

Study LNG advance training requirements and vocational programme

ET6

ET6 aims to establish different issues related with the training requirements:



- Training needs and levels both on shore and at sea.
- Accreditation process.
- Analysis of employees needed to provide the service.

Proposal accreditation process finalized.

Partners involved



This study is focused in providing training plans for different professional categories of regasification plants to achieve this objective the definition of needs by type of bunkering method is ongoing.

Other important part in this subactivity is to develop and define an accreditation process in order to certificate and validate the different studies.

- **ET6:** The deployment of LNG as fuel for transport services in the next years will need to address a strong and robust training framework, particularly in maritime transport and ports application, including advance training for specific LNG uses and vocational programmes. To that extent ET6 leads with a specific study on LNG training covering, among others, the identification of training needs and different training levels required, the need for LNG training centres, an analysis on the possible employees needed to provide the expected services, with particular emphasis on the corridors, accreditation processes at different levels and definition of courses to gain or validate experience.

The human element is essential to provide LNG bunkering services for maritime transport and LNG supply to both land transport (road, railway and river) and to freight terminal handling equipments. Natural gas as energy source is flammable, and liquefied, a cryogenic product, at -164 °C, that needs trained human element to handle.

The deployment of LNG supply infrastructure oriented to Transport services and bunkering will create new need for training mainly in road, river, rail and maritime transport. Training is needed at different levels in the transport supply chain on land, at port quays and at sea on board. Operators that have to deal with LNG, must be trained to manage transference of LNG, transport or storage conditions, at different training levels depending on the responsibility during the different processes. Training is also necessary at user level: drivers, crew and ship's company should be formed in different aspects, such as security on board, storage and emergency situations.

Particular attention to be paid to crisis situations and special training vocational education programs to firefighters both on land and on board to react to undesirable limit situations with LNG involved. From 1994 the EU has regulated the handling of gases with the ATEX DIRECTIVE 94/9/EC of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially Explosive Atmospheres - Updated in December 2013, which is fully applicable to LNG operations, probabilistic risk assessments and legislation.

On the other hand, generalization in using LNG must ensure that society has high level training specialists, including the three academic levels, graduate, master and research & doctorate levels, under the responsibility of universities. The level of specialisation of training activities related to LNG requires tight cooperation between industry (both on land and at sea), university establishments, and accreditation agencies.

TEN-T programs already paid attention to training the human element in maritime transport (TrainMoS) and particular training needed in the use of clean marine fuels TRAIN-MOS II (2013-EU-21012-S), being the objective of this project to establish the content of a modular MSc/Post Graduate Diploma/Certificate/Continuing professional development (CPD) programme. Other TEN-T co-funded initiative, Monalisa 2.0, addressed to emergency situations and to firefighters and marine crews to act in extreme conditions.

The Activity ET6 of the CORE LNGas hive proposal, in tight contact with other related TEN-T co-funded training activities, will focus on technical contents of training programs both on land and at sea at the different educational levels and specific accreditation requirements, in close cooperation with industrial, naval, classification societies, etc., and universities together with accreditation agencies.

An advanced course on analysis of explosions and other hazards at risk in LNG facilities will be considered, addressing the multiple hazards associated with onshore and offshore LNG operations focusing on prevention and mitigation of risks associated to LNG handling. Besides the technological aspects of LNG handling, the Activity ET6 will consider the regulatory side, both legislative and standardization.

Self-financing in the long term of training operations include in ET6 the development of a business plan to study viability of autonomous training centres at different possible locations to be defined.

The main objectives of ET6 include the following:

- 1 – Identification of training needs and different training levels required.
- 2 – Identification of possible existing LNG training centers.
- 3 – Analysis of employees needed to provide the expected services in CNCs.
- 4 – Accreditation processes at different levels.
- 5 – Definition of pilot courses to obtain experiences to validate or modify courses, contents and structure.
- 6 – Support of platforms of knowledge, dissemination and cross fertilization.

Four main tasks identified in ET6:

- Training needs both on shore and at sea.
- Training programs and infrastructure. Accreditations.
- Training the human element in emergency and risk situations.
- University level training in cooperation with the specialized industry.

The reports to be produced in this activity, that will be included in the Deliverables, will be:

- Training programs contents for the LNG supply chains and storage.
- Training program contents for vocational education on land suppliers and receivers.
- Training program contents for vocational education on board suppliers and receivers.
- Accreditation processes for vocational education.
- Firefighting and crisis procedures manual.
- University level training programs together with the industry.
- LNG knowledge platform.
- Business and development plan.