EMISSION INVENTORY REPORT I 14064-1

ENERGY REVIEW I ISO50001 I 2024

Criteria:	CO_2- Performance ladder level 3
Drawn up:	K. Kuiper/ M. van Damme
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1 INTRODUCTION AND ACCOUNTABILITY

The emission report presents the progress made in relation to the CO_2 objectives of Muller Maritime Holding (MMH). This annual report also serves as an incentive to continually work toward achieving the CO_2 reduction targets set out in the organization's Safety, Health, Environment & Quality (SHE-Q) Policy.

The annual report has been prepared based on the mandatory subjects for periodic reporting described in Chapter 9.3 of ISO-14064-1:2018.

1.1 SHE-Q POLICY

In its policy statement, the organization MMH establishes that it is implementing a proactive environmental policy. As a fundamental requirement in carrying out its tasks, MMH will continue to comply with legal requirements and guidelines in the field of environmental protection.

With a view to sustainable business operations, we will continuously improve our environmental performance through control, reduction, and innovation.

CO_2 reduction objectives:

- Determine, monitor, and continuously manage the energy consumption of our own facilities and fleet, improve it where possible.
- Reduce CO_2 emissions by raising awareness and implementing operational improvements where possible.

1.2 CO2 RESPONSIBILITY

The responsibilities related to environment and sustainability fall under the daily management of the SHE-Q department, with the SHE-Q Manager designated as the responsible function.
Management holds final responsibility and will maintain contact with the SHE-Q department regarding this. The SHE-Q Manager also has direct communication with management.

2 DESCRIPTION OF THE ORGANIZATION

Muller Maritime Holding B.V., headquartered in Terneuzen, the Netherlands, is the holding company of the Muller Maritime Group - jointly owned by the Muller Family and Fairplay Towage. The Group's principal operating division, Multraship, was founded in 1984 and specialises in harbour and terminal towage, salvage, sea towage, and support to the offshore energy and infrastructure industries. The Muller family has been active in the shipping industry for more than 240 years, with a focus on towage and salvage since 1911. Operating a modern fleet of tugs, self-propelled floating sheerlegs, diving support vessels and other specialised units, the Group serves clients across Europe, Africa and the Middle East. In addition to its head office in Terneuzen, the Group maintains branch offices in Rotterdam and Bulgaria.

2.1 BOUNDARY DETERMINATION

To determine which entities of MMH fall under the CO_2 performance ladder certificate, an AC analysis was conducted. This analysis is based on the turnover of the various entities within the holding for this year (2024). Entities that represent a significant share of the total turnover are considered material to the organization and therefore fall within the scope of the certificate. These companies are:

- Multraship Ocean Towage BV
- Multraship BV
- Multraship Salvage BV
- Bourgas Tug Services EOOD

In addition to the entities that are required to be within the scope based on this analysis, it was decided to voluntarily include additional entities within the scope of the CO_2 Performance ladder. This decision was made to provide as complete a picture as possible of the CO_2 footprint of the Holding, to promote internal cooperation, and to implement sustainability measures across the holding as a whole.

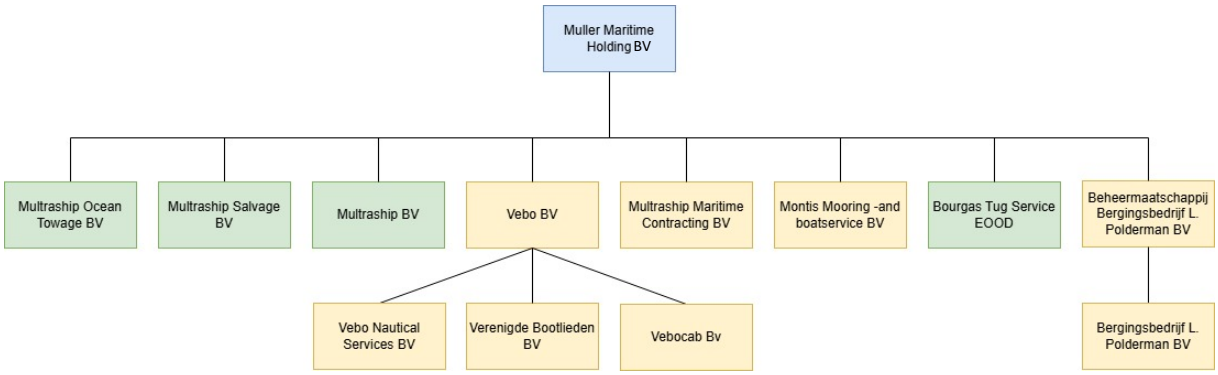
The following entities are therefore included within the certification scope;

