

REPORT ON THE RESULTS AND CONCLUSIONS ON AN LNG POWERED TUGBOAT OPERATION IN BILBAO

D5.3

Compañía de Remolcadores Ibaizabal (IBAIZABAL)



CORE LNGas
hive



Core Network Corridors and Liquefied Natural Gas

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D5.3 – REPORT ON THE RESULTS AND CONCLUSIONS ON SEA-TRIALS AND OPERATIONS OF AN LNG POWERED TUGBOAT IN BILBAO


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More Information

Public CORE LNGas HIVE reports and additional information related to the project execution and results are available through the CORE LNGas Hive public website at www.corelngashive.eu

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1. Introduction

The purpose of the report is to document the operational monitoring 12 months period of the vessel IBAIZABAL QUINCE, building within the framework of the EPA3 sub-activity of the CORE LNGas hive project.



Picture 1. IBAIZABAL QUINCE. Authorities official presentation event.

2. Monitoring of sub-activity EPA3

2.1. Description of the sub-activity

The aim of the sub-activity was the Building and operating of an LNG powered harbour tugboat to test its feasibility, suitability and benefits. If successful, it would be incorporated to port services fleet in Bilbao.

Find below a table with the main technical characteristics of IBAIZABAL QUINCE.


MAIN CHARACTERISTICS		PROPULSION & POWER SYS.	
✓ Length overall	28,00 m	✓ Main Engines - Wärtsila 9L20DF-	2x 1.665 Kw @1200rpm
✓ Length b.p.	23,40 m	✓ Azimutal Thrusters - RRM US 205 P20 CP	2x 1.665 kW
✓ Breadth	12,00 m	✓ Main Gensets – ARDORA 634 DSBG	2x 130 kW
✓ Depth	4,80 m	✓ Port Genset – AGCO SISU POWER	1x 90 kW
✓ Draught	3,80 m	✓ LNG Fuel Tank - Wartsila	1x 25 m3
✓ Trial speed	11 kn		
✓ Crew	6 persons		
✓ Gross Tonnage	395 GT		
TOWING AND AUX. EQUIPMENT		CLASS NOTATION	
✓ Bollard Pull Stern	57 Ton	BV- Class; I, ✕HULL, ✕MACH, HARDBOUR TUG, DUAL FUEL COASTAL AREA, Temporary Unrestricted Navigation, ✕AUT-UMS, Fire-fighting ship 1 ,Water spray.	
✓ Bollard Pull Ahead	55 Ton		
✓ Fwd. Towing Winch	1x	OWNER	
✓ Aft. Towing Hook	1x		
✓ External Fire Fight System	FIFI 1	✓ IBAIZABAL, Compañía de remolcadores 	
✓ 1x Service Crane -Fassi F80AFM22-	1 Ton @ 7,25 m		
		Delivery date: 2020	

Table 1. Technical characteristics

2.1. Monitoring operations

The vessel IBAIZABAL QUINCE was built in Astilleros Murueta (Murueta Shipyard).

