

INFORMATION  
BOOKLET



**MRV Compliant**  
**eMission Monitoring**  
**2024**



Ship Energy Efficiency Management

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## We Believe

- Prudent management towards safety and efficiency should be emerged effortlessly by adopting smart practices and forward thinking
- Focus on the root, all else will follow
  - Team work is a key for success
- Trust needs time, consistency and professionalism



## Our Commitment

**To maintain a high level of quality and strong customer service!  
Offer benchmarking tools across the shipping industry and assist knowledge to spread!**

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## DYNAMARINE APPROACH FOR EMISSION MONITORING

During the development of SEEMP, particular consideration should be given to **minimize any onboard administrative burden**. In addition, as far as SEEMP serves an optimization purpose, the **ship and company specific** feature should be highly emphasized. These two critical points are mentioned also in the legislation and the associated guidelines. Furthermore, according to the scope of SEEMP, improvement actions and upgrades should also be evaluated and adopted. DYNAMARINE introduces cost benefit analysis as a basis for the evaluation procedures.

In order to minimize onboard as well as the ashore administrative burden, DYNAMARINE strongly believes that sooner or later companies will acknowledge the need of an information system to collect, transmit and process the required data. For this reason, the Emission Monitoring System, developed by DYNAMARINE, will be fully compatible with this concept, whenever the company wishes to adopt same. In addition, DYNAMARINE offers such an information system at a minimum additional cost per ship on an annual basis. Our in-house solution is very competitive, with unique features (noon report integration, marine docs, alerts, etc.), and is part of a wider, constantly improving platform of marine electronic services.

## INFORMATION SYSTEM WHICH SUPPORTS CONTINUOUS IMPROVEMENT

DYNAMARINE has designed an information system (Emission Monitoring) for reception of data on a daily basis. Data will be feasible to be submitted in various formats in order to be adopt-

ed in current messaging system of each vessel. In this way we ensure that the capacity of message in kb will be optimized in order to minimize transmittance costs. All these data will be automatically sorted and stored in a cloud database for instant analysis. Various indexes will be calculated in order to verify ship performance and distinguish possible inefficient procedures. Comprehensive charts will give an in-depth view of vessel functionalities and offer the user numerous possibilities for thorough and systematic analysis. There will also be an advanced feature, where the user will be able to make comparisons with other sister vessels and evaluate his vessel behavior based on many different criteria.

"The company overview feature will summarize all the important information in a tabular format, for all ships, in one comprehensive screenshot. With this feature there is no need for going through all the noon reports, if there is not a specific issue to examine."

"The reporting feature will provide to the user a customized report for the ship performance with comparative data from other sister vessels of the same company and from other companies as a benchmark. Furthermore, the system will offer to the end user extensive company reports, where the overall performance of the company will be presented, also in a customized view."

This online information system will offer the user, carbon footprint, etc.) at a minimum cost. There is no need to occupy any IT position, the service will be constantly developing according to the needs and the updates will be instantly available to all users. This online platform will be secured and will be treated with particularly confidentiality for all clients.



## YOUR BENEFITS

Your benefits from the proposed Emission Monitoring System, developed by DYNAMARINE are the following:

Easy access to fleet energy data

Comprehensive reports

Energy flow and in depth analysis tools

Comparison features provided

Benchmarking tools

Minimize shore workload

CO<sub>2</sub> & EEOI



## EMISSION MONITORING PLATFORM TOOLS

### Company page – Fleet overview and consumption alarms

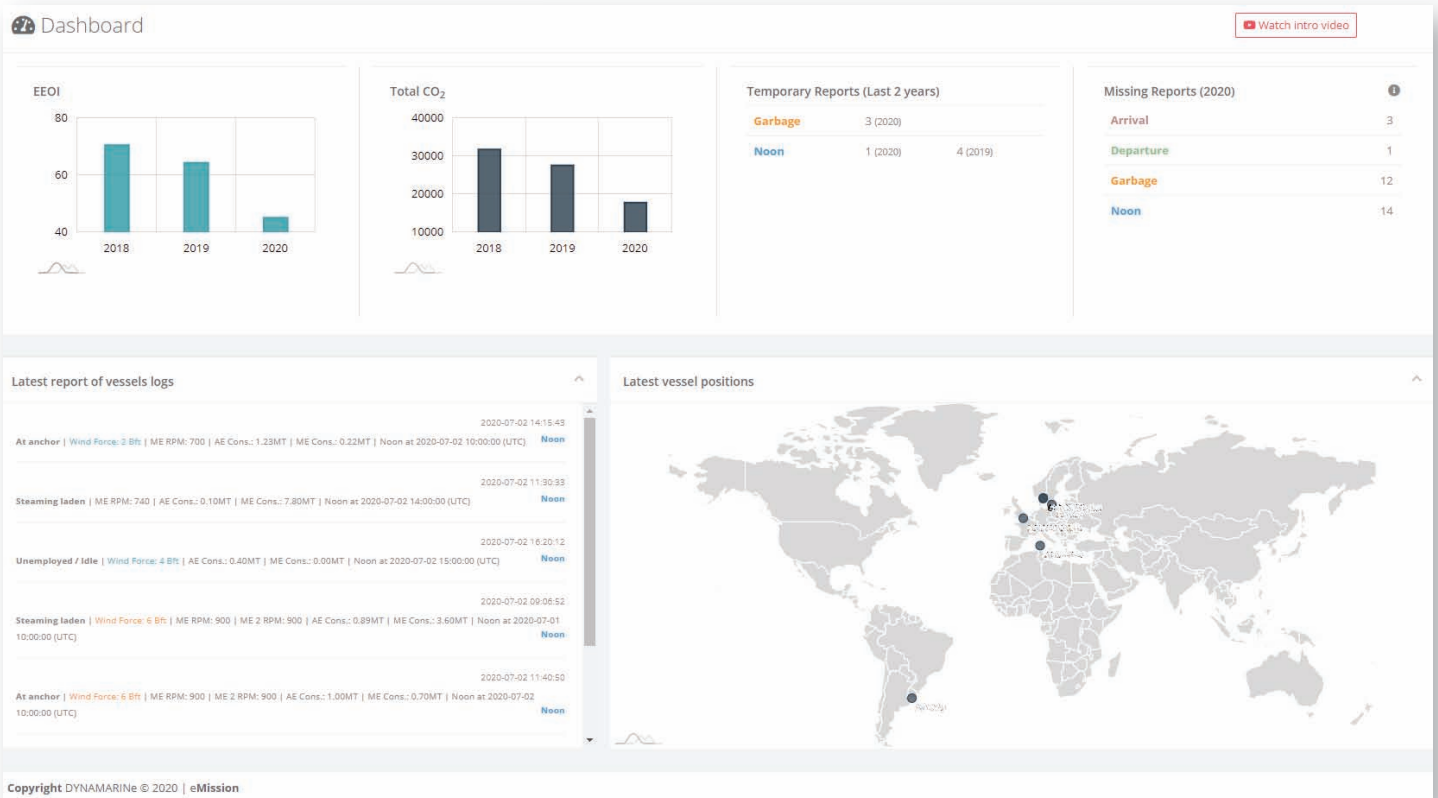


Figure 1. Central view panel

In this section the user can easily check the last received noon reports and view directly last reported positions, either for specific vessels or for the whole fleet.

Here the user can also view the 24hrs main engine consumption, the auxiliary engine consumption, the average M/E RPM, the EEOI indexation per year, as it is derived by the consolidated data in the records as well as the total CO<sub>2</sub> emissions for the whole company per year. Additionally, the user has an overview of the temporary reports for the last 2 years, as well as a view of the missing reports of the current year. Finally, the user is also

provided with a company EEOI and total CO<sub>2</sub> for the last three years, which is based on the performance of all the vessels.





Figure 2. Fleet position

## Reporting forms section

### Confirmed reports

Highlighted reports have edit mode enabled in client side

Noon Arrival Departure Garbage

PDF CSV COPY Show 10 entries Search:

	Date (UTC)	Voyage	Condition	Total CO2 emission	Next port	ETA next port	Timezone	
🕒	2019-12-31 06:00:00	8	Steaming ballast	160.70	MESSAIEED	2020-01-06	+6	🔍
🕒	2019-12-30 05:00:00	8	Steaming ballast	155.98	MESSAIEED	2020-01-06	+7	🔍
🕒	2019-12-29 05:00:00	8	Steaming ballast	167.32	MESSAIEED	2020-01-06	+7	🔍
🕒	2019-12-28 04:00:00	8	Steaming ballast	58.29	MESSAIEED	2020-01-06	+8	🔍
🕒	2019-12-27 03:00:00	8	Steaming ballast	104.30	SINGAPORE OPL ANCHORAGE	2019-12-27	+9	🔍
🕒	2019-12-26 04:00:00	8	Steaming ballast	139.28	SINGAPORE OPL ANCHORAGE	2019-12-27	+8	🔍
🕒	2019-12-25 04:00:00	8	Steaming ballast	150.30	SINGAPORE OPL ANCHORAGE	2019-12-27	+8	🔍
🕒	2019-12-24 04:00:00	8	Steaming ballast	157.24	SINGAPORE OPL ANCHORAGE	2019-12-27	+8	🔍
🕒	2019-12-23 03:00:00	8	Steaming ballast	155.03	SINGAPORE OPL ANCHORAGE	2019-12-27	+9	🔍
🕒	2019-12-22 03:00:00	8	Steaming ballast	154.09	SINGAPORE OPL ANCHORAGE	2019-12-27	+9	🔍

The archive section refers to the confirmed reports of a company that are stored in our database

## Temporary reports section

	Received Date	Datetime (UTC)	Vessel	Imo	Version	Voyage	Actions
<a href="#">New</a>	2020-07-03 11:15:02	2020-07-03 08:00:00			6.6	V459X	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 10:15:02	2020-07-03 05:00:00			6.5	03B/20	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 09:15:02	2020-07-03 03:00:00			6.7	03	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 08:15:02	2020-07-03 04:00:00			6.5	206 S	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 08:15:02	2020-07-03 03:00:00			6.5	50B	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 07:15:02	2020-07-03 05:00:00			6.5	20/2020	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 07:15:02	2020-07-03 04:00:00			6.5	TC V7	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 07:15:02	2020-07-03 04:00:00			6.5	79L	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 06:15:02	2020-07-03 04:00:00			6.5	14/D/2020	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>
<a href="#">New</a>	2020-07-03 06:15:02	2020-07-02 04:00:00			6.5	79L	<a href="#">✓</a> <a href="#">✎</a> <a href="#">🗑</a>

Figure 3. Control panel for the reports with inconsistencies

Here, the user can check all the reports' inconsistencies that have been automatically recognized by the system. The user can select a specific date, view the errors, and submit any corrections, if required. The specific noon report, which is identified with an error, stays as a temporary file, until the

corrections have been first saved, and then submitted.

The "tick" button instantly confirms a report sending it to the database, and the "trash can" button instantly removes it. Below follows the correction section, expanded by the "pen" (edit) button.

❗ Errors (1)

⚠ Warnings (11)

✓ Confirm 💾 Save 🗑 Ignore Expand all

**Voyage Details**

**General Details**

Average Speed over ground:  Knots

Draft Fwd:  meters

Observed Distance (since previous state):  Nmiles

Distance to go:  Nmiles

Distance sailed through ICE:  Nmiles

Wind Force:  Beaufort

Sea Current Speed:  Knots

Swell Height:  meters

Average Speed over water:  Knots

Draft Aft:  meters

Total distance on passage:  Nmiles (Until now)

ETA Next Port Date:

Hours sailed through ICE:  hrs

Wind Direction:

Sea Current Direction:

Swell Direction:

Daily Average Sllp:  %

Total Steaming on Passage:  hrs (Until now)

ETA Next Port Time:

Total Stop / Delays:  hrs (last 24 hours)

Pitch:  meters

Total Steaming in Heavy Weather:  hrs (last 24 hours)

Next Port:

Stop / Delays reason:

**Stoppages since previous report**

Type:

Date:

Time:

Duration:

[+](#)

**Engine Details (from previous state)**

**Cargo Details**

**Bunkers consumption (from previous state)**

Figure 4. Report correction section

In the current section the user shall edit all the values of a given report. After the implementation of the amendments, the user has to first, save, and then submit the report.

**Errors (1)**  
**Warnings (6)**

Confirm Save Ignore Close all Hide existing

**Voyage Details**  
**General Details**

Average Speed over ground: 0 Knots 12.42	Average Speed over water: 0 Knots 13.36	Daily Average Slip: 0 % 7.06	Pitch: 0 meters 5.7502
Draft Fwd: 10.5 meters 12.9	Draft Aft: 10.5 meters 12.9	Total distance on passage: Nmiles (Until now)	Total Steaming on Passage: hrs (Until now)
Observed Distance (since previous state): 0 Nmiles 296	ETA Next Port Date: 03-07-2020 01-06-2020	ETA Next Port Time: 15:00 19:00	Total Steaming In Heavy Weather: 0 hrs (last 24 hours)
Distance to go: 0 Nmiles 68	Hours sailed through ICE: 0 hrs	Next Port: Botany Bay SINGAPORE	Stop / Delays reason:
Distance sailed through ICE: 0 Nmiles	Wind Force: 3 Beaufort 5	Wind Direction: N SW	Total Stop / Delays: 0 hrs (last 24 hours)
Sea Current Speed: 0.3 Knoss 0.5	Sea Current Direction: SW NE	Swell Height: 0.5 meters 1	
Stoppages since previous report			

**Figure 5. Comparison of an inconsistent, duplicate report**

A duplicate report again goes to the temporary section, labeled as "Duplicate"

**Duplicate** 2020-07-23 11:15:02 2020-07-23 04:00:00

As illustrated in Figure 5, the user may "Compare with existing" values. The two duplicate reports, may refer to the same date, but they may differ in the values inserted: values in red indicate incompatibility with the already archived values, otherwise, values that appear in green, show a match in the values of the two reports.





## Analysis section

In this section the user can proceed with numerous analysis tools and benchmarking for his vessels, as illustrated below.

### Benchmarking tools

Vessel	Type	Deadweight	Year of Build	Vessel Indexes				Equivalent Indexes <sup>®</sup>			
				EEOI	Fuel Efficiency Index <sup>®</sup>	ME SFOC Ballast	ME SFOC Laden	EEOI	Fuel Efficiency Index	ME SFOC Ballast	ME SFOC Laden
				(gr CO <sub>2</sub> /tn*nm)	(tn / nm)	(gr/kWh)	(gr/kWh)	(gr CO <sub>2</sub> /tn*nm)	(tn / nm)	(gr/kWh)	(gr/kWh)
Chemical/Oil Products Tanker		3522	2005	115.28	0.072	280.7	344.11	115.15	0.067	377.02	283.78
Oil products tanker		2490	1997	65.6	0.025	162.38	150.06	65.6	0.025	162.38	150.06
Chemical/Oil Products Tanker		6019	2002	72.91	0.05	203.54	181.22	72.91	0.05	203.54	181.22
Oil products tanker		3813	2005	133.82	0.038	176.09	168.3	80.83	0.028	140.44	153.48
Chemical/Oil Products Tanker		3522	2006	115.02	0.062	378.35	245.68	115.15	0.067	377.02	283.78
Chemical/Oil Products Tanker		11299.9	1970	35.59	0.05	201.82	198.79	35.59	0.05	201.82	198.79
Chemical/Oil Products Tanker		8129	2007	39.66	0.044	181.08	177.06	39.66	0.044	181.08	177.06
Oil products tanker		3814	2006	59.93	0.023	133.09	143.33	80.83	0.028	140.44	153.48

Figure 6. Benchmarking Table

The user is provided with indicators to compare vessels of his company with an "equivalent vessel" that derives from consolidated data from our whole database. An "equivalent vessel" is defined based on the following criteria:

- Same vessel type
- Similar deadweight
- Similar vessel ages

The comparison shows the indexes in red that are worse than equivalent indexes, and in blue, the indexes that are better than the equivalent ones.







