Innovation and Networks Executive Agency

Department C - Connecting Europe Facility (CEF)

AMENDMENT N° 1
TO AGREEMENT No INEA/CEF/TRAN/M2017/1608352

The **Innovation and Networks Executive Agency (INEA)** ("the Agency"), under the powers delegated by the European Commission ("the Commission"), represented for the purposes of signature of this amendment by the Head of Department C of the Agency, Andreas Boschen,

on the one part,

and

1. **Balearia Eurolíneas Marítimas S.A. (Balearia)**
SOCIEDAD ANONIMA
Registration No A-48549
Estación Marítima s/n
03700 Denia
Spain

hereinafter referred to as "the coordinator", represented for the purposes of signature of this amendment by

and the following other beneficiaries:

2.**Fundación de la Comunidad Valenciana para la Investigación, Promoción y Estudios Comerciales de Valenciaport (Fundación Valenciaport) (FV)** - established in Spain
3.**Gas Natural Comercializadora, S.A. (GNC)** - established in Spain
4.**Port Authority of Gijon (PAG)** - established in Spain
5.**Scale Gas Solutions S.L. (Scale Gas)** - established in Spain

duly represented by the coordinator by virtue of the mandates included in Annex IV of the above-mentioned grant agreement for the signature of this amendment,

hereinafter referred to collectively as "the beneficiaries", and individually as "beneficiary" for the purposes of this amendment where a provision applies without distinction between the coordinator or another beneficiary,

on the other part,

Having regard to the above-mentioned grant agreement concluded between the Agency and the coordinator on 07/12/2018,

Whereas:

(1) The coordinator has requested the Agency on 18/03/2020 to amend the above-mentioned grant agreement for the following reason(s): Replacement of a beneficiary, removing the reference to the specific routes where the retrofitted ferries and the MTTS are to be operating, extend the implementation period of activity 6 (within the timeline of the Action).

(2) The measures provided for in this amendment do not affect the award of the Union financial aid.

HAVE AGREED AS FOLLOWS:

Article 1

(1) The participation of "Gas Natural Comercializadora, S.A." as beneficiary in the above-mentioned grant agreement is terminated. The termination shall take effect as of 31/12/2019.

(2) The following beneficiary is added to the above-mentioned grant agreement as of 31/12/2019:

Scale Gas Solutions S.L. (Scale Gas)
SOCIEDAD LIMITADA
Registration No M642876
Paseo de los Olmos 19
28005 Madrid
Spain
[redacted]

which accepts the terms and conditions of the grant agreement.

(3) Article 7 "Entities affiliated to the beneficiaries" is replaced by the following article:

"ARTICLE 7 – ENTITIES AFFILIATED TO THE BENEFICIARIES

For the purpose of this Agreement, the following entities are considered as affiliated entities:

- Kanalion Marine Company Limited, affiliated to Baleària;"

[redacted]

(4) Annex I shall read as follows:

"ANNEX I

DESCRIPTION OF THE ACTION

ARTICLE I.1 – IMPLEMENTATION OF THE TEN-T NETWORK

The action contributes to the implementation of the:
- the core network
  - Corridor(s): Atlantic, Mediterranean

ARTICLE I.2 – LOCATION OF THE ACTION

I.2.1 Member State(s): Spain, France.

I.2.2 Region(s) (using the NUTS2 nomenclature): Principado de Asturias (ES12), Andalucía (ES61), Región de Murcia (ES62), Comunidad Valenciana (ES52), Cataluña (ES51), País Vasco (ES21), Illes Balears (ES53), Canarias (ES70), Pays de la Loire (FR51).

I.2.3 Third country(ies): not applicable.

ARTICLE I.3 – SCOPE AND OBJECTIVES OF THE ACTION

The Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure defines a common framework of measures for the deployment of alternative fuels infrastructure in the European Union in order to minimise dependence on oil and to mitigate the environmental impact of transport. It sets out minimum requirements for the building-up of alternative fuels infrastructure to supply clean fuels for maritime transport and ports operations, gradually replacing the current coal and oil propulsion systems. In particular, the current European framework provides a window of opportunity for the deployment of the use of LNG as marine fuel. The transition towards using LNG as fuel for shipping requires the design of a whole LNG supply chain and ensuring the availability of LNG in a network of refuelling stations sufficiently broad for sea carriers to consider LNG as an option. As of 2020, shipping companies operating within the European Union and exclusive-economic-zone waters will have to use low-sulphur fuels to comply with current regulations of Annex VI of MARPOL Agreement that will limit the maximum sulphur content in marine fuels to 0.5%.
Public interventions for stimulating the use of LNG in maritime transport are therefore necessary.
In this context, the shipping company Balearia decided to use LNG as marine fuel in its fleet.
The Global Project is LNGHIVE2 flagship initiative for the LNG marine fuel market development in southern Europe.
The Action is part, together with Action "LNGHIVE2 Infrastructure and Logistic Solutions", of the LNG deployment strategy led by the Spanish Administration and framed under the LNG section of the Spanish National Policy Framework on the deployment of alternative fuels in transport.

The Action "LNGHIVE2 Vessels demand: green and smart links" has two specific objectives.

The first specific objective is to retrofit five vessels to be fuelled with LNG (Abel Matutes, Nápoles, Sicilia, Bahama Mama and Martín i Soler). All LNG-related necessary systems will be installed and engines will be adapted for the five vessels (activities 1 to 5). These five vessels will be the first LNG-fuelled fleet of ferries operating in the Mediterranean area and the Spanish-Atlantic arc. After the retrofitting, the vessels will operate for 5 years in EU waters after the end date of the Action.

The second specific objective of the Action is to build L-CNG infrastructures, namely a LNG and CNG supply station for vehicles in the Port of Gijón and a Multiple-Truck-To-Ship (MTTS) system for LNG bunkering in a Spanish core port, contributing to ensure the supply of natural gas to shipping and port consumers (activity 6).

To ensure that the Action is delivered on time and within budget, a Coordination (project management) activity (activity 7) is part of the Action.

All static and dynamic data generated by the operation of the infrastructure financed by this action shall be made accessible for exchange and re-use by any user, in particular through the national or common access point in line with Commission Delegated Regulation (EU) 2015/962.

Beneficiaries will ensure prominent visibility about CEF funding in line with CEF programme's requirements on the infrastructures, mobile infrastructures and equipment realised through the Action.

ARTICLE I.4 – ACTIVITIES

I.4.1 Activities timetable

Activity number	Activity title	Indicative start date	Indicative end date	Milestone number
1	Retrofitting of the Ropax Abel Matutes			
2	Retrofitting of the Ropax Bahama Mama			
3	Retrofitting of the Ropax Nápoles			
4	Retrofitting of the Ropax Martin i Soler			
5	Retrofitting of the Ropax Sicilia			
6	LNG Port Infrastructures			

I.4.2 Activities description

Activity 1: Retrofitting of the Ropax Abel Matutes

The objective of the activity is to retrofit the ropax Abel Matutes to run on LNG dual-fuel.
The ropax Abel Matutes was built in 2008 and it is 190-meter-long with capacity for both passengers (864) and cargo (2,235 line meters).
The Abel Matutes vessel has got installed on board two main engines MAK 9M43C with a power of 9,000 kW each and a weight of 127 tonnes.

Five sub-activities are included in Activity 1:
1.1. Technical supervision of the retrofitting works of ropax Abel Matutes
1.2. Delivery of main components to retrofit the ropax Abel Matutes
1.3. Retrofitting of the ropax Abel Matutes
1.4. Training on LNG operations for the ropax Abel Matutes
1.5. Retrofitting validation of the ropax Abel Matutes

1.1. Technical supervision of the retrofitting works of the ropax Abel Matutes

This sub-activity covers the supervision of the technical actions carried out to retrofit the ropax Abel Matutes in order to obtain the certificates provided by the Classification Society and statutory flag proving that the vessel is suitable for running on LNG dual-fuel mode.