- Vebo BV
- Verenigde Bootlieden BV
- Vebocab BV
- Vebo Nautical Services BV
- Montis Mooring and Boat Services BV
- Beheermaatschappij Bergingsbedrijf L. Polderman BV
- Bergingsbedrijf L. Polderman
- Multraship Maritime Contracting BV

Table 1: Boundary Determination

Company	KVK	Adress
Muller Maritime Holding BV	22046602	Schuttershofweg 1, 4538 AA Terneuzen
Multraship Ocean Towage BV	22057648	Schuttershofweg 1, 4538 AA Terneuzen
Multraship BV	21013792	Schuttershofweg 1, 4538 AA Terneuzen
Multraship Salvage BV	22052053	Schuttershofweg 1, 4538 AA Terneuzen
Vebo BV	21016048	Schuttershofweg 1, 4538 AA Terneuzen
Verenigde Bootlieden BV	21013764	Goessekade 1, 4531 DZ Terneuzen
Vebocab BV	21015415	Goessekade 1, 4531 DZ Terneuzen
Vebo Nautical Services BV	21016766	Goessekade 1, 4531 DZ Terneuzen
Montis Mooring -and Boatservice BV	21018475	Goessekade 1, 4531 DZ Terneuzen
Beheermaatschappij Bergingsbedrijf I. Polderman BV	20142899	Tramperweg 4, 4417 CZ Hansweert
Bergingsbedrijf L. Polderman BV	22008188	Tramperweg 4, 4417 CZ Hansweert
Bourgas Tug Service EOOD	102798181	Alexander Battenberg 1, Burgas 8000, Bulgarije
Multraship Maritime Contracting BV	87504499	Schuttershofweg 1, 4538AA Terneuzen

This results in the following organizational chart, in which the green boxes represent the entities identified through the AC analysis, and the yellow boxes represent the BV's that have been included on a voluntary basis.



Picture 2: Organization Chart Co-2 performance ladder

2.2 STATEMENT ON ORGANIZATIONAL SIZE

Based on the figures from the footprint (table 3), MMH qualifies as a “small organization” regarding offices and business premises, but as a “large organization” due to the maritime operations based on CO_2 – emissions .

Table 2: Classification of small, medium, or large organizations according to the CO_2 Performance Ladder Handbook 3.1

Organization type	Services	Works/ Delivery’s
Small organization(S)	Total CO_2 emissions are a maximum of (<) 500 tonnes per year.	Total CO_2 emissions from offices and business premises are a maximum of (<) 500 tonnes per year, and total CO_2 emissions from all construction sites and production locations are a maximum of (<) 10,000 tonnes per year.
Medium-sized organization (M)	Total CO_2 emissions are a maximum of (<) 2,500 tonnes per year.	Total CO_2 emissions from offices and business premises are a maximum of (<) 2,500 tonnes per year, and total CO_2 emissions from all construction sites and production locations are a maximum of (<) 10,000 tonnes per year.
Large organization (L)	Total CO_2 emissions exceed the thresholds for small or medium-sized organizations.	All other situations.

