

From Regulation to Reality: Fuel Assessment Update of the Mediterranean Emission Control Area

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By the end of October 2025, six months had passed since the implementation of the Mediterranean Emission Control Area (ECA). This article will set out to review what's changed in terms of the fuel mix and fuel quality, across the region between 1st November 2024 - 31st October 2025.

Pre-Mediterranean ECA

The six months leading up to the implementation of the Mediterranean ECA (1st November to 30th April 2025), VPS tested marine fuels representing 1,610,852mt, bunkered in the Top 10 Mediterranean ports. This consisted of: 53% VLSFO, 28% HSFO, 16% MGO, 2% ULSFO and 1% Biofuels.

These Top 10 Mediterranean ports during the six months leading up to the ECA coming into force, provided approximately 90% of the total fuel tested by VPS from the whole region. The breakdown by port and fuel type in mt was as follows:

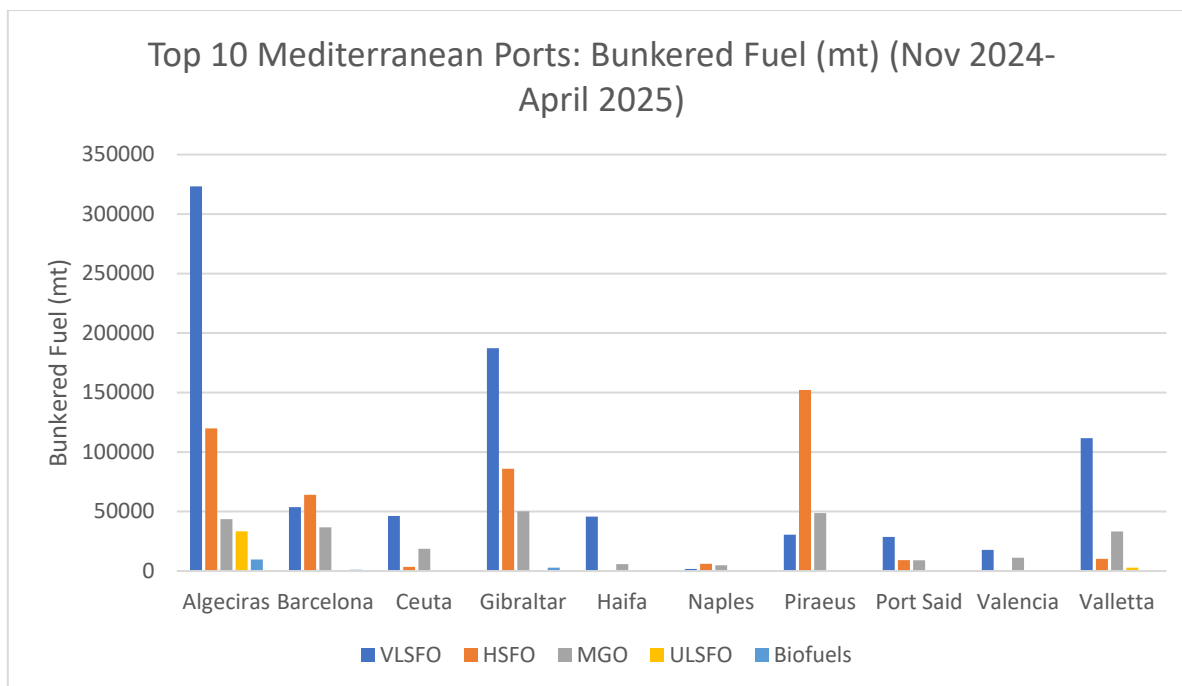


Figure 1: Top 10 Mediterranean Ports Bunkered Fuel Tonnage by Type (Nov-24 to Apr-25)

Port	VLSFO	HSFO	MGO	ULSFO	Biofuels
Algeciras	323,309	119,885	43,537	33,344	9,660
Barcelona	53,695	64,095	36,677	350	1,042
Ceuta	46,230	3,500	18,745		
Gibraltar	187,265	86,022	50,235		2,837
Haifa	45,764	300	5,799		
Naples	1,790	6,018	4,826		
Piraeus	30,562	152,235	48,710		
Port Said	28,721	9,106	9,090		
Valencia	17,757	600	11,125	85	
Valletta	111,641	10,176	33,299	2,821	
Total	846,733	451,938	262,042	36,601	13,538
% Share	53%	28%	16%	2%	1%

Table 1: Top 10 Mediterranean Ports Bunkered Fuel Tonnage by Type (Nov-24 to Apr-25)

Over the six month period Pre-ECA, (Nov-24 to Apr-25), 5.5% by volume, of all fuels bunkered across the Top 10 Mediterranean ports, were off-specification. However, by fuel type, over that time period, the following off-specification rates were observed:

VLSFO (6%), HSFO (6%), MGO (3%), ULSFO (2%) and Biofuels (0%).

