INTERNATIONAL CONFERENCE
REDUCTING AIR POLLUTION FROM SHIPS IN THE MEDITERRANEAN SEA.

Madrid, March 18th, 2019
Index:

- Fuel Inspections and samplings to vessels. Data, penalties applied and prospects for improvement and reinforcement, having in mind the IMO 2020 0.50% global Sulphur limit.
- Projects in which we are working to improve the air quality in our ports and coastal areas, in application of the European Directive 2014/94 on the deployment of alternative fuels infrastructure.
- New projects already launched to transform ships to make them cleaner in air emissions.
- New legislation to comply with the European Directive 2016/2284 on the reduction of national emissions of certain atmospheric pollutants.
SULPHUR INSPECTIONS TO REDUCE SOX.

Number of Ship’s Inspections and Sampling obligations according Commission Implementing Decision (EU) 2015/253.
• 10% of Individual Ships to be Inspected.
• 20% of these Ships to be sampled.

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Target</td>
<td>Done</td>
<td>Target</td>
<td>Done</td>
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<tr>
<td>Number of Ships</td>
<td>961</td>
<td>937</td>
<td>1033</td>
<td>1075</td>
</tr>
<tr>
<td>Sampling and analysis</td>
<td>N/A</td>
<td>N/A</td>
<td>206</td>
<td>76</td>
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• 20 Sanction files for this reason in 2017.
• 29 sanctioning proceedings had been initiated in 2018.
• Amount of fines imposed between 3,000 and 12,000 Euro, having in mind the estimated economic benefits for the non-compliances found during the inspections.
• Planning to increase the amount of fines, due to the increase of fuel prices.
• According to the Sulphur Directive, from 01/01/2020, 30% of vessels inspected to be sampled.

• Regarding IMO 2020, 0,50% global sulphur limit, plan for enforcement checks by the use of sniffers with drones in Strait of Gibraltar Area.

• PSC MARPOL Annex VI Inspections focusing in checks for fuels on board >0,50% sulphur ban.

LNG C.E.F. PROJECTS:

- **“CORE LNGas HIVE”:** Core Network Corridors and Liquefied Natural Gas“ Action Nº 2014-EU-TM-0732-S.
- **GAINN4SHIP:** “LNG Technologies and Innovation for Maritime Transport for the Promotion of Sustainability, Multimodality and the Efficiency of the Network (GAINN4SHIP INNOVATION)”. Action Nº: 2014-ES-TM-0593-S.
- **“GAINN4MOS”:** "Sustainable LNG Operations for Ports and Shipping - Innovative Pilot Actions". Action Nº 2014-EU-TM-0698-M.
CLEANPORT: 3,174,529€ Grant.

Port of Barcelona:

Ferry “ABEL MATUTES”

LNG Port Aux. generator: Rolls-Royce Bergen C26:33L6AG: 1.620 KW
CORE LNGas HIVE: Grant 16,647,880€. 42 Public and Private Enterprises.-

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<td><strong>ET0</strong></td>
<td>National Policy Framework</td>
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<tr>
<td><strong>ET1</strong></td>
<td>Technical, safety and environmental specifications of LNG</td>
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<tr>
<td><strong>ET2</strong></td>
<td>LNG demand and supply chain analysis for roll out</td>
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<td><strong>ET3</strong></td>
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<td><strong>ET4</strong></td>
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<tr>
<td><strong>ET5</strong></td>
<td>LNG social acceptance</td>
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<tr>
<td><strong>ET6</strong></td>
<td>LNG advanced training requirements and vocational programme</td>
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<td><strong>WP4.1</strong></td>
<td>Observatory</td>
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<td><strong>WP4.5</strong></td>
<td>Dissemination of the results</td>
</tr>
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CORE LNGas HIVE:

- Adaptation of LNG terminals of the ports of Bilbao, Ferrol, Barcelona and Cartagena to supply LNG to bunker vessels.
- Two engineering studies for adaptation of LNG terminals of the ports of Sagunto and Huelva.
- Construction of a LNG bunker barge for Barcelona.
- Retrofitting of a multiproduct bunker barge to supply LNG. Already in service in Huelva.
- Construction of a LNG powered tugboat for the port of Bilbao.
- Two engineering studies for the construction of Tugboats NG powered, one by CNG and the other one by LNG <500GT.
- Construction of a new containerized LNG generator to supply electric power to the vessels for the ports of Barcelona, Vigo and Tenerife.
- Retrofitting of two straddle carriers to use LNG as fuel.
- New small scale LNG/CNG station for vehicles and small boats in the port of Valencia.
- Retrofit of a port rail locomotive to use LNG.
- Engineering and viability studies for the construction of a new LNG powered SAR & Rescue vessel for our National SAR Agency.
M/T “OIZMENDI” 1ST MULTIPRODUCT BUNKER SUPPLY VESSEL (HFO/MGO/ LUBEOIL/ LNG) in service.
50% + 20% reduction in port fees for vessels powered by LNG or using LNG as fuel during their stay in port.
LNG dual-fuel
retrofitted ropax high-speed craft

FRED. OLSEN Express

1st in the World

Canary Islands

gainn
4Ship Innovation

Co-financed by the European Union
Connecting Europe Facility

FUNDACIÓN VALENCIA PORT
FRED. OLSEN EXPRESS
va encrypt valenciaport
GOBIERNO DE ESPAÑA MINISTRO DE FOMENTO
CIMNE
Project recently cancelled after detailed engineering study completed and full transformation of one engine to the use of LNG as fuel completed.
Retrofitting of a bunker barge, cancelled after detailed engineering study completed.
• New Royal Decree 335/2018, and a new Order TEC/1367/2018 modifying the structure of the tolls offered by the regasification plants, to include and reducing the tolls of refilling of ships in order to adapt their structure to allow the bunkering of LNG in small scale.