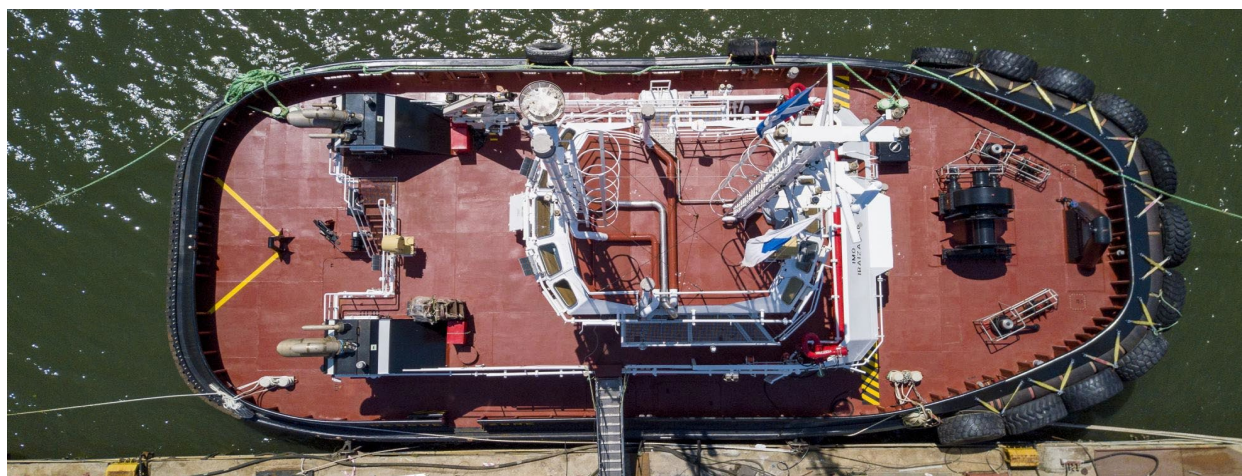
Although the shipbuilding contract was signed on 30th June 2018, the building process suffered some delays due to the worldwide impact of Covid-19.

Despite of the abovementioned impact, the vessel successfully passed the Official Seatrials test, obtaining the corresponding Maritime Official Certificates, being delivered to the Shipowner on July 2nd, 2020, and is fully operative in Port towing activities since that date.

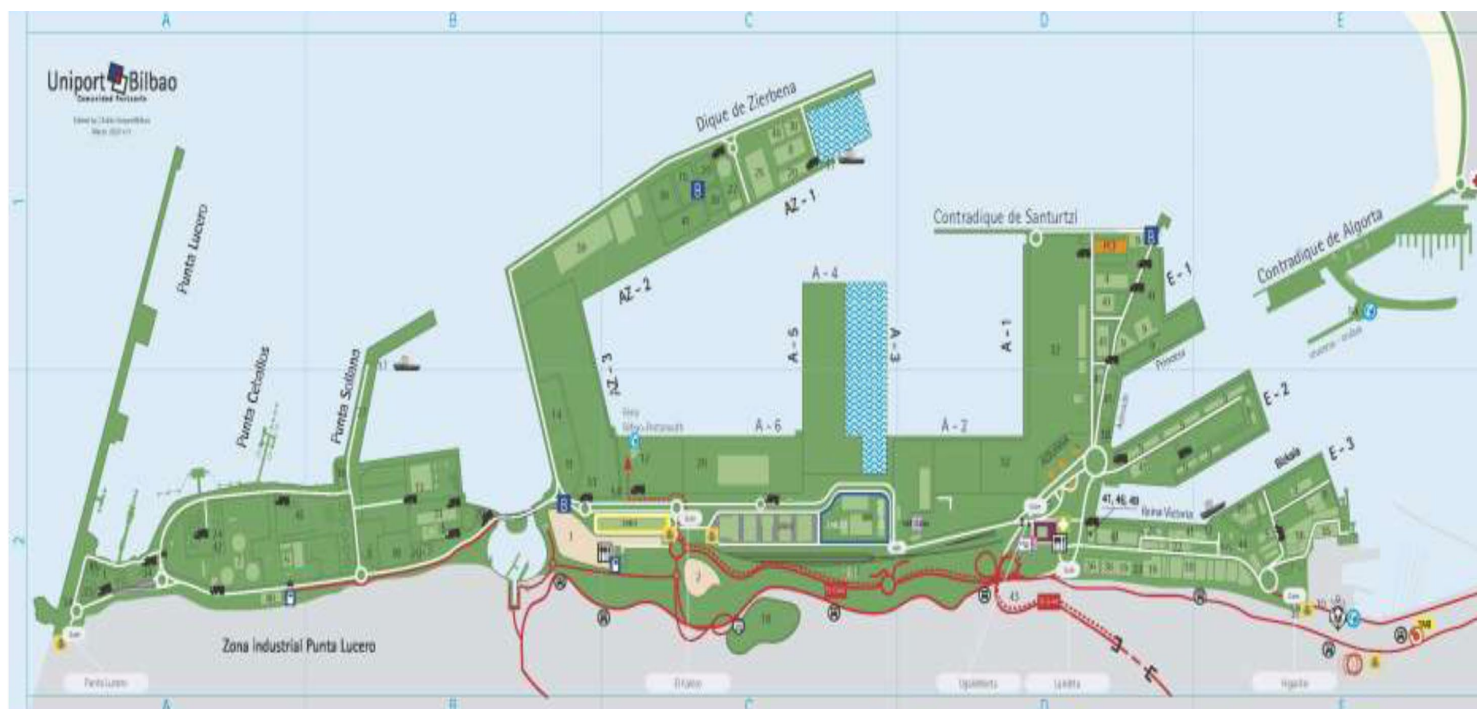
The vessel IBAIZABAL QUINCE is located in the Port of Bilbao, being part of the current IBAIZABAL 's fleet for towing operations in that Port.



