RDBFIS – fleet analysis tool

Fleet Analysis: An Open Access Tool[1] has been developed and integrated within the RDBFIS to illustrate the evolution of fleet dynamics in Europe, with potential links to landings, discards, and value variables (FDI Table A).

Data from the professional fishing fleet, spanning the period from 1991 to 2024, was downloaded from the official EU Fleet Register portal[2]. GIS techniques were employed to spatially join the fishing ports with various geographical entities, including NUTS2 and NUTS3[3], FDI subregions[4], Geographical areas (GFCM, ICES). The fishing ports were match to LOCODE from the CIRCAMB Master Data Register[5]. The accuracy of the fishing port locations was validated using information available from the IFREMER Sextant portal[6].

The main interface of the RDBFIS web-based application is divided into two sections. The left panel hosts the primary navigation menu and the remaining screen area is dedicated to tabular data visualization, processing/analysis. The EU fleet is accessible through the "EU Fleet/Fishing Fleet Vessels" module. This module is organized into two main tabs, each supporting different stages of data exploration and analysis.

In the first tab, users can view the raw fleet open data exactly as provided by the official EU Fleet Register portal. The interface supports data filtering, enabling users to refine the dataset by year, country, vessel identifiers, event types, and other key attributes. All displayed data can be exported in CSV format, allowing users to conduct further offline analysis or integrate the data into external workflows (Figure 1).

The second tab provides an advanced analysis and reporting environment. Here, users can define fleet-related queries by selecting the relevant fleet segment, time period, and optional filters on vessel characteristics or geographical criteria. The tool enables the execution of standardized analyses based on predefined coding system used in EU (e.g. gears, vessel length, geographical areas). Results are generated automatically and may include aggregated statistics, vessel segmentation outputs, or comparative analyses across years or regions (Figure 2). This functionality supports the production of consistent and reproducible fleet reports, facilitating scientific evaluations and policy-driven decision-making within the EU fisheries context.

Together, these two components offer a complete workflow—from data retrieval and filtering to analytical processing—integrated seamlessly within the RDBFIS platform.

The automatic generation of a comprehensive report, including maps, graphs, and tabular information, is currently under development. The system is updated annually, when the complete data series is downloaded each March or April. The reference year corresponds to

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[1] *Accessible on https://medbs-rdbfis.hcmr.gr/ with credentials:* ***user*** *as username,* ***RDBF1$*** *as password*

[2] *https://webgate.ec.europa.eu/fleet-europa/index_en*

[3] *https://ec.europa.eu/eurostat/web/gisco/geodata/statistical-units/territorial-units-statistics*

[4] *https://dcf.ec.europa.eu/data-calls/fdi_en*

[5] *https://circabc.europa.eu/ui/group/3cc8c417-0f2a-4eb4-8ff7-10d60638446a/library/7133c5c8-305d-4a5b-9956-ae83f0e1a4f1*

[6] *https://sextant.ifremer.fr/*

the end of that year. Therefore, if you select 2024, the system will return the fleet status (i.e., the data) as it was on 31/12/2024.