The engineering tasks to adapt the ropax Abel Matutes will comply with the rules established in the following guidelines:

- MARPOL, International Convention for the Prevention of Pollution from Ships, 1973/1978.
- International Convention for the Safety of Life at Sea (SOLAS), 1974.
- Resolution MSC. 391(95), Adoption of the International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code), 1995.
- RD 1837/2000 of 10 November for the inspection, survey and certification of ships. Spanish Ministry of Works, 2000.
- Technical Code NOx, MARPOL, 2008.
- BV Rules for Gas Fuelled Ships. January 2017.
- IGF Code, January 2017. The present version of the IGF Code includes regulations to meet the functional requirements for LNG.

Engineering projects have already been carried out to develop the necessary regulatory studies, guidelines and assessment tools, as it is necessary to properly apply IGF Code (International Code of Safety for Ships using Gases or other Low-flashpoint Fuels). A feasibility engineering project represents the first phase of the vessel retrofitting which has already been completed.

Two main actors will participate in this sub-activity. The first actor is the External Technical

Supervising Team (ETST), in charge of checking that all the installations are done correctly and following the time plan and technical terms established in the engineering projects. The second main actor is the classification society, in charge of the final official validation and approval of the installations done on board, which will certify that all rules and regulations have been applied.

The main challenges in the adaptation of ropax Abel Matutes and the role that each actor will have as a result in this sub-activity are as follows:

- Concerning the main engines adaptation, the ETST will check that the engine conversion is done following the engineering project, according to time plan, and that components required are transported, cleaned and dispatched according to plan. The class society surveyor will check that all parts installed on the engine are properly certified.

- Regarding LNG tanks and cryogenic equipment, the ETST will make sure that the LNG tank, tank connection space, bunker station and control system (which is a plug and play package) will arrive to the shipyard at the right time and that all the components are in line with the supply contract. The ETST will then check that the installation is done following the engineering project in terms of position, this point being of special relevance, as the LNG package needs to fit properly with pipes and other structural elements. The class society surveyor will check that all the equipment installed on board is properly certified.

- In relation to the adaptation of vessel systems, the ETST will need to check that all works concerning piping, wires, structural elements, detectors, sensors and fans are installed following the engineering design. The class society surveyor will check that all the equipment installed on board is properly certified and follows the class rules.

- The ETST will develop an LNG bunkering procedure following suppliers' recommendations and will carry out a risk assessment. This procedure and risk assessment will need to be approved by the port authority. Once procedure and risk assessment will be approved, the ETST will check that they are being correctly followed during the first LNG charge.

1.2. Delivery of main components to retrofit the ropax Abel Matutes

This sub-activity includes the purchase of equipment.
Once the contracts will be signed, the engine adaptation and the building of the LNG tanks will be carried out within sub-activity 1.3.

The specific deliverables of this sub-activity will be the adapted engines of the ropax Abel Matutes to run on LNG and the LNG tanks.

1.3. Retrofitting of the ropax Abel Matutes

This sub-activity comprises the retrofitting of the ropax Abel Matutes under strict supervision of Baleària, the ETST, he Classification Society and flag authorities.

Concerning the planned technical interventions, the following elements will be implemented:

- LNG tank

Two LNG horizontal cylindrical vacuum+perlite tanks of 178 m3/each gross capacity, and the maximum allowable relief valve setting (MARVS) of 10 barg will be located on the deck. These tanks are vacuum insulated cylindrical double shell tanks with ellipse heads. The tanks with their corresponding tank connection space (TCS) will be installed on the deck, 2,700 mm above base line. In relation with the TCSs, they will be gas tight towards adjacent spaces. Their ventilation and gas detections systems will be designed according to the IGF Code.
The tank dimension will be 4,200 mm of diameter and 19,500 mm (bare tank, 21,500 mm including the TCS).
The tank will be designed according to IGF IGCC MSC 86/26 IMO Type C independent/IGF.
Two independent systems for level measurement according to EN13645 par 7.4 will be installed.
This tank is stainless steel, double walled and will be fire protected by a water spray system.

- Engine modification

The option selected to retrofit the ropax Abel Matutes is adapting the existing two engines on board Abel Matutes, MAK 9M43C. The technological solution to be used will be the one already developed by Caterpillar: based on the MAK M43C engine, Caterpillar designed the dual-fuel engine M46DF with an 8,685 kW power to meet and exceed the M43C reliability and lifetime expectations, while maintaining its class leading position regarding operational efficiency and reliability. Applying the same design philosophy, the dual-fuel M46DF shares the same footprint with the M43C, providing the opportunity to retrofit M43C engines.

The main interventions that will be done on the engine affect the following components: Piston crowns and cylinder liners; Cylinder heads incl. pilot fuel injector; Intake cams; revised charge air system incl. charge air cooler, cooler casing and charge air pipe; Lambda control system (air fuel ratio); Revised exhaust gas system engine including pressure relief valves; Double-wall gas pipe system on engine; Pilot fuel system incl. common rail control unit / high pressure pump; Complete exchange of TC to a TCA design; SOLAS covering; Cabling + electrical equipment; Electronic speed governor control; 2 gas valve units enclosed for gas pressure regulation before engine, incl. gas filter and gas flow counter; 1 x pilot fuel module + pump unit; 2 exhaust gas blowers (purging fan); 2 crankcase ventilation units without coalesce; 2 Torque measuring units; 2 Required system connections such as double wall gas compensator at the gas inlet of the engine and exhaust gas compensator; 2 Set of Pressure relief valves for explosion protection of exhaust stack.

In addition, the following modules will be incorporated to the engine package: two modular alarm and control systems, two gas valve units, two slow turn devices, ignition fuel/oil module (MDO required), engine ventilation modules, exhaust ventilation unit, two crankcase detection systems.

The following additional equipment will be installed in the engine package: Explosion relief valves for exhaust piping, set for gas leakage detection per cylinder.

Additionally, different vessel systems need to be updated, because either they are already in place in the vessel but do not take into account the gas system, or they are newly designed gas specific systems that need to comply with the IGF Code and Classification Society's requirements: inert; ventilation; gas/fire detection; bilge; electrical installations; automation; safety and fire prevention; fire protection; control air; LNG heating and vaporization;

monitoring and control of gas; vent mast; cryogenic piping, gas ventilated piping, cooling water system, diesel system.

The main technical works to retrofit the vessel (adaptation and modification of the vessel systems; engine adaptation; and installation of the LNG tanks) will be carried out at pier / shipyard.

- Tank connection space (TCS)

TCSs, connected to each storage tank, consist of:
- 100% flow shell and tube Fuel Gas Vaporiser
- Shell and tube Pressure Build Up Unit
- All (cryogenic) automatic, manual and regulating valves, safeties, regulators
- Cryogenic bunker connections/valves, integrated inside the TCS crossover GNG connection between two TCS with manual shutoff valves
- Miscellaneous components, required instrumentations, cabling of instruments, interconnecting piping, flanges, fittings and tubing, valves
- Bunkerline drain/vapour return connection
- Ventilation connection
- Low temperature protection

- Water glycol heating media system: It will be used to heat the LNG and vaporise it.

- Modification of starting air system, cooling water system, lube oil system, firefighting system

- Structural actions: deck reinforcement, routing of the pipeline.

