
ADERCO 2055G FOR ENHANCED FUEL EFFICIENCY AND CO2 REDUCTION



Aderco 2055G is 100% vegetal-organic, ashless, and metal-free, making it an environmentally friendly choice for fuel treatment. This advanced product is the most concentrated surfactant/dispersant available, suitable for use in any kind of residual or distillate fuels. Its primary functions include homogenising the fuel, cleaning and protecting components, maximising energy potential, and minimising CO2 emissions. Designed to address fuel-related problems before, during, and after combustion, Aderco 2055G represents the latest generation of fuel treatments, delivering optimum results in terms of efficiency, economy, and environmental impact.





Introduction

Embarking on a journey towards sustainable maritime operations, Aderco proudly presents the preliminary results of our groundbreaking fuel treatment, Aderco 2055G.

This case study explores the impact of Aderco 2055G on a Refrigerated Cargo Ship using VLSFO. The aim of this study was to evaluate the effects of Aderco 2055G on fuel consumption savings and the reduction of CO2 emissions. The assessments were carried out using the Gold Standard Carbon Registry methodology, "Retrofit Energy Efficiency Measures in Shipping."



Methodology

GOLD STANDARD PROTOCOL FOR SHIPPING

The tests conducted by the vessel followed the guidelines of the Gold Standard Carbon Registry methodology "Retrofit Energy Efficiency Measures in Shipping"*

Main Engine Fuel Consumption Assessment:

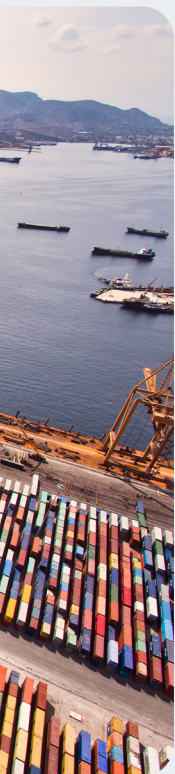
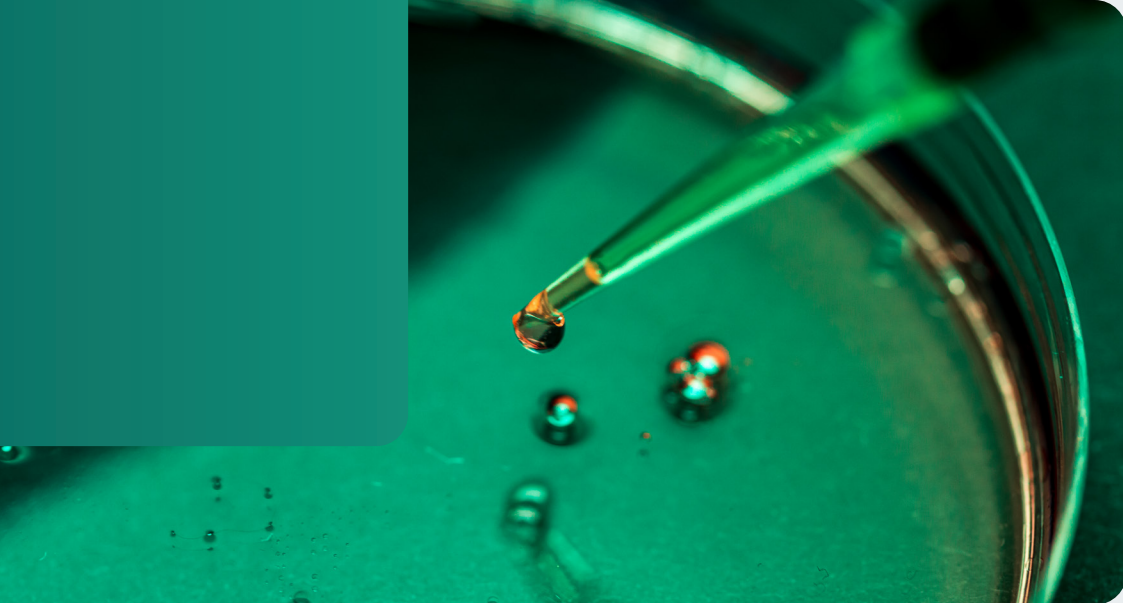
The methodology focuses on comparing main engine fuel consumption between two distinct periods: a baseline period of six months prior to initiating Aderco 2055G treatment and a subsequent project period of six months with treatment. The fuel savings / CO2 emission reductions are established by subtracting the average consumption for the project period to the baseline period.

Data Parameters: Daily reporting of various parameters is crucial for fuel consumption performance analysis. These parameters include:

- Daily speed (over ground)
- Daily distance
- Sailing hours
- Beaufort Sea State
- Draft
- Main Engine (ME) Very Low Sulphur Fuel Oil (VLSFO) consumption
- ME Marine Gas Oil (MGO) consumption

*Reference: <https://globalgoals.goldstandard.org/422-ee-shipping-retrofit-energy-efficiency-measures-in-shipping/>





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Data Filtering: To ensure the accuracy and reliability of the assessment, the methodology sets specific criteria for data filtering, including:

- Minimum of 23 sailing hours per day: Days with insufficient sailing activity are excluded from the analysis to focus on periods of significant operational activity.
- Exclusion of days with Beaufort Sea State above 6: Days with adverse weather conditions, indicated by a Beaufort Sea State above 6, are excluded to mitigate the impact of external factors on fuel consumption.