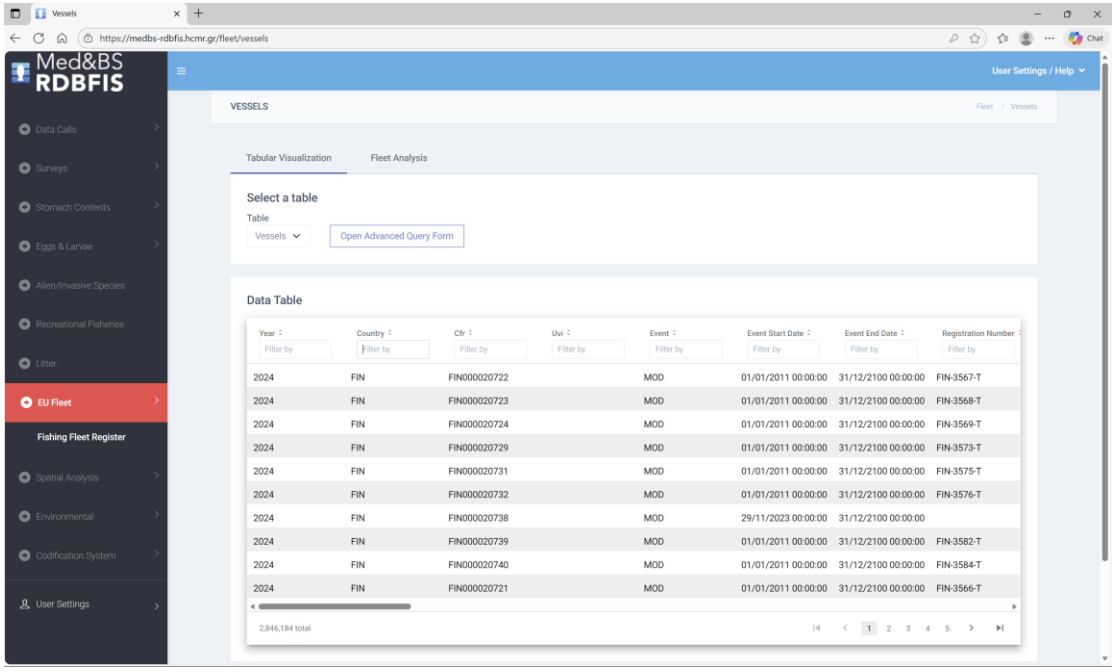


Figure 1. Tabular Visualization of the EU Fishing Fleet

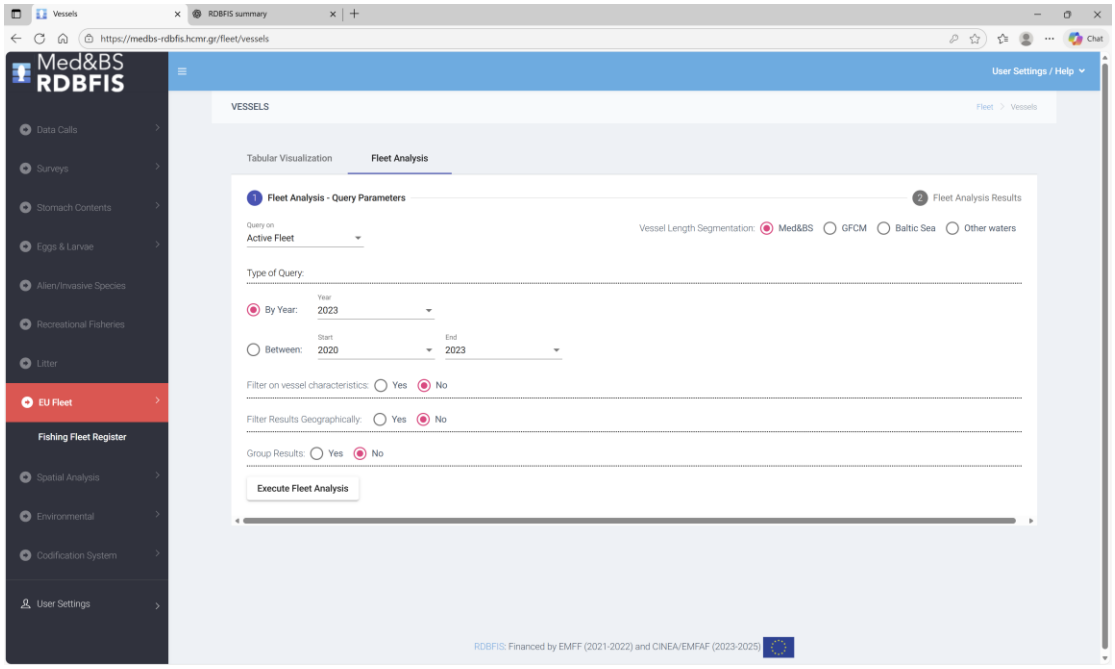
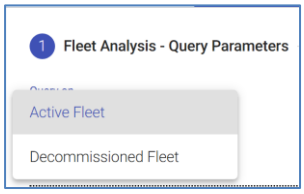


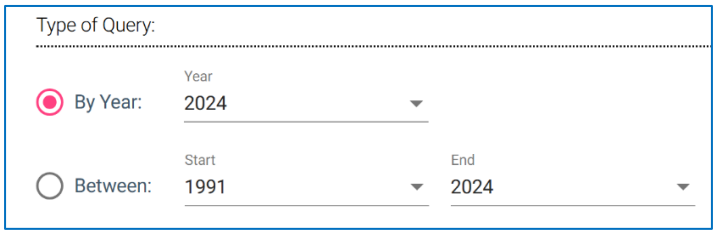
Figure 2. EU Fishing Fleet tool

Reports can be generated based on user-defined queries about active or decommissioned fishing fleets.



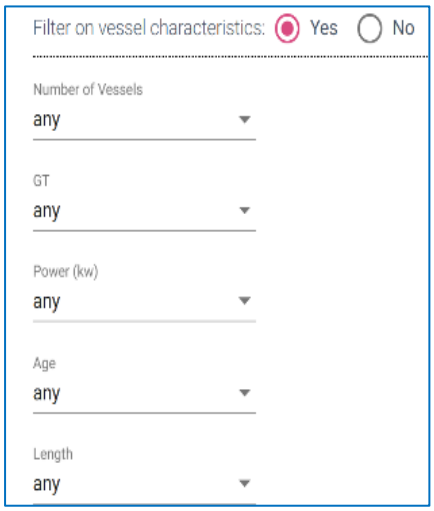
Four vessel length segmentations are available according to the code list provided in Appendix 2 of the FDI Annex 1 (Med&BS, Baltic Sea, Other waters) and in Appendix B of the GFCM/DCRF manual.

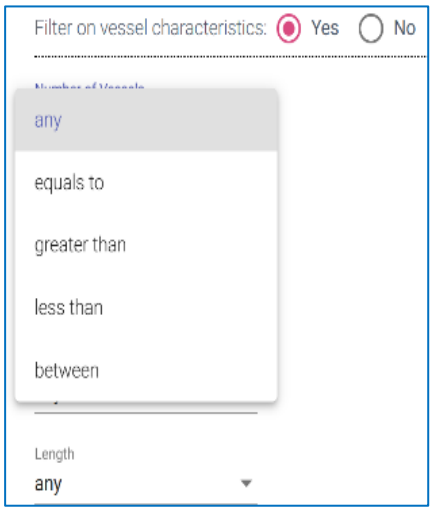
The queries can retrieve information for a specific year or a range of years (starting from the year 1991 up to current year-1).