1.4. Training on LNG operations for the ropax Abel Matutes

This sub-activity will cover the crew and technical staff specific training for the ropax Abel Matutes in order to become proficient in LNG operations.
According to their duties and responsibilities on board, personnel will acquire competence in the issues related with physical and chemical properties of natural gas, hazardous areas, occupational health and safety precautions and measures, firefighting operations, response to emergencies and prevention of pollution among others. An interval between 40 and 50 people are expected to receive the appropriate training according to their responsibilities on board

Safety and operational procedures will be developed. In particular, special attention will be paid to the following safety procedures:
- Definition of the bunker process and standard from the vessel and terminal side.
- Passenger and cargo load/unload during bunkering process: Simultaneous bunkering and commercial operations will be the main safety procedure to be developed
- Towage, pilotage, mooring
- International Ship and Port Facility Security compliance
- Proficiency in the use of the IGF Code and related documents and in the information contained in a Safety Data Sheet (SDS) about LNG.

Training the crew that will operate the vessel and the port technical staff will be completed prior to starting with real trials. Baleària will be in charge of the training. Specialised training schools will be sub-contracted for specific LNG-related courses.

1.5. Retrofitting validation of the ropax Abel Matutes

This sub-activity comprises the retrofitted validation from different perspectives for the ropax Abel Matutes:

- Emissions measurement on board the vessel prior to retrofitting will be compared with the emissions generated after dual-fuel retrofitting according to the methodology proposed by the International Maritime Organisation (IMO) under MARPOL Annex VI and NOx Technical Code.
- Analysis of the technical solutions implemented. During this phase it will be tested that all the installations on board are working as expected, trials during sailing operation will be important during this phase.
- Bunkering system validation: first bunkering operation and check-up that all alarms and signals work properly
- Regulatory validation compliance with the regulation in force: Balearia will elaborate the International Safety Manual and the documents necessary to obtain the International Oil Pollution Prevention Certificate. The classification society and statutory flag will check these manual and documents prior to providing the final class and statutory certificates.
- Validation of the safety procedures developed during the training: Crew will be monitored to check whether the procedures established in the International Safety Manual (described in the point above) are being followed during the first week of operations after the retrofitting will have been completed.
- Financial feasibility and cost-benefit analysis of the retrofitted vessel following the methodology included in the Guide to Cost Benefit Investment Projects elaborated by DG Regio and using the results obtained in the emission measurements.

Deliverables:
- Ropax Abel Matutes retrofitted to run on LNG dual-fuel;
- Class and statutory certificates of the ropax Abel Matutes provided by the Classification Society and statutory flag proving that the vessel is suitable for running on dual mode;
- Report on training of crew and port workers for the ropax Abel Matutes.

Activity 2: Retrofitting of the Ropax Bahama Mama

The objective of Activity 2 is to retrofit the ropax Bahama Mama to run on LNG dual-fuel.
The ropax Bahama Mama was built in 2008 and it is 154.5-meter-long with capacity for both passengers (966) and cargo (1,367 line meters).
The Bahama Mama vessel has got installed on board two main engines MAK 9M43C with a power of 9,000 kW each and a weight of 127 tonnes.

Exactly as in the case of Activity 1, five sub-activities are included in Activity 2:
2.1. Technical supervision of the retrofitting works of ropax Bahama Mama
2.2. Delivery of main components to retrofit the ropax Bahama Mama
2.3. Retrofitting of the ropax Bahama Mama
2.4. Training on LNG operations for the ropax Bahama Mama
2.5. Retrofitting validation of the ropax Bahama Mama

2.1. Technical supervision of the retrofitting works of the ropax Bahama Mama

This sub-activity covers the supervision of the technical actions carried out to retrofit the ropax Bahama Mama in order to obtain the certificates provided by the Classification Society and statutory flag proving that the vessel is suitable for running on LNG dual-fuel mode. Engineering projects have already been carried out and are similar to Abel Matutes' studies.

Two main actors will participate in this sub-activity. The first actor is the ETST, in charge of checking that all the installations are done correctly and following the time plan and technical terms established in the engineering projects. The second main actor is the classification society, in charge of the final official validation and approval of the installations done on board, which will certify that all rules and regulations have been applied.

The main challenges in the adaptation of ropax Bahama Mama and the role that each actor will have as a result in this sub-activity are as follows:

- Concerning the main engines adaptation, the ETST will check that the engine conversion is done following the engineering project, according to time plan and that components required are transported, cleaned and dispatched according to plan. The class society surveyor will check that all parts installed on the engine are properly certified.

- Regarding LNG tanks and cryogenic equipment, the ETST will make sure that the LNG tank, tank connection space, bunker station and control system (which is a plug and play package) will arrive to the shipyard at the right time and that all the components are in line with the supply contract. The ETST will then check that the installation is done following the engineering project in terms of position, this point being of special relevance, as the LNG package needs to fit properly with pipes and other structural elements. The class society surveyor will check that all the equipment installed on board is properly certified.

- In relation to the adaptation of vessel systems, the ETST will need to check that all works concerning piping, wires, structural elements, detectors, sensors and fans are installed following the engineering design. The class society surveyor will check that all the equipment installed on board is properly certified and follows the class rules.

- The ETST will develop an LNG bunkering procedure following suppliers' recommendations and will carry out a risk assessment. This procedure and risk assessment will need to be approved by the port authority. Once procedure and risk assessment will be approved, the ETST will check that they are being correctly followed during the first LNG charge.

2.2. Delivery of main components to retrofit the ropax Bahama Mama

This sub-activity includes the purchase of equipment.
The engine adaptation and the building of the LNG tanks will be carried out within sub-activity 2.3.

Although the technical works to retrofit the ropax Bahama Mama are not included in sub-activity 2.2, this sub-activity will only end when the engines and the tanks have been delivered in order to cover any additional purchases of pieces or equipment that may require procurement processes.

The specific deliverables of this sub-activity will be the adapted engines of the ropax Bahama Mama to run on LNG and the LNG tanks.

2.3. Retrofitting of the ropax Bahama Mama

This sub-activity comprises the retrofitting of the ropax Bahama Mama under strict supervision of Baleària, the Classification Society and flag authorities.

The main technical tasks to be carried out in this sub-activity are similar to the tasks described in sub-activity 1.3 and the summary of the planned intervention by element is as follows:

- LNG tank

Two LNG tanks with a gross volume of 140 m3 each are required to adapt the ropax Bahama Mama to run on dual-fuel mode. These tanks are vacuum insulated cylindrical double shell tanks with ellipse heads. The tanks with its corresponding tank connection space (TCS) will be installed on the deck, 13,550 mm above base line. These tanks will be separated from the garage space by means of longitudinal and transversal A-60 bulkheads. This tank is stainless steel, double walled and will be fire protected by water spray system.

- Engine modification

The option selected to retrofit the ropax Bahama Mama is adapting the existing two engines MAK 9M43C. The technology to be used for the adaptation of the MAK 9M43C engines on board will be the already developed by Caterpillar (MAK M46DF) described in activity 1.

The main interventions that will be done on the engine affect the following components: Piston crowns and cylinder liners; Cylinder heads incl. pilot fuel injector; Intake cams; revised charge air system incl. charge air cooler, cooler casing and charge air pipe; Lambda control system (air fuel ratio); Revised exhaust gas system engine including pressure relief valves; Double-wall gas pipe system on engine; Pilot fuel system incl. common rail control unit / high pressure pump; Complete exchange of TC to a TCA design; SOLAS covering; Cabling + electrical equipment; Electronic speed governor control; 2 gas valve units enclosed for gas pressure regulation before engine, incl. gas filter and gas flow counter; 1 x pilot fuel module + pump unit; 2 exhaust gas blowers (purging fan); 2 crankcase ventilation units without coalesce; 2 Torque measuring units; 2 Required system connections such as double wall gas compensator at the gas inlet of the engine and exhaust gas compensator; 2 Set of Pressure relief valves for explosion protection of exhaust stack.