2.3 AMBITION

MMH is mid-level ambitious, firstly through achieving CO_2 Performance Ladder Level 3, and secondly because the defined reduction target is ambitious compared to sector peers.

The concrete reduction target for the year 2028 is a 6% reduction in total CO_2 emissions compared to the organizational footprint of 2023.

Sector peers generally set an average reduction target of 5%. Based on this comparison, the organization positions itself as a mid-level performer with a forward-looking and progressive reduction target.

CO2-FOOTPRINT

Table 3: Footprint 2024

Energy source	Scope	Unit	Annual consumption 2024	Annual emmission 2024 (in ton Co2)
All air travel	3	**KM**	4.669.948	850
Various motor fuels – Business travel	3	**KM**	860.642	166
Electricity consumption – shore power	2	**kWh**	39.612	0
Electricity consumption (power label)	2	**kWh**	310.859	48
Gas consumption – Buildings	2	**M³**	15.411	33
Electricity consumption Buildings	2	**kWh**	251.149	0
Various motor fuels – Vehicle fleet	1	**KM**	447.977	86
MGO consumption (Ocean Towage)	1	**Liter**	7.136.379	24.521
Maritime Contracting	1	**Liter**	818.600	2.813
HVO 20 consumption (Ocean Towage)	1	**Liter**	161.000	553
HVO 50 consumption (Ocean Towage)	1	**Liter**	2.383.600	4.621
MGO consumption (HarbourTowage)	1	**Liter**	2.795.117	9.604
MGO consumption (Polderman)	1	**Liter**	105.170	361
MGO consumption (Verenigde Bootlieden (VB) /Montis)	1	**Liter**	156.179	537
MGO consumption (Bourgas)	1	**Liter**	356.127	1.224
			Total Co_2 ton: 45.416	
			Total running hours: 63.438	

3 EMISSION SOURCE INVENTORY

Table 4: Emission-factor

Source	Unit	Conversion Factor (WTW)
Air Travel	KM	0,182
Fuel (vehicle – unknown type)	KM	0,190
Green Electricity (Shore Power)	kWh	0
Green Electricity (Buildings)	kWh	0
Electricity (Power Buildings)	kWh	0,203
Natural Gas	M^3	2,134
MGO	Liter	3,436
HVO 20	Liter	2,8424
HVO 50	Liter	1,952

The emission factors published by Factoren | CO_2-emissiefactoren were applied to determine the total CO_2 emissions of MMH for the year 2024. The results of these calculations are included in Chapter 2.4.

3.1 RELEVANCE

Within the carbon footprint, the products Aspen and AdBlue have been excluded on the basis of materiality, as their limited consumption relative to other fuel types does not have a significant impact on the total CO_2 footprint.

3.2 CALCULATION METHOD

Scope 1: includes emissions that are directly released from sources that are owned or controlled by MMH.

Scope 2: includes emissions that are indirectly caused by MMH, such as emissions resulting from the generation of purchased electricity.

Scope 3: includes other indirect emissions that arise from activities of the organization where assets owned by other organizations are used.
For MMH, the scopes have been calculated in the following manner:

3.2.1 SCOPE 1

Scope 1 includes the direct CO_2 emissions resulting from fuel consumption from the own activities of MMH. This mainly concerns fuel consumption of the deployed vessels and the company vehicle fleet

- In 2024, approximately 14 million Liters of fuel were consumed, resulting in 44.234 tonnes of CO_2emissions.
- The largest share of these emissions originates from offshore and sea towage operations, where mainly Marine Gas Oil (MGO) is used for international towing and salvage activities (24.521 tonnes CO_2).
- Alternative fuels are also used within these activities. In 2024 this included HVO20 (553 tonnes CO_2) and HVO50 (4.621 tonnes CO_2), contributing to lower CO_2 emissions per litre of fuel.
- Harbour towage services account for 9.604 tonnes CO_2, mainly due to the continuous deployment of tugboats for port assistance. Emissions depend strongly on operational deployment, operating hours and power demand.

