ABS MYFREEDOM™ CLIENT PORTAL

FuelEU Maritime Calculator

Step-by-step instructions to help you Investigate alternative Compliance Options for **FuelEU maritime.**

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For questions, please email ABSServiceDesk@eagle.org

How to Calculate FuelEu Maritime

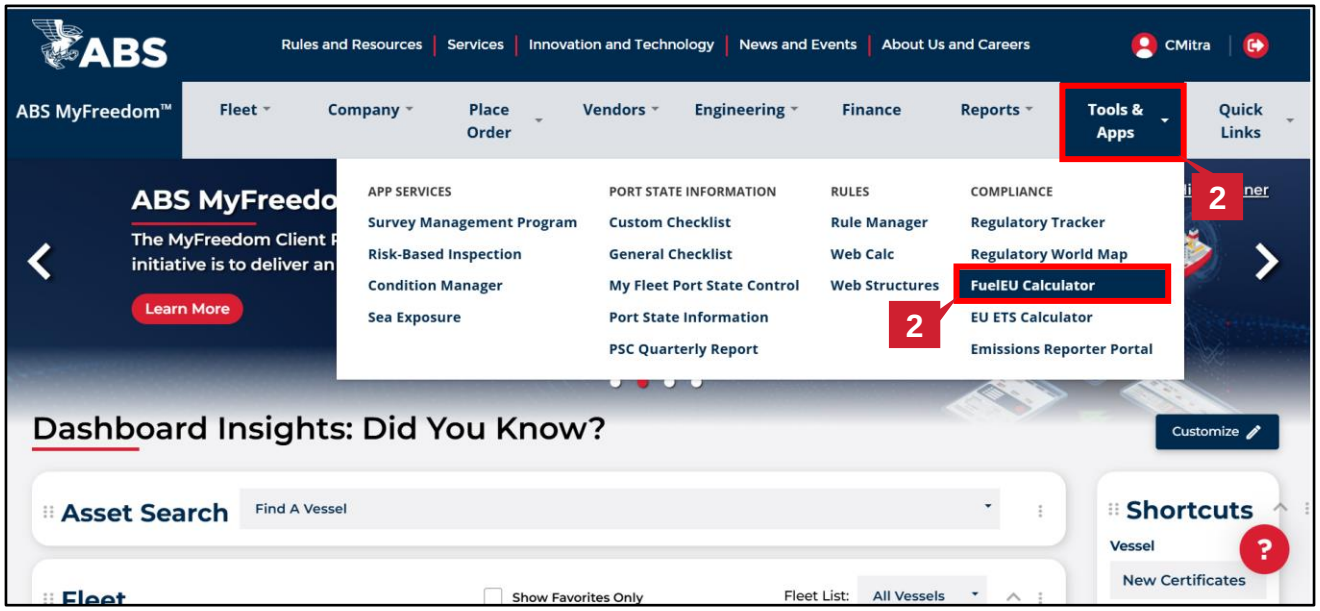
For **FuelEU Maritime Regulation,** this **FuelEU Maritime Calculator** is designed to help you explore various pooling combinations and calculate both the remedial penalty and the maximum potential value that the pooling arrangement can offer.

The application includes two distinct tools:

- **FuelEU Maritime Simulator**
- **FuelEU Maritime Exposure Estimator**

A) How to Calculate FuelEU Maritime Simulator

1	**Login** to **ABS MYFREEDOM™CLIENT PORTAL.**
2	Select **FuelEU Calculator** under **Compliance** from the **Tools & Apps** drop-down options.



Calculating FuelEU Maritime Simulator (Cout'd)

For the calculation to function properly, provide any amount of fuel consumption.

- You can combine various fossil fuels such as HFO, LFO, MDO/MGO, LPG, LNG, and grey fuels like Grey-Hydrogen, Grey-Ammonia, and Grey Methanol.
- You can also include biofuels such as Biodiesel, Bio-LNG, and e-fuels like Blue or Green-Ammonia.

Calculating FuelEU Maritime Simulator (Cout'd)

For Fossil fuels, provide the mass consumed (expressed in MT).