2.4. Training on LNG operations for the ropax Bahama Mama

This sub-activity will cover the crew and technical staff specific training for the ropax Bahama Mama in order to become proficient in LNG operations. An interval between 40 and 50 people are expected to receive the appropriate training according to their responsibilities on board. The same objectives described in Activity 1 for the ropax Abel Matutes will be applied to the ropax Bahama Mama.

2.5. Retrofitting validation of the ropax Bahama Mama

This sub-activity comprises the retrofitted validation from different perspectives for the ropax Bahama Mama: emissions measurement, technical, regulatory, safety procedures, LNG

bunkering quality control and financial feasibility and cost-benefit analysis of the retrofitted vessel following the same processes as those included in sub-activity 1.5

Deliverables:
- Ropax Bahama Mama retrofitted to run on LNG dual-fuel;
- Class and statutory certificates of the ropax Bahama Mama provided by the Classification Society and statutory flag proving that the vessel is suitable for running on dual mode;
- Report on training of crew and port workers for the ropax Bahama Mama.

Activity 3: Retrofitting of the Ropax Nápoles

The objective of Activity 3 is to retrofit the ropax Nápoles to run on LNG dual-fuel. The vessel is owned by the Cypriot company Kanalion which is 100% owned by Baleària.
The ropax Nápoles was built in 2008 and it is 154.5-meter-long with capacity for both passengers (950) and cargo (2,000 line meters approx.).
The Nápoles vessel has got installed on board two main engines MAN 9L48/60A with a power of 9,450 kW each and a weight of 149 tonnes.

Exactly as in the case of Activity 1, five sub-activities are included in Activity 3:
3.1. Technical supervision of the retrofitting works of ropax Nápoles
3.2. Delivery of main components to retrofit the ropax Nápoles
3.3. Retrofitting of the ropax Nápoles
3.4. Training on LNG operations for the ropax Nápoles
3.5. Retrofitting validation of the ropax Nápoles

3.1. Technical supervision of the retrofitting works of the ropax Nápoles

This sub-activity covers the supervision of the technical actions carried out to retrofit the ropax Nápoles in order to obtain the certificates provided by the Classification Society and statutory flag proving that the vessel is suitable for running on LNG dual-fuel mode.

Two main actors will participate in this sub-activity. The first actor is the ETST, in charge of checking that all the installations are done following the time plan and technical terms established in the engineering projects. The second main actor is the classification society, in charge of the final official validation and approval of the installations done on board, which will certify that all rules and regulations have been applied.

The main challenges in the adaptation of ropax Nápoles and the role that each actor will have as a result in this sub-activity are as follows:

- Concerning the main engines adaptation, the ETST will check that the engine conversion is done following the engineering project, according to time plan and that components required are transported, cleaned and dispatched according to plan. The class society surveyor will check that all parts installed on the engine are properly certified.

- Regarding LNG tanks and cryogenic equipment, the ETST will make sure that the LNG tank, tank connection space, bunker station and control system (which is a plug and play package) will arrive to the shipyard at the right time and that all the components are in

line with the supply contract. The ETST will then check that the installation is done following the engineering project in terms of position, this point being of special relevance, as the LNG package needs to fit properly with pipes and other structural elements. The class society surveyor will check that all the equipment installed on board is properly certified.

- In relation to the adaptation of vessel systems, the ETST will need to check that all works concerning piping, wires, structural elements, detectors, sensors and fans are installed following the engineering design. The class society surveyor will check that all the equipment installed on board is properly certified and follows the class rules.

- The ETST will develop an LNG bunkering procedure following suppliers' recommendations and will carry out a risk assessment. This procedure and risk assessment will need to be approved by the port authority. Once procedure and risk assessment will be approved, the ETST will check that they are being correctly followed during the first LNG charge.

3.2. Delivery of main components to retrofit the ropax Nápoles

This sub-activity includes the purchase of equipment.
The engine adaptation and the building of the LNG tanks will be carried out within sub-activity 3.3.

The specific deliverables of this sub-activity will be the adapted engines of the ropax Nápoles to run on LNG and the LNG tanks.

Although the technical works to retrofit the ropax Nápoles are not included in sub-activity 2.2, this sub-activity will only end when the engines and the tanks have been delivered in order to cover any additional purchases of pieces or equipment that may require procurement processes.

3.3. Retrofitting of the ropax Nápoles

This sub-activity comprises the retrofitting of the ropax Nápoles under strict supervision of Baleària, the Classification Society and flag authorities.

The main technical tasks to be carried out in this sub-activity are similar to the tasks described in sub-activity 1.3. A brief summary of the planned interventions that will be done per element is shown below:

- LNG tanks

One LNG tank with a gross volume of 440 m3 is required to adapt the ropax Nápoles to run on dual-fuel mode. This tank is vacuum insulated cylindrical double shell tank with ellipse heads. The tank with its corresponding tank connection space (TCS) will be installed on the deck, 1,990 mm above base line. This tank will be separated from the garage space by means of longitudinal and transversal A-60 bulkheads. This tank is stainless steel, double walled and will be fire protected by water spray system

- Engine modification

The option selected to retrofit the ropax Nápoles is adapting the existing two engines MAN 9L48/60A on board. The technology to be used for the adaptation of these engines will be the

already developed by MAN Diesel & Turbo, which provides a dual-fuel engine (MAN 51/60DF) with low emissions and an 8,775 kW power.

The adaptation of propellers (propulsion system) will allow up to 5% fuel savings, increasing efficiency and reducing emission levels and risk of cavitation. The propeller upgrade is an extra efficiency energy gain for the vessel as this task will reduce up to 5% the energy consumption of the ship and thus, the emissions of CO2, NOx and PM, in line with the objective of the Action. Moreover, once converted the new LNG-fuelled engines will lose around 5% of the total power, so changing the propellers will also help to balance the energy of the ship.

The main interventions that will be done on the engine affect the following components: Piston crowns and cylinder liners; Cylinder heads incl. pilot fuel injector; Intake cams; revised charge air system incl. charge air cooler, cooler casing and charge air pipe; Lambda control system (air fuel ratio); Revised exhaust gas system engine including pressure relief valves; Double-wall gas pipe system on engine; Pilot fuel system incl. common rail control unit / high pressure pump; Complete exchange of TC to a TCA design; SOLAS covering; Cabling + electrical equipment; Electronic speed governor control; 2 gas valve units enclosed for gas pressure regulation before engine, incl. gas filter and gas flow counter; 1 x pilot fuel module + pump unit; 2 exhaust gas blowers (purging fan); 2 crankcase ventilation units without coalesce; 2 Torque measuring units; 2 Required system connections such as double wall gas compensator at the gas inlet of the engine and exhaust gas compensator; 2 Set of Pressure relief valves for explosion protection of exhaust stack.

3.4. Training on LNG operations for the ropax Nápoles

This sub-activity will cover the crew and technical staff specific training for the ropax Nápoles in order to become proficient in LNG operations. An interval between 40 and 50 people are expected to receive the appropriate training according to their responsibilities on board. The same objectives described in Activity 1 for the ropax Abel Matutes will be applied to the ropax Nápoles.

3.5. Retrofitting validation of the ropax Nápoles

This sub-activity comprises the retrofitted validation from different perspectives for the ropax Nápoles: emissions measurement, technical, regulatory, safety procedures, LNG bunkering quality control, and financial feasibility and cost-benefit analysis of the retrofitted vessel, following the same processes as those included in sub-activity 1.5.