In terms of the off-specification parameters by fuel type pre-ECA, these were mainly the following:

VLSFO – Viscosity, Cat-fines

HSFO – Viscosity, Density, Water

MGO – Flash Point

ULFSO – Pour Point

Post-Mediterranean ECA

From the implementation of the Mediterranean ECA on 1st May until 31st October 2025, VPS tested marine fuels representing 1,888,799 mt from the Top Ten Mediterranean ports. This consisted of: 30% VLSFO, 29% HSFO, 30% MGO, 8% ULSFO and 4% Biofuels.

Looking at the Top 10 Mediterranean ports since the start of the ECA and up to 31st October, these ports have supplied approximately 90% of the total fuel tested by VPS, which is a similar percentage to the six month period pre-ECA.

The breakdown by port and fuel type in mt is as follows:

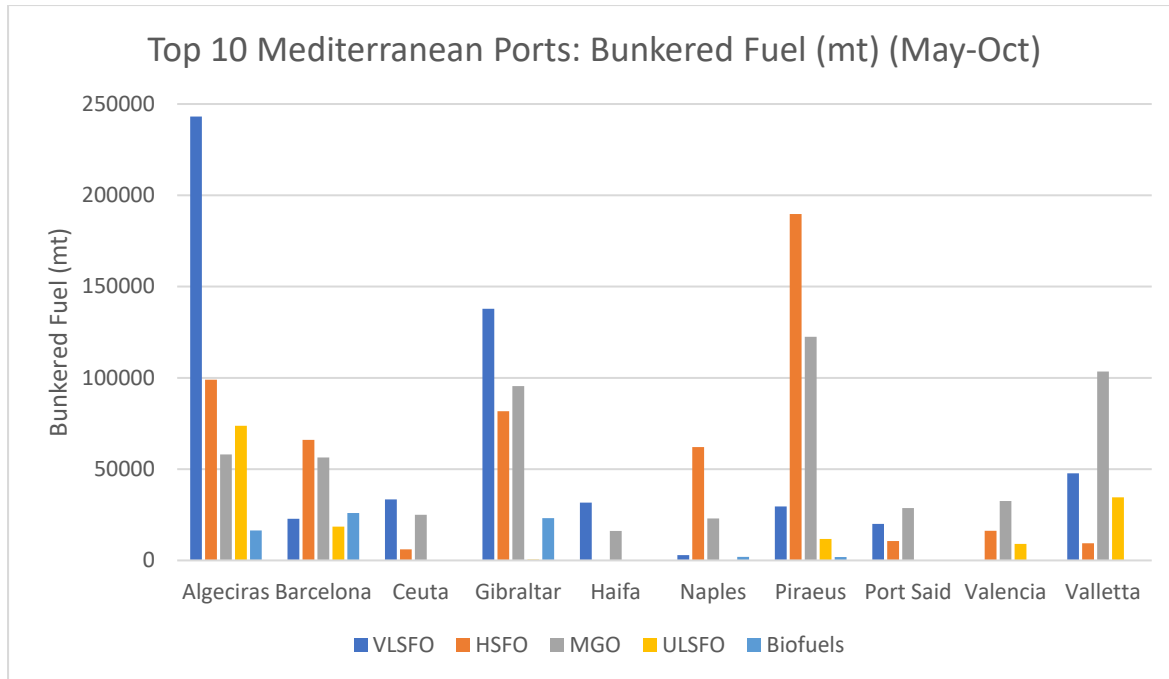


Figure 2: Top 10 Mediterranean Ports Bunkered Fuel Tonnage by Type (May-25 to Oct-25)

Port	VLSFO	HSFO	MGO	ULSFO	Biofuels
Algeciras	243,173	98,956	58,025	73,714	16,425
Barcelona	22,847	65,997	56,390	18,472	25,983
Ceuta	33,452	6,042	25,022	165	0
Gibraltar	137,865	81,756	95,454	428	23,120
Haifa	31,649		16,189	0	0
Naples	2,910	62,070	22,995	0	1,980
Piraeus	29,545	189,728	122,520	11,797	1,847
Port Said	19,971	10,610	28,697	0	0
Valencia	0	16,258	32,545	9,064	0
Valletta	47,732	9,427	103,445	34,535	0
Totals	569,144	540,845	561,281	148,174	69,356
% Share	30%	29%	30%	8%	4%

Table 2: Top 10 Mediterranean Ports Bunkered Fuel Tonnage by Type (May-25 to Oct-25)

Impact of the Mediterranean ECA

The relative percentage volume of VLSFO bunkered in the ECA has decreased significantly since its implementation, whilst HSFO has increased slightly, with MGO, ULSFO and Biofuel volumes all dramatically increasing in volumes.

