

# EEXI

Energy Efficiency Existing Ship Index

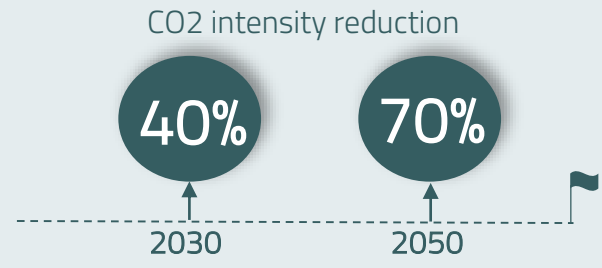
## Regulatory and Compliance



# THE FUTURE OF SUSTAINABLE SHIPPING

## EEXI explained

- In April 2018 the IMO adopted the GHG reduction strategy which aims to reduce the CO2 emissions by at least 40 % by 2030 and 70% by 2050
- In 2020 IMO introduced the **Energy Efficiency Existing Ship Index (EEXI)** which is a technical framework concerning all existing ships above 400 GT. All ships must develop an approved energy efficiency improvement and decarbonisation plan based on the requirements for each type of vessel.



### MANDATORY FROM 1<sup>ST</sup> OF JANUARY 2023

- All vessels must have compliant EEXI and EEXI Technical file approved by class
- All vessels must have a renewed IEEC certificate (first annual survey)



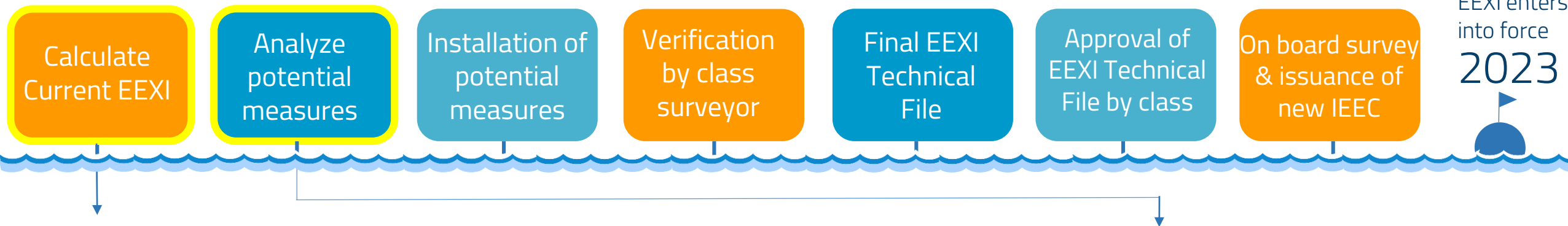
Ship types and Required Reduction EEXI (depending by the size)



# HOW CAN WE HELP YOU?

We can support you in every stage of the compliance process.

## EEXI COMPLIANCE PROCESS



A calculation of the attained EEXI is recommended, as these values serve as the basis for decisions to be made within the next months until 2023.

We can offer:

- ✓ Guidance on EEXI calculation
- ✓ Calculation of the attained EEXI based on vessel's particulars as per guidelines on method of calculation of the attained EEXI
- ✓ Calculation of the required EEXI based on vessel type and size according to amendments by MARPOL Annex VI, Regulations 19-21 as accepted by MEPS 75

$$\frac{\left( \prod_{j=1}^n f_j \right) \left( \sum_{i=1}^{nME} P_{ME(i)} \cdot C_{FME(i)} \cdot SFC_{ME(i)} \right) + (P_{AE} \cdot C_{FAE} \cdot SFC_{AE}^*) + \left( \left( \prod_{j=1}^n f_j \cdot \sum_{i=1}^{nPTI} P_{PTI(i)} - \sum_{i=1}^{neff} f_{eff(i)} \cdot P_{AE_{eff}(i)} \right) C_{FAE} \cdot SFC_{AE} \right) - \left( \sum_{i=1}^{neff} f_{eff(i)} \cdot P_{eff(i)} \cdot C_{FME} \cdot SFC_{ME}^{**} \right)}{f_i \cdot f_c \cdot f_l \cdot Capacity \cdot f_w \cdot V_{ref} \cdot f_m}$$

Based on the calculated EEXI and the target that needs to be achieved we can analyze the best measures. We take into account key criteria like **time of installation, cost and payback time, vessel age** and etc.