Deliverables:
- Ropax Nápoles retrofitted to run on LNG dual-fuel;
- Class and statutory certificates of the ropax Nápoles provided by the Classification Society and statutory flag proving that the vessel is suitable for running on dual mode;
- Report on training of crew and port workers for the ropax Nápoles

Activity 4: Retrofitting of the Ropax Martin i Soler

The objective of Activity 4 is to retrofit the ropax Martín i Soler to run on LNG dual-fuel.
The ropax Martín i Soler was built in 2007 and it is 165.3-meter-long with capacity for both

passengers (1,164) and cargo (1,711 line meters).
The Martín i Soler vessel has got installed on board two main engines MAK 9M43C with a power of 9,000 kW each and a weight of 127 tonnes.

Exactly as in the case of Activity 1, five sub-activities are included in Activity 5:
4.1. Technical supervision of the retrofitting works of ropax Martín i Soler
4.2. Delivery of main components to retrofit the ropax Martín i Soler
4.3. Retrofitting of the ropax Martín i Soler
4.4. Training on LNG operations for the ropax Martín i Soler
4.5. Retrofitting validation of the ropax Martín i Soler

4.1. Technical supervision of the retrofitting works of the ropax Martín i Soler

This sub-activity covers the supervision of the technical actions carried out to retrofit the ropax Martín i Soler in order to obtain the certificates provided by the Classification Society and statutory flag proving that the vessel is suitable for running on LNG dual-fuel mode. Engineering projects have already been carried out and are similar to Abel Matutes' studies.

Two main actors will participate in this sub-activity. The first actor is the ETST, in charge of checking that all the installations are done correctly and following the time plan and technical terms established in the engineering projects. The second main actor is the classification society, in charge of the final official validation and approval of the installations done on board, which will certify that all rules and regulations have been applied.

The main challenges in the adaptation of ropax Martín i Soler and the role that each actor will have as a result in this sub-activity are as follows:

- Concerning the main engines adaptation, the ETST will check that the engine conversion is done following the engineering project, according to time plan and that components required are transported, cleaned and dispatched according to plan. The class society surveyor will check that all parts installed on the engine are properly certified.

- Regarding LNG tanks and cryogenic equipment, the ETST will make sure that the LNG tank, tank connection space, bunker station and control system (which is a plug and play package) will arrive to the shipyard at the right time and that all the components are in line with the supply contract. The ETST will then check that the installation is done following the engineering project in terms of position, this point being of special relevance, as the LNG package needs to fit properly with pipes and other structural elements. The class society surveyor will check that all the equipment installed on board is properly certified.

- In relation to the adaptation of vessel systems, the ETST will need to check that all works concerning piping, wires, structural elements, detectors, sensors and fans are installed following the engineering design. The class society surveyor will check that all the equipment installed on board is properly certified and follows the class rules.

- The ETST will develop an LNG bunkering procedure following suppliers' recommendations and will carry out a risk assessment. This procedure and risk assessment will need to be approved by the port authority. Once procedure and risk assessment will be approved, the ETST will check that they are being correctly followed during the first LNG charge.

4.2. Delivery of main components to retrofit the ropax Martín i Soler

This sub-activity includes the purchase of equipment.
The engine adaptation and the building of the LNG tanks will be carried out within sub-activity 4.3

Although the technical works to retrofit the ropax Martin i Soler are not included in sub-activity 4.2, this sub-activity will only end when the engines and the tanks have been delivered in order to cover any additional purchases of pieces or equipment that may require procurement processes

The specific deliverables of this sub-activity will be the adapted engines of the ropax Martín i Soler to run on LNG and the LNG tanks.

4.3. Retrofitting of the ropax Martín i Soler

This sub-activity comprises the retrofitting of the ropax Martín i Soler under strict supervision of Baleària, the Classification Society and flag authorities.
The main technical tasks to be carried out in this sub-activity are similar to the tasks described in sub-activity 1.3.

Concerning the planned technical interventions, the following elements will be implemented:

- LNG tanks

A LNG tank with a gross volume of 496 m3 is required to adapt the ropax Martín i Soler to run on dual-fuel mode. This tank is vacuum insulated cylindrical double shell tank with ellipse heads. The tank with its corresponding tank connection space (TCS) will be installed on the deck, 2,570 mm above base line. This tank will be separated from the garage space by means of longitudinal and transversal A-60 bulkheads. This tank is stainless steel, double walled and will be fire protected by water spray system

- Engine modification

The option selected to retrofit the ropax Martín i Soler is adapting the existing two engines. The technology to be used for the adaptation of the MAK 9M43C engines on board will be the already developed by Caterpillar (MAK M46DF) described in sub-activity 1.1.
The main interventions that will be done on the engine affect the following components: Piston crowns and cylinder liners; Cylinder heads incl. pilot fuel injector; Intake cams; revised charge air system incl. charge air cooler, cooler casing and charge air pipe; Lambda control system (air fuel ratio); Revised exhaust gas system engine including pressure relief valves; Double-wall gas pipe system on engine; Pilot fuel system incl. common rail control unit / high pressure pump; Complete exchange of TC to a TCA design; SOLAS covering; Cabling + electrical equipment; Electronic speed governor control; 2 gas valve units enclosed for gas pressure regulation before engine, incl. gas filter and gas flow counter; 1 x pilot fuel module + pump unit; 2 exhaust gas blowers (purging fan); 2 crankcase ventilation units without coalesce; 2 Torque measuring units; 2 Required system connections such as double wall gas compensator at the gas inlet of the engine and exhaust gas compensator; 2 Set of Pressure relief valves for explosion protection of exhaust stack.

4.4. Training on LNG operations for the ropax Martín i Soler

This sub-activity will cover the crew and technical staff specific training for the ropax Martín i Soler in order to become proficient in LNG operations. An interval between 40 and 50 people are expected to receive the appropriate training according to their responsibilities on board. The same objectives described in Activity 1 for the ropax Abel Matutes will be applied to the ropax Martín i Soler.

4.5. Retrofitting validation of the ropax Martín i Soler

This sub-activity comprises the retrofitted validation from different perspectives for the ropax Martín i Soler: emissions measurement, technical, regulatory, safety procedures, LNG bunkering quality control and financial feasibility and cost-benefit analysis of the retrofitted vessel, following the same processes as those included in sub-activity 1.5.

Deliverables:
- Ropax Martín i Soler retrofitted to run on LNG dual-fuel;
- Class and statutory certificates of the ropax Martín i Soler provided by the Classification Society and statutory flag proving that the vessel is suitable for running on dual mode;
- Report on training of crew and port workers for the ropax Martín i Soler.

Activity 5: Retrofitting of the Ropax Sicilia

The objective of Activity 5 is to retrofit the ropax Sicilia to run on LNG dual-fuel. The vessel is owned by the Cypriot company Kanalion which is 100% owned by Baleària.

The vessel Sicilia was built in 2004 and it is 186-meter-long with capacity for both passengers (950) and cargo (2,000 line meters approx.).
The Sicilia vessel has got installed on board two main engines MAN 9L48/60A with a power of 9,450 kW each and a weight of 149 tonnes.

Exactly as in the case of Activity 1, five sub-activities are included in Activity 5:
5.1. Technical supervision of the retrofitting works of ropax Sicilia
5.2. Delivery of main components to retrofit the ropax Sicilia
5.3. Retrofitting of the ropax Sicilia
5.4. Training on LNG operations for the ropax Sicilia
5.5. Retrofitting validation of the ropax Sicilia

5.1. Technical supervision of the retrofitting works of the ropax Sicilia

This sub-activity covers the supervision of the technical actions carried out to retrofit the ropax Sicilia in order to obtain the certificates provided by the Classification Society and statutory flag proving that the vessel is suitable for running on LNG dual-fuel mode.