However, looking at the actual volumes Post-ECA versus Pre-ECA, VLSFO has decreased by **-278K mt**, whilst HSFO (+89K mt), MGO (+300K mt), ULSFO (+112K mt) and Biofuels (+56K mt), have all increased, indicating an increased mix in the use of compliant fuels (<0.1% Sulphur) and scrubber usage across the Mediterranean ECA.

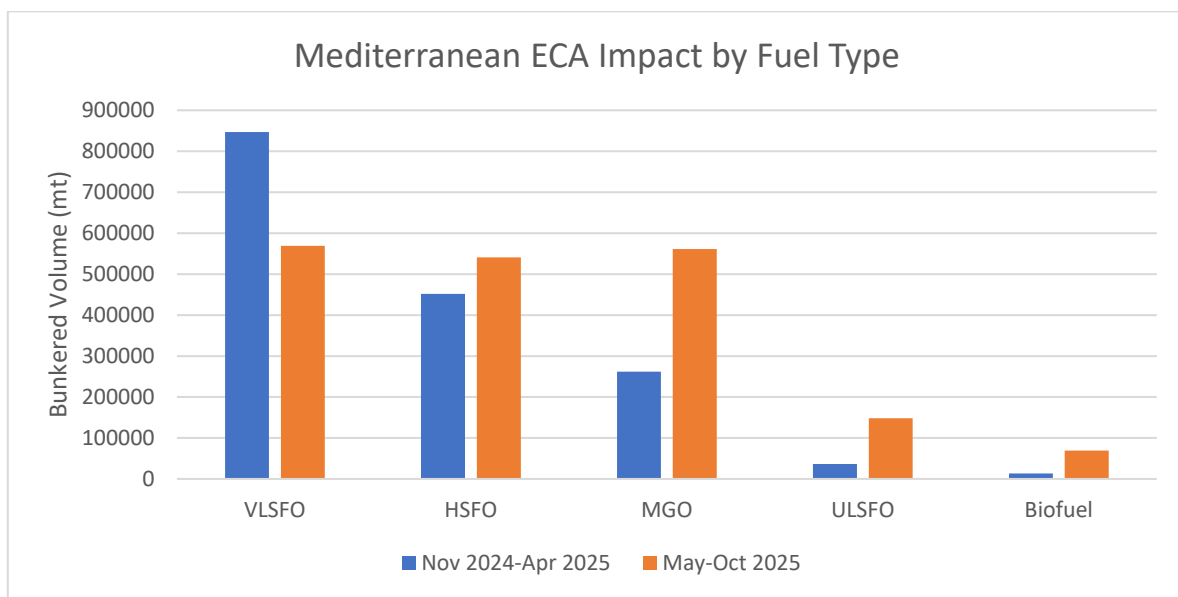


Figure 3: Mediterranean Bunker Fuel Volumes by Type, Pre & Post-ECA

The combined off-specification rate for the Top 10 Mediterranean Ports, across all fuels since the implementation of the ECA is 5.1%, which is only slightly lower to the pre-ECA off-specification rate of 5.5%. However, by fuel type over that time period, the following off-specification rates were observed:

VLSFO 5%, HSFO 3%, MGO 4%, ULSFO 20%, Biofuels 2%

In terms of the off-specification parameters by fuel type post-ECA, these were mainly the following:

VLSFO – Sulphur, Cat-fines

HSFO – Density

MGO – Pour Point, FAME

ULFSO – Pour Point, Sulphur, TSP, CCAI, Water, Viscosity

Biofuels - FAME

The high level of ULSFO off-specifications, came from 78 bunker stems (29K mt) out of 341 delivered stems (148K mt):

ULSFO Off-specs: May to Oct 2025	
Off Spec Parameter	No of occurrences
CCAI	3
Water	1
PP	56
Viscosity	1
Sulphur	12
TSP	5

Table 3: ULSFO Off-Specification Parameters (May-Oct 2025)