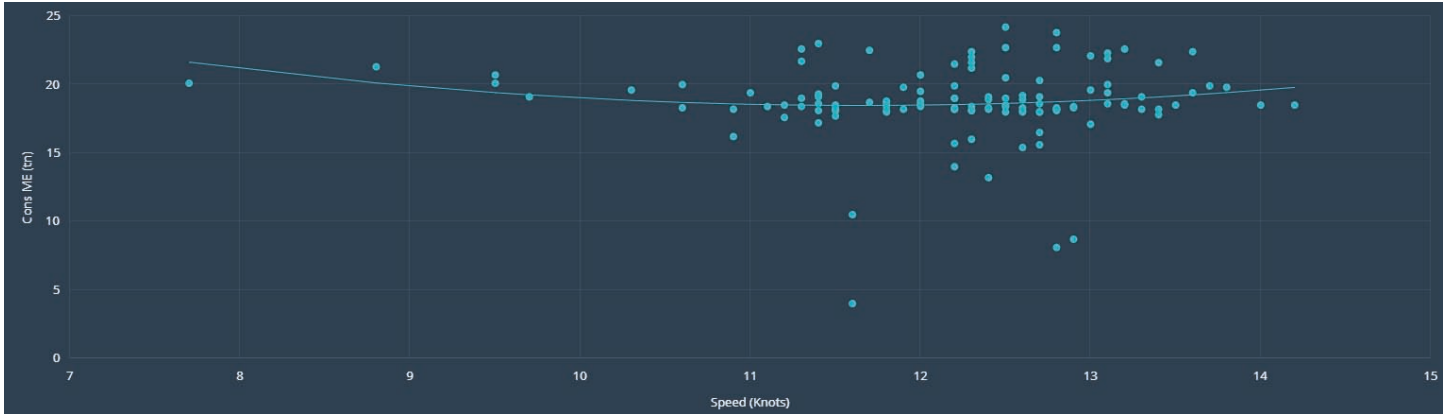


Figure 8. Daily analysis – consumptions vs. speed

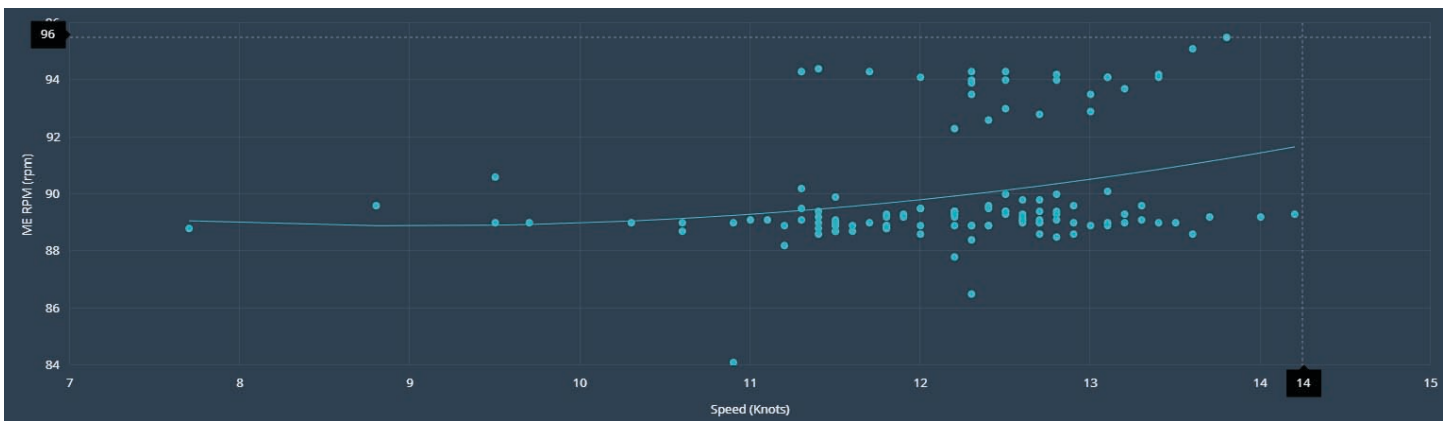


Figure 9. Daily analysis – RPM vs Speed

Bar and linear charts output

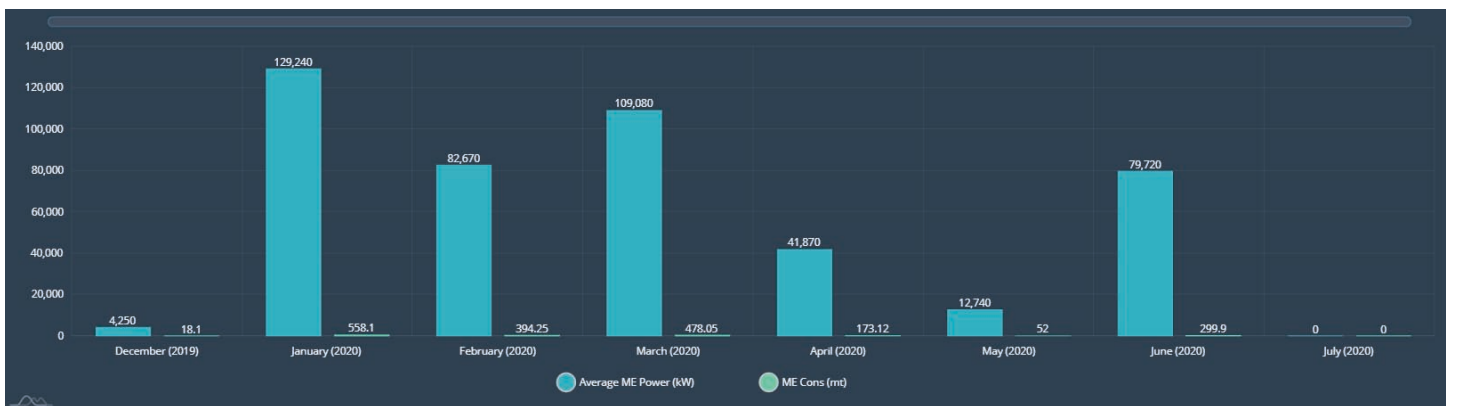


Figure 10. Average ME power per ME consumption

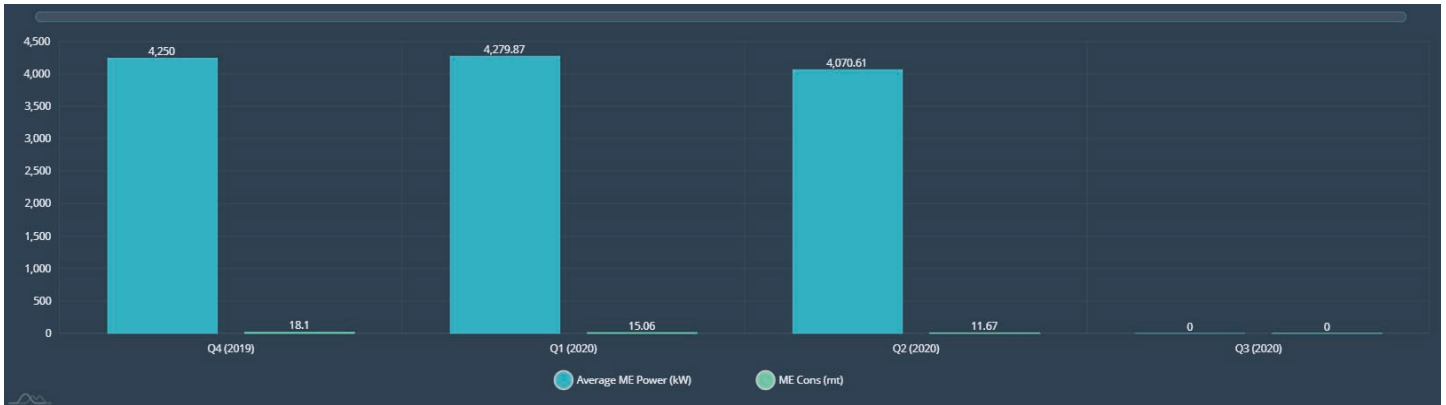


Figure 11. Average ME power per ME consumption

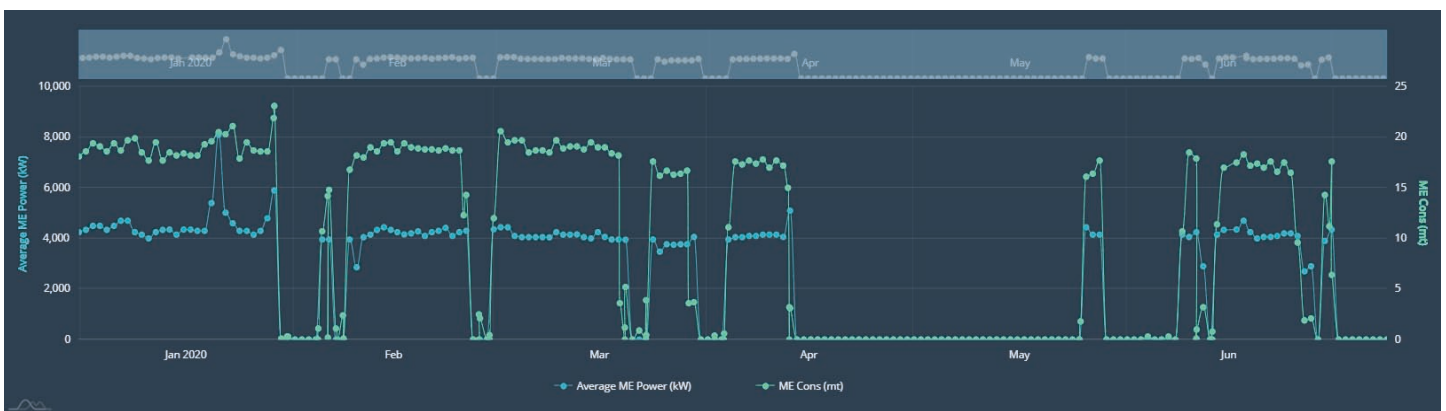


Figure 12. Linear average ME power per ME consumption

### Predefined charts and vessel comparison

The performance of a vessel can be compared to the performance of equivalent (as of type, size, and year of construction)vessels, chosen from our database. This feature allows the immediate view of the two vessels' indices in different colors, as illustrated below.

The user still has the same options in terms of exporting the information of the graph or saving the chart as shown.

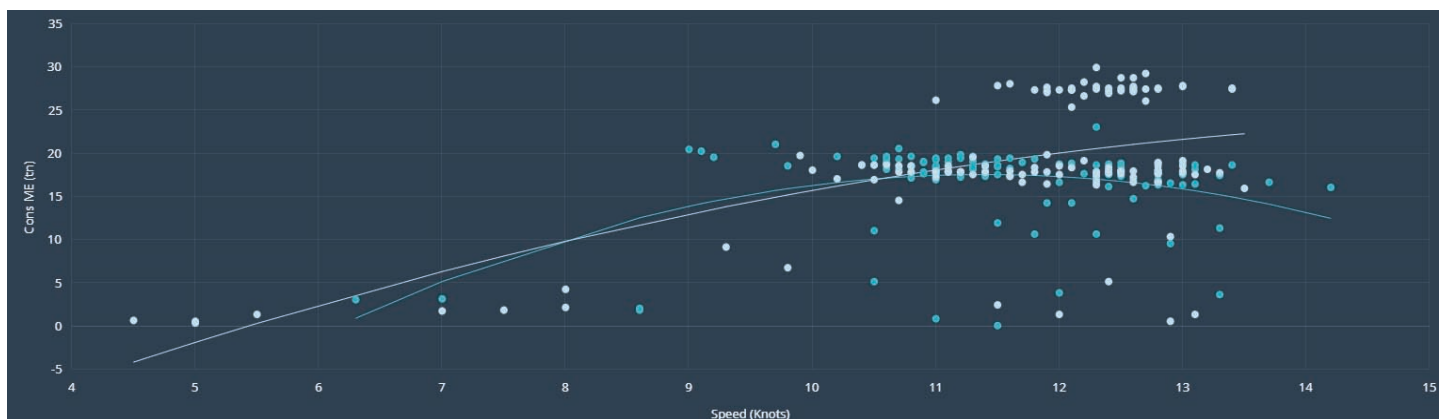
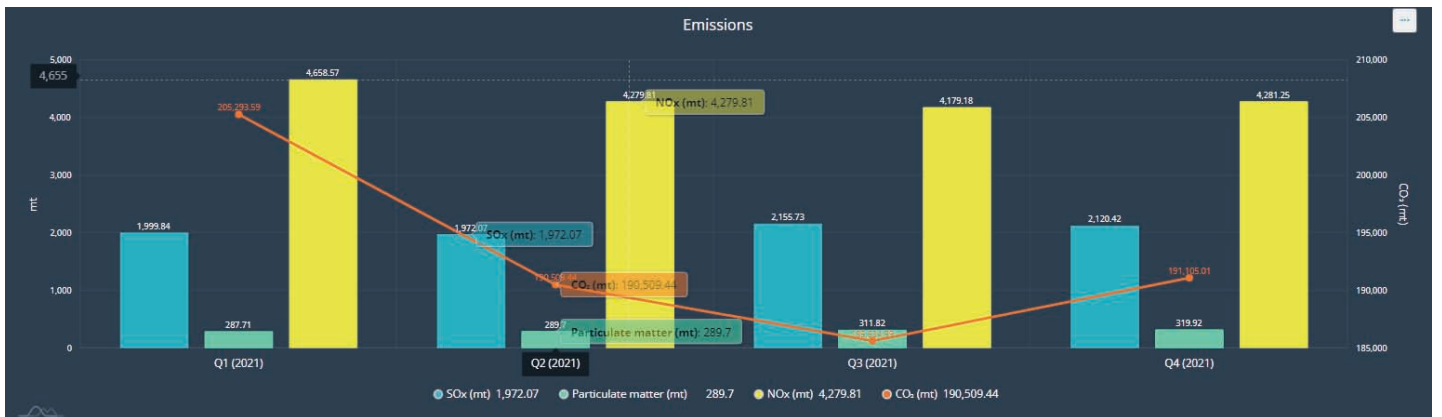
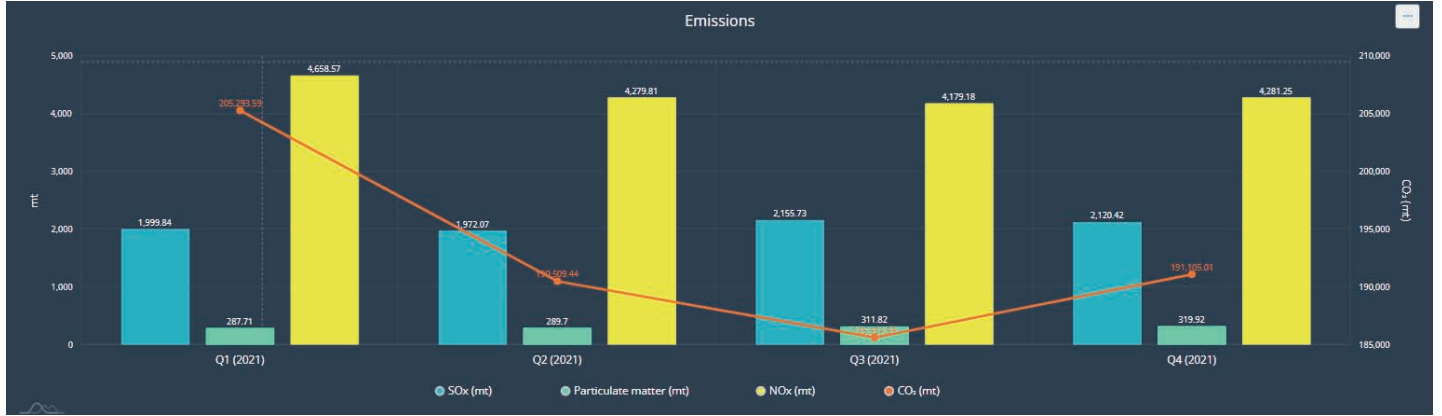
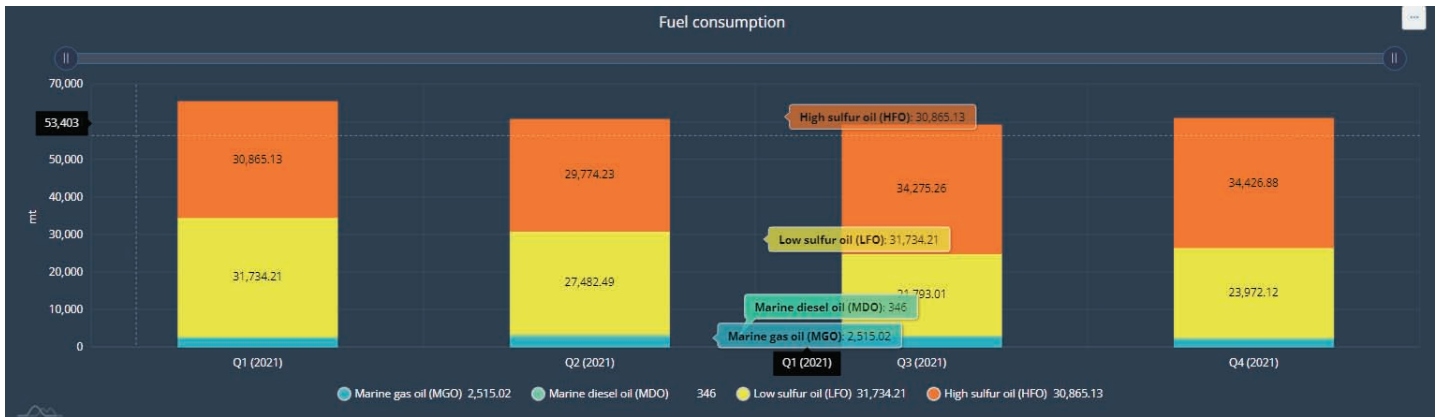