Two main actors will participate in this sub-activity. The first actor is the ETST, in charge of checking that all the installations are done correctly and following the time plan and technical terms established in the engineering projects. The second main actor is the classification society, in charge of the final official validation and approval of the installations done on

board, which will certify that all rules and regulations have been applied.

The main challenges in the adaptation of ropax Sicilia and the role that each actor will have as a result in this sub-activity are as follows:

- Concerning the main engines adaptation, the ETST will check that the engine conversion is done following the engineering project, according to time plan, and that components required are transported, cleaned and dispatched according to plan. The class society surveyor will check that all parts installed on the engine are properly certified.

- Regarding LNG tanks and cryogenic equipment, the ETST will make sure that the LNG tank, tank connection space, bunker station and control system (which is a plug and play package) will arrive to the shipyard at the right time and that all the components are in line with the supply contract. The ETST will then check that the installation is done following the engineering project in terms of position, this point being of special relevance, as the LNG package needs to fit properly with pipes and other structural elements. The class society surveyor will check that all the equipment installed on board is properly certified.

- In relation to the adaptation of vessel systems, the ETST will need to check that all works concerning piping, wires, structural elements, detectors, sensors and fans are installed following the engineering design. The class society surveyor will check that all the equipment installed on board is properly certified and follows the class rules.

- The ETST will develop an LNG bunkering procedure following suppliers' recommendations and will carry out a risk assessment. This procedure and risk assessment will need to be approved by the port authority. Once procedure and risk assessment will be approved, the ETST will check that they are being correctly followed during the first LNG charge.

5.2. Delivery of main components to retrofit the ropax Sicilia

This sub-activity includes the purchase of equipment.
The engine adaptation and the building of the LNG tanks will be carried out within sub-activity 5.3.

Although the technical works to retrofit the ropax Sicilia are not included in sub-activity 5.2, this sub-activity will only end when the engines and the tanks have been delivered in order to cover any additional purchases of pieces or equipment that may require procurement processes.

The specific deliverables of this sub-activity will be the adapted engines of the ropax Sicilia to run on LNG and the LNG tanks.

5.3. Retrofitting of the ropax Sicilia

This sub-activity comprises the retrofitting of the ropax Sicilia under strict supervision of Baleària, the ETST, the Classification Society and flag authorities.
The main technical tasks to be carried out in this sub-activity are similar to the tasks described in sub-activity 1.3. A brief summary of the planned interventions that will be done per element is shown below:

- LNG tanks

One LNG tank with a gross volume of 425 m3 is required to adapt the ropax Sicilia to run on dual-fuel mode. This tank is vacuum insulated cylindrical double shell tank with ellipse heads. The tank with its corresponding tank connection space (TCS) will be installed on the deck, 1,990 mm above base line. This tank will be separated from the garage space by means of longitudinal and transversal A-60 bulkheads. This tank is stainless steel, double walled and will be fire protected by water spray system

- Engine modification

The option selected to retrofit the ropax Sicilia is adapting the existing two engines MAN 9L48/60A. The technology to be used for the adaptation of the MAN 9L48/60A engines on board will be the already developed by MAN Diesel & Turbo, which provides a dual-fuel engine (MAN 51/60DF) with low emissions and kW power 8,775.

The adaptation of propellers (propulsion system) will allow up to 5% fuel savings, increasing efficiency and reducing emission levels and risk of cavitation. The propeller upgrade is an extra efficiency energy gain for the vessel as this task will reduce up to 5% the energy consumption of the ship and thus, the emissions of CO2, NOx and PM, in line with the objective of the Action. Moreover, once converted the new LNG-fuelled engines will lose around 5% of the total power, so changing the propellers will also help to balance the energy of the ship.

The main interventions that will be done on the engine affect the following components: Piston crowns and cylinder liners; Cylinder heads incl. pilot fuel injector; Intake cams; revised charge air system incl. charge air cooler, cooler casing and charge air pipe; Lambda control system (air fuel ratio); Revised exhaust gas system engine including pressure relief valves; Double-wall gas pipe system on engine; Pilot fuel system incl. common rail control unit / high pressure pump; Complete exchange of TC to a TCA design; SOLAS covering; Cabling + electrical equipment; Electronic speed governor control; 2 gas valve units enclosed for gas pressure regulation before engine, incl. gas filter and gas flow counter; 1 x pilot fuel module + pump unit; 2 exhaust gas blowers (purging fan); 2 crankcase ventilation units without coalesce; 2 Torque measuring units; 2 Required system connections such as double wall gas compensator at the gas inlet of the engine and exhaust gas compensator; 2 Set of Pressure relief valves for explosion protection of exhaust stack.

5.4. Training on LNG operations for the ropax Sicilia

This sub-activity will cover the crew and technical staff specific training for the ropax Sicilia in order to become proficient in LNG operations. An interval between 40 and 50 people are expected to receive the appropriate training according to their responsibilities on board. The same objectives described in Activity 1 for the ropax Abel Matutes will be applied to the ropax Sicilia.

5.5. Retrofitting validation of the ropax Sicilia

This sub-activity comprises the retrofitted validation from different perspectives for the ropax Sicilia: emissions measurement, technical, regulatory, safety procedures, LNG bunkering quality control, and financial feasibility and cost-benefit analysis of the retrofitted vessel, following the same processes as those included in sub-activity 1.5.

Deliverables:
- Ropax Sicilia retrofitted to run on LNG dual-fuel;
- Class and statutory certificates of the ropax Sicilia provided by the Classification Society and statutory flag proving that the vessel is suitable for running on dual mode;
- Report on training of crew and port workers for the ropax Sicilia.

Activity 6: LNG Port Infrastructures

Activity 6 comprises the development and operation of LNG bunkering facilities: 1) a LNG supply station for vehicles in the port of Gijón and 2) a Multiple-Truck-to-Ship system (MTTS) for vessels operating in a Spanish core port.

6.1. Construction of a LNG supply station at the port of Gijón

A new gas station for road vehicles will be installed inside the port of Gijón to supply both Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG).
Works will be carried out by Scale Gas, who will be in charge of the construction of the LNG supply station, and by the Port Authority of Gijón, who will urbanise an esplanade close to the LNG station including a parking area with proper communication with the station.
Engineering projects were completed and building permits required have already been obtained to start works.

The main tasks to be carried out are the following:
- Approval of detailed drawings and legal procedures complying with regulation in force in order to start works.
- Development of civil works and urbanisation area.
- Installation of LNG and CNG systems (storage, conditioning, equipment, etc.).
- Installation of auxiliary systems: control system, land network, signal system, illumination and security systems.
- End of the LNG supply station works and tests

The characteristics of the station, which will be located in the Port and designed from customer needs, are:
- 80 m3 tank capacity.
- Geometric Capacity: 59.9 m3.
- Overflow: 95%.
- Maximum operating pressure: 18 bar.
- With display and level transmitter and pressure.
- Safety assembly comprising four valves 2 + 2 configuration.
- With flame arresters.

LNG line, comprising:
- LNG conditioning system
- LNG supplier type JC Carter UE metrological certificate with free return gas phase and break-away device.

CNG line, consisting of:
- Cryogenic pump piston, 600-700 Nm3 / h capacity and 300 bar outlet pressure.