Picture 2. IBAIZABAL QUINCE



Picture 3. IBAIZABAL QUINCE



Picture 4. Port of Bilbao

Find below a table showing the three first operations of towing, carried out by vessel IBAIZABAL QUINCE, monitored by our technical inspectors and with satisfactory results with no incidents during the services.

OP. #	DESCRIPTION	DATE
1	M/V MSC EYRA: Berthing operation/manoeuvre from sea to A-1 Dock (Port of Bilbao)	15 July, 2020
2	M/V MORGENSTOND I: Unberthing operation /manoeuvre from 2 -Norte Dock (Port of Bilbao) to open waters.	15 July, 2020
2	M/V DELTA STAR: Unberthing operation /manoeuvre from Punta Lucero 1 Dock (Port of Bilbao) to open waters.	16 July, 2020

Table 2. List of operations carried out

2.1.1 Operation # 1. Description/KPI

GENERAL DATA		
Operation	Berthing	
Vessel	MSC EYRA	
Type Vessel	Container Ship	
G.T.:	21.586	
Lenght overall	203	
Breadth	25	
Draught	10	
E.T.A	12:40	15/07/2020
SERVICE		
Number of TUGS	2	GATIKA - IBAIZABAL QUINCE
Operation/manoeuvre	Berthing	
From	Open waters	
to	A-1 Dock	
Tug departure	11:30	15/07/2021
Pilot	On board	
Weather condition/visibility	Calm / Clear (no windy)	
Towing service starts:	12:40	15/07/2020
Towing service ends:	13:20	15/07/2020
Tug arrival (Docked)	14:00	15/07/2020
CAPTAIN's NOTES		
Incidents	Nothing to declare	
Comments	No comments	
Others	Inspectors on Board	
Tug/s	Docked and ready	



Picture 5. MSC EYRA

2.1.2 Operation #2: Description/KPI

GENERAL DATA		
Operation	Unberthing	
Vessel	MORGENSTOND I	
Type Vessel	General Cargo	
G.T.:	8.999	
Lenght overall	143	
Breadth	18.9	
Draught	8	
E.T.D	16:00	15/07/2020
SERVICE		
Number of TUGS	1	IBAIZABAL QUINCE
Operation/manoeuvre	Unberthing	
From	2 Norte Dock	
to	Open waters	
Tug departure	15:30	15/07/2020
Pilot	On board	
Weather condition/visibility	Calm / Clear (no windy)	
Towing service starts:	16:00	15/07/2020
Towing service ends:	16:30	15/07/2020
Tug arrival (Docked)	17:00	15/07/2020
CAPTAIN's NOTES		
Incidents	Nothing to declare	
Comments	No comments	
Others	Inspectors on Board	
Tug/s	Docked and ready	