By adhering to these data filtering parameters, the assessment aims to provide a robust evaluation of the impact of Aderco 2055G treatment on main engine fuel consumption. This careful approach to data analysis is designed to ensure that the results are both accurate and reliable, thus providing a clear understanding of the product's performance. Specifically, this method allows us to accurately measure the effectiveness of Aderco 2055G in enhancing energy efficiency and reducing CO2 emissions in real-world maritime operations.

By applying stringent data filtering criteria, we can eliminate any extraneous variables and potential biases that might otherwise skew the results. This means that the evaluation focuses solely on the relevant data, leading to a more precise assessment of how Aderco 2055G impacts fuel consumption. Such rigor in data handling ensures that the conclusions drawn from the assessment truly reflect the product's capabilities and performance.

Results

REFRIGERATED CARGO SHIP

Dataset prior Gold Standard filtering requirements:

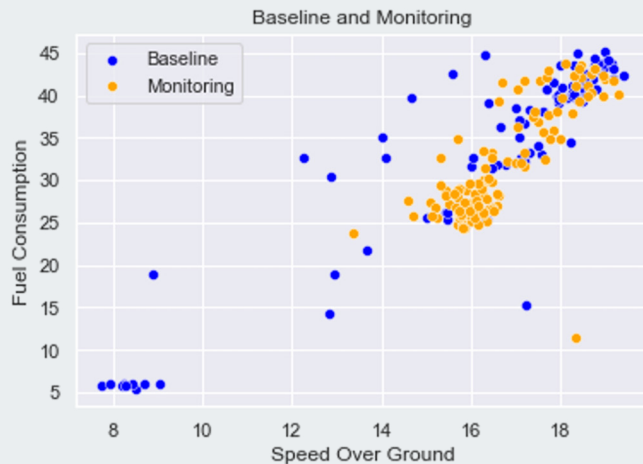


Dataset after Gold Standard filtering requirements:



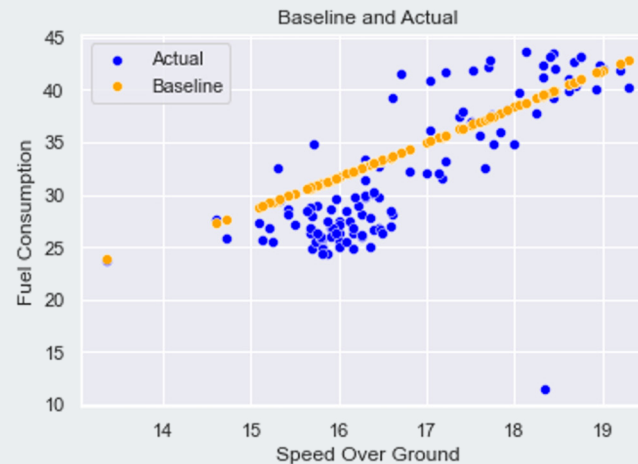
The graphical representation of the data collected shows a change in speed pattern between the baseline and the project period.

Fuel consumption vs speed (combined data):



This Graph shows the fuel consumption before and after the fuel conditioner is used in treatment.

Mathematical regression chart:



This Graph shows the fuel comparison between baseline and actual after applying the baseline regression line as per Gold Standard Requirement.

The point cloud already shows an improvement of consumption for the project period.

Key dates:

Baseline: 02.11.2022 to 04.05.2023 (153 days)

Project: 10.05.2023 to 30.11.2023 (204 days)

By categorising the datapoints into different speed groups, the fuel consumption before and after treatment are estimated using the respective linear regression models without considering the steaming time. The comparison results are as shown in table below. The fuel consumption reduction is within the range of 1.13% to 5.26%. The average fuel saving mentioned in the table below aligns with the range.

Speed, knt	Number of Datapoints		Fuel Consumption, MT			
	Before	After	Before	After	Difference	%Change
15	12	34	24.74	23.44	1.30	5.26%
16	12	38	29.43	28.33	1.10	3.73%
17	20	19	34.11	33.22	0.90	2.63%
18	35	19	38.80	38.11	0.69	1.79%
19	8	3	43.49	43.00	0.49	1.13%
Total	87	113				



RESULTS

Fuel consumption performance improved by **4%** with a daily reduction of **2.35 metric tonnes of fuel**

The Result of the mathematical regression (following Gold Standard protocol) shows the following;

The ship demonstrated an **average fuel savings of around 4.8%**. Longer term performance may vary by + / - 1% using larger data samples (both baseline and project) however the initial exercise of evaluating the positive impact of the fuel treatment is met. The fuel savings averaged **2.35 mt daily**, totalling **273 mt of fuel saved** for the project period.

The data has been verified by the American Bureau of Shipping (ABS).



To find out how much you could save, use our simulators on our website

FUELING A GREENER TODAY,
FOR A CLEANER TOMORROW.

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