- For **LPG**, select between LPG Butane and LPG Propane,
- For **LNG**, select the LNG with its associated **methane slip value**.

For Biofuels, select the **biofuel type** (FAME, HVO, Ethanol fall under the Biodiesel category).

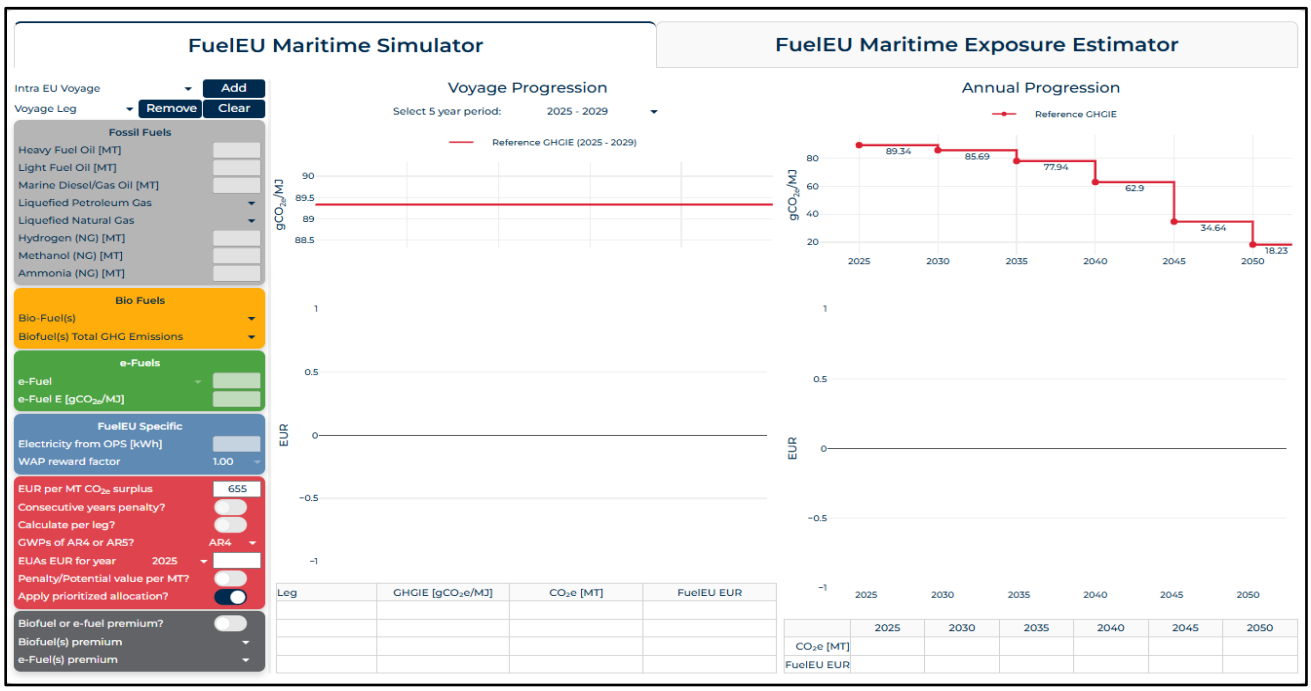
Bio-LNG, select the associated **methane slip value**.

- Specify the **Lower Calorific Value (LCV)** of the biofuel (expressed in MJ/g) and the **Total GHG Emissions** (the E value as indicated in the proof of sustainability) (expressed in gCO_{2e}/MJ).

For E-fuels, select the specific **type**, **relevant mass consumption** and the **Total GHG Emissions** (expressed in gCO_{2e}/MJ).

For all fuels, specify the **EUA price** to integrate the **EU ETS** and **FuelEU Maritime** remedial penalties and select the EU exposure, which is the percentage of reported fuels consumed during EU voyages (0-100%).

The calculator also allows you to input any electricity delivered from **Onshore Power Supply (OPS)** (expressed in kWh) and, at the vessel level, the relevant Wind Assisted Propulsion factor (f_{wind}).



