deadweight. All these measures have been adopted considering that CO2 emissions per transport work will be reduced by at least 40% by 2030 compared to 2008. Further, work is under progress in respect of midterm measures which includes, implementation programme for Alternative Fuels & Technologies & New/innovative emission reduction mechanism(s) possibly including Market-based Measures (MBMs) and review of the measures already taken and analysis of collected data which will be carried out in 2026, based on which future policy decisions will be made to achieve 2050 targets i.e reduction of 70% CO2 emissions per transport work and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 levels.

Q. Where do you think Indian flag ships are placed in terms of CO2 emissions vis-à-vis foreign flag ships?

CO2 emissions from Indian Flag

ships was approximately 4.62 million tonnes in 2020. In comparison the overall CO2 emissions based on data submitted to IMO Ship Fuel Oil Consumption Database in GISIS for the year 2020 was approximately 630 million tonnes (MEPC 77/6/1 submitted by Secretariat). Considering the average age of the Indian fleet is over 17 years, it is understandable that compliance to EEXI and CII will be a challenging task for Indian Ship Owners. Based on our preliminary assessment, it has been observed that 90% of bulk carriers and tankers in our Classed fleet will have to adopt Engine Power Limitation or other technical measure to meet the Required EEXI value. Regarding CII, it is observed that around 55% of vessels in our classed fleet (considering all ship types) would be falling in D & E rating by 2023. As far as Containerships in our fleet, although a small sample size, are better placed with 50 % of containerships having A rating in 2023.

Q. What policy measures can we expect from Government to support ship owners for switching over to green fuels?

Government is taking various initiatives for switching to green fuels. The acceptance to try biofuels onboard ships is a recent example as briefed above in Question 1. Various themes for Green Initiatives have been identified with participation from major stakeholders, and these will form inputs to the National Action Plan for green initiatives in marine sector. These themes include as Fuel Cell, Battery propulsion, Solar power, Bio-fuels/ Methanol, Storage and Dispensing of Hydrogen from Ports, Potential of usage of wind energy for Propulsion, Voyage optimization, Energy Mix for future emission free ships (hybridisation of above technologies).

Understandably government will have to play a major role in encouraging Indian ship owners to adopt green fuel friendly ships in their fleet and in setting up the infrastructure facilities to enable deploying alternative fuels and technologies on ships. **EF**