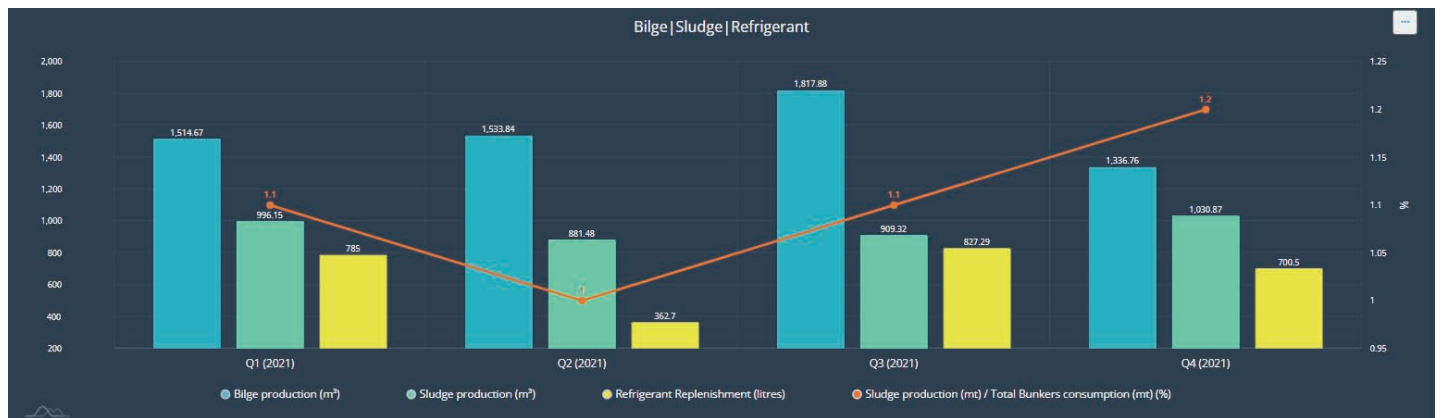
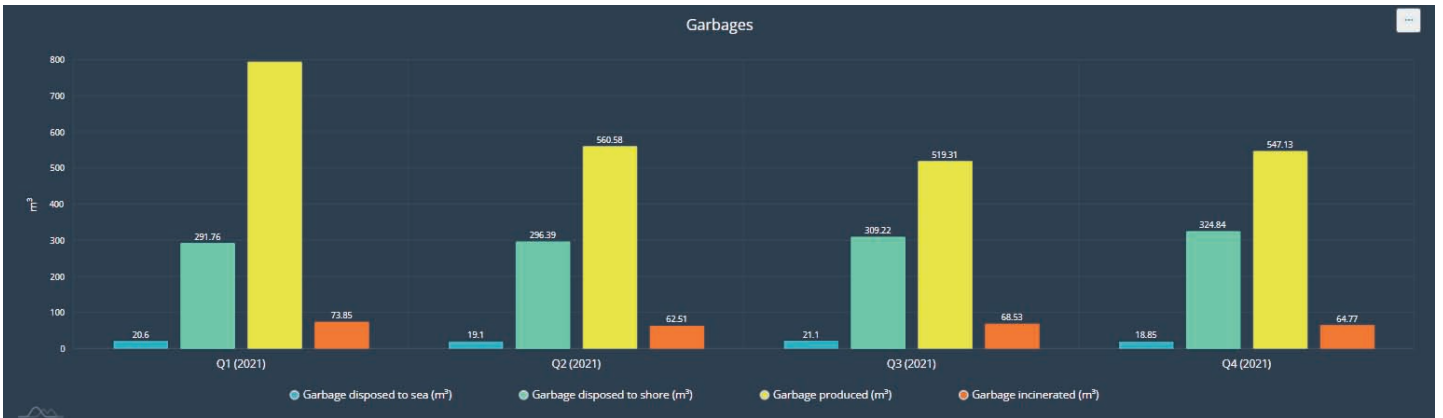
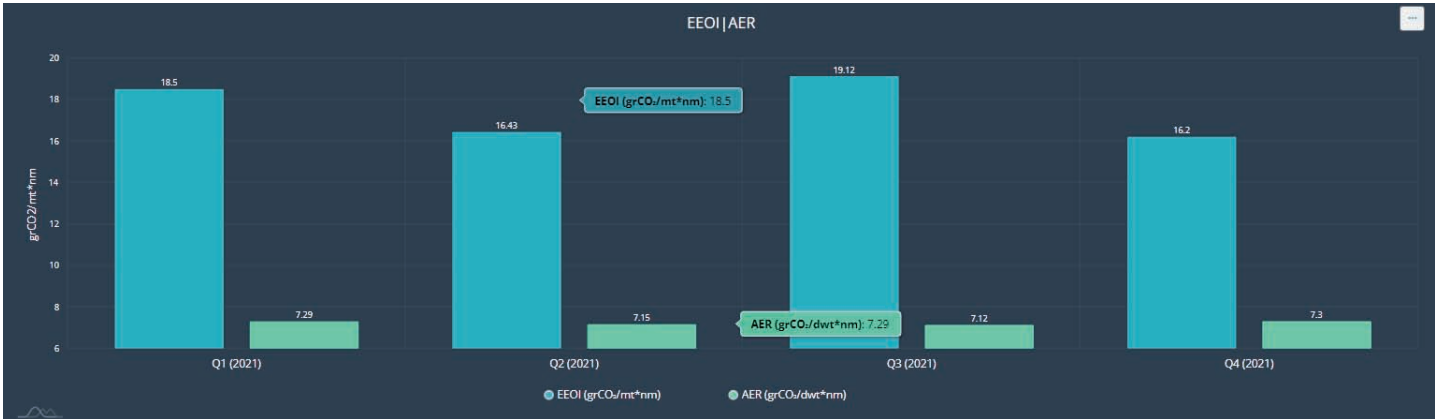
Figure 13. Vessels comparison chart (Indicative chart)

## Fleet Performance

The Fleet performance analysis section is a very detailed analysis of the fleet consumption, emission details, EEOI, AER and garbage related information. This analysis is provided on a quarter-to-quarter basis for the ships selected.

Indicative screenshots of this section are as shown below:





## Automated reporting section

### COMPANY RELATED REPORTS

Annual – Quarter – Monthly Company reports

Annual Indexes					
EEOI	CO <sub>2</sub>	Ballast miles	Laden miles	Number of ships contributing	Records
(grCO <sub>2</sub> /tn*ml)	(mt)	(nm)	(nm)		
10.98	400241.73	391625.11	1089315.53	64	16957
10.51	334246.44	342912.94	950741.82	51	14081
9.03	26893.04	23952.24	84246.19	4	879
12.88	33253.76	49242.71	79797.46	7	1486
70.29	45568.75	45206.3	71943.38	10	3121
13.98	43486.15	53028.66	86547.62	8	1951
15.73	457.91	658.2	727	1	17

Figure 14. Annual indexes

The annual indexes section shows the annual total of Energy Efficiency Operational Indicator (EEOI), the total of CO<sub>2</sub>, and the total of Ballast and Laden miles for the Main company and its sub-offices, if any. The division includes the numbers of ships contributing to these totals, as illustrated in the above figure.

Additionally, in this section the consumption related information is provided in the form of "general details" of the fleet (apart from the annual index), and "emission details" which are related to the emission sources.



## General details

HFO	LFO	MDO	MGO	Ethanol	Methanol	ME cons	AE cons	Cylinder Oil cons	ME Oil cons	D/G Oil cons	HFO received quantities	LFO received quantities	MDO received quantities	MGO received quantities	Ethanol received quantities	Methanol received quantities	Ballast days	Laden days
(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(ltrs)	(ltrs)	(ltrs)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)		
0	1702.3	0	817.55	0	0	1973.52	382.05	15962	2000	2450	0	2485.29	0	6	0	0	43.17	64.83
0	1963.12	0	17.04	0	0	1604.46	314.33	19687	1500	1360	797.8	1648.54	0	0	0	0	38.59	57.13
0	2743.98	0	178.01	0	0	2510.53	337.23	20082	200	136	0	975.04	0	0	0	0	49.28	66.89
2525.69	291.73	0.03	0	0	0	2434.84	352.64	18011	2120	16200	2470.59	0	0	357.01	0	0	4.36	124.57
0	0	0	215.76	0	0	171.31	36.47	2030	0	500	0	0	0	0	0	0	10.5	0
2355.64	0	0	296.61	0	0	2233.3	360.88	12779.09	4000	3446	2842.56	0	0	267.76	0	0	24.67	99.24
0	1988.12	0	491.14	0	0	2023.4	359.03	11422	5800	3350	0	1799.01	0	307.94	0	0	9.48	100.53
0	2679.22	0	294.61	0	0	2555.72	333.97	21587.01	3200	3793	0	2494.36	0	255.99	0	0	11.96	118.23
0	1140.34	0	0	0	0	958.62	142.17	8283	4000	470	0	1508.35	0	9.24	0	0	16.53	25.39
0	1775.14	0	55.99	0	0	1370.01	353.4	13769	2500	2200	0	1774.21	0	109	0	0	11.78	86.08
0	802.86	0	497.41	0	0	707.82	432.69	4769	9610	350	0	599.48	0	398.56	0	0	17.45	24.62
0	1055.49	0	581.57	0	0	1111.91	364.68	11761	2100	6946	0	1339.97	0	650.46	0	0	27.59	24.81
0	1883.26	0	375.07	0	0	1822.25	390.84	14293	2300	3300	0	1990.06	0	345.27	0	0	61.35	49.59
0	886.98	0	302.97	0	0	727.96	324.61	5968	1850	3026	0	0	0	0	0	0	17.58	9.75
0	1749.46	0	769.49	0	0	1957.5	431.33	22865	4000	850	0	2519.73	0	700.44	0	0	24.7	52.46
0	995.36	0	653.84	0	0	1186.73	340.61	12722	8100	3700	0	1237.72	0	694.61	0	0	22.97	24.13
0	1582.63	0	244.76	0	0	1225.15	493.5	10271	3500	5700	0	927.37	0	150	0	0	40.55	37.69
0	1047.7	0	462.6	0	0	1085.5	332.24	17126	3756	5180	0	1168.39	0	490.29	0	0	30.5	24.31
0	1547.16	0	87.47	0	0	1346.1	213.84	23019	4300	6400	0	1426.75	0	359.1	0	0	23.89	72.36
1245.35	0	50.79	0	0	0	603.32	607.21	3654	8200	9475	181.51	276.91	0	0	0	0	19.61	14.84

Figure 15. General details of the company's fleet (annually)

## Emission details

HFO	LFO	MDO	MGO	Ethanol	Methanol	ME cons	AE cons	Cylinder Oil cons	ME Oil cons	D/G Oil cons	HFO received quantities	LFO received quantities	MDO received quantities	MGO received quantities	Ethanol received quantities	Methanol received quantities	Ballast days	Laden days
(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(ltrs)	(ltrs)	(ltrs)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)		
0	1702.3	0	817.55	0	0	1973.52	382.05	15962	2000	2450	0	2485.29	0	6	0	0	43.17	64.83
0	1963.12	0	17.04	0	0	1604.46	314.33	19687	1500	1360	797.8	1648.54	0	0	0	0	38.59	57.13
0	2743.98	0	178.01	0	0	2510.53	337.23	20082	200	136	0	975.04	0	0	0	0	49.28	66.89
2525.69	291.73	0.03	0	0	0	2434.84	352.64	18011	2120	16200	2470.59	0	0	357.01	0	0	4.36	124.57
0	0	0	215.76	0	0	171.31	36.47	2030	0	500	0	0	0	0	0	0	10.5	0
2355.64	0	0	296.61	0	0	2233.3	360.88	12779.09	4000	3446	2842.56	0	0	267.76	0	0	24.67	99.24
0	1988.12	0	491.14	0	0	2023.4	359.03	11422	5800	3350	0	1799.01	0	307.94	0	0	9.48	100.53
0	2679.22	0	294.61	0	0	2555.72	333.97	21587.01	3200	3793	0	2494.36	0	255.99	0	0	11.96	118.23
0	1140.34	0	0	0	0	958.62	142.17	8283	4000	470	0	1508.35	0	9.24	0	0	16.53	25.39
0	1775.14	0	55.99	0	0	1370.01	353.4	13769	2500	2200	0	1774.21	0	109	0	0	11.78	86.08
0	802.86	0	497.41	0	0	707.82	432.69	4769	9610	350	0	599.48	0	398.56	0	0	17.45	24.62
0	1055.49	0	581.57	0	0	1111.91	364.68	11761	2100	6946	0	1339.97	0	650.46	0	0	27.59	24.81
0	1883.26	0	375.07	0	0	1822.25	390.84	14293	2300	3300	0	1990.06	0	345.27	0	0	61.35	49.59
0	886.98	0	302.97	0	0	727.96	324.61	5968	1850	3026	0	0	0	0	0	0	17.58	9.75
0	1749.46	0	769.49	0	0	1957.5	431.33	22865	4000	850	0	2519.73	0	700.44	0	0	24.7	52.46
0	995.36	0	653.84	0	0	1186.73	340.61	12722	8100	3700	0	1237.72	0	694.61	0	0	22.97	24.13
0	1582.63	0	244.76	0	0	1225.15	493.5	10271	3500	5700	0	927.37	0	150	0	0	40.55	37.69
0	1047.7	0	462.6	0	0	1085.5	332.24	17126	3756	5180	0	1168.39	0	490.29	0	0	30.5	24.31
0	1547.16	0	87.47	0	0	1346.1	213.84	23019	4300	6400	0	1426.75	0	359.1	0	0	23.89	72.36
1245.35	0	50.79	0	0	0	603.32	607.21	3654	8200	9475	181.51	276.91	0	0	0	0	19.61	14.84

Figure 16. General details on a quarter basis

## Ship specific reports

### Voyage Report

A consolidation of all the vessels voyages for a specified period. Departing and arrival ports are mentioned the fuel consumption is

specified for each voyage leg along with the hours underway and the distance travelled.

