

ACTIVITY 3.2 Pilot actions implementation

PILOT ACTION FINAL REPORT

Final Version
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1. BACKGROUND

Introduction

Technical Work Package 3 includes pilot actions and trainings for cooperation in multimodal transport chains and business activation. Within this WP, activity 3.2 involves the implementation of the pilot actions.

Each partner shall carry out its pilot (as it is specified in the application form) and prepare its pilot report. In all cases other partners are involved, too (assessment, capitalization etc).

Purpose of this document

In order to have a same quality level of pilot report, PP8 Freeport of Budapest as WP leader provides a series of reporting templates, including:

- the pilot action inception report
- the pilot action mid-term report
- and the pilot action final report

This document - the template of the pilot action final report - is the third and last element of this series. The aim of this document is to provide methodological support to be used to summarise the implementation of each pilot action.

Which project partners are involved?

Each project partner who has a pilot is involved. The following table summarises the pilot actions and the responsible PPs.

Topic	Pilot action - Deliverable	Partner responsible
Last mile connections of multimodal nodes	D 3.2.1. PA for last mile connectivity of multimodal nodes: Feasibility Study for a new rail terminal	PP4 - ZAILOG
Multimodal terminals efficiency and optimisation	D 3.2.2. PA for multimodal nodes/terminals efficiency and optimization: innovative control shunting system	LP - NASPA

Topic	Pilot action - Deliverable	Partner responsible
Multimodal terminals efficiency and optimisation	D 3.2.3. PA for multimodal nodes/terminals efficiency and optimization: ICT/ITS tools for rail traffic	LP - NASPA
Multimodal terminals efficiency and optimisation	D 3.2.4. PA for multimodal nodes/terminals efficiency and optimization: ICT/ITS tools for rail traffic	PP6 - Port of Rijeka
Multimodal terminals efficiency and optimisation	D 3.2.5. PA for multimodal nodes/terminals efficiency and optimization: new WMS (warehouse management system) model	PP16 - CODOGNOTTO POLAND
Assessment of market opportunities to reinforce or activate new multimodal services	D 3.2.6. PA for activation/optimization of multimodal services: new services port gateway/freight village	PP4 - ZAILOG AND LP - NASPA
Assessment of market opportunities to reinforce or activate new multimodal services	D 3.2.7. PA for activation/optimization of multimodal services: modal shift from road to rail	PP16 - CODOGNOTTO POLAND AND LP - NASPA
Alternative fuels deployment	D 3.2.8. PA for ECO-innovations on alternative fuels deployment: development of new e-mobility	PP8 - FREEPORT OF BUDAPEST (WITH PP9 - PUBLIC PORTS JSC INVOLVEMENT)
Alternative fuels deployment	D 3.2.9. PA for ECO-innovations on LNG deployment as alternative fuels: logistic model for LNG	PP16- CODOGNOTTO POLAND
Energy efficiency solutions	D 3.2.10.	PP5 - LUKA KOPER

Topic	Pilot action - Deliverable	Partner responsible
	PA for ECO-innovations on energy efficiency deployment: test of energy efficiency in cargo handling	
Energy efficiency solutions	D 3.2.11. PA for ECO-innovations on energy efficiency deployment: tests on transport operations	PP14- LOKOMOTION (assessment by PP7 - RCH)
Trainings	D 3.2.12. Testing of training pathways for energy efficiency deployment in the rail sector - RCH (report is not needed)	PP7 - RAIL CARGO HUNGARY
Trainings	D 3.2.13. Testing of training pathways for energy efficiency deployment in the rail sector - Lokomotion (report is not needed)	PP14- LOKOMOTION

Why do you have to do it?

The main important findings of the pilot actions are recorded and organized in specific documents in order to support the transferability process. It means that we have to prepare a summary assessment report of all pilot actions - which is the responsibility of WP responsible partner (Freeport of Budapest - PP8). The summary report will be based on the inputs you provide in your inception, mid-term and final reports about your pilot actions. Inputs from you are provided for the final report in the format specified by this document.