The remaining Scope 1 emissions originate from:

- Maritime Contracting 2.813 tonnes CO_2
- Bourgas 1.224 tonnes CO_2
- Verenigde Bootlieden/ Montis 537 tonnes CO_2
- Polderman 361 tonnes CO_2
- Vehicle fleet 86 tonnes CO_2

3.2.2 SCOPE 2

Scope 2 includes the consumption of electricity and natural gas in the buildings of MMH.

In 2024, a total of 15.411 m³ of natural gas was consumed, resulting in CO_2 emissions of 32,8 tonnes of CO_2. In addition, 124.397 kWh of electricity was consumed. As this electricity was fully generated from wind and solar energy, no CO_2 emissions are associated with this electricity consumption.

The building located at Goesekade has a different energy supplier because it is classified as a large-scale consumer. This is due to the maintenance activities carried out by Verenigde Bootlieden at this location, which require additional electricity for workshop equipment, technical installations, and lighting, resulting in an annual electricity consumption of 310.859 kWh.

Furthermore, the use of shore power was introduced in 2024. This allows vessels to connect to the electricity grid instead of running their onboard generators while they are moored, resulting in fuel savings. In 2024, 39.612 kWh of electricity was consumed via shore power. This electricity is also fully generated from wind and solar energy and therefore does not result in CO_2 emissions.

3.2.3 SCOPE 3

Scope 3 includes the business travel of MMH.

In 2024, personnel and management undertook a total of 1.639 flights, resulting in CO_2 emissions of 1.650,3 tonnes of CO_2. In addition, employees declared 63.421 km of business travel by road. When multiplied by the applied emission factor of 2,821, this corresponds to CO_2 emissions of 178,9 tonnes of CO_2.

3.3 UNCERTAINTIES

The presented results should be regarded as the best possible estimate of the actual values. Most data used for the CO_2 footprint is based on invoices and/or directly measured quantities, resulting in a relatively low level of uncertainty.

- Flight kilometres partly depend on data provided by external parties. Although sample checks have been carried out to verify the reported distances, deviations in the actual number of kilometres flown cannot be fully excluded

- Emissiefactoren.nl provides gas emission factors in Nm³, while gas consumption on invoices is reported in m³. This difference in units may result in a slight over- or underestimation of the actual CO_2 emissions.

3.4 VERIFICATION

The CO_2 footprint of MMH has been reviewed and verified as part of the certification audit for the CO_2 Performance Ladder. Based on this verification, the presented data and results are considered reliable.

3.5 REFERENCE TABLE

Table 5: Reference table

ISO 14064-1 §9.3.1 Requirement	Reference in This Report
General description of the organization	§2 Description of the Organization
Name of the responsible person	§1.3 Responsible Person
Reporting period	§2.3 Ambition
Description of the organizational boundary	§2.1 Boundary Determination
Description of the reported boundary, including the criteria established by the organization to determine significant emissions	§2.1 Boundary Determination
Specification of Scope 1 emissions	§2.4 CO_2 Footprint
Statement regarding the combustion of biomass	§2.4 CO_2 Footprint §2.5 Emission Source Inventory
Quantification in tonnes of CO_2 or confirmation that no GHG removals have taken place	§2.4 CO_2 Footprint
Specification of exclusions, other than uncertainties or omissions	§2.6 Uncertainties
Specification of Scope 2 emissions	§2.4 CO_2 Footprint
Reference year (historical) and reference year of the emissions inventory	§2.2 Statement on Organizational Size
Recalculation of footprints from the reference year up to the reporting (partial) year	§2.4 CO_2 Footprint
Calculation methodologies, including justification of the chosen methods	§2.7 Calculation Methodology
Explanation of changes to previously applied calculation methodologies	§2.7 Calculation Methodology
Conversion factors, including source references	§2.5 Emission Factor Inventory
Uncertainties, including an estimate of their effect on the accuracy of the emissions inventory	§2.8 Uncertainties
Description of the uncertainty assessment and results	§2.8 Uncertainties
Statement that the report complies with ISO 14064	§1 Introduction and Accountability
Description of whether the emissions inventory has been externally verified	§2.9 Verification
Global Warming Potential (GWP) values, including source references	§2.5 Emission Source Inventory