Start date/time	End date/time	Voyage	Departure port code	Departure country code	Arrival port code	Arrival country code	HFO	LFO	LNG	MDO	MGO	Butane	Propane	Ethanol	Methanol	Other	Hours underway	Distance travelled	Remarks
UTC	UTC						mt	mt	mt	mt	mt	mt	mt	mt	mt	mt	hh:mm	nm	
01/01/2020 08:30:00	01/01/2020 08:36:00	PORT					0	0.74	0	0	0	0	0	0	0	0	0:0	0	
01/01/2020 08:36:00	02/01/2020 09:42:00	AT SEA		IN		IN	17.23	2.06	0	0	0	0	0	0	0	0	24:18	264.5	
02/01/2020 09:42:00	10/01/2020 09:18:00	PORT				IN	0	26.11	0	0	0	0	0	0	0	0	0:0	0	
10/01/2020 09:18:00	20/01/2020 08:36:00	AT SEA		IN		SG	189.64	3.04	0	0	0	0	0	0	0	0	259:24	3098	
20/01/2020 08:36:00	21/01/2020 04:48:00	PORT				SG	0	-355.39	0	0	357.01	0	0	0	0	0	0:0	0	
21/01/2020 04:48:00	23/01/2020 14:42:00	AT SEA		SG		ID	51.41	4.15	0	0	0	0	0	0	0	0	55:48	750	
23/01/2020 14:42:00	25/01/2020 17:06:00	PORT				ID	1294.79	5.1	0	1.9	0	0	0	0	0	0	0:0	0	
25/01/2020 17:06:00	06/03/2020 22:18:00	AT SEA		ID		US	0	26.7	0	0	0	0	0	0	0	0	988:12	12608	1715 UTC 05 Mar 2020. Vessel completed ULSFO change to 1930UTC 05 Mar 2020 Enter ECA area.
06/03/2020 22:18:00	14/03/2020 20:06:00	PORT				US	600	18.8	0	0	0	0	0	0	0	0	0:0	0	
14/03/2020 20:06:00	16/03/2020 13:10:00	AT SEA		US		US	0	32.2	0	0	0	0	0	0	0	0	33:42	377	
16/03/2020 13:10:00	29/03/2020 13:54:00	PORT				US	0	43.3	0	0	0	0	0	0	0	0	0:0	0	
29/03/2020 13:54:00	03/04/2020 18:00:00	AT SEA		US	CRISTOBAL	US	0	18.3	0	0	0	0	0	0	0	0	156:36	1629.88	
03/04/2020 18:00:00	04/04/2020 14:35:00	PORT			CRISTOBAL	US	0	3.3	0	0	0	0	0	0	0	0	0:0	0	

Figure 17. Voyage reports

### MRV Report

Timeline analysis	Report sequence inconsistencies	Reportable voyages	At sea calculations	In port calculations	Annual Calculations
2019-08-22 21:36:00		UNITED STATES	Marcus Hook	3.07	✓
2019-08-25 16:00:00			Loading		
2019-08-26 11:36:00		UNITED STATES	Marcus Hook	7.07	✓
2019-08-28 18:00:00			Loading		
2019-08-27 16:00:00			Steaming laden		
2019-08-28 18:00:00			Steaming laden		
2019-08-29 15:00:00			Steaming laden		
2019-08-30 14:00:00			Steaming laden		
2019-08-31 13:00:00			Steaming laden		
2019-09-01 13:00:00			Steaming laden		
2019-09-02 13:00:00			Steaming laden		
2019-09-03 12:00:00			Steaming laden		
2019-09-04 11:00:00			Steaming laden		
2019-09-05 10:00:00			Steaming laden		
2019-09-06 10:00:00			Steaming laden		
2019-09-06 23:00:00		SPAIN	TARRAGONA	57.95	✓
2019-09-07 10:00:00			At anchor		
2019-09-08 10:00:00			Discharging		
2019-09-09 10:00:00			Discharging		
2019-09-10 10:00:00			Discharging		

Figure 18. MRV – Annual Voyage Overview

In the MRV voyage report, the beige-colored section indicates the operation of a vessel in a European port. All records for the selected period are presented in a sequential flow.

Timeline analysis Reports sequence inconsistencies **Reportable voyages** At sea calculations In port calculations Annual Calculations

Show 10 entries Search:

Voyage	Vessel	Start (UTC)	Port	EU	End (UTC)	Port	EU	Number of Reports	State
1	IBIS PACIFIC	2019-06-26 00:00:00	HOUSTON	No	2019-07-13 04:42:00	CASTELLON	Yes	19	At sea
2	IBIS PACIFIC	2019-07-18 14:54:00	CASTELLON	Yes	2019-07-25 21:36:00	Lavera	Yes	9	At sea
3	IBIS PACIFIC	2019-08-02 20:42:00	Lavera	Yes	2019-08-09 23:36:00	ANTWERP	Yes	9	At sea
4	IBIS PACIFIC	2019-08-14 03:06:00	ANTWERP	Yes	2019-08-22 10:42:00	FAWLEY	Yes	10	At sea
5	IBIS PACIFIC	2019-08-27 02:42:00	FAWLEY	Yes	2019-08-28 03:18:00	AMSTERDAM	Yes	3	At sea
6	IBIS PACIFIC	2019-09-10 07:36:00	AMSTERDAM	Yes	2019-09-24 23:24:00	JACKSONVILLE	No	17	At sea
1	IBIS PACIFIC	2019-07-13 04:42:00	CASTELLON	Yes	2019-07-18 14:54:00	CASTELLON	Yes	8	In port
2	IBIS PACIFIC	2019-07-25 21:36:00	Lavera	Yes	2019-08-02 20:42:00	Lavera	Yes	10	In port
3	IBIS PACIFIC	2019-08-09 23:36:00	ANTWERP	Yes	2019-08-14 03:06:00	ANTWERP	Yes	6	In port
4	IBIS PACIFIC	2019-08-22 10:42:00	FAWLEY	Yes	2019-08-27 02:42:00	FAWLEY	Yes	6	In port

Previous 1 2 Next

Figure 19. Reportable voyages

Timeline analysis Reports sequence inconsistencies Reportable voyages **At sea calculations** In port calculations Annual Calculations

Show 10 entries Search:

Voyage	Departure Port / Country	Arrival Port / Country	Departure Date / Time (UTC)	Arrival Date / Time (UTC)	Elapsed Time (hrs)	Fuel Type	Fuel Consumption (mt)	Emission factor (tCO <sub>2</sub> /tn)	Distance sailed (nm)	Cargo Transferred (mt)	Total CO <sub>2</sub> Tt (mt)
1	HOUSTON United States	CASTELLON Spain	2019-06-26 00:00:00	2019-07-13 04:42:00	412.7	HSFO LSGO	487.67 23.92	3.1144 3.206	5412	40847.4	1595.49
2	CASTELLON Spain	Lavera France	2019-07-18 14:54:00	2019-07-25 21:36:00	174.7	HSFO LSGO	61.19 9.26	3.1144 3.206	339	0	220.26
3	Lavera France	ANTWERPEN Belgium	2019-08-02 20:42:00	2019-08-09 23:36:00	170.9	HSFO LSGO	151.95 44.99	3.1144 3.206	2114	21044.9	617.47
4	ANTWERPEN Belgium	FAWLEY United Kingdom	2019-08-14 03:06:00	2019-08-22 10:42:00	199.6	LSGO	73.34	3.206	314	0	235.13
5	FAWLEY United Kingdom	AMSTERDAM Netherlands	2019-08-27 02:42:00	2019-08-28 03:18:00	24.6	LSGO	26.95	3.206	299.5	35594.4	86.4
6	AMSTERDAM Netherlands	JACKSONVILLE United States	2019-09-10 07:36:00	2019-09-24 23:24:00	351.8	HSFO LSGO	347.69 105.9	3.1144 3.206	417.38	52718.4	1422.36

Previous 1 Next

Figure 20. At sea calculations for the MRV reporting

Voyage	Port / Country	Berthed Date / Time (UTC)	Unberthed Date / Time (UTC)	Elapsed Time (hrs)	Fuel Type	Fuel Consumption (mt)	Emission factor (tCO2/tn)	Total CO2 (mt)
1	CASTELLON Spain	2019-07-13 04:42:00	2019-07-18 14:54:00	130.2	LSGO	47.81	3.206	153.28
2	Lavera France	2019-07-25 21:36:00	2019-08-02 20:42:00	191.1	LSGO	50.46	3.206	161.77
3	ANTWERPEN Belgium	2019-08-09 23:36:00	2019-08-14 03:06:00	99.5	LSGO	29.34	3.206	94.06
4	FAWLEY United Kingdom	2019-08-22 10:42:00	2019-08-27 02:42:00	112	LSGO	25.1	3.206	80.47
5	AMSTERDAM Netherlands	2019-08-28 03:18:00	2019-09-10 07:36:00	316.3	LSGO	99.7	3.206	319.64

Figure 21. In port calculations for the MRV reporting

Fuel Type	Amount (tn)	Factor (tn CO <sub>2</sub> / tn fuel)	CO <sub>2</sub> (tn)
Diesel/Gas oil	140.87	3.206	451.63
Description			
	Amount	Unit	
Total CO <sub>2</sub>	451.64	(tn)	
Total CO <sub>2</sub> : Voyages between ports under Member State's jurisdiction		(tn)	
Total CO <sub>2</sub> : Voyages departed from ports under Member State's jurisdiction		(tn)	
Total CO <sub>2</sub> : Voyages to ports under Member State's jurisdiction	451.64	(tn)	
Total CO <sub>2</sub> : Berth emissions withing ports under Member State's jurisdiction		(tn)	
Total distance sailed	10713.05	(nm)	
Total time at sea	994.11666666667	(hrs)	
Total transport work	494961122.185	(tn-nm)	
Total Cargo Carried	46201.7	(tn)	
Average energy efficiency: Fuel consumption per distance	13.15	(KgFUEL/NM)	
Average energy efficiency: Fuel consumption per transport work	0.28	(gFUEL/tonne-NM)	
Average energy efficiency: CO <sub>2</sub> emissions per distance	42.16	(KgCO <sub>2</sub> /NM)	
Average energy efficiency: CO <sub>2</sub> emissions per transport work	0.91	(gCO <sub>2</sub> /tonne-NM)	
Monitoring Plan Version	1		
Monitoring Plan Date	2019-01-01		
Total Number of voyages under EU MRV for the year	1		

Figure 22. MRV – Annual report

In the above section of the THETIS – MRV Annual report is an overview of a vessel's annual performance. The user as shown in the upper part of the figure may export the data in

XML, or PDF type. The .xml file type can be directly uploaded to the THETIS online system, thus no need for the users to manually enter the information to the THETIS system.

## UK Mrv Module

Similarly to the EU MRV module, the UK MRV has been developed based on the latest UK regulations.

The type of data and parameters which are monitored on a per-voyage basis under the UK MRV regime are the same as those required under the EU MRV regime. They include:

- Port of departure and port of arrival including the date and hour of departure and arrival
- Amount and emission factor for each type of fuel consumed in total
- CO<sub>2</sub> emitted
- Distance travelled
- Time spent at sea
- Cargo carried
- Transport work

Similar parameters apply under the UK MRV for monitoring emissions on an annual basis. These are:

- The amount and emission factor for each type of fuel consumed in total
- Total aggregated CO<sub>2</sub> emitted within the scope of the Regulation
- Aggregated CO<sub>2</sub> emissions from all voyages between ports in the UK
- Aggregated CO<sub>2</sub> emissions from voyages which departed from ports in the UK (except those going to a port in the EEA)
- Aggregated CO<sub>2</sub> emissions from voyages to ports in the UK (except those originating from a port in the EEA)
- CO<sub>2</sub> emissions which occurred within ports in the UK at berth
- Total distance travelled
- Total time spent at sea
- Total transport work
- Average energy efficiency

The emissions data that are automatically generated by the eMission Monitoring system and are required to be reported under the UK MRV regime are for the following voyages:

- Voyages between two UK ports
- Voyages between a UK and non-EEA port
- Emissions generated at a UK port for the above voyages

*All the above legs are generated by the system and can be exported as an xml file or a pdf file.*



## Consolidated Report

### Consolidated report

Selected period (UTC) from 31/12/2018 12:00:01 to 31/12/2019 12:00:00

Confirmed reports period (UTC) from 01/01/2019 04:00:00 to 31/12/2019 09:00:00

#### General indices

EEOI: 26.79 [g CO <sub>2</sub> / tn-mi]	CO <sub>2</sub> : 34596.47 [tn]
SOx: 646.75 [MT]	NOx: 1193.63 [MT]
Particulate Matter (10): 83.72 [MT]	Fuel Efficiency Index: 0.1485 [MT / nm]
Reports inconsistencies	
Noon Reports: 1	Arrival Reports: 1
Departure Reports: 1	

#### Bunkers consumption

HSFO: 10606.494 [MT]	LSFO: 393 [MT]
HSDO: 0 [MT]	LSDO: 0 [MT]
MGO: 0 [MT]	LSGO: 101.448 [MT]
ULSFO: 0 [MT]	VLSFO: 0 [MT]
Ethanol: 0 [MT]	Methanol: 0 [MT]

#### Period summary

Daily average consumption for main engine (for all fuels) at <a href="#">steaming ballast</a> :	42.94	[MT/day]
Daily average consumption for main engine (for all fuels) at <a href="#">steaming laden</a> :	45.86	[MT/day]
Daily average consumption of auxiliary engines:	5.36	[MT/day]
Daily average slip:	5.44	%
Daily average ME rpm at <a href="#">steaming ballast</a> :	115.7	[rpm]
Daily average ME rpm at <a href="#">steaming laden</a> :	107.59	[rpm]
Daily average ME speed at <a href="#">steaming ballast</a> :	14.75	[knots]
Daily average ME speed at <a href="#">steaming laden</a> :	14.56	[knots]
Total ME running hours :	4536.47	[hrs]
Total AE 1 running hours :	109	[hrs]
Total AE 2 running hours :	4640.4	[hrs]
Total AE 3 running hours :	4459.4	[hrs]
Total AE 4 running hours :	3964.38	[hrs]
Highest ME consumption noticed (2019-09-24 08:00:00):	53.3	[MT]
Worst weather conditions encountered:	9	[beaufort]
Duration at <a href="#">steaming ballast</a> :	100.8	[days]
Duration at <a href="#">steaming laden</a> :	83.65	[days]
Total voyage duration:	364.21	[days]
Distance observed at <a href="#">steaming ballast</a> :	34841.14	[nm]
Distance observed at <a href="#">steaming laden</a> :	30475.9	[nm]
Total distance observed:	65317.04	[nm]
Total sludge quantity:	236.51	[m <sup>3</sup> ]
Total bilge quantity:	507.64	[m <sup>3</sup> ]

Figure 23. Consolidated voyage report



## Ship and Fleet CII

The Carbon Intensity Indicator (CII) is a measure of how efficiently a ship transports goods or passengers and is given in grams of CO<sub>2</sub> emitted per cargo-carrying capacity and nautical mile. The ship is then given an annual rating ranging from A to E, whereby the rating thresholds will become increasingly stringent towards 2030. The CII applies to all cargo, RoPax and cruise ships above 5,000 GT.