Calculating FuelEU Maritime Simulator (Cout'd)

The calculator uses the Global Warming Potential (GWPs) as defined in the **Directive (EU) 2018/2001**, paragraph 4 of part C of Annex V, which are equal to 25 for CH_4 and 298 N_2O.

The potential value of the compliance surplus is calculated based on the following formula, in which the $GHGIE_{target}$ is the reference GHG intensity of the specific five period.

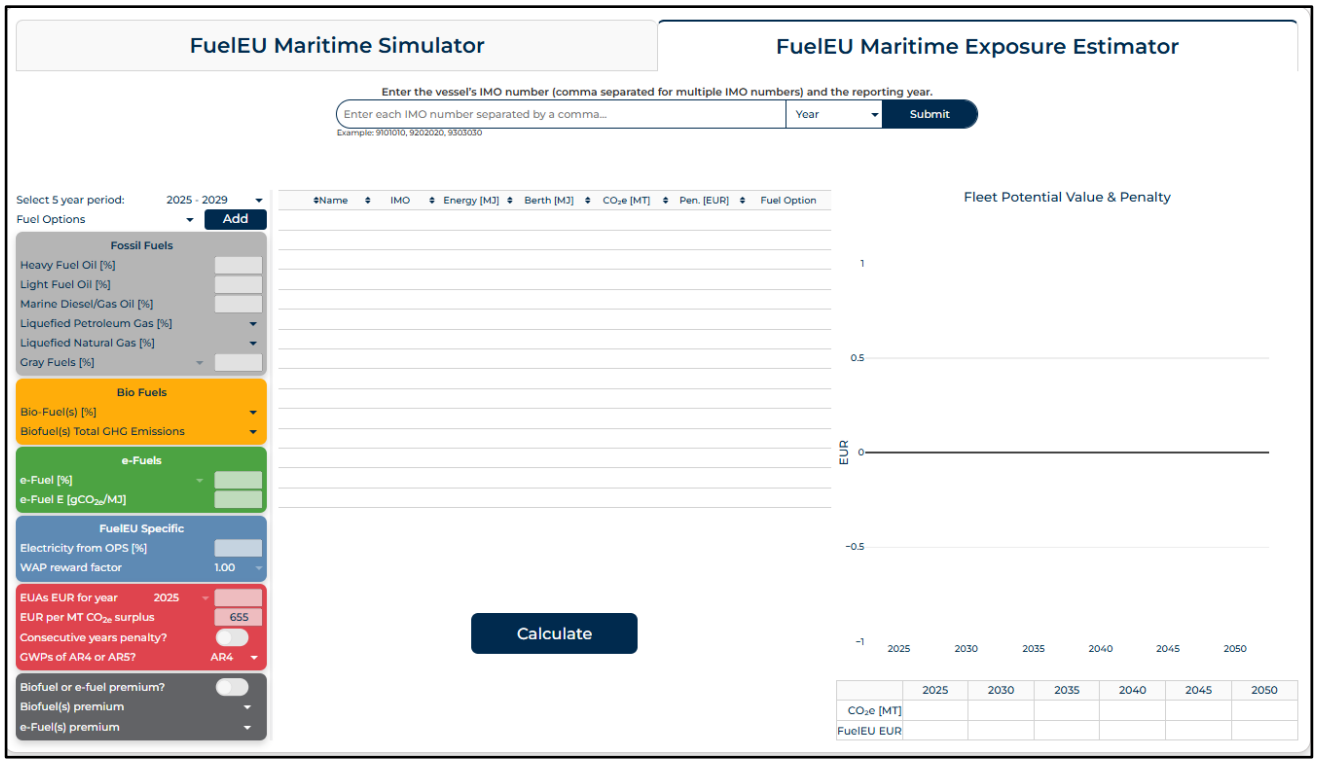
$$\text{Potential Value } [EUR] = \frac{Compliance\ Surplus\ [gCO_{2e}]}{GHGIE_{target}\ .41000}\ .\ 2400$$

In case that you have specified the consumption of a green fuel, then in the "FuelEU Pool Value" vertical bar chart and in the table below, results for the year 2034 are being also calculated, due to the rewarding factor of 2 (RWD) that is applied to sustainable green fuels till 31st December 2034.