- Environmental Spray high pressure
- Odorization THT high pressure.
- CNG storage about 2,400 liters in blocks of high and medium
- NGV1 nozzle spout with EU high flow and metrological certificate with two hoses.

Recovery line gas boil-off, comprising:
- Environmental gas heater boil-off.
- Cutting system cold gas line boil-off.
- Lung tank gas storage.
- Gas compressor boil-off for injection into the middle level.
- Environnemental high pressure vaporiser.

There are two main supply lines for natural gas vehicles in two different states which initially start in the LNG tank (where gas is in liquid state and at very low temperatures, cryogenic fluid). These CNG and LNG lines supply the gas and liquid state fuel respectively. Additionally, there is a line intended for the collection, handling and use of the boil off gas.

In the CNG line, gas is compressed by the piston pump first. Secondly, this gas passes through the vaporizer. The vaporizer is a heat exchanger where the phase changes from the liquefied natural gas to a gas state. There is a gas control panel that optimizes storage utilization for minimum time CNG refueling. The odorisation phase is done to add the characteristic gas smell to the fuel so that it is easy to detect a leakage in case this occurs. The last element of this line is the supplier of CNG.

In the LNG line liquefied gas is compressed by the cryogenic LNG pump. Then there is a fork with a conditioner. Conditioner function is to maintain a suitable temperature for the liquefied gas supply. Finally, there is the supplier of LNG.

Additionally, there is a boil off recovery line. The boil off is natural gas which changes from liquefied to gaseous state in the LNG tank. This gas rather than expelled into the atmosphere is exploited (preheating and delivery) by injecting it in the block storage medium pressure CNG line.

6.2. Multiple-Truck-to-Ship system

A MTTS system is an engineering element that is designed to facilitate the operation of filling LNG fuel tanks on ships of up to 500 m3 from tanker trucks. Within this portable system, filling the ship's fuel tank can be done with up to six tanker trucks at the same time. The design allows this operation to be carried out without interruptions to the emptying process of each tank.

The innovative features of MTTS system are:

- Multiple Truck to Ship system (MTTS) improves loading rate and quantity to load with respect to Truck to Ship (TTS), but it has the advantages of the conventional TTS such as flexibility and low costs of investment and operation.
- MTTS is able to load up to 500 m3 in less than 3 hours, including previous and subsequent activities (cooling down, purging, and inertization), therefore it reaches features of Tank to Ship via Pipeline (TPS) and Ship to Ship (STS).
- MTTS does not require any fix location on the port and it is transportable with no

special requirements.
- The MTTS works as a "stand-alone" system: It only needs a ground connection on the site, to which the MTTS grounding system must be connected.
- MTTS system does not release any pollution to the environment.
- MTTS operation will be integrated into the rest of Port activities.

The main tasks to be carried out are the following:
- Purchasing process: after selecting the best technical and commercial offer for each equipment, the purchasing process will be formalised by sending the corresponding proceeding orders to suppliers.
- Equipment manufacture: suppliers will manufacture the equipment under awarded conditions.
- Factory Acceptance Test (FAT): before leaving the factory, equipment will be tested in order to successfully complete the FAT.
- Module assembly: A supplier will be awarded to assembly every delivered equipment to build the whole MTTS system. This task includes supervision of installation on site as well as a dry test with banker simulation before leaving the factory.
- Commissioning: The MTTS system will be tested under agreed commissioning procedures, including a final Performance Test, aimed at demonstrating that the system fulfils the specified parameters.
- Training: technical staff specific training in order to become proficient in LNG operations. An interval between 8 and 13 people are expected to receive the appropriate training according to their responsibilities on board. Safety and operational procedures will be developed.

The MTTS will mainly operate in the port of Valencia, which is a strategic location for Balearia and where it is expected to have 3 different vessels powered with LNG calling at and thus, the highest level of service should be provided. However, the beneficiaries have the right to move the mobile infrastructure in another Spanish core port, according to the development of the bunkering market in Spain.

Deliverables
- LNG supply station built and operational at the port of Gijón
- Multiple-Truck-to-Ship system operating in a Spanish core port

Activity 7: Project coordination

This activity includes the project management of the Action that will be required throughout its duration, namely the administrative and technical organisation structure, control procedures, quality and risk management, monitoring and auditing aspects of the project and control of procedures applied and follow-up of all tendering processes related to all the other activities.

This activity, which could be sub-contracted within the limits set in Article II.1.3 of the Grant Agreement, will contribute to the overall objectives of LNGHIVE2 VESSELS DEMAND by:
- Ensuring the efficient implementation of the Action, in compliance with the Grant Agreement;
- Supporting the transfer of information to the Stakeholders Interest Group and decision-making bodies involved in the LNGHIVE2 global project;
- Keeping LNGHIVE2 VESSELS DEMAND on track and maintaining the focus on project

objectives;
- Producing timely, high quality deliverables;
- Running efficiently the administrative and financial aspects of the Action.

The main functions of the most relevant organisational bodies are as follows:
- Project Coordinator: Baleària will act as Coordinator for the Action ensuring effective and comprehensive project coordination and management.
- Administrative and Reporting Manager: Fundación Valenciaport will carry out the following tasks: administrative activities, financial monitoring, preparation and submission of deliverables, preparation of periodic and final reports and organisation of project meetings, among others. Fundación Valenciaport will act under the supervision and subject to the approval of the coordinator of the Action. Fundación Valenciaport will carry out an important role in the quality control of the project as it will carry out the first verification of all the information dossiers to be sent to INEA.
- Project Board: This is the body where all the partners are represented. It is composed of one duly authorised representative of each of the partners.
- Stakeholders Interest Group: It will be composed by representatives from companies interested in the project who have signed the letter of support to the Action. They will have free access to ad hoc reports for stakeholders and public results as decided by the Project Board and will be invited to the communication events.