The yearly CII is calculated based on reported IMO DCS data and the ship is given a rating from

A to E. For ships that achieve a D rating for three consecutive years or an E rating in a single year, a corrective action plan needs to be developed as part of the SEEMP and approved.

The eMission monitoring system provides automatic calculations of the CII along with supporting evidence on how the calculation took place.

### 1. Fleet CII

*An overview of the fleet CII ratings and the deviation from the required CII can be easily created and presented for all the ships at once.*

Vessel	IMO	Vessel Type	Capacity (MT)	Distance sailed (Nm)	Distance deducted (Nm)	CO <sub>2</sub> (MT)	CO <sub>2</sub> deducted (MT)	Total Correction	Attained CII (YTD)	Required CII	Deviation (%)	Rating
BULK CARRIER	9014007	BULK CARRIER	76600	18841.86	-	5385.95	0	0	3.73	4.04	7.75	A
BULK CARRIER	9000019	BULK CARRIER	61393	23278.54	-	7261.3	0	0	5.08	4.64	9.48	B
BULK CARRIER	9001004	BULK CARRIER	59450	17891.4	-	4668.61	0	0	4.39	4.73	7.26	B
BULK CARRIER	9000000	BULK CARRIER	60000	24094.1	-	5850.71	0	0	4.05	4.71	13.95	B
BULK CARRIER	9001000	BULK CARRIER	52454	20650.75	-	5722.45	0	0	3.28	5.12	3.19	B
BULK CARRIER	9000007	BULK CARRIER	58738	32355.44	-	8980.76	0	0	4.73	4.77	0.82	B
BULK CARRIER	9000000	BULK CARRIER	56548	27277.06	-	7569	0	0	4.91	4.88	0.55	B
BULK CARRIER	9000004	BULK CARRIER	58749	26164.02	-	7205.6	0	0	4.69	4.77	1.65	B
BULK CARRIER	9000000	BULK CARRIER	78228	16942	-	5519.38	0	0	4.16	3.99	4.24	B
BULK CARRIER	9001000	BULK CARRIER	61330	16031.31	-	4476.53	0	0	4.55	4.64	2	B

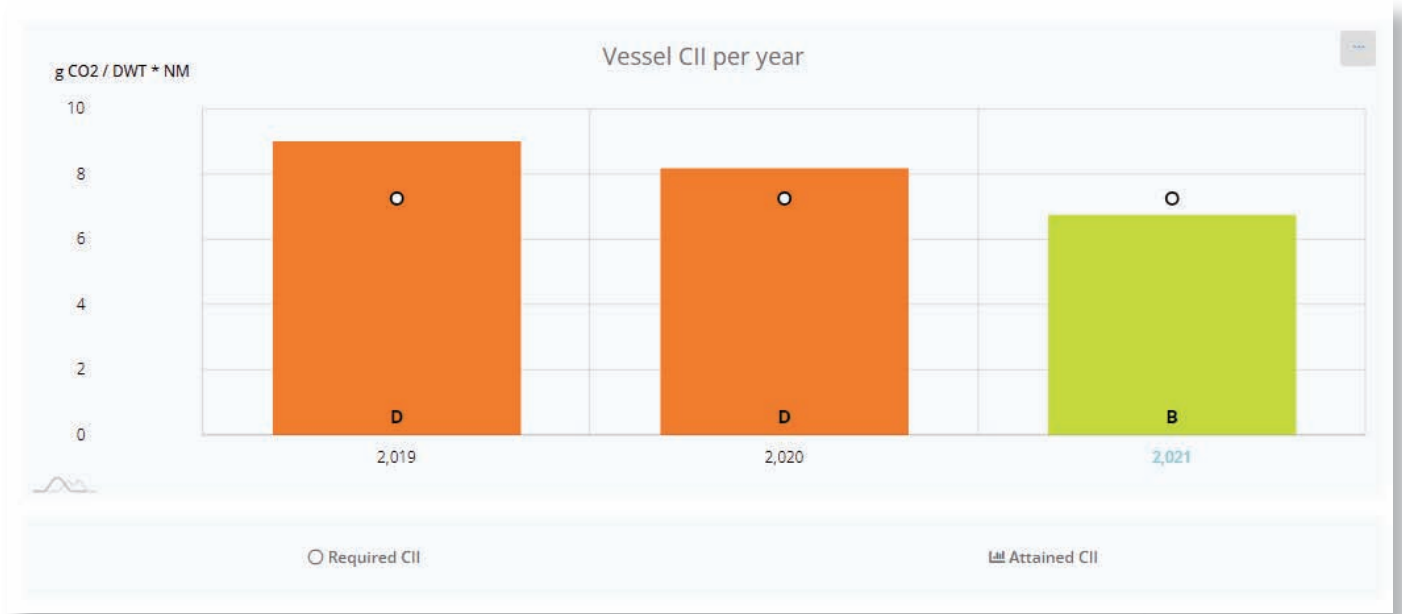
### 2. Ship CII

Vessel: I

Ship CII Rating (Year 2021): C

CII Calculation	
Ship Type	LPG TANKER
Deadweight [MT]	58585
Gross Tonnage [MT]	47173
Distance Travelled [NM]	65203.9
CO <sub>2</sub> emissions [MT]	28130.53
Attained CII [g CO <sub>2</sub> / DWT * NM]	7.36
Parameter (a)	8104
Parameter (c)	0.639
Reference CII	7.28
Required CII (-) [g CO <sub>2</sub> / DWT * NM]	7.28
Attained CII / Required CII	1.01
Rating (Year 2021)	C





### Fleet CII Projection

The fleet CII projection offers a great preview of your ship's current status and the projection of the scoring of your ship for following years, in case the performance

remains the same. It is a great indication to help you prevent having a bad scoring way in advance.

Vessel	IMO	2024	2025	2026
BULK CONCORD	911687	Attained CII: 3.73 gCO <sub>2</sub> / DWT*NM	C	C
BULK COMPASSION	908819	Attained CII: 5.08 gCO <sub>2</sub> / DWT*NM	D	D
BULK DESTINY	918184	Attained CII: 4.39 gCO <sub>2</sub> / DWT*NM	B	B
BULK ENDURANCE	916893	Attained CII: 4.05 gCO <sub>2</sub> / DWT*NM	B	B
BULK FREEDOM	911762	Attained CII: 5.28 gCO <sub>2</sub> / DWT*NM	C	D
BULK FRONTIER	908817	Attained CII: 4.73 gCO <sub>2</sub> / DWT*NM	C	C
BULK INDEPENDENCE	917862	Attained CII: 4.91 gCO <sub>2</sub> / DWT*NM	C	B
BULK PRIDE	908818	Attained CII: 4.69 gCO <sub>2</sub> / DWT*NM	B	B
BULK PROMISE	908815	Attained CII: 4.16 gCO <sub>2</sub> / DWT*NM	D	D
BULK PRUDENCE	911818	Attained CII: 4.55 gCO <sub>2</sub> / DWT*NM	C	C

Furthermore, the user is provided with tools to identify the deviation of his current scoring from the upper and lower limits of the neighboring scores, considering that the ship is having the same daily average

distance sailed. The system also provides a figure that depicts what the daily CO2 should be for the remaining of the year for the vessel to achieve the corresponding class rating.

2024		A			B			C			
Vessel	IMO	Reduced daily distance [Nmiles]*	Deviation from A rating limit [%]	CI Limit for A rating	Remaining daily CO2 for A rating [MT]**	Deviation from B rating limit [%]	CI Limit for B rating	Remaining daily CO2 for B rating [MT]**	Deviation from C rating limit [%]	CI Limit for C rating	Remaining daily CO2 for C rating [MT]**
BULK COLANGIUS	900807	101.41	-7.00	3.47	25.02	2.00	3.80	30.00	13.00	4.28	37.47
BULK COLANGIUS	900809	98.1	-27.00	3.99	15.79	-16.00	4.36	20.83	-3.00	4.92	28.39
BULK DETHY	979184	98.26	-8.00	4.07	21.97	1.00	4.45	26.31	12.00	5.01	32.81
BULK INDEPENDENCE	979602	147.25	0.00	4.05	35.81	9.00	4.43	42.02	19.00	4.99	51.34
BULK PRODIGE	907192	131.84	-20.00	4.40	25.41	-10.00	4.81	30.59	3.00	5.43	38.36
BULK PRODIGE	948077	164.91	-15.00	4.10	33.47	-5.00	4.48	41.00	7.00	5.06	52.30
BULK INDEPENDENCE	979602	138.55	-17.00	4.20	27.08	-7.00	4.59	33.33	5.00	5.17	42.70
BULK PRIDE	948075	111.96	-14.00	4.10	22.22	-4.00	4.48	27.83	8.00	5.06	36.25
BULK PRIDE	948076	90.89	-21.00	3.43	19.26	-11.00	3.75	23.76	2.00	4.23	30.53
BULK PRODIGE	971875	126.68	-14.00	3.99	28.08	-4.00	4.36	32.89	8.00	4.92	40.11

### EU ETS Reporting section

Very easily each ship operator can have an overview of all EU related voyages and the associated cost for the EUAs that need to be acquired for each ship.

for EU port stays, voyages to EU and voyages from EU. An estimated EUA cost is presented for each ship, based on the previous close of the EUA spot price.

The system presents the detailed allocation of the CO2 and the total EUAs respectively

Fleet | Year: 2024 | ICE EUA Future Contract: Jun24 - 65.82 (-1.349% ↓)

▼ Vessels

Show 10 entries

Vessel Name	Vessel Imo	Total CO2	Total Fuel <sup>1</sup>	Total EU Taxed CO2 <sup>2</sup>	Total EU Fuel <sup>3</sup>	At berth EU CO2 <sup>4</sup>	Intra EU CO2 <sup>5</sup>	From EU CO2 <sup>6</sup>	To EU CO2 <sup>7</sup>	Total EUA Cost <sup>8</sup>
IMO	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	€
BULK COLANGIUS	900807	3542.13	1135.8	2119.96	679.7	143.41	554.38	754.79	2089.55	55,814.31
BULK DETHY	979184	4033.06	1286	2756.03	877.13	601.82	877.18	1479.57	1074.49	72,560.75
BULK PRODIGE	907192	1577.77	498.7	1215.61	382.915	301.5	551.95	724.32	0	32,004.58
BULK INDEPENDENCE	979602	377.48	118.04	377.48	118.04	23.98	353.5	0	0	9,938.29
BULK PRIDE	971875	1410.08	449.86	765.955	243.93	116.48	5.35	714.24	574.01	20,166.08
BULK DETHY	948077	2007.69	644.03	1051.565	337.08	59.14	36.3	1103.18	809.07	27,685.61
BULK DETHY	900807	2717.25	867.81	1922.66	612.72	116.7	1011.37	930.7	658.48	50,619.80
BULK PRIDE	900807	2333.11	745.7	1605.22	512.5	273.82	603.51	1025.84	429.94	42,262.23
<b>Total</b>		<b>17998.57</b>	<b>5745.94</b>	<b>11814.48</b>	<b>3764.015</b>	<b>1636.85</b>	<b>3993.34</b>	<b>6732.64</b>	<b>5635.54</b>	<b>311,051.65</b>

40% of Total EU Taxed CO2





HFO	LFO	MDO	MGO	Ethanol	Methanol	ME cons	AE cons	Cylinder Oil cons	ME Oil cons	D/G Oil cons	HFO received quantities	LFO received quantities	MDO received quantities	MGO received quantities	Ethanol received quantities	Methanol received quantities	Ballast days	Laden days
(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(ltrs)	(ltrs)	(ltrs)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)		
3263.66	0	0	31.3	0	0	2596.6	565.94	13219	910	1800	1749.46	0	0	0	0	0	31.2	22.18
3282.2	0	0	197.8	0	0	2895.1	514.1	15980	1500	2950	3426.19	0	0	0	0	0	46.93	21.74
2800.3	0	0	468.7	0	0	2559.6	643.7	17519.2	2000	3400	1597.4	0	0	232.8	0	0	25.92	36.71
2596.66	0	0	336.51	0	0	2470.04	418.47	13508	0	300	1324.4	0	0	316.03	0	0	28.77	38.52
2723.81	0	30.86	280.52	0	0	2410.22	573.91	16901	0	700	2315	0	0	145	0	0	36.39	29.56
70	0	0	480.6	0	0	130.3	374.3	650	0.1	400.1	0	0	0	0	0	0	0	5.86
2757.25	0	0	497	0	0	2738.75	483.9	14440	2000	100	1485.2	0	0	434.4	0	0	28.04	42.73
2736.1	2.2	0	226.5	0	0	2447.9	472.3	16146.01	3500	300	3919.78	0	0	219.64	0	0	42.51	18.72
2343	0	0	460.4	0	0	2237.4	498.6	14772	1021	100	1790.57	0	0	386.05	0	0	16.91	33.64
2200.57	6.2	0	175.8	0	0	1894.47	263.56	16292.11	27000	48	1198.62	0	0	0	0	0	16.19	34.04
3495.81	0	9.95	253.49	0	0	3123.65	615.38	18206	4000	490	2300	0	0	340.13	0	0	33.73	43.24
3387.98	0	0	233.74	0	0	2978.9	568.82	20662	0	0	3066.31	0	0	269.8	0	0	38.18	31.95
3291.82	0	0	26.71	0	0	2717.94	600.59	13678.12	100	2100	425.59	0	0	0	0	0	33.86	32.78
2281.13	11.55	0	210.7	0	0	1951.55	490.21	11681.12	0	0	1863.94	0	0	98	0	0	24.95	33.55
2222.7	0	0	207.28	0	0	1919.01	449.02	9891	11500	1350	2709.9	0	0	189	0	0	46.92	16.44
3037.58	0	0	2.9	0	0	2594.09	408.96	18647.03	0	200	2230.01	0	0	0	0	0	55.41	21.72
2187.2	0	0	47.2	0	0	1629.9	514.1	9938	3200	6540	1488.82	0	0	199.34	0	0	26.26	28.44
1744.52	0	0	118.41	0	0	1437.11	345.82	10254	3047	11	0	0	0	0	0	0	24.13	15.92
3190.83	0	0	2.82	0	0	2653.22	478.94	15016	1000	0	4494.11	0	0	38.38	0	0	40.62	27.42
3053.7	0	0	196.6	0	0	2681.5	539.1	15511	0	0	2960.52	0	0	282.44	0	0	50.05	26.57
2803.59	0	0	182.38	0	0	2380.57	536.27	14020	2900	400	2176.63	0	0	160.01	0	0	27.19	30.31
2478.59	0	0	210.7	0	0	2047.2	575.69	15322	0.2	0.2	2237.66	0	0	354.9	0	0	26.21	40.96
1651.1	0	0	363.3	0	0	941.9	354.5	4485	0	150	357.1	0	0	331.3	0	0	13.03	21.37