4 REDUCTION TARGETS AND LIST OF MEASURES

Table 6: Reduction targets and list of measures

No.	Objective	Measure	Measurable	Responsible	Realistic	Deadline
1	6% reduction in total CO_2 emissions per operating hour of the fleet	Use of cleaner fuels (HVO), operational optimisation and monitoring of operating hours	CO_2 per operating hour of the fleet	SHE-Q / Operations	Yes, data available from fuel and operating hour registration	Continuous
2	6% reduction in business travel kilometres of personnel	Monitor declared kilometres and encourage more efficient travel movements	Number of km + CO_2 per year	SHE-Q	Yes, declaration data available	2028
3	Reduction of fleet CO_2 emissions with HVO	Customer research on cost pass-through of HVO, market analysis of competitors and supplier availability. Phased implementation of HVO20/HVO50	Consumption MGO vs. HVO + CO_2 factor	SHE-Q / Commercial	Yes, HVO technically applicable	2028
4	Insight into and optimisation of fuel consumption for harbour operations	Implementation of data system: map processes, set up dashboards and analyse data	Fuel consumption per vessel	Operations / SHE-Q	Yes, software already purchased	Continuous
5	Reduction of CO_2 emissions through shore power usage	Identify savings per vessel, stimulate and where possible enforce shore power use	Shore power consumption and reduced generator use	Operations	Yes, shore power facilities available	Continuous
6	6% reduction in electricity consumption of buildings (Scope 2)	Raise awareness through communication on consumption, costs and CO_2 impact per building	kWh per building per year	SHE-Q	Yes, consumption data available	2028
7	6% reduction in gas consumption of buildings (Scope 2)	Communication on gas consumption and saving tips to building users	m^3 gas per building per year	SHE-Q	Yes, insight available via invoices	2028
8	6% reduction in CO_2 emissions from air travel (Scope 3)	Optimise crew rotations and critically assess the use of foreign crew	CO_2 emissions from air travel per year	SHE-Q / Crewing	Yes, travel data available	2028

5 COMMUNICATION

5.1 OBJECTIVE AND GOALS OF THE COMMUNICATION PLAN

Below, the objective of the communication plan is described, along with the corresponding communication goals.

5.1.1 OBJECTIVE OF THE PLAN

The objective of the communication plan is defined as follows:

- To create support for CO_2 reduction measures
- To provide transparency towards externals

5.1.2 COMMUNICATION OBJECTIVES

MMH aims to achieve the following objectives through communication about its CO_2 policy:

Inform: Our aim is to provide insight into our CO_2 footprint, objectives and progress

Motivate: Encourage employees to actively contribute to energy savings

Engage: Involve stakeholders in our sustainability approach

Report transparently: Demonstrate externally how Muller Maritime Holding implements CO_2 reduction measures

5.2 INFORMATION SHARED INTERNALLY AND EXTERNALLY

Table 7: Communication planning

Period	Activity	Subject / Objective	Communication Format
Quarterly	Management Team reporting	Progress on fuel consumption, CO_2 emissions and reduction measures	Monthly report
January	Year-end closing (previous year)	Results and analysis of the CO_2 footprint	Internal newsletter / intranet
March	External publication	Annual CO_2 report (Handbook C2/C3)	Website / SKAO portal
June	Internal update	Progress on reduction targets and improvement actions	Intranet / newsletter
September (yearly)	External update	Ongoing initiatives and new measures	Website / LinkedIn
December	Summary report	New reduction targets for the following year	Annual report / newsletter