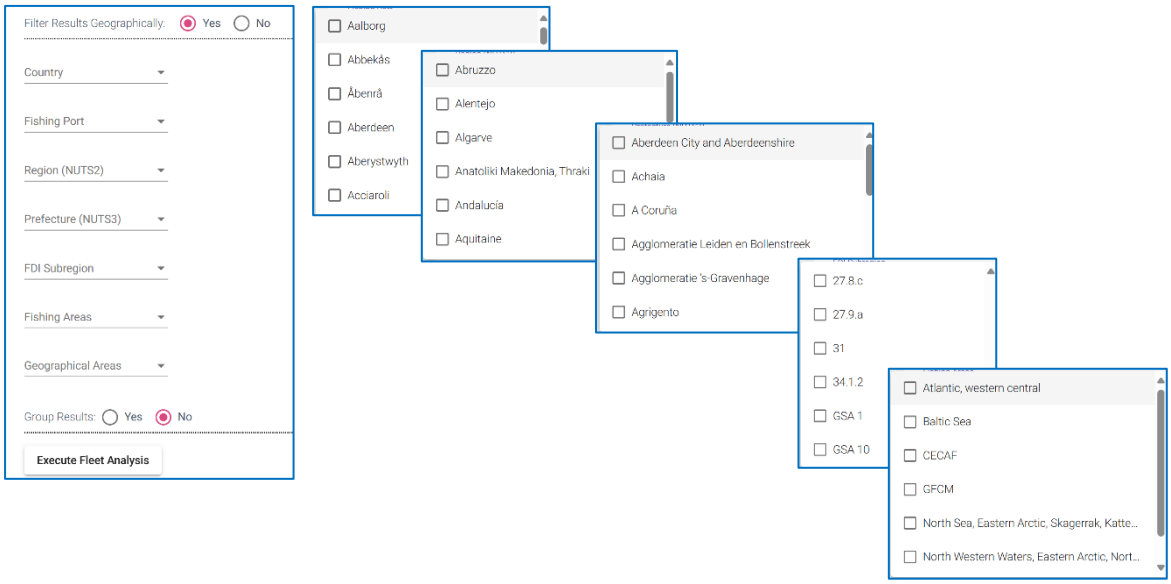
The requested information can be filtered:

(i) on vessel technical characteristics (GT, kW, age, length)

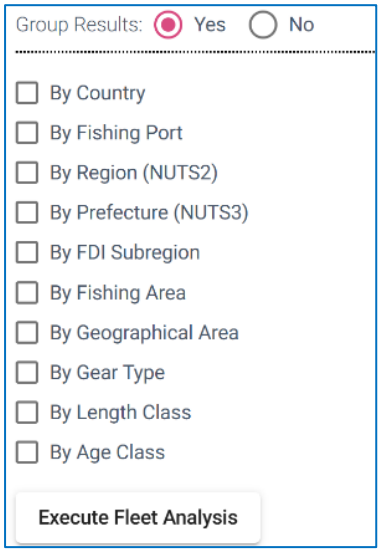




(ii) Geographically

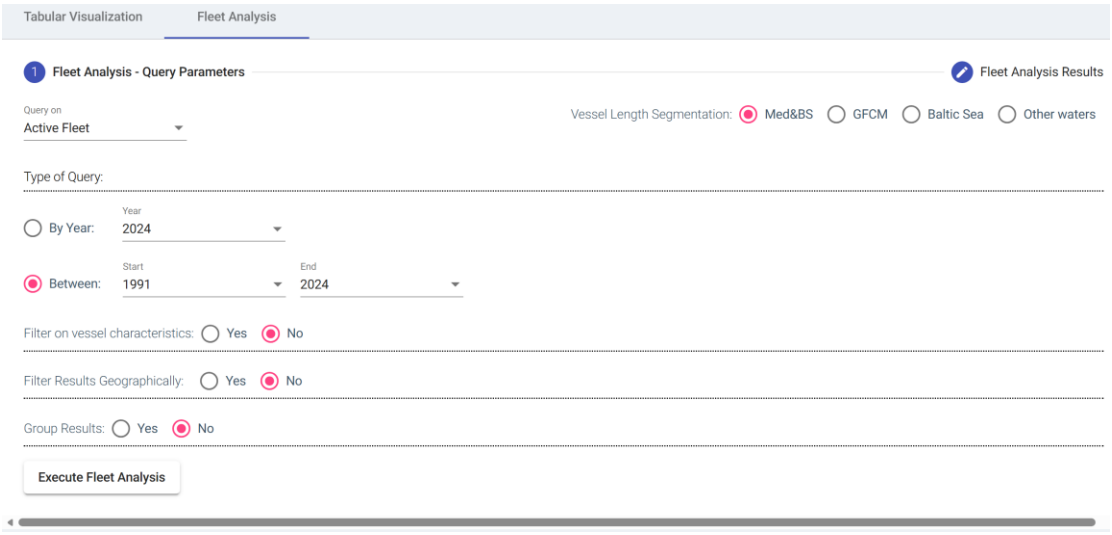


The results can be grouped:

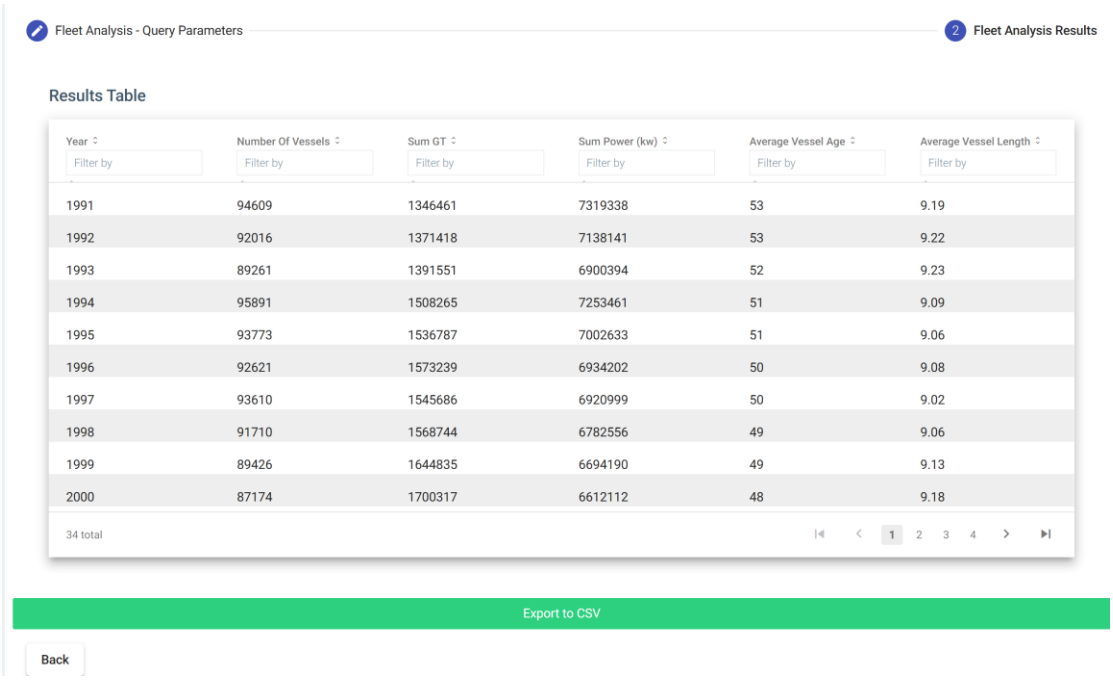


Below are example queries that extract information for the period 1991–2024.