• The Port of Barcelona carried out three Hazid and Risk Studies for the supplying of LNG to vessels from Truck to Ships and Ship to Ship. Same risk studies were also carried out at the port of Bilbao and another one made at the port of Gijon for MTTS.

• Two big Cruise companies are already interested to call to the port of Barcelona with its new LNG cruise vessels, and one bunker company have shown interest to supply LNG bunker to those vessels and carried out compatibility and Hazid studies to do so. They also were done at the port of Tenerife.

• The shipping company Balearia dedicated to the transport of passengers and cargo between the ports of the peninsula (mainly Barcelona, Valencia and Denia) and the Balearic Islands, and the ports of Algeciras, Almeria and Malaga with Ceuta and Melilla, built two new Ro-Pax to reinforce its fleet by 2019, and one HSC for 2020, all powered by LNG, and has announced publicly its intention to transform six of its other Ro-Pax vessels to the use of LNG as fuel. One of them, the previously mentioned “Abel Matutes”.
LNGHIVE2 New Projects Submitted
(2017 CEF BLENDING CALL 2ND CUT)

- LNGHIVE2 Vessel Demand: 75,05 M€ (15,01)
- LNGHIVE2 Infrastructure and Logistics Solutions: 23,69 M€ (4,74)

Adaptation of LNG Plant in Huelva and MTTS

LNG in Maritime-Rail Corridor

Multifuel Barge

Retrofitting 5 LNG Powered Ferries

Adaptation of LNG Plant in Sagunto

MTTS and Gas Station

LNG Bunkering Ship
NEW LEGISLATION.


<table>
<thead>
<tr>
<th>Atmospheric Pollutants</th>
<th>SOx</th>
<th>NOx</th>
<th>NMCOV</th>
<th>NH3</th>
<th>PM(_{2.5})</th>
</tr>
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<tbody>
<tr>
<td>2020-2029 for each year</td>
<td>2030 onwards</td>
<td>2030 onwards</td>
<td>2030 onwards</td>
<td>2030 onwards</td>
<td>2030 onwards</td>
</tr>
<tr>
<td>67%</td>
<td>88%</td>
<td>41%</td>
<td>62%</td>
<td>22%</td>
<td>39%</td>
</tr>
</tbody>
</table>

Commitments to reduce emissions. Reduction compared to 2005 Levels
New Law of Climate Change and Energetic Transition, in preparation, proposed to include the following measures:

- To encourage the development of the use of Natural Gas, with a mix of renewable gas with neutral carbon emissions, to favor the use of LNG as a transition fuel in the maritime transport, through the use of certificates of origin of the renewable gas and exchange of rights of emissions.

- To review the regulatory framework that regulates tolls for the use of the gas network, in order to make LNG supply services competitive as a fuel for maritime transport.

- To review the regulatory framework that regulates the regime applicable to the supply of electricity to ships berthed in ports, in order to make these supply services competitive for maritime transport.

- After approval by the European Commission of the corresponding request, to reduce the electricity tax that is provided to the vessels at berth.

- Annual R&D&I aids for the development, renewal and construction of more efficient ships or moved by alternative energies.
- The Port Authorities will:

• Bonus in the Ship’s tolls to those who use LNG in their propulsion, as well as vessels that use LNG or electricity supplied from the port to feed their auxiliary services.
• Subsidize the Vessel, Merchandise and Passenger fees for transport operators that loads heavy goods vehicles in Short Sea Shipping lines.
• Reduce the Merchandise fees to those which enters or leaves the port by rail transport.
• Reward in the activity tax to the operators that sign with the Port Authority Agreements of Good Practices on energy efficiency.
• Implement energy efficiency measures and develop renewable energy projects for self-consumption, in line with the Energy Ports Management Guide.
• Include in the bidding documents of criteria for energy efficiency and reduction of polluting emissions for the licenses of port services of towage, mooring and fuel supply, with incentives for companies that use ships and boats that use alternative energies for propulsion and electrical generation, as well as in the dredging works of the ports.
Spanish Maritime Administration position regarding the creation of an Emission Control Zone in the Mediterranean Sea.

As you have seen, Spain is committed to reduce the pollutant ship’s emissions.

Spain supports the creation of an ECA in all the Mediterranean Sea, provided that all its coastal countries support it and this is discussed and approved within the International Maritime Organization (IMO), as well as the ECAs of the North Sea and Baltic Sea for SOx and more recently for NOx, were approved.

It must be borne in mind that a large part of the international maritime traffic between the countries of Asia and the Middle East with Europe and America, and vice versa, goes along the Mediterranean Sea and the Strait of Gibraltar, so it seems logical that a possible ECA in the Mediterranean Sea has to be discussed and approved within the IMO.

If this possible ECA were only approved within the countries of the European Union, outside the IMO, it would create a distortion in the navigation routes in the Mediterranean Sea, since a large part of the maritime traffic would be diverted to waters beyond the waters of responsibility of the European countries, but this could not be applied in the Strait of Gibraltar, since it is an International Strait, and therefore a large part of the Spanish coastal areas would continue to be affected.

For this reason, Spain hopes to create an ECA in the Mediterranean Sea with the support of all its riparian countries and the IMO approval.
MANY THANKS.

ANY QUESTIONS?