2. PILOT ACTION IMPLEMENTATION

PROJECT PARTNER	PP15 - Codognotto Polska
PILOT PROJECT NAME:	<p>TalkNET Thematic work package 3 D 3.2.9.</p> <p>PA for ECO-innovations on LNG deployment as alternative fuels: logistic model for LNG</p>
PILOT PROJECT ID:	O.T3.9

3. DESCRIPTION OF THE PILOT ACTION

NEEDS AND CHALLENGES ADDRESSED BY THE PILOT ACTION (max. 2000 characters)

On the basis of the evidences and main findings of the analysis previously drafted D.T2.2.8, Codognotto Group faced the challenge to use LNG Heavy Duty Vehicles (henceforth HDV), for road haulage in the Central Europe macro-area. The pursuing of this goals is in line with the Group global policy and strategy on sustainability.

This attempt results in a challenge due to several pivotal reasons listed in the aforementioned analysis:

- a. The alternative fuels market is still quite immobile due to the lack of technological and commercial development, the lack of acceptance by consumers and the lack of adequate infrastructures;
- b. the differences in the distribution and availability related to infrastructure impacting on operability;
- c. the lack of a clear and harmonized policy at EU level;
- d. the higher costs of a modern EURO VI LNG HDV compared to a standard EURO VI Diesel truck available on the market.

The test was anyway conducted successfully from the operation point of view and TalkNET represented the first project in testing alternative fuel for long haul transport in Poland.

The promotion of the initiative had a visibility in the operator of the sector and the example was successfully followed by other operators in the months after the test implementation.

BEST PRACTICES AND ACTION PLANS SUPPORTING THE PILOT ACTION (max. 2000 characters)

Best practice in the field of alternative fuels showed the positive impact on the environment of LNG vehicles. Deliverable D.T 2.4.1 pointed out the different aspects which are not impairing the deployment of LNG in Central Europe area. LNG HDV solution is still facing barriers impairing the full exploitation of the technological solution. By way of example:

Purchasing, as the cost of a EURO VI LNG HDV is about EUR. 40.000 € higher than a standard EURO VI diesel truck:

- a. Fuel cost, as in general terms the cost trend is decreasing but still too subject to market fluctuations and the cost of transport;
- b. Maintenance. In this case the costs appear in line with a standard EURO VI diesel truck.

All cost aspects have been overcome in time thanks to:

- a. the establishment of a long-term collaboration with OEMs, focusing on supporting technological development and overcoming buyers reluctance;
- b. the signing of long-term agreement with clients so as to ensure adequate volumes able to offer an acceptable ROI;
- c. the support in opening refueling stations on consolidated routes of interest.

At the present, the only Alternative Fuel and related HDV traction showing an acceptable technological readiness level in order to operative perform standard long-range Full Track Load (FTL) transport missions is the LNG.

PURPOSE OF THE PILOT ACTION (max. 1000 characters)

The purpose of the Pilot action was to enhance the usage of alternative fuels in the programme area. The possibility was raised up thanks to a strict cooperation with key players such as IVECO, SCANIA and UNILEVER. The involvement of such companies was a crucial aspect for the success and visibility of the pilot in the logistics sector with reference to shippers and transport and logistics operators. The result was successfully obtained being able to perform the LNG test and to show its usability in the area.

TalkNET was so the first initiative testing LNG trucks in Poland and Germany.

CONTENT AND OUTPUT OF THE PILOT ACTION - DESCRIPTION OF THE DELIVERABLE (max. 15000 characters)

When the pilot actions was implemented, the map of LNG refuelling stations showed one refuelling station in Germany, two in Poland and eleven in the north Italy. TalkNET represented a landmark in testing LNG and opened the possibility for other companies to touch the topic and to start different pilot actions in the area. The situation is now radically different as shown in the map below.



The table above shows the data resulting from the average of results of two different tests: one made with IVECO truck and one with SCANIA truck.

TEST RESULTS	LNG	DIESEL	LNG vs DIESEL
Average fuel consumption [/100 km]	24,39 kg	31,5 l	
Average fuel gross cost in test [100 km]	25,09 EUR	38,56 EUR	- 13,47 EUR
Average fuel net cost in test [/100 km]	20,93 EUR	32,13 EUR	- 11,20 EUR
Km with 1 unit of fuel	4,11 km/kg	3,2 km/lt	+ 0,91 Km
Average CO2 emissions (kg/km)	0,700 kg/km	827 kg/km	-15%

The two model of trucks were different in terms of capacity and so the data cannot be considered fully comparable. Nonetheless, both tables show the reliability of the trucks performance and the usability of the trucks.