1. The query …

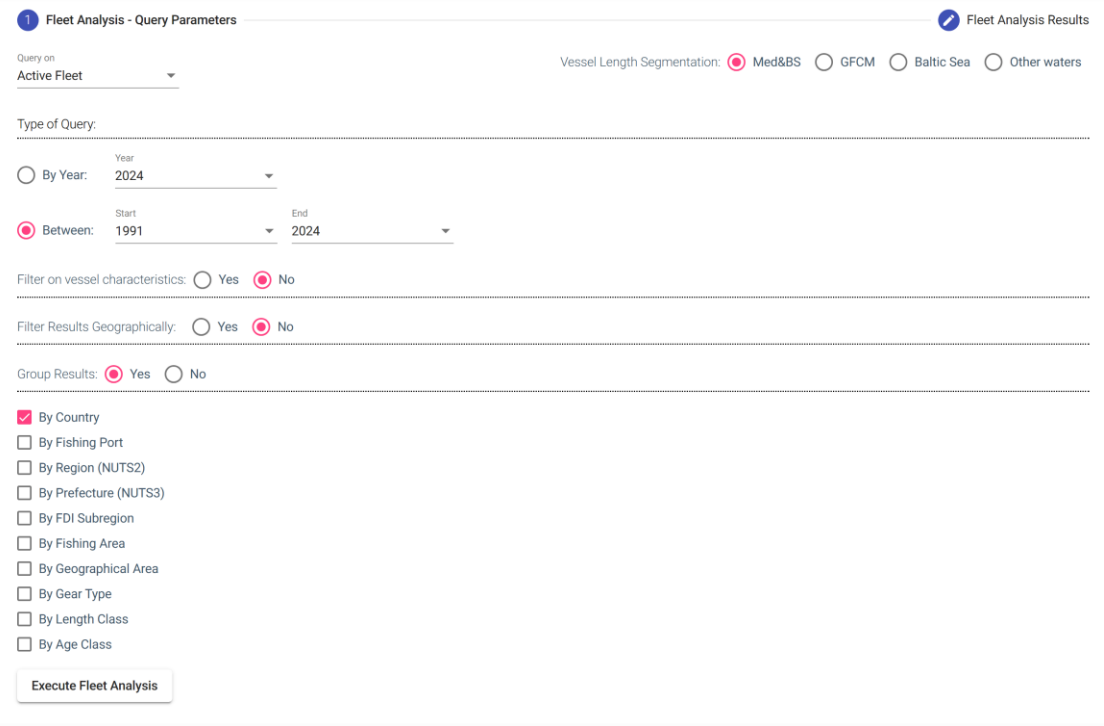


.. and the results (this query takes approximately 20 seconds to retrieve the data)

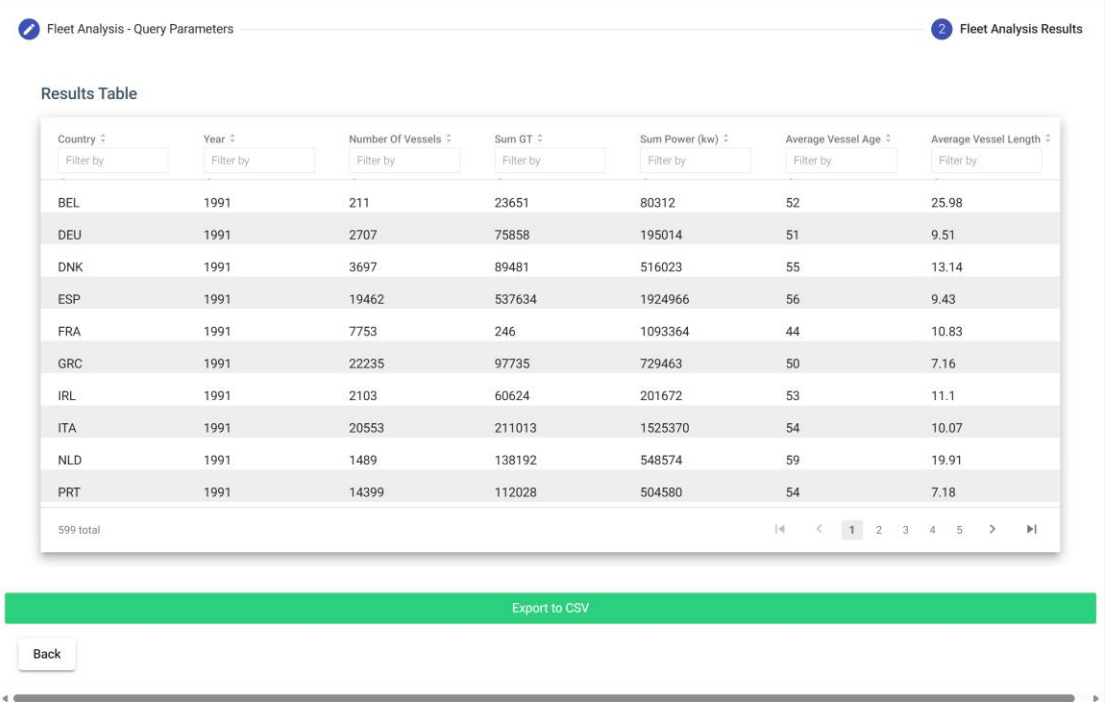


Click the “Back” button to navigate back to the query form.