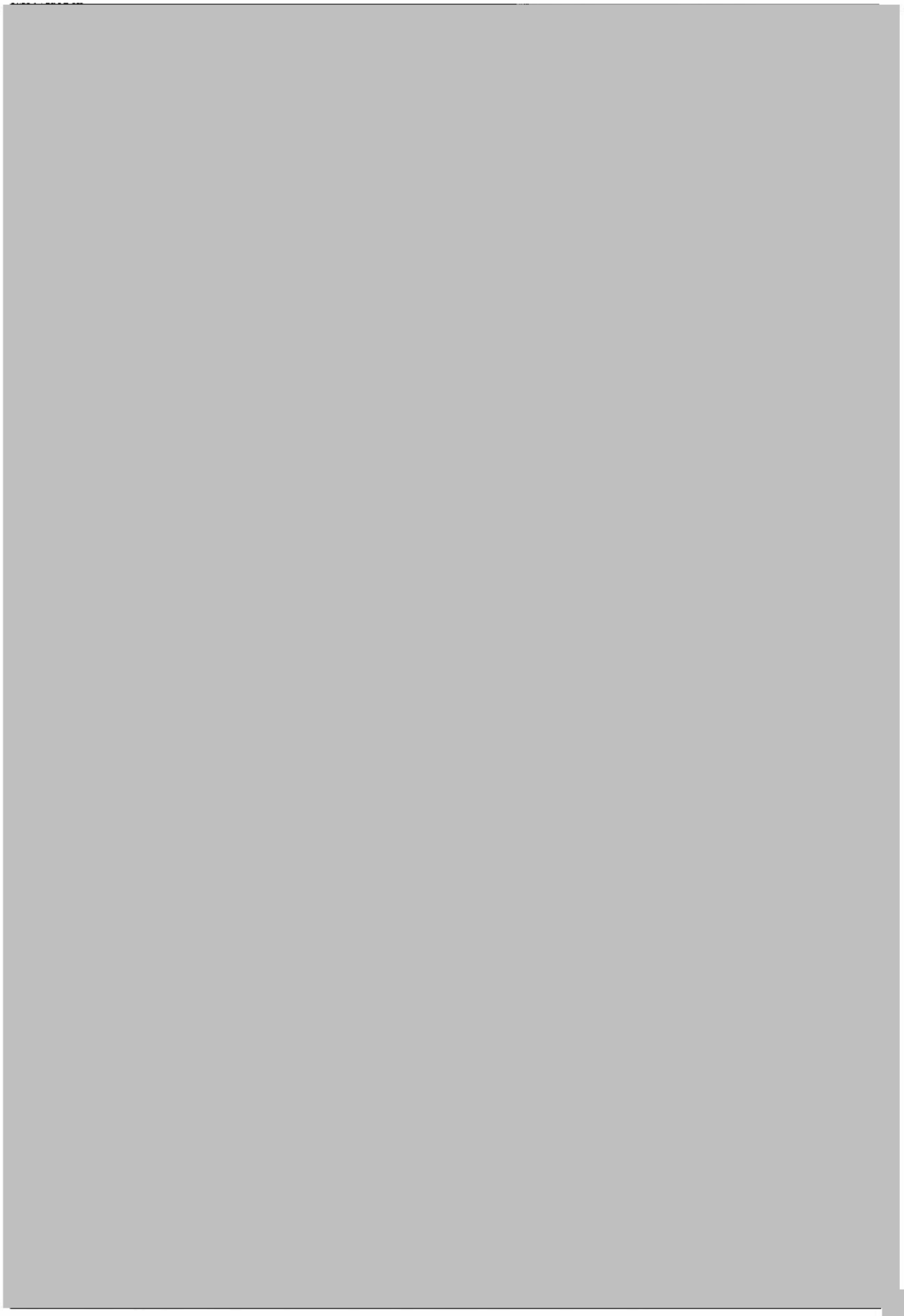
Different reports will be produced by the consortium that will facilitate monitoring the conformity of expenditures incurred by the Action: Action Status Report (annually), Interim Reports (at least every two reporting periods) and a Final report (within 12 months following the completion date of the project). The Action Status Report and the Final Report will also include information on the technical development of the activities. Besides, a Project Management Plan will be prepared by 1st December 2018, which will contain the principles, techniques and tools to plan, control, monitor and review the Action in order to achieve the successful completion of the project objectives within the constraints of time, cost and performance requirements. A Quality Control Plan (QCP) will be included in the Project Management Plan to ensure the proper development of the activities and compliance of the project objectives.

Regarding the technical supervision of the project, each activity will be organised and led by a technical Activity Leader. The responsibilities of the Activity Leader will be to guarantee the technical execution of the Activity, being supported and monitored by the Project Board, ensuring that the work executed by each partner participating in the activity proceeds at all levels and particularly that the necessary technical links between partners and with stakeholders are established and maintained. Meetings will be organised on a monthly basis to supervise the technical and administrative execution of the project objectives as well as identify risks and propose mitigation measures.

Concerning the tendering processes, all beneficiaries will follow the rules stated in the Grant Agreement. The contracts will be awarded to the tenders offering best value for money or, as appropriate, to the tender offering the lowest price. In doing so, they will avoid any conflict of interests.

ARTICLE I.5 – MILESTONES AND MEANS OF VERIFICATION

Milestone number	Milestone description	Indicative completion date	Means of verification



[redacted]

ARTICLE I.6 – PROJECT FINANCING REQUIREMENT

I.6.1 Project description

The project seeking finance is equal to the Action as described in Article I.3.

I.6.2 Project financing plan

The financing plan is outlined in Annex III Table 1."

[redacted]

(5) Annex III shall read as follows:

"ANNEX III

ESTIMATED BUDGET OF THE ACTION

Table 1: Planned sources of financing of the eligible costs of the action

Financing sources	Amount of financial contribution to the action eligible costs (EUR) Balearia	Amount of financial contribution to the action eligible costs (EUR) FV	Amount of financial contribution to the action eligible costs (EUR) *GNC*	Amount of financial contribution to the action eligible costs (EUR) PAG	Amount of financial contribution to the action eligible costs (EUR) Scale Gas

The participation in the grant agreement of the Beneficiary(ies) highlighted in Italic and not in bold has been terminated

Table 2: Indicative breakdown per activity and per beneficiary of estimated eligible costs of the action (EUR)

The participation in the grant agreement of the Beneficiary(ies) highlighted in Italic and not in bold has been terminated

The participation in the grant agreement of the Beneficiary(ies) highlighted in Italic and not in bold has been terminated

Table 3: Indicative breakdown per beneficiary of the maximum CEF contribution (EUR)

	Estimated contribution	Pro-rata share of the maximum CEF contribution (%)
Total	**11,797,424**	**100.00%**

"

The participation in the grant agreement of the Beneficiary(ies) highlighted in Italic and not in bold has been terminated

(6) The mandate n° 4 enclosed to this amendment is added to Annex IV of the above mentioned grant agreement.

Article 2

All the other provisions of the grant agreement shall remain unchanged.

Article 3

The present amendment shall form an integral part of the grant agreement and it shall enter into force on the date on which it is signed by the last party. It shall take effect on 31/12/2019.

SIGNATURES

For the beneficiary Baleària Eurolíneas Marítimas S.A.

[redacted]

Done at Denia [redacted] 08/20

For the Agency

Andreas Boschen

Done at Brussels, on

[redacted]

Date: 2020.09.08 [redacted] +[redacted]

In duplicate in English.

Annex: mandate added to Annex IV of the grant agreement

ANNEX

MANDATE 4

I, the undersigned,

representing,

Scale Gas Solutions S.L. (Scale Gas)
SOCIEDAD LIMITADA
Registration No M642876
Paseo de los Olmos 19
28005 Madrid
Spain

hereinafter referred to as "the beneficiary",

for the purposes of the signature of amendment n° 1 and the implementation of the grant agreement No INEA/CEF/TRAN/M2017/1608352 for the Action No 2017-EU-TM-0147-W entitled "LNGHIVE2 vessels demand: green and smart links - LNG solutions for smart maritime links in Spanish Core ports" with the Innovation and Networks Executive Agency (hereinafter referred to as "the grant agreement")

hereby mandate:

Baleària Eurolíneas Marítimas S.A. (Baleària)
SOCIEDAD ANONIMA
Registration No A-48549
Estación Marítima s/n
03700 Denia
Spain

represented by (hereinafter referred to as "the coordinator")

1. to sign in my name and on my behalf amendment(s) to the grant agreement with the Innovation and Networks Executive Agency,

and

2. to act on behalf of the beneficiary in compliance with the grant agreement.

I hereby confirm that the beneficiary accepts all terms and conditions of the grant agreement and, in particular, all provisions affecting the coordinator and the other beneficiaries. In particular, I acknowledge that, by virtue of this mandate, the coordinator alone is entitled to receive funds from the Innovation and Networks Executive Agency and distribute the amounts corresponding to the beneficiary's participation in the action.

I hereby accept that the beneficiary will do everything in its power to help the coordinator fulfil its obligations under the grant agreement, and in particular, to provide to the coordinator, on its request, whatever documents or information may be required.

I hereby declare that the beneficiary agrees that the provisions of the grant agreement, including this mandate, shall take precedence over any other agreement between the beneficiary and the coordinator which may have an effect on the implementation of the grant agreement.

This mandate shall be annexed to the grant agreement and shall form an integral part thereof.

SIGNATURE

Done at Madrid, on

In duplicate in English