Test with IVECO truck

Km travelled	5401
Total fuel consumption (LNG)	1374,99 Kg
Average weight on rear axis	7800 kg

Historical diesel parameters for comparison

Km/lt	3,226
Lt/100 Km	31
Standard consumption for 5401 km	1674,31 lt

Test with SCANIA truck

Km travelled	7308
Total fuel consumption (LNG)	1703,59 Kg
Average weight on rear axis	7800 kg

After the test implementation, the drivers were interviewed about the usability of truck and they outlined the following elements

POSITIVE	NEGATIVE
The motor is quieter	The stations are not open 24 h
Refuelling is easy and fast	There must be a booking before first refuelling
	We need to refuel more often than diesel
	We should be couple of hours before our ferry in the port because LNG trucks should stay on open-air deck
	Special equipment and driver course are needed
	Not many refuelling

Considering all aspects of the pilot, the important element to outline is that LNG showed its operational usability. It supported the idea that alternative fuels do not impact the daily work.

Nonetheless, some elements still prevent a complete deployment in the programme area:

- Lack of refuelling station: in the programme area the unique area fully covered by refuelling stations is the north of Italy. It determined the difficulty to really think about a possible fleet conversion by big operators such as Codognotto Poland. Indeed, even when Codognotto Poland started to think about a test in real trial there were not routes that could be manage starting from the unique refuelling station available at that time. For this reason, Codognotto needed to find a different route just partially whitening the programme area;
- The cost saving is not enough to cover the gap price from an LNG truck to a Diesel one. The lack of EOMs producing such kind of vehicles and the relatively new technology used drive to a cost increase of 40K euro. The gap price could be recovered just through a massive exploitation of the vehicles that should run for around 150K kms every year. In order to respect the legal boundaries of break time that every driver should respect this option is just available organising parks where drivers could

exchange the same trucks keep it running. Nonetheless, this practice is just exploited for domestic flows and where the network of refuelling station is spread enough;

In the recent weeks some Polish transport operators have organised their own LNG refuelling station.

WERE THERE ANY DEVIATIONS IN TERMS OF THE CONTENT OR PURPOSE OR ANY PART OF THE PILOT ACTION - IF YES, PLEASE DESCRIBE THE REASONS (max. 2000 characters)

Two major changes were needed in order to allow the pilot implementation: the geographical area involved was partially outside the programme area and the pilot was anticipated.

In order to organise a test on real trial, Codognotto Poland needed to face the problem of commodities flows not manageable with the unique refuelling station available at that time in Poland. When it verifies the interest of an important company as UNILEVER in performing the test, it decides to manage the pilot even if the shipment required to overcome the programme area.

The decision to anticipate the pilot was agreed with the steering committee and lead partner in order to take the opportunity to show the real applicability of LNG as alternative fuel. At that time, LNG in Poland was at the very beginning in terms of discussion and promotion. There were more doubts that certainties about its real applicability to the logistics chain. For such reason, Codognotto Poland proposed the anticipation of the pilot to take the right timing. Furthermore, UNILIVER showed interest in TalkNET and in participating in the testing. For such relevant reasons, it was decided to anticipate.

4. STAKEHOLDER'S INVOLVEMENT

HOW THE STAKEHOLDERS WERE INVOLVED (max 2000 characters)

The main important stakeholders involved were SCANIA, IVECO and UNILEVER. The EOMs were looking for the possibility to have an important use case of LNG in Poland where the market on alternative fuel was blocked by the reticence of the operators that were reluctant in approaching such massive change. UNILVER is one of the major company in the world with a turnover of 53 billion. The company has an incredibly high and recognized rating on social and environmental responsibility.

The experience was then shared with other shippers being included in all marketing material of Codognotto Group.

5. TRANSFERABILITY OF PILOT ACTION RESULTS

TRANSFERABILITY OF THE PILOT ACTION RESULTS (max. 2000 characters)

Since the pilot was performed almost two years ago the transferability is already taking place. The test contributed in strengthening UNILEVER awareness about alternative fuels while SCANIA and IVECO exploited the promotion of the use case to open new market perspectives. Other polish companies exploited Codognotto Poland example and have overcome the problems highlighted by creating with EOMs their own refuelling station.