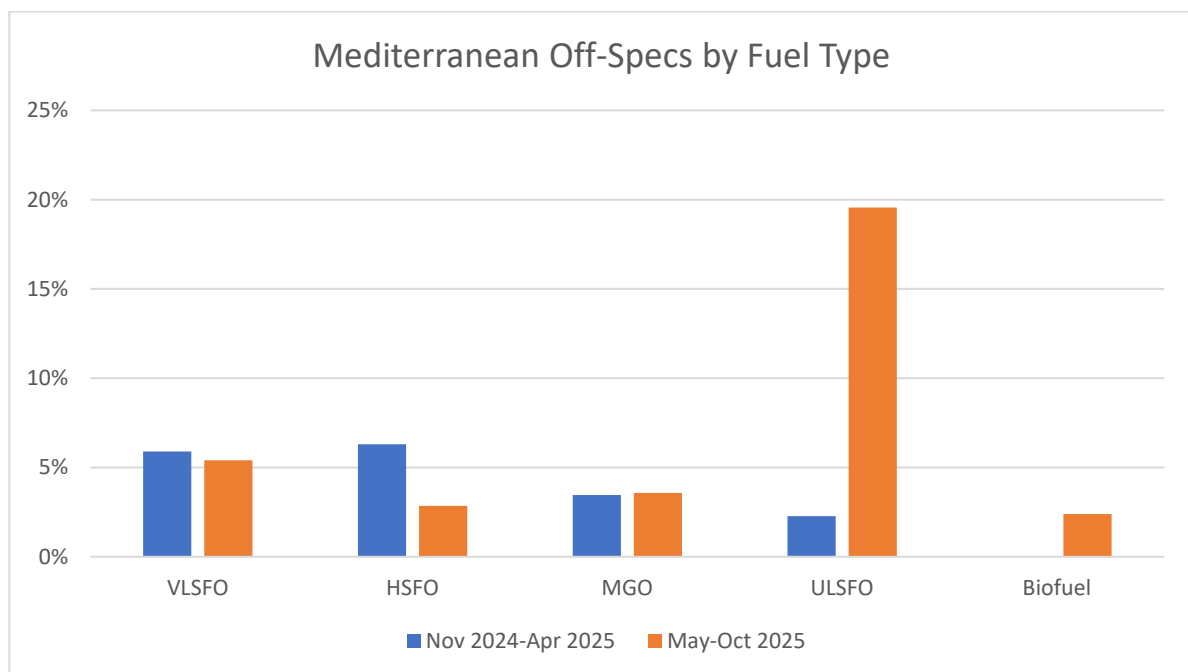


Figure 4: Mediterranean Off-Specification Rates by Fuel Type, Pre & Post ECA

Summary

As stated, this article compares bunker volumes and quality, six months Pre-ECA versus the first six months Post-ECA implementation.

Both before and after ECA implementation, the Top 10 Mediterranean Ports provide 90% of all fuel within the region.

From these Top 10 Mediterranean Ports, VPS tested marine fuels representing 1.9million mt from the new ECA region compared with 1.6million mt in the six months leading up to the ECA implementation, showing an almost **20% increase in fuel supply**.

Pre-ECA implementation the fuel mix in the Mediterranean was, 53% VLSFO, 28% HSFO, 16% MGO, 2% ULSFO and 1% Biofuels. From the 1st May 2025, the mix changed to, 30% VLSFO, 29% HSFO, 30% MGO, 8% ULSFO and 4% Biofuels.

So, in terms of actual tonnage, VLSFO decreased by 23%, whilst MGO usage increased by 107%. ULSFO supply increased 4-fold and biofuels increased 5-fold.

Overall **Off-specification rates** for all fuels before ECA implementation was **5.5%** and over the first six month since the start of the ECA, the rate was **5.1%**. Since the ECA implementation, off-specification rates for VLSFO and HSFO have reduced to 5% and 3% respectively. However, MGO off-specification rates have increased to 4%. However, the most worrying off-specification rates are for **ULSFO** which have shown a **10-times increase from 2% to 20%** since the start of the ECA, with the main off-specification parameters for ULSFO being pour point, sulphur, TSP, CCAI, water and viscosity.

So in conclusion, as anticipated, the implementation of the Mediterranean ECA on 1st May 2025, has seen a significant change in the Mediterranean fuel mix, with a significant reduction in VLSFO supply and demand, but a major increase in the supply and demand of MGO, ULSFO and Biofuels. A 20% increase in HSFO supply, would indicate an increase in scrubber-fitted vessels and/or existing scrubber-fitted vessels taking more HSFO fuel.

The wide range of off-specifications across the fuel mix, continues to highlight the need for proactive fuel testing to protect the vessel, their crew and the environment. The ultimate outcome, being a successful reduction in SO_x, NO_x, PM and GHG emissions across the Mediterranean Sea.

Note, all data and statistics within this report were generated from the VPS PortStats digital platform.

For further information relating to marine fuel testing or PortStats, please contact: steve.bee@vpsveritas.com