

1. Service Contents

- (1) EEXI assessment (EEXI calculation and assessment of MCR_{lim} by EPL(Engine Power Limitation))
- (2) Propose and provide measures to improve EEXI (EPL, etc.)
- (3) Development of required documents (EEXI technical file, Onboard Management Manual on EPL)

2. The ship's speed (V_{ref}) used in the EEXI calculation should be obtained from the simple formula, the tank test results, or CFD analysis.

The simple formula for ship's speed includes a margin of about 5%, so using the power curve based on the tank test results may improve the EEXI value by up to 5%, although not necessarily for all ships.

However, as shown in the table below, additional costs will be incurred, so please consider how to determine the ship speed in consideration of cost effectiveness.

How to determine the ship speed to be used in EEXI calculations

How to determine the ship speed (V_{ref})	Note	Approx. cost (Additional cost)
(1) Simple formula	<ul style="list-style-type: none"> - Ship speed is calculated using a simple formula based on DWT. - The simple formula includes a margin of about 5%, so the attained EEXI may be worse than the tank test. - No additional charge 	No additional charge
(2) Power curve based on the tank test results	<ul style="list-style-type: none"> - Additional costs will be incurred because the shipyard needs to prepare the documents on ship propulsion performance (including tank test reports). - The attained EEXI value may be improved by up to 5% compared to the simplified formula (but not necessarily for all ships) 	Approx. Hundreds of thousands of JPY
(3) CFD analysis and other numerical calculations	<ul style="list-style-type: none"> - Since the shipyard had not conducted tank tests, a new CFD analysis is carried out to estimate the power curve. - Expensive cost and several months required. - May not be available at some shipyards. 	Approx. Millions of JPY

3. We recommended the EPL as it is the most cost effective way to improve EEXI. Additional fee will be charged for preparation of EPL Onboard Management Manual.

4. If you would like to request the additional energy saving device (ESD), the draft up, engine tuning, etc. as the additional measures (EPL + a) in order to reduce the MRC_{lim} by EPL, please let us know. We will discuss with shipyard / engine manufacturer about the optimal solutions.

5. When DWT is changed, the attained EEXI is changed, which will also affect the EPL. If you plan to change the DWT in the future due to SOx scrubber retrofit, etc., please let us know.

To request a quote for EEXI support services, please fill out the attached Ship List (Excel) and send it to us (eexi@classnkcs.co.jp), including your desired method of determining ship speed (Vref).

In case of the class other than ClassNK, please input all column.

And, please send the following documents.

•Ship's Particular (Hull & Machinery) including the following information

- Ship dimension
- Deadweight / Displacement / Lightweight
- Cargo Capacity
- Class notation (CRS etc.)
- M/E Manufacturer
- M/E Model
- MCR(ME) (kW) / Revolution(ME)(rpm)
- Number of sets(M/E)
- A/E Manufacturer
- A/E Model
- MCR(AE) (kW) / Revolution(AE)(rpm)
- Number of sets(A/E)
- Type of Propeller(FPP or CPP) / Propeller Diameter / Number of Propeller blades / Number of sets(Propeller)
- Voltage of each Generator(V)

•EIAPP Certificates (each M/E and A/E)

•EEDI technical file (in case of ships to which EEDI was applied)

If you have any questions, please do not hesitate to contact us.