Figure 24. Consolidated company's quarter report with general details as exported in PDF

CO2	SOx	NOx	SOx Intensity ME	Specific SOx ME	NOx Intensity ME	Specific NOx ME	SOx Intensity AE	Specific SOx AE	EEOI	Avg HFO Sulfur	Avg LFO Sulfur	Avg MDO Sulfur	Avg MGO Sulfur	Avg Ethanol Sulfur	Avg Methanol Sulfur	Distance sailed	Total cargo
(mt)	(mt)	(mt)	(gr/tn*ml)	(gr/kWh)	(gr/tn*ml)	(gr/kWh)	(gr/tn*ml)	(gr/kWh)	(grCO2/tn*ml)	(%)	(%)	(%)	(%)	(%)	(%)	nm	(mt)
34596.47	646.75	1193.63	0.3751	12.7543	0.4309	14.1913	0.0578	12.0985	26.79	3.04	0.5	0	0.1	0	0	65317.04	683108.8
44572.39	696.27	1016.77	0.1443	9.5986	0.2206	14.1841	0.0191	10.5617	17.92	2.89	0.43	0	0.08	0	0	101904.01	440923.73
38814.56	568.03	849.37	0.2389	9.256	0.384	13.9949	0.0413	10.304	19.96	2.56	0.38	0	0.09	0	0	93691.77	448868.89
35019.5	517.09	801.08	0.1077	8.5843	0.1738	13.6352	0.0127	9.6323	15.63	2.49	0.46	0	0.06	0	0	95779.38	368239.1
39484.63	606.97	899.92	0.1124	9.0461	0.1829	13.4065	0.0173	9.8383	17.74	2.77	0.48	0.08	0.08	0	0	102028.95	572534.7
21706.13	180.11	481.11	0.0715	6.1156	0.199	13.7518	0.0093	3.1302	23.72	1.59	0.47	0	0.1	0	0	52169.82	865968.8
36900.56	562.87	902.05	0.116	8.7701	0.197	13.264	0.0159	9.0903	14.97	2.69	0	0	0.07	0	0	92307.83	685453.13
38793.57	572.31	846.21	0.1215	8.8243	0.1995	13.0603	0.0153	9.8013	19.32	2.58	0.43	0.1	0.09	0	0	92964.1	540498.06
37311.96	566.82	804.12	0.1291	9.1972	0.1944	12.9953	0.0168	9.3426	16.42	2.71	0.47	0	0.09	0	0	84981.02	379998.48
36004.55	612.34	817.49	0.157	9.8349	0.2144	13.4697	0.0138	6.7179	16.84	2.83	0.03	0	0.07	0	0	82684.31	359834
40799.04	645.41	926.92	0.1269	9.5018	0.19	13.5728	0.0213	10.0704	17.95	2.7	0	0.06	0.08	0	0	97006.29	380642.4
40677.41	728.1	930.94	0.1419	10.3357	0.1937	13.0399	0.0206	10.8896	17.66	3.01	0.45	0	0.08	0	0	98071.3	422782.16
38501.58	653.35	810.78	0.1284	10.2943	0.1756	13.4995	0.022	13.377	17.83	2.66	0	0.03	0.76	0	0	96586.79	444822.18
31820.91	536.47	756.73	0.1335	9.8461	0.1896	13.5079	0.0164	9.4402	16.68	2.78	0.05	0	0.07	0	0	76629.11	200517.9
37282.83	583.78	782.39	0.2368	9.8349	0.3321	13.0095	0.0313	9.2007	17.47	2.66	0.45	0	0.12	0	0	89427.6	594415.95
35661.06	557.12	799.72	0.1339	9.226	0.2007	13.3665	0.0163	9.7191	22.55	2.65	0.49	0.08	0.04	0	0	89486.5	581333.7
32577.04	600.98	717.61	0.147	10.467	0.1971	13.1415	0.0227	12.4349	14.37	3.05	0	0	0	0	0	82251.49	680740.23
30194.98	477.18	696.57	0.1882	9.2186	0.3031	13.6294	0.0279	8.634	22.55	2.65	0.04	0	0.08	0	0	72570.08	378585.82
39660.66	614.95	890.95	0.1177	8.7718	0.1933	13.5626	0.0172	11.4731	17.95	2.43	0	0	0.07	0	0	97740.5	415230.9
41610.05	600.93	891.01	0.1016	8.6214	0.1594	12.8819	0.0143	8.8048	14.88	2.37	0.45	0	0.09	0	0	99078.5	543091.8
38333.79	509.94	845.74	0.0969	8.015	0.1872	13.4238	0.0137	8.5434	15.74	2.2	0.23	0	0.09	0	0	95452.11	504078.5
31353.7	415.07	674.41	0.1101	7.7394	0.193	13.3934	0.0184	9.106	17.11	2.34	0	0	0.07	0	0	78255.32	418653.66
22765.65	273.52	410.08	0.0604	8.0115	0.1106	12.638	0.0079	8.6463	12.91	2.27	0.41	0	0.06	0	0	35682.88	2408903.6
12105.17	212.76	287.66	0.076	10.1734	0.1232	16.1188	0.0064	13.3586	9.89	2.73	0	0.06	0.08	0	0	24805.13	866811.2

Figure 25. Annual Report

The above figure illustrates the annual consumption of each vessel of a given company

## IMO Data Collection System (IMO DCS)

Date of Operations	Diesel/Gas Oil	LFO	HFO	LPG(Propane)	LPG(Butane)	LNG	Methanol	Ethanol	Other
(dd/mm/yyyy)	(Cf: 3.206)	(Cf: 3.15104)	(Cf: 3.1144)	(Cf: 3)	(Cf: 3.03)	(Cf: 2.75)	(Cf: 1.375)	(Cf: 1.913)	(Cf: ...)
11/02/2019	120.03	0	1350				0	0	
28/03/2019	44	0	300				0	0	
18/04/2019	80.456	0	749,546				0	0	
10/08/2019	120	0	850				0	0	
22/09/2019	114.08	0	949,194				0	0	
31/10/2019	84.9	0	0				0	0	
26/12/2019	738.96	0	0				0	0	
<b>Annual supply amount</b>	<b>1302.426</b>	<b>0</b>	<b>4198.74</b>				<b>0</b>	<b>0</b>	
01/01/2019	0	0	1055.58				0	0	
30/12/2019	813.6	0	0				0	0	
<b>Correction for the tank oil remainings</b>	<b>-813.6</b>	<b>0</b>	<b>1055.58</b>				<b>0</b>	<b>0</b>	
<b>Annual other corrections</b>	<b>0</b>	<b>0</b>	<b>0</b>				<b>0</b>	<b>0</b>	
<b>Annual Fuel Consumption</b>	<b>488.826</b>	<b>0</b>	<b>5254.32</b>				<b>0</b>	<b>0</b>	

Figure 26. IMO DCS report (indicative BDN Summaries)

The above indicative figure shows the IMO report based on Bunker Delivery Notes (BDN). What is illustrated is a vessel's supply of fuel within a year, the type of the fuel, the dates and quantities of supply, as well as the correction factors. There is also provided the option of exporting the report in either PDF or excel format.

Since 2019, IMO has adopted a universal, mandatory, Fuel Oil Data Collection System (DCS) for all vessels above 5,000 GT. Adopting the Regulation 22A of Annex VI of MARPOL for collecting and reporting a vessel's fuel oil consumption information, that has to be annually collected and reported to a vessel's flag state, verifying that all data are aligned

with the requirements prior to the Statement of Compliance. All these information and data are automatically generated in the export report section; the user has the option to automatically generate the IMO DCS report based on different report types and on different data basis. The features of the IMO DCS section are the "Collected Data Summaries", the "Standardized Reporting Form" and the "Singapore Flag Report", are all based either on RoB or on daily consumption data, and are illustrated below.



Start date	End date	Distance travelled	Hours underway	Diesel/Gas Oil	LFO	HFO	LPG(Propane)	LPG(Butane)	LNG	Methanol	Ethanol	Other
(dd/mm/yyyy) (1200hrs UTC Time)	(dd/mm/yyyy) (1200hrs UTC Time)	(nm)	(h)	(Cf: 3.206)	(Cf: 3.15104)	(Cf: 3.1144)	(Cf: 3)	(Cf: 3.03)	(Cf: 2.75)	(Cf: 1.375)	(Cf: 1.913)	(Cf: ...)
01/01/2019		330	24	0	0	0				0	0	
02/01/2019		316	23	0	0	0				0	0	
03/01/2019		319	23	0	0	0				0	0	
04/01/2019		343	24	0	0	0				0	0	
05/01/2019		310	23	0	0	0				0	0	
06/01/2019		337	24	0	0	0				0	0	
07/01/2019		322	23	0	0	0				0	0	
08/01/2019		335	24	0	0	0				0	0	
09/01/2019		329	23	0	0	0				0	0	
10/01/2019		342	24	0	0	0				0	0	
11/01/2019		330	23	0	0	0				0	0	
12/01/2019		339	24	0	0	0				0	0	
13/01/2019		345	24	0	0	0				0	0	
14/01/2019		339	23	0	0	0				0	0	
15/01/2019		333	24	0	0	0				0	0	
16/01/2019		326	23	0	0	0				0	0	
17/01/2019		346	24	0	0	0				0	0	
18/01/2019		279	22.5	0.52	0	572.98				0	0	
19/01/2019		0	0	0	0	0				0	0	
20/01/2019		0	0	0	0	0				0	0	

Figure 27. IMO - Collected Data Summaries

Hours underway	Distance travelled	AE engine(s)	Main propulsion power	Ice class	Energy Efficiency Design Index (EEDI)	Deadweight tonnage	Net tonnage	Gross tonnage	Ship type	Imo number	End date	Start date
(h)	(nm)	(kW)	(kW)		(gCO <sub>2</sub> /tn <sup>2</sup> m)	(DWT)	(NT)	(GT)			(dd/mm/yyyy) (1200hrs UTC Time)	(dd/mm/yyyy) (1200hrs UTC Time)
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		01/01/2019	31/12/2018
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		02/01/2019	01/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		03/01/2019	02/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		04/01/2019	03/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		05/01/2019	04/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		06/01/2019	05/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		07/01/2019	06/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		08/01/2019	07/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		09/01/2019	08/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		10/01/2019	09/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		11/01/2019	10/01/2019
0	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		12/01/2019	11/01/2019
2.3	0	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		13/01/2019	12/01/2019
23.5	274	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		14/01/2019	13/01/2019
24	284	2880	8455		0	51277	NA	29993	Chemical/Oil Products Tanker		15/01/2019	14/01/2019

Figure 28. IMO - Standardized Reporting Form

Show  entries Search:

Start date	End date	Imo number	Ship type	Gross tonnage	Net tonnage	Deadweight tonnage	Energy Efficiency Design Index (EEDI)	Ice class	Main propulsion power	AE engine
(dd/mm/yyyy) (1200hrs UTC Time)	(dd/mm/yyyy) (1200hrs UTC Time)			(GT)	(NT)	(DWT)	(grCO <sub>2</sub> /tn*m)		(kW)	
31/12/2018	01/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
01/01/2019	02/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
02/01/2019	03/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
03/01/2019	04/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
04/01/2019	05/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
05/01/2019	06/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
06/01/2019	07/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
07/01/2019	08/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
08/01/2019	09/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
09/01/2019	10/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
10/01/2019	11/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
11/01/2019	12/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880
12/01/2019	13/01/2019		Chemical/Oil Products Tanker	29993	NA	51277	0		8455	2880

Figure 29. Singapore Flag Report

## Garbage (EMS) Report

In the garbage report section, the user chooses a year for which there is a report for each one of the months of that given year, regarding the wastes generated.

Start date	End date	Imo number	Ship type	Gross tonnage	Net tonnage	Deadweight tonnage	Energy Efficiency Design Index (EEDI)	Ice class	Power output (rated power) (kW) <sup>5</sup>		Fuel oil consumption								Methods used to measure fuel oil consumption			
									Main propulsion power	AE engine(s)	Distance travelled (nm)	Hours underway (h)	Diesel/Gas Oil (Cf: 3.206)	LFO (Cf: 3.15104)	HFO (Cf: 3.1144)	LPG(Propane) (Cf: 3)	LPG(Butane) (Cf: 3.03)	LNG (Cf: 2.75)		Methanol (Cf: 1.375)	Ethanol (Cf: 1.913)	Other (Cf: ...)
(dd/mm/yyyy) (1200hrs UTC Time)	(dd/mm/yyyy) (1200hrs UTC Time)			(GT) <sup>3</sup>	(NT) <sup>4</sup>	(DWT) <sup>5</sup>	(if applicable) <sup>6</sup> (grCO <sub>2</sub> /tn*m)	(if applicable) <sup>7</sup>			(nm)	(h)	(Cf: 3.206)	(Cf: 3.15104)	(Cf: 3.1144)	(Cf: 3)	(Cf: 3.03)	(Cf: 2.75)	(Cf: 1.375)	(Cf: 1.913)	(Cf: ...)	
31/12/2018	01/01/2019		Bulk Carrier	43904	27981	82079	3.48		9660	1845	330	24	0	0	28.59				0	0		1
01/01/2019	02/01/2019		Bulk Carrier	43904	27981	82079	3.48		9660	1845	316	23	0	0	28.16				0	0		1
02/01/2019	03/01/2019		Bulk Carrier	43904	27981	82079	3.48		9660	1845	319	23	0.1	0	28.4				0	0		1
03/01/2019	04/01/2019		Bulk Carrier	43904	27981	82079	3.48		9660	1845	343	24	0.1	0	29.21				0	0		1
04/01/2019	05/01/2019		Bulk Carrier	43904	27981	82079	3.48		9660	1845	310	23	0	0	28.35				0	0		1

Figure 30. Monthly EMS Report 2019 (indicative)