2. The query …



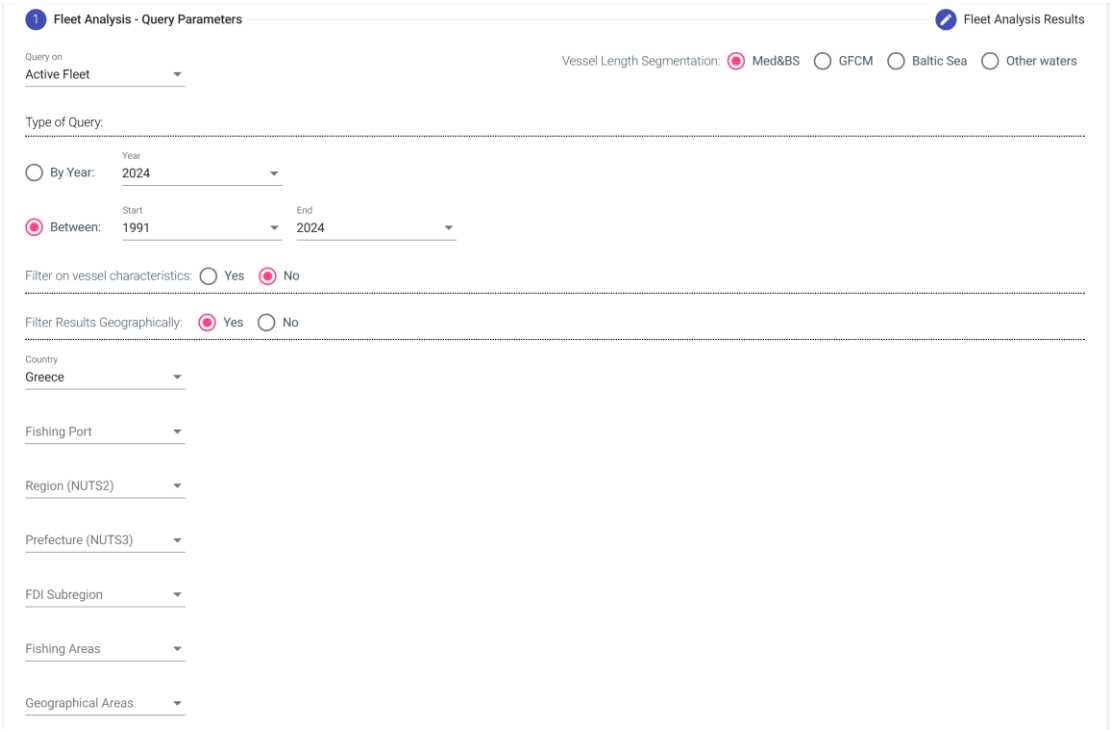
.. and the results (this query takes approximately 20 seconds to retrieve the data)



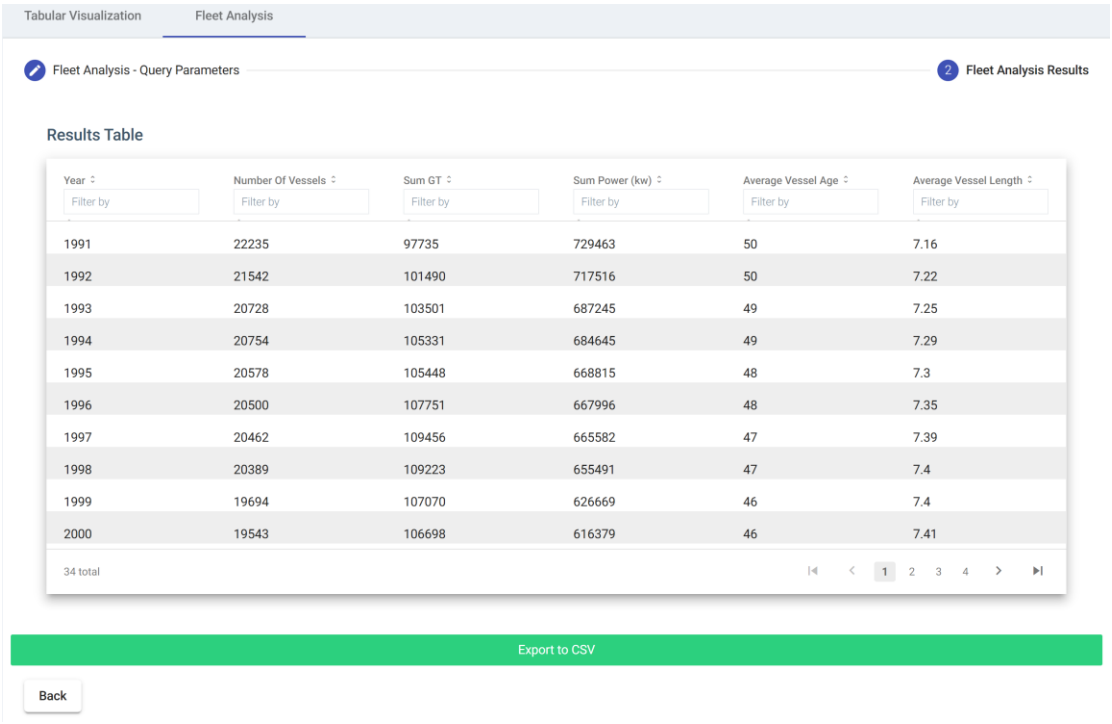
Country	Year	Number Of Vessels	Sum GT	Sum Power (kw)	Average Vessel Age	Average Vessel Length
BEL	1991	211	23651	80312	52	25.98
DEU	1991	2707	75858	195014	51	9.51
DNK	1991	3697	89481	516023	55	13.14
ESP	1991	19462	537634	1924966	56	9.43
FRA	1991	7753	246	1093364	44	10.83
GRC	1991	22235	97735	729463	50	7.16
IRL	1991	2103	60624	201672	53	11.1
ITA	1991	20553	211013	1525370	54	10.07
NLD	1991	1489	138192	548574	59	19.91
PRT	1991	14399	112028	504580	54	7.18