The horizontal bar chart in the right side of the application provides the remedial penalty or the potential value, expressed in EUR, of one MT of fossil fuels, biofuel and e-fuel reported, with respect to the 5 years period you have selected.

B) How to Calculate FuelEU Maritime Exposure Estimator

The **FuelEU Maritime Exposure Estimator** is an upgraded version of the existing EU ETS and FuelEU Calculator.



To use it:

- Enter at least one IMO number in the **"Enter each IMO comma Separated"** field. For multiple IMOs, separate each one with a comma.
- Select the year for the verified **EU MRV data** from the **"Year"** dropdown and click **Submit**.
- Review the input IMOs displayed and remove any incorrect entries. Once the values are correct, press the **"Calculate"** button.
- You can calculate the compliance cost for different years by changing the **"Year"** field and clicking Calculate again.

After clicking the **"Calculate**" button, the **Compliance Balance** (expressed in MT CO_2e) and the **EUR Remedial Penalty** or **Potential Value** (if the fleet has a Compliance Surplus) will be calculated.

Once the calculations are complete, the **"FuelEU Report"** will appear. Click this button to download detailed FuelEU Report one-pagers to receive more information on the CO_2 compliance balance and the remedial penalty for each vessel from 2025 to 2050.

Calculating FuelEU Maritime Exposure Estimator (Cout'd)

A table will display the vessels you entered that were found in the EU MRV data for the selected year. This table includes:

- **Vessel name**
- **IMO number**
- **Estimated total energy consumed during EU voyages** (expressed in MJ)
- **Estimated energy consumed at EU berth** (expressed in MJ)
- **Fuel option per vessel**

Since the public **EU MRV Thetis data** does not include information on the fuels used, certain estimations are necessary to calculate the total energy consumption and energy used at berth for each vessel:

- For vessel types other than LNG and gas carriers, it is assumed that they consumed **85% LFO and 15% MGO** during their EU voyages.
- For LNG and gas carriers, if the average CO_2 emission factor is less than 2.8, it is assumed that these vessels consumed **98.5% LNG and LFO**; otherwise, 85% LFO and 15% MGO.

Once the calculations are complete, the application may create up to two fuel options:

1. **85% LFO and 15% MGO**
2. **98.5% LNG and 1.5% MGO**

You can create additional fuel options by clicking the "Add" button, specifying the percentage of each fuel and choosing from **HFO, LFO, MDO/MGO, LPG, LNG, grey** and **e-fuels**.

Additionally, you can select:

- **Percentage of Onshore Power Supply** (along with at least one fuel consumption), which is applied to the energy at berth entry for each vessel.
- **Wind Assisted Propulsion** ($fwind$ factor).

If no fuel consumption is specified, the application defaults to **85% LFO and 15% MGO.**

After creating additional fuel options, you can:

- Change the fuel option for each vessel by modifying the entries in the dropdown menu under the **"Fuel Option"** column.
- Recalculate **the Compliance Balance** and **Remedial Penalty** or **Potential Value** of the fleet by unchecking/checking the checkbox for each vessel.

Clicking **"Calculate"** again will recalculate the vessels based on their initial entries.

Additional Note

A fast and efficient way to enter multiple IMOs, comma separated is the following:

- Assuming that you have multiple IMOs already placed is an excel spreadsheet, column wisely.
- The whole column can be converted to be a string with comma separated values, based on the following formula:

$$= CONCATENATE(TRANSPOSE(A_{begin}: A_{end}), \quad ",")$$

Where A_{begin} and A_{end} are the first and the last cell of IMOs' list assuming that IMOs are placed in column A (in the following example A_{begin} = A1 and A_{end} = A6).

	A	B	C	D	E	F	G	H
1	IMO_1		IMO_1,	IMO_2,	IMO_3,	IMO_4,	IMO_5,	IMO_6,
2	IMO_2							
3	IMO_3							
4	IMO_4							
5	IMO_5							
6	IMO_6							