Month	Tanks cleaning operation		OBS Part II - Slips Discharged		Discharge avertedboard (by OWS)		Incidents	Garbage Discharged into the sea			Garbage Loaded ashore									Garbage Remaining on board	Garbage Incinerated	Garbage Calculation	Cleaning Chemical usage	
	No of Tanks Cleaned	Any pollution incident	Discharge ashore	Discharge to sea (OOOE)	Functioning of OWS satisfactory?	Any pollution incident	Any incident (During bunkering)	OilB (Food wastes- Commercial Grounded or Unprocessed)	OilC (Cargo residues (non-HSE))	Accidental Discharges	OilA (Plastics)	OilB (Food waste if loaded ashore)	OilC (Domestic waste-Paper, rags (glass,metal, bottles crockery etc.))	OilD (Cooking oil)	OilE (Incinerator ash)	OilF (Operational waste)	OilG (B-waste)	OilH (Cargo Residues (non-HSE))	OilI (Cargo Residues (HSE))	Special Hazardous waste (Used batteries, Expired medicines, Spilt bulbs etc.)	All categories	Applicable categories	Total Garbage generated	Total quantity of cleaning chemicals used
Qty	(Yes/No)	(m3)	(m3)	(Yes/No)	(Yes/No)	(Yes/No)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(litres)	
February	0	No	0	0	Yes	No	No	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.05	0.65	0
March	0	No	0	0	Yes	No	No	0.36	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.35	0.91	0
April	0	No	0	0	Yes	No	No	0.29	0.4	0	0	0	0	0	0	0	0	0	0	0	0.2	0.185	0.675	25
May	0	No	0	0	Yes	No	No	0.31	0	0	0	0	0	0	0	0	0	0	0	0	0.25	0.06	0.62	0
June	0	No	0	0	Yes	No	No	0.19	0	0	0.2	0.1	0.3	0	0	0	0	0	0	0	0.1	0.035	0.925	0
July	0	No	0	0	Yes	No	No	0.18	0.5	0	0	0	0	0	0	0	0	0	0	0	0.4	0.03	0.61	0
August	0	No	0	0	Yes	No	No	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.025	0.755	0
September	0	No	0	0	Yes	No	No	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.035	0.735	0
October	0	No	0	0	Yes	No	No	0.31	0.4	0	0	0	0	0	0	0	0	0	0	0	0.5	0.03	0.84	0
November	0	No	0	0	Yes	No	No	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0.6	0.025	0.925	0
December	0	No	0	0	Yes	No	No	0.42	0.1	0	0.1	0	0.35	0	0	0	0	0	0	0	0.15	0.025	1.045	0

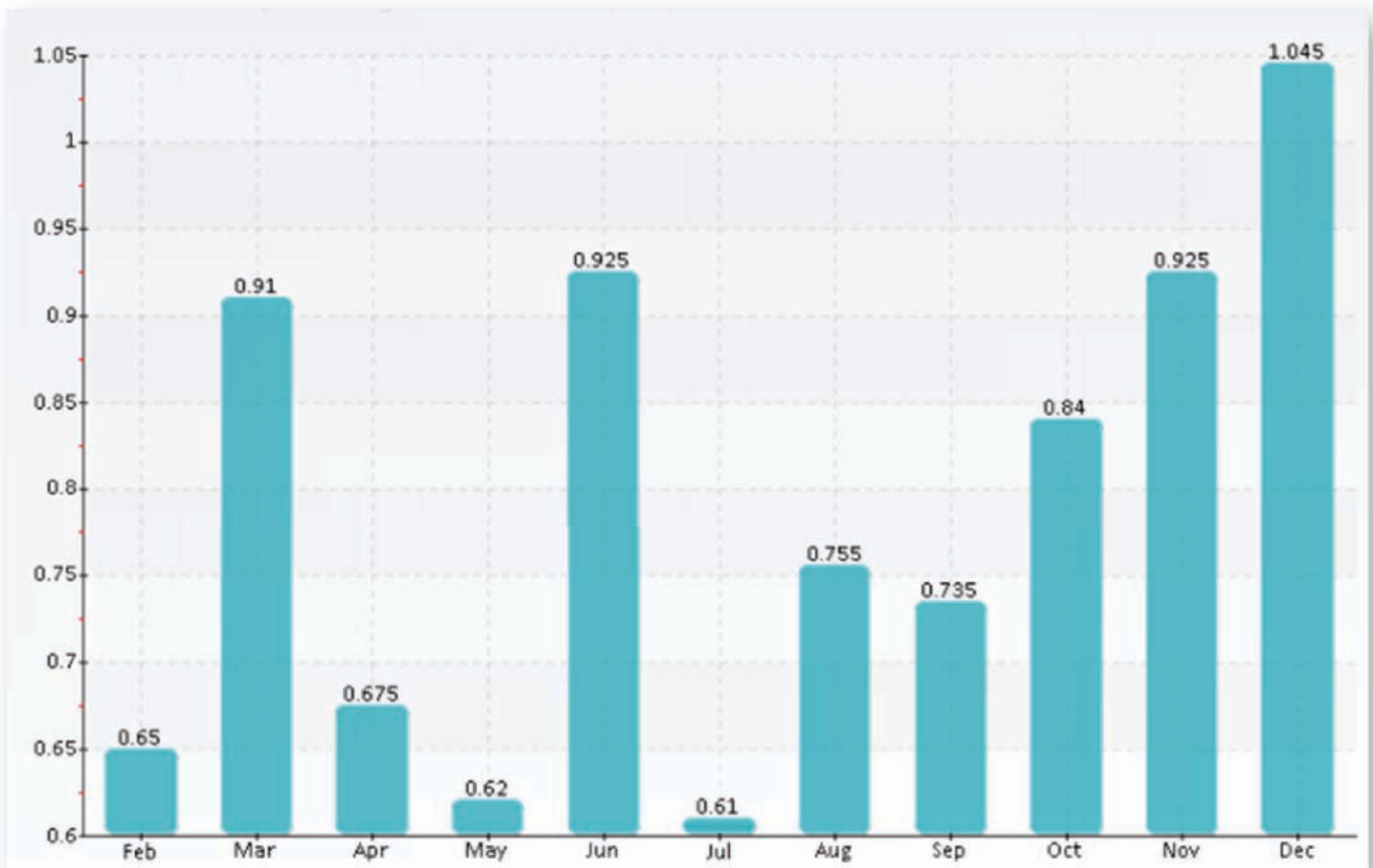


Figure 31. Monthly garbage generation in m3

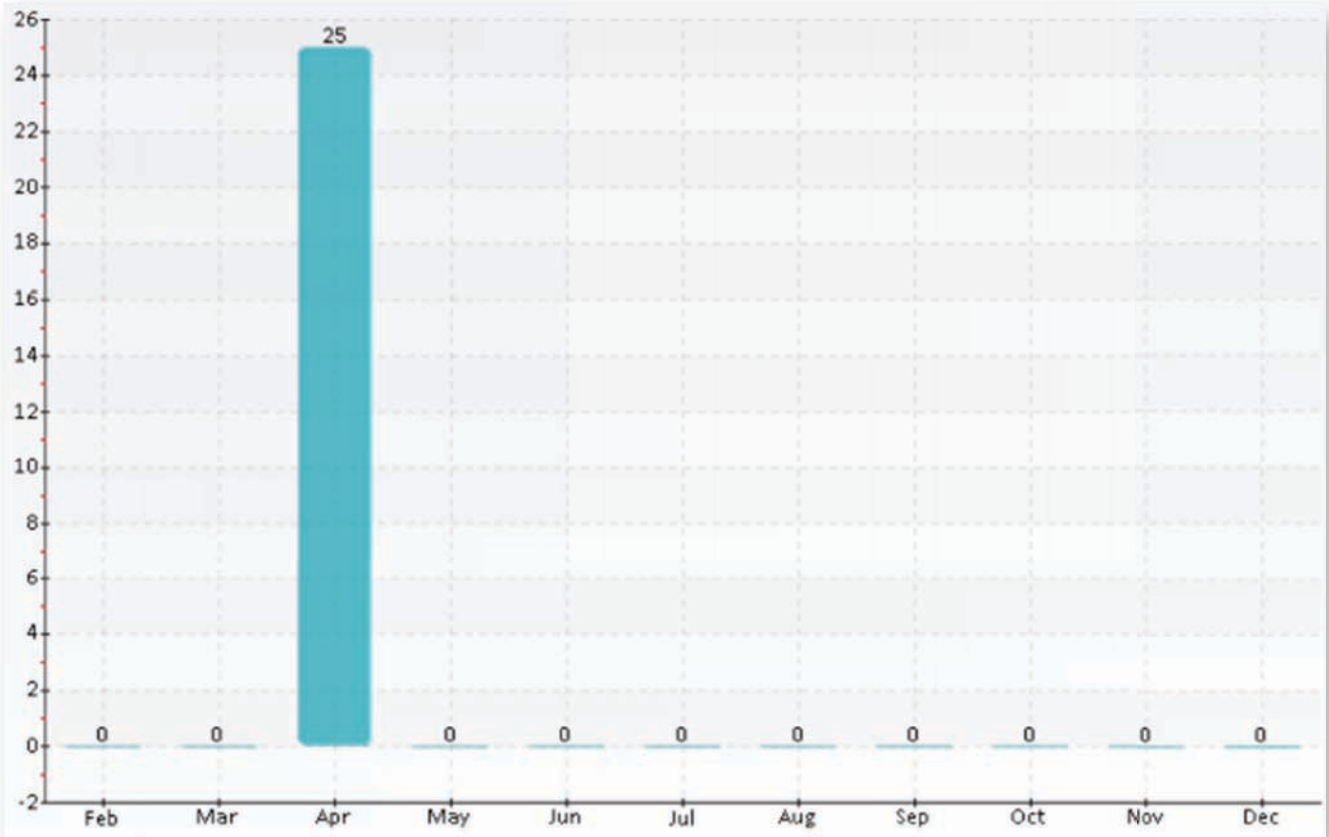


Figure 32. Month-wise consumption of cleaning chemical (litres)

## Widgets section

### File Manager

The file manager is a section where the user can store and share all the softcopies of the documents related to the day-to-day workload. Those documents may be the bill of lading, bunker delivery notes, voyage related documents

or even engine logbook extracts.

Those can be easily uploaded online and with a few clicks can be shared as a link with any other user requested via a simple email.

**File Manager**  
In this section you can upload and manage files related to your fleet.

[Vessel\*] Share file with: [Select type or insert]\*  
 Documents date: [ ] [ ]  
 Document period start: [ ] [ ]  
 Document period ending: [ ] [ ]

Drop file to upload or click to select.  
 Allowed files are: .pdf, .xls, .xlsx, .doc

[Upload]

[Vessel\*] [Type\*] Document date/period from: [ ] Document date/period to: [ ] [Search]

Use options to filter your results:

Per page: 10 [ ] [Next] [Last] Results: 1 to 10 of 973 total

[PDF] [CSV] [COPY] Search: [ ]

Vessel	File name	Type	Uploaded as	Document date/period	Actions
[Vessel]	BDN VLSHFO Houston 28.07.2021.pdf	BUNKERING REPORT	29/07/2021 17:33:18	28/07/2021	[ ] [ ] [ ] [ ] [ ] [ ]
[Vessel]	BL SET A.pdf	B/L	29/11/2021 11:1:202	27/11/2021	[ ] [ ] [ ] [ ] [ ] [ ]

Multiple files share link [ ]

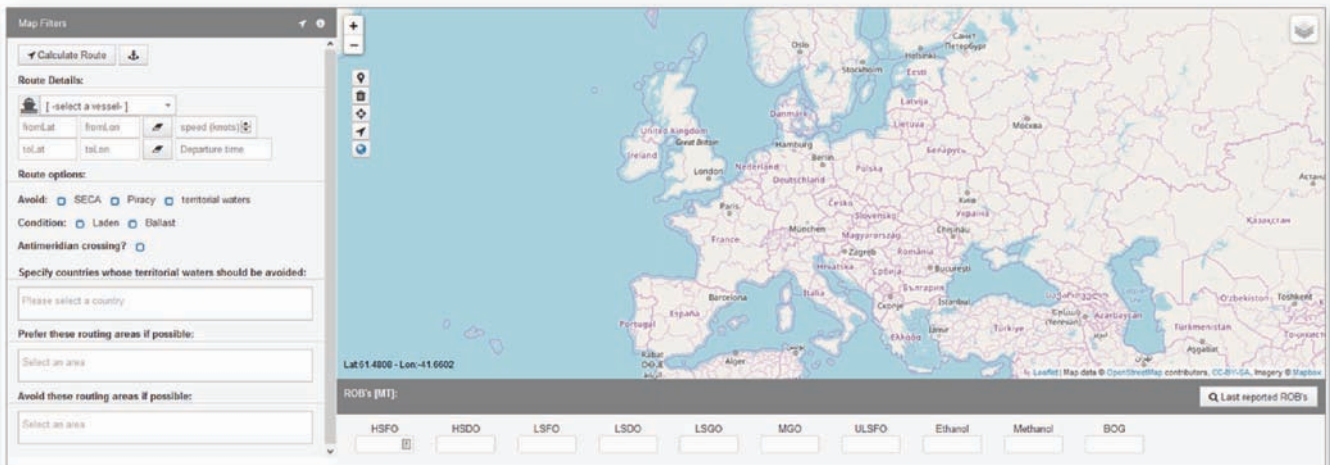


## Routing

With the routing tool of this section, users can plot the optimal route for their voyage. Calculation of the trip from port A to port B begins after one completes the starting and ending point of the trip. Out of the options provided, the minimum distance is calculated,

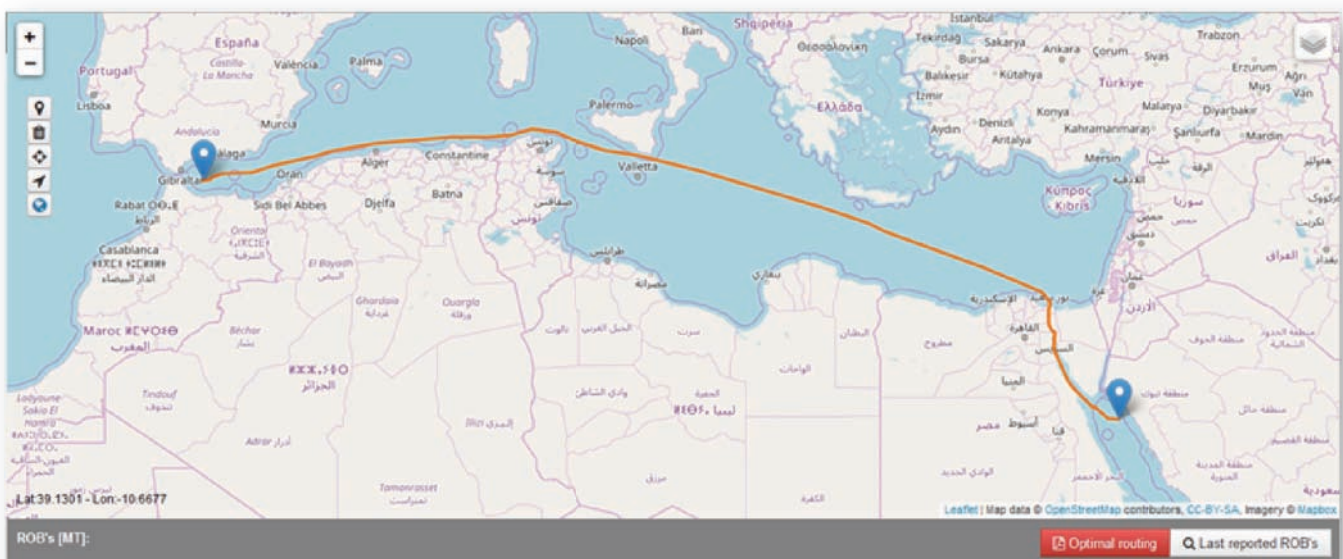
the estimated bunkers consumption and ROB, as well as the weather conditions (current and prospect) of the two ports and the in between voyage points.