599 total

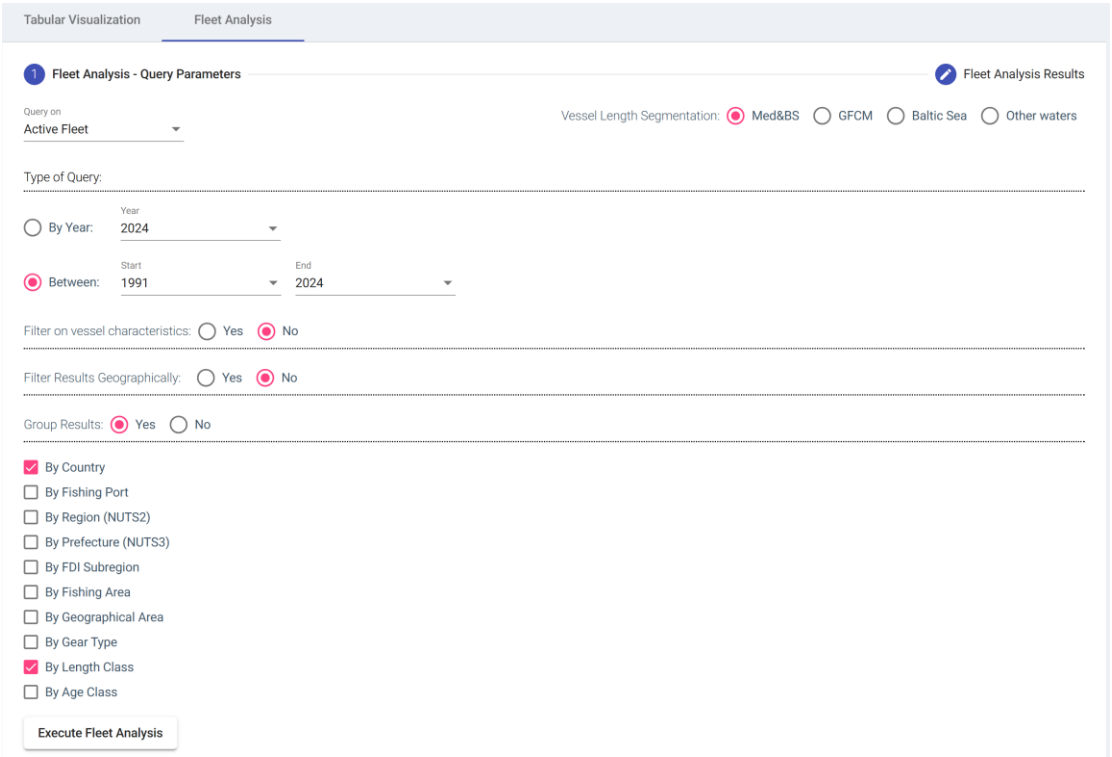
3. The query (Active fleet evolution 1991-2024 for Greece) ..



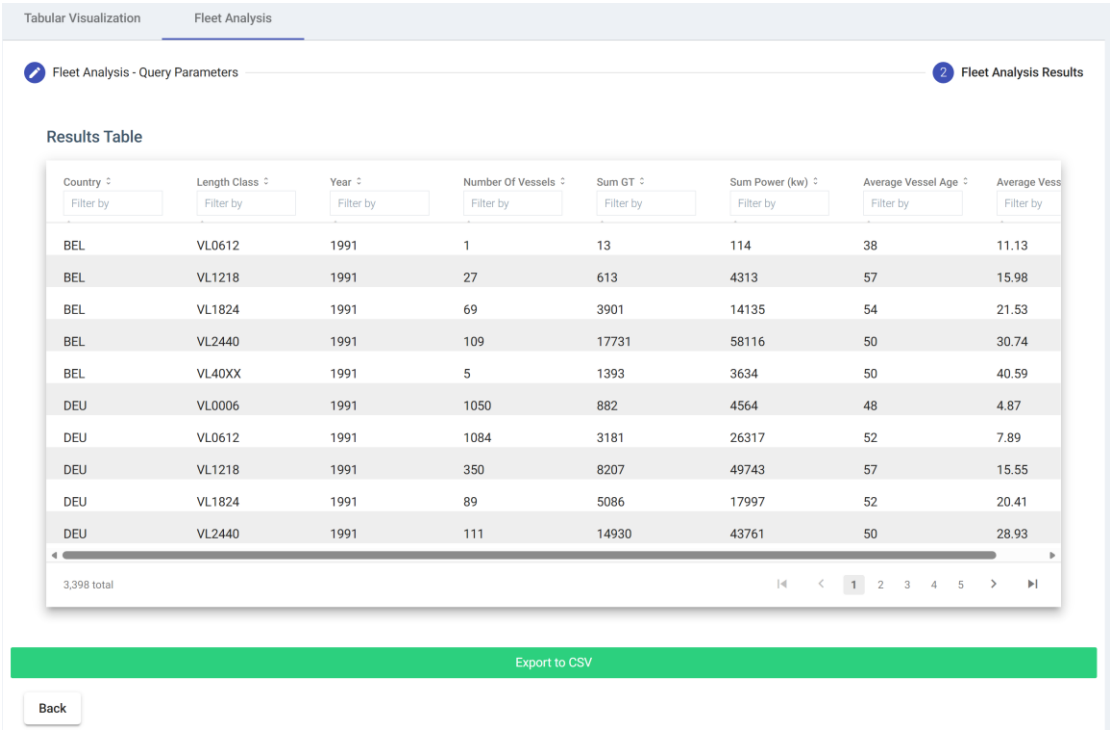
.. and the results (this query takes approximately 5 seconds to retrieve the data)