Picture 6. MORGENSTOND I

2.1.3 Operation #3: Description/KPI

GENERAL DATA		
Operation	Unberthing	
Vessel	DELTA STAR	
Type Vessel	Oil Tanker	
G.T.:	61.314	
Lenght overall	249,97	
Breadth	43,84	
Draught	8	
E.T.D	9:30	16/07/2020
SERVICE		
Number of TUGS	4	IB-15/GATIKA/GALDAMES/IB-11
Operation/manoeuvre	Unberthing	
From	Punta Lucero 1 Dock	
to	Open waters	
Tug departure	9:15	16/07/2020
Pilot	On board	
Weather condition/visibility	Calm / Clear (no windy)	
Towing service starts:	9:30	16/07/2020
Towing service ends:	10:30	16/07/2020
Tug arrival (Docked)	10:45	16/07/2020
CAPTAIN's NOTES		
Incidents	Nothing to declare	
Comments	No comments	
Others	Inspectors on Board	
Tug/s	Docked and ready	



Picture 7. DELTA STAR

2.1.4 Statistics: Towing operations/services.

Find below a table showing the main statistics about number of services, hours employed and remarks of the vessel IBAIZABAL QUINCE during the 12 months after delivery.

The statistics shows that the use of the vessel IBAIZABAL QUINCE in the Port of Bilbao (services /hours) has been increased month after month, as a signal of the satisfactory performance/working

IBAIZABAL QUINCE LNG POWERED TUGBOAT				
Year	Month	Number of services	Total Hours Employed	Incidents/Claims
2020	July	23	34,66	No incidents/No claims
2020	August	43	56,58	No incidents/No claims
2020	September	17	22,58	No incidents/No claims
2020	October	33	51,75	No incidents/No claims
2020	November	25	30,83	No incidents/No claims
2020	December	14	15,25	No incidents/No claims
2021	January	73	106,72	No incidents/No claims
2021	February	79	117,91	No incidents/No claims
2021	March	67	98,87	No incidents/No claims
2021	May	74	103,76	No incidents/No claims
2021	April	74	98,82	No incidents/No claims
2021	June	78	149,32	No incidents/No claims

Services 2nd Semester 2020	155
Services 1st Semester 2021	445
Services Variation	187%

Hours Employed 2nd Semester 2020	211,65
Hours Employed 1st Semester 2021	675,4
Hours Employed Variation	219%

Table 3. Operations & hours employed

Find below a graphic with the monitored consumption of the Main engines (LNG-Gas Oil) for the period august 2020 to April 2021