The optimal routing feature is located under the "Routing" tab at the main menu.



After the optimal route calculation, the system output is as follows:

### 1 Graphical Image output for the optimal routing





**2** General information for the calculated route as follows:

General Information

Total distance 2223.27 (nm)	Total passage time 7.72 (days)	Seca Intersection 0 (nm)	Piracy Intersection 54.57 (nm)	Fuel Consumption Estimation 57 (tn)	Estimated Fuel Efficiency Index 0.8256 (tn/nm)
Bunkers ROB 8 (tn)					

**3** Detailed information about the calculated route:

Show 10 entries

Latitude	Longitude	Distance
35.7455122599	-4.39453125	0
35.7903902502	-4.10239982605	14.43
35.9415527344	-4.0591750145	18.36
35.9871994015	-3.96428322792	23.73
35.9642181396	-3.76548337936	34.44
36.0111351013	-3.62104980098	42
36.0196506549	-3.392816702	53.1
36.0257492005	-3.07831660854	68.37
36.0404663086	-2.75130009651	84.28
36.0390167236	-2.5450490578	94.29

Routing areas

Show 10 entries

Area	Alternatives
Suez Canal	NE Passage,Cape Horn,Magellan Strait,Cape Good Hope,NW Passage,Panama Canal
Gela Canal	Messina Strait

Showing 1 to 2 of 2 entries

Weather data at each routing point

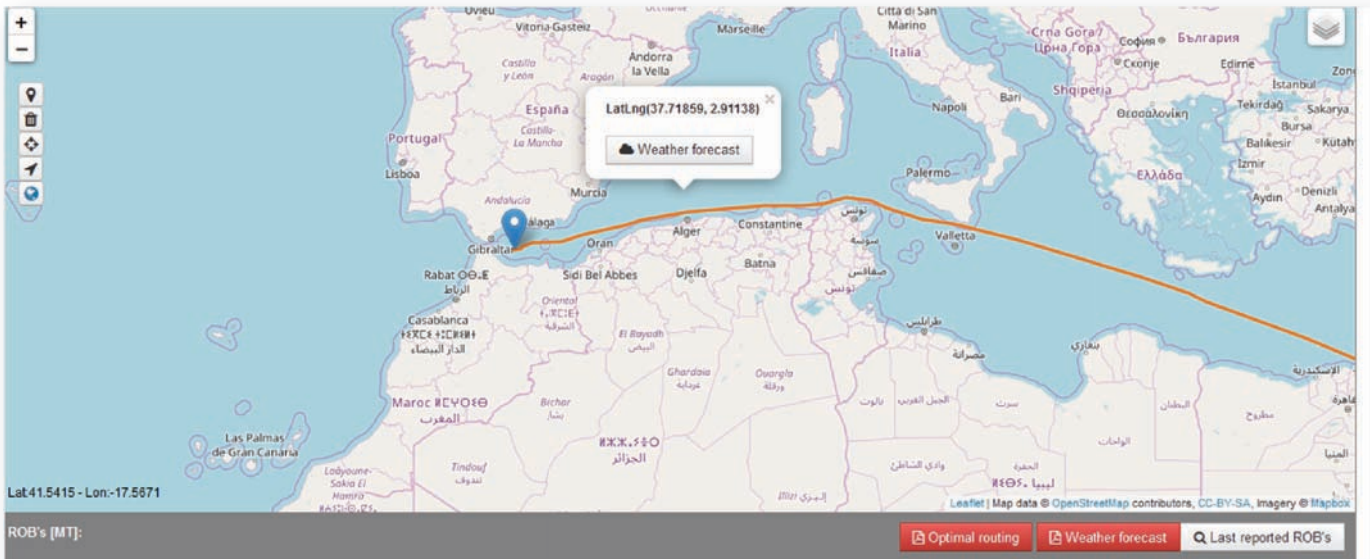
Show 10 entries

Datetime	Latitude	Longitude	Wave height [m]	Wave Dir [degrees]	Wind speed [m/s]	Temperature [celsius]	Currents speed (S-N) [m/s]	Currents speed (W-E) [m/s]	Ice [%]
2017-11-30 10:25:00	35.7455	-4.3945	1.1	58.3	6.2	17.4	-0.1	-0.1	0
2017-11-30 19:37:09	35.7964	-4.1024	1.6	67.4	11.1	18.4	0.2	0.3	0
2017-11-30 19:56:47	35.8416	-4.0592	1.6	67.4	11.1	18.4	0.2	0.3	0
2017-11-30 20:23:38	35.8872	-3.9643	1.6	67.4	11.1	18.4	0.2	0.3	0
2017-11-30 21:17:12	35.9642	-3.7656	1.6	67.4	11.1	18.4	0.2	0.3	0
2017-11-30 21:55:01	36.0111	-3.621	1.8	64	10.7	18.2	0.5	-0.3	0
2017-11-30 22:49:29	36.0187	-3.3928	1.8	64	10.7	18.2	0.5	-0.3	0
2017-12-01 00:06:52	36.0257	-3.0783	1.9	58.2	11.7	17.8	0.3	0	0
2017-12-01 01:26:23	36.0405	-2.7513	1.5	57.6	7.9	17.8	0.3	-0.1	0
2017-12-01 02:16:27	36.039	-2.545	1.4	49.1	8.4	18.2	-0.3	0.1	0

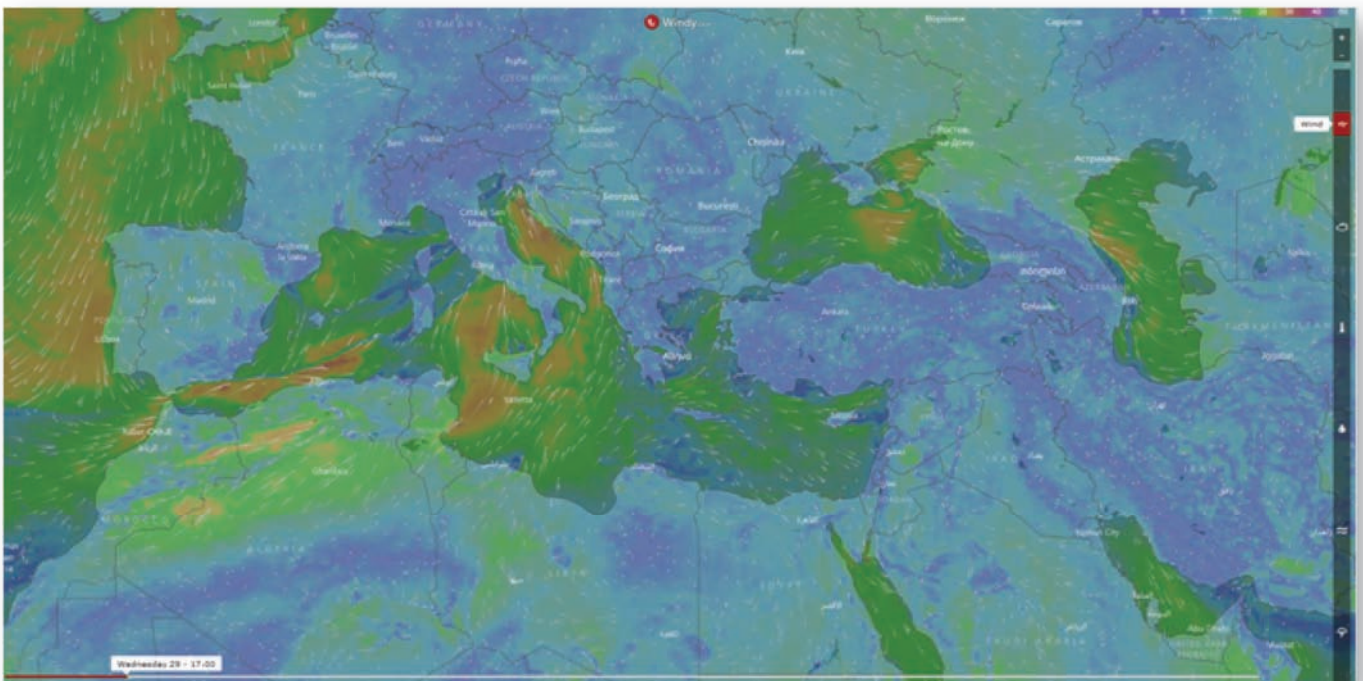
Showing 1 to 10 of 218 entries



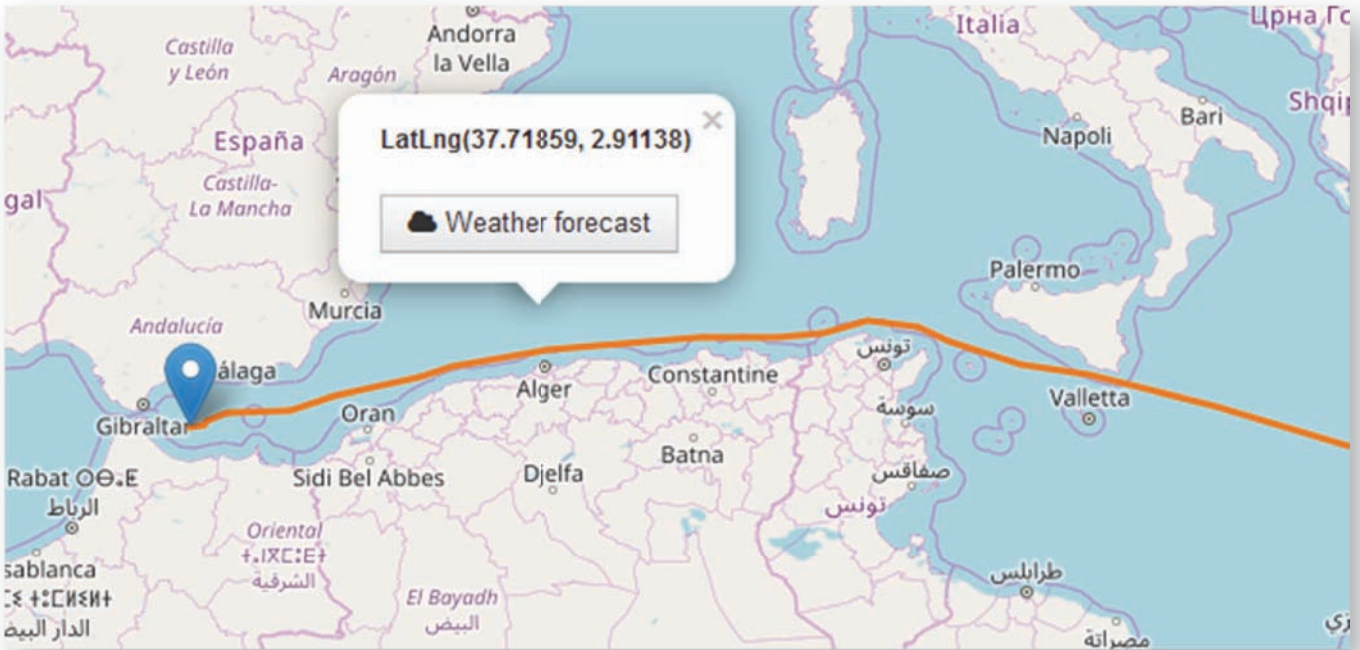
- 4 The user can also download a pdf (as shown below), which has the summary of the routing information and provides the weather data for each of the points on the routing plan, at the time the vessel will go through these points.



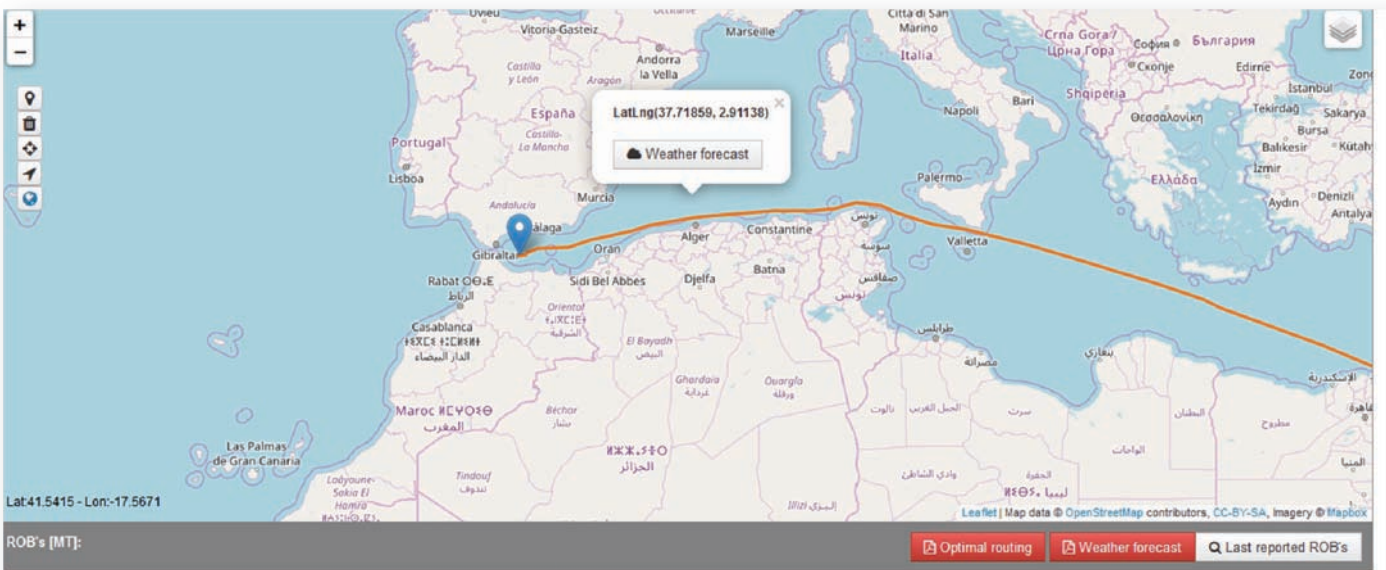
- 5 The user can also have an interactive weather chart for the following 3 days, simply by selecting the map icon (🌍). A pop up window will show the weather forecast from now and until the 3 next days.



- 6 The user can also download a pdf (as shown below), which has the summary of the routing information and provides the weather data for each of the points on the routing plan, at the time the vessel will go through these points.



By selecting the button weather forecast, a pop up will present the daily weather forecast for the area for the following 7 days. This report will be available for download from the bottom right section of the map:





## CONNECTION WITH OTHER SYSTEMS

### API Integration with DNV's Veracity

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Data validation has been enhanced through our latest collaboration with DNV. eMission monitoring platform is now connected with Veracity in real-time, allowing the data to be effortlessly imported to DNV's Veracity

database. All automated controls and validation rules have been incorporated in the connection, so that no adjustments need to be done by the user, apart from submitting the data.

### Connection with ABS data structure

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Through our long-lasting collaboration with ABS, a specific reporting export template has been developed and structured to comply with ABS prerequisites. Therefore, the data

are exported and formatted as required for direct import to ABS database, with the scope to minimize office workload during this uploading process.





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