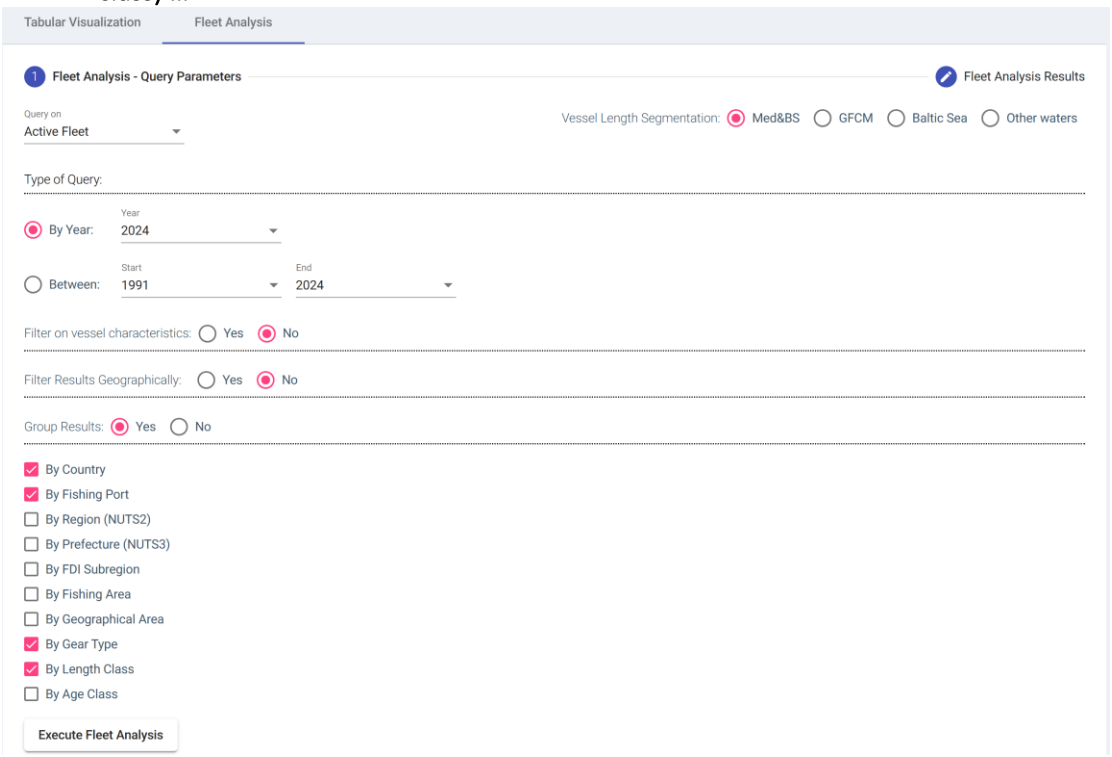
4. The query (Active fleet evolution 1991-2024 by country and length class)..