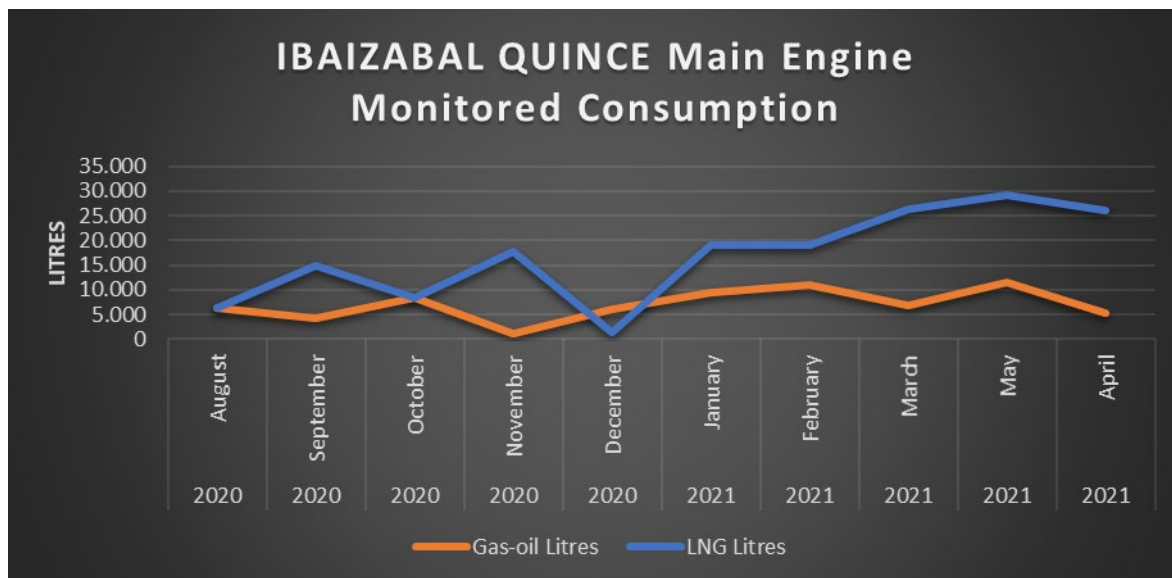
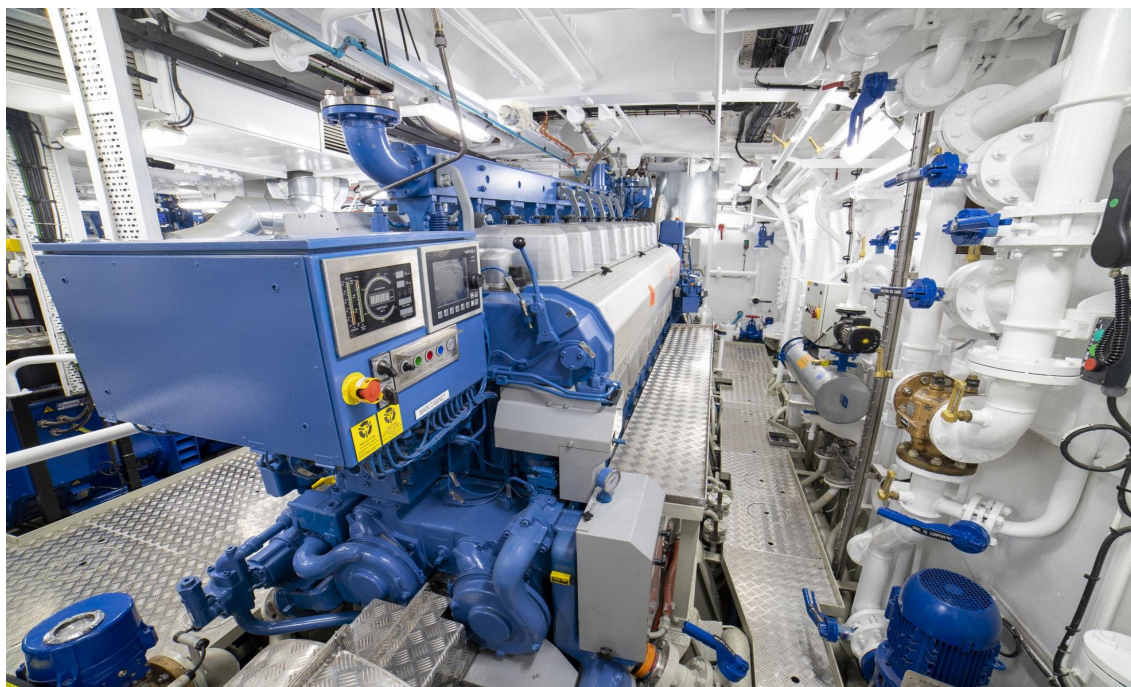


Table 4. Monitored consumption



Picture 8. IBAIZABAL QUINCE

3. Conclusions

At the time of writing this report, the vessel IBAIZABAL QUINCE has carried out more than 1.050 berthing/unberthing operations in the Port of Bilbao, with no incidents/claims or technical failures regarding the LNG power system.

Following the monitored period, explained in this report, we can conclude that vessel IBAIZABAL QUINCE as a LNG powered tugboat, complies with the expectations, being able to perfectly develop its function as a port tugboat.



Picture 9. IBAIZABAL QUINCE

4. List of Acronyms and Abbreviations

LNG	Liquefied natural gas
IBAIZABAL	Compañía de Remolcadores Ibaizabal
E.T.A	Estimated Time for Arrival
E.T.D	Estimated Time for Departure
G.T	Gross Tonnage