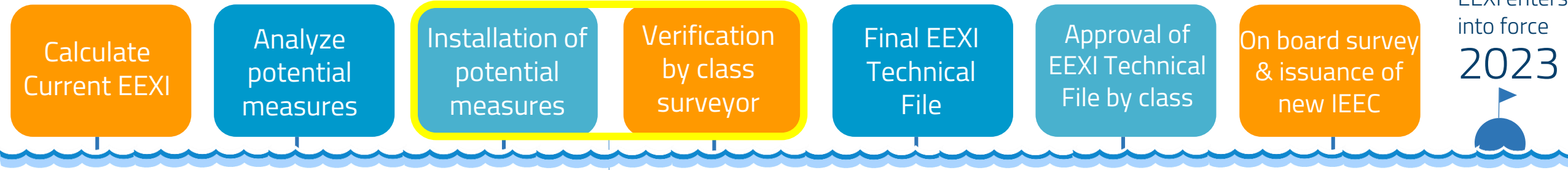
We can offer:

- ✓ Assessment of options for individual ship to comply with EEXI requirements
- ✓ Comparison of different improvement solutions
- ✓ Assessment of alternatives for fleet development

**LOOKS COMPLICATED?**

**Don't worry, WE'VE GOT IT!**

# EEXI COMPLIANCE PROCESS



Based on the analysis of the potential measures that need to be taken in order to achieve the target EEXI, we can help support you in:

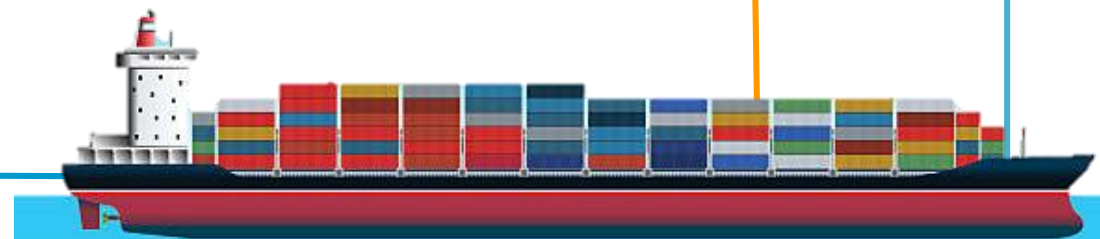
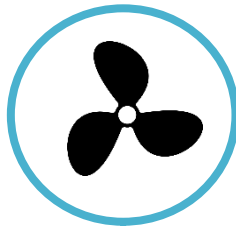
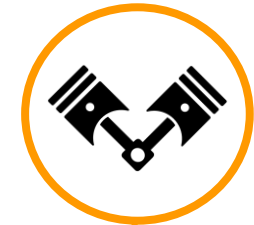
## Retrofitting energy efficiency technologies:

- ✓ Retrofitting wind-assisted propulsion systems (Rotor Sails)
- ✓ Hull optimization
- ✓ Propeller optimization
- ✓ Retrofitting air lubrication systems (ALS)
- ✓ Other EET

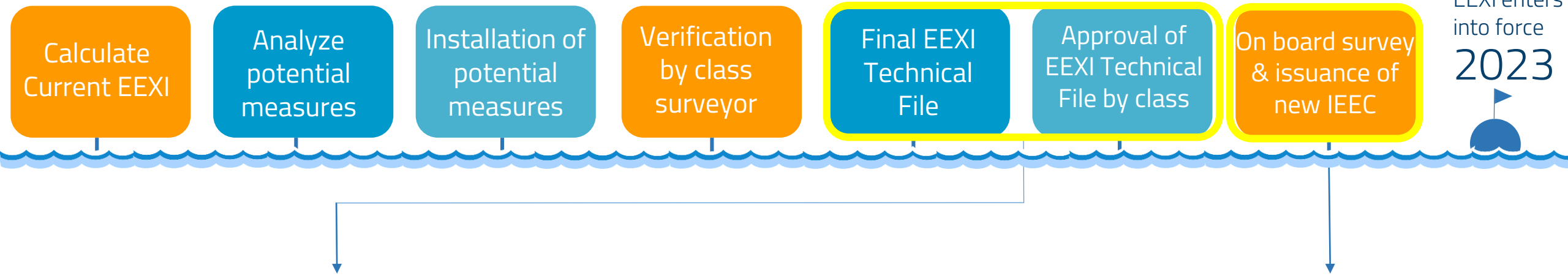
## Engine Power Limitation/Shaft Power Limitation:

- ✓ Calculation of required limitation
- ✓ Calculation of speed after EPL implementation
- ✓ Creating an EPL management plan (according to guidelines)

Fuel conversion - (LNG, LPG, Hydrogen, Ammonia)



# EEXI COMPLIANCE PROCESS



The EEXI Technical File contains general information on the ship, the calculation of the EEXI value attained and required, and copies of the documents from which the values applied for the EEXI calculation are taken.

We can help you with:

- ✓ Calculation of new EEXI according to guidelines
- ✓ Issue of EEXI Technical File
- ✓ Establish EEXI Technical File for submission to the respective classification society

Approval of the EEXI Technical File by the Administration or the Recognized Organization.

Applicable on first annual, intermediate or renewal IAPP survey or the initial IEE survey after 1 January 2023.

Issuance of new IEEC after EEXI verification with the first annual survey in 2023.

Are you ready for the Energy Efficiency Existing Ship Index?  
Time is short – and there are many steps to compliance.

Contact our experts for more information at [office@ihbshipdesign.com](mailto:office@ihbshipdesign.com)

# Feasibility Study by IHB ShipDesign Outline