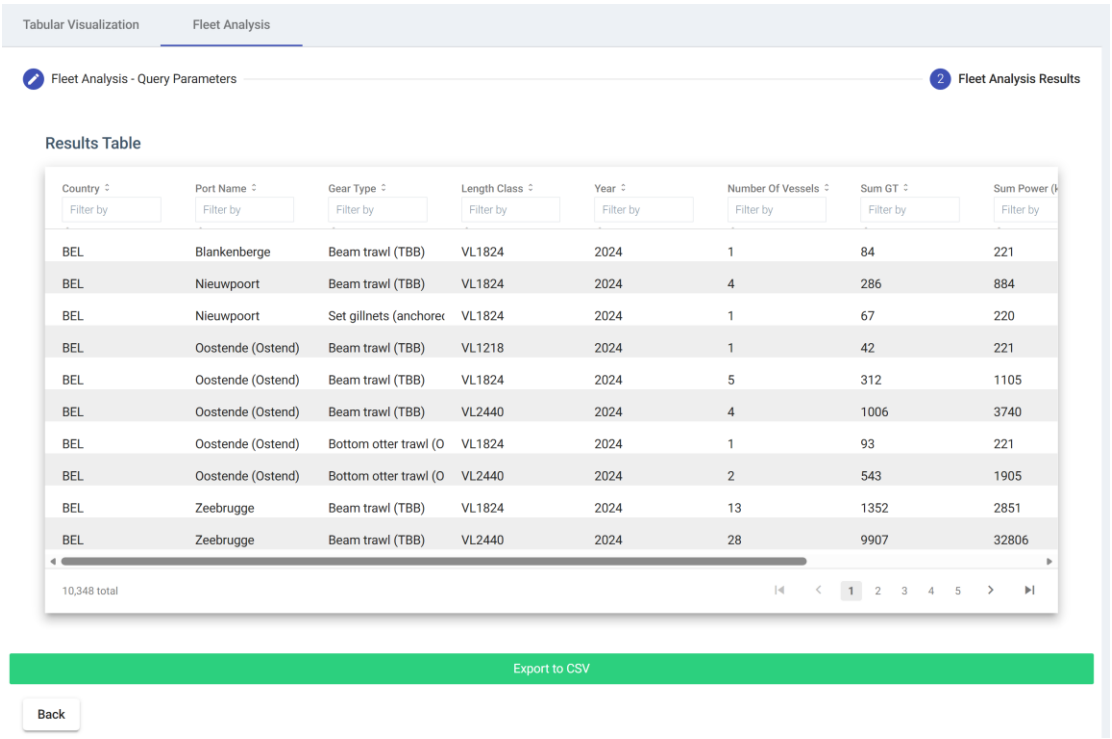
.. and the results



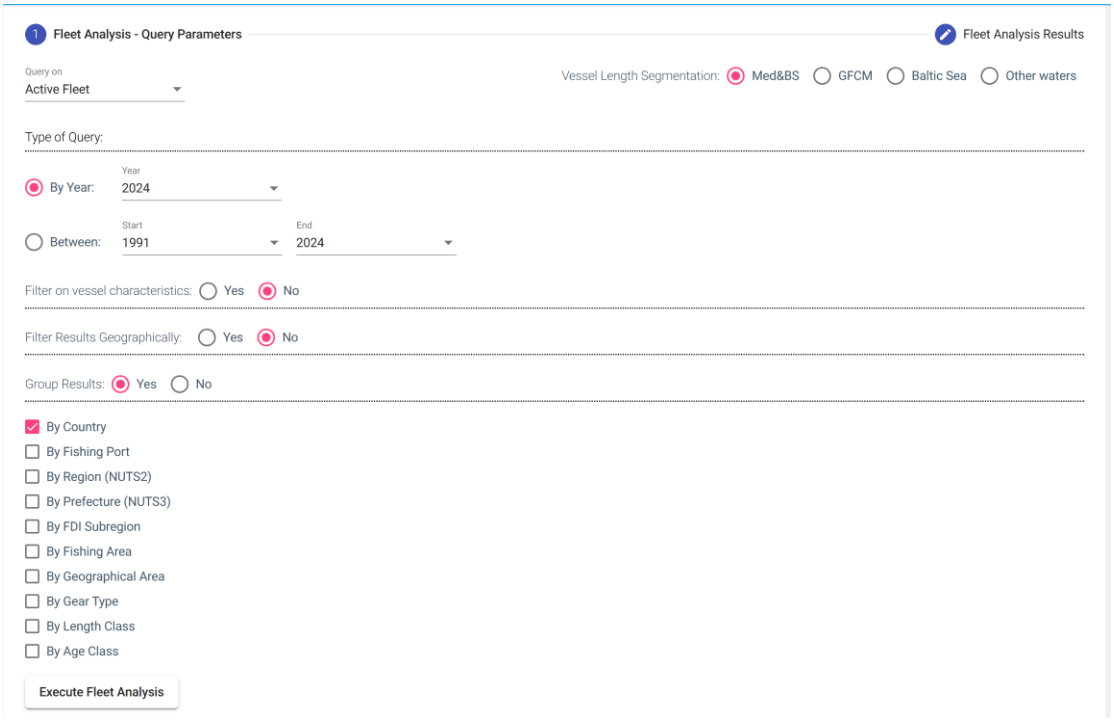
5. The query (requested information for 2024 by country, fishing port, gear type, length class) …



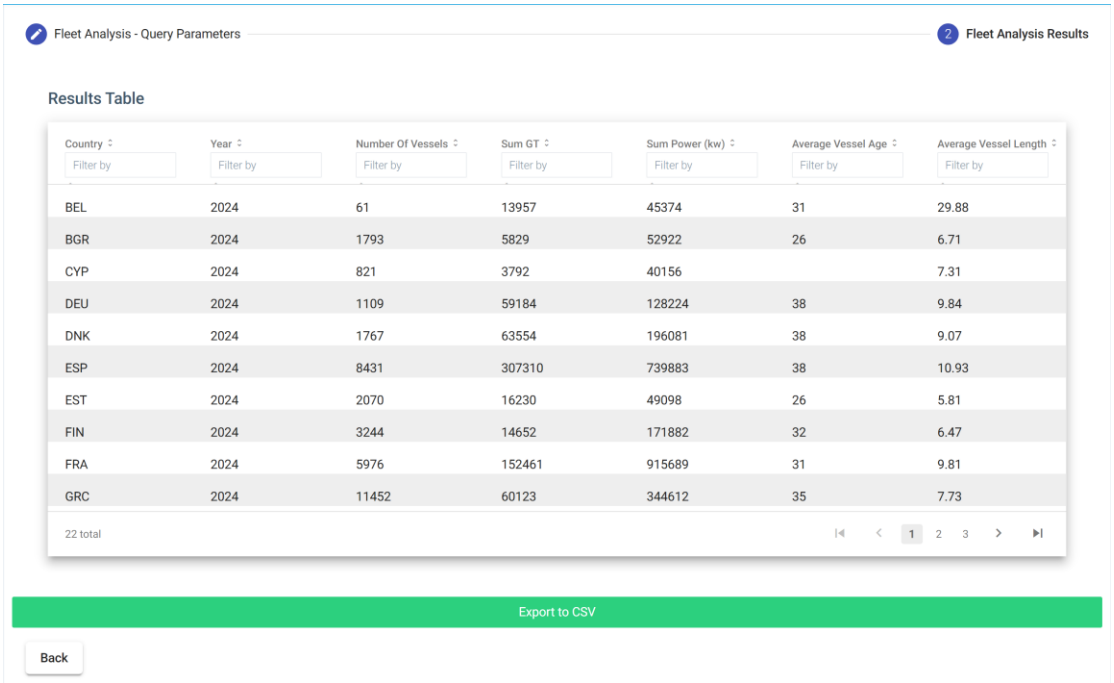
.. and the results (this query takes approximately 3 seconds to retrieve the data)



6. the query (requested information for 2024 by country) …



.. and the results (this query takes approximately 1 second to retrieve the data)



Country	Year	Number Of Vessels	Sum GT	Sum Power (kw)	Average Vessel Age	Average Vessel Length
BEL	2024	61	13957	45374	31	29.88
BGR	2024	1793	5829	52922	26	6.71
CYP	2024	821	3792	40156		7.31
DEU	2024	1109	59184	128224	38	9.84
DNK	2024	1767	63554	196081	38	9.07
ESP	2024	8431	307310	739883	38	10.93
EST	2024	2070	16230	49098	26	5.81
FIN	2024	3244	14652	171882	32	6.47
FRA	2024	5976	152461	915689	31	9.81
GRC	2024	11452	60123	344612	35	7.73

22 total