

Final report TEN-T project “Shore Power in Flanders” 2012-BE-92063-S



Medegefinancierd door de Europese Unie
Trans-Europees vervoersnetwerk (TEN-T)



Objectives of the Project

The Project's overall objective is to establish a shore power network, including a uniform management and payment system, on a larger scale for inland navigation in Flanders to eventually contribute to its development as an environmental friendly alternative to road transport.

To deliver on the overall objective of the project, there are three specific objectives which have been met by carrying out six defined activities within the Action. The first specific objective is to design a uniform management and payment system for shore power in Flanders. The second specific objective is to deploy, monitor and evaluate a pilot project aiming at installing and adapting existing and new shore power supply to connect to the web application and support the proposed management and payment system. The third and final specific objective is to propose a strategy to stimulate the expansion of this environmental friendly technology. [Reed more](#)

Description of the Project

During the last years, the interest in the use of shore power facility has strongly increased in the Flemish ports and inland waterways. The continuous expansion of shore power facilities also contributes to the implementation of the Flemish 3E Inland Navigation Covenant of 2009 and the 3E Inland Navigation Plan, aiming amongst others at a significant reduction of CO, NOx fine particles and CO2. The Air Quality Plan approved on March 30th, 2012 by the Flemish Government containing measures to achieve the proposed NO2 concentrations in 2015, also foresees actions to encourage the use of shore power facility.

One of the actions to encourage the expansion of shore power facility was the setup of the Flemish Shore Power Platform (www.walstroomplatform.be) which coordinates all actions related to the use, implementation and expansion of this environmentally friendly technology for inland navigation in Flanders. The Flemish shore power platform is involving the Flemish inland waterways managers, port managers, shippers organisations, ports and water policy officers, and stakeholders.

Several feasibility studies at local scale have been conducted by different Flemish port authorities and inland navigation managers. However, all those feasibility

studies and their proposed management and payment systems remain fragmented and not standardised.

A uniform management and payment system for shore power is crucial for the expansion of this technology at regional/national level. All partners of the Flemish shore power platform agreed on that a uniform management & payment system for Flanders is needed.

This Action is the first Flemish project that has implemented shore power supply on a larger scale in Flanders and designed a uniform management and payment system for shore power services in Flanders.

The Action's overall objective is therefore to establish a shore power network, including a uniform payment system, on a larger scale for inland navigation in Flanders to eventually contribute to its development as an environmental friendly alternative to road transport.

To deliver on the overall objective of the Action, there are three specific objectives which will be met by carrying out six defined activities within the Action. The first specific objective is to design a uniform exploitation and payment system for shore power in Flanders. This objective will be met by undertaking market surveys and cost-benefit analysis, as well as by designing and operating a single web application platform for accessing shore power services in Flanders (activities 1 and 2). The second specific objective is to deploy, monitor and evaluate a pilot project aiming at installing and adapting existing and new shore power supply to connect to the web application and support the proposed payment system. This objective will be met through activities 3 and 4. The third and final specific objective is to propose a strategy to stimulate the expansion of this environmental friendly technology. This objective will be met by investigating on how a national network of shore power facilities should be expanded and which communication strategy should be adopted to encourage the use of shore power in Flanders (activity 5). To ensure the Action is delivered on time and within budget, Project Management has been separated out as a distinct activity (activity 6).

First specific objective:

Activities 1 and 2 have resulted in an online operational Central Management System for shore power in Flanders (Figure 1).

The CMS is available online through the Flemish Shore Power Platform website: <http://www.binnenvaartservices.be/walstroom/aanvragen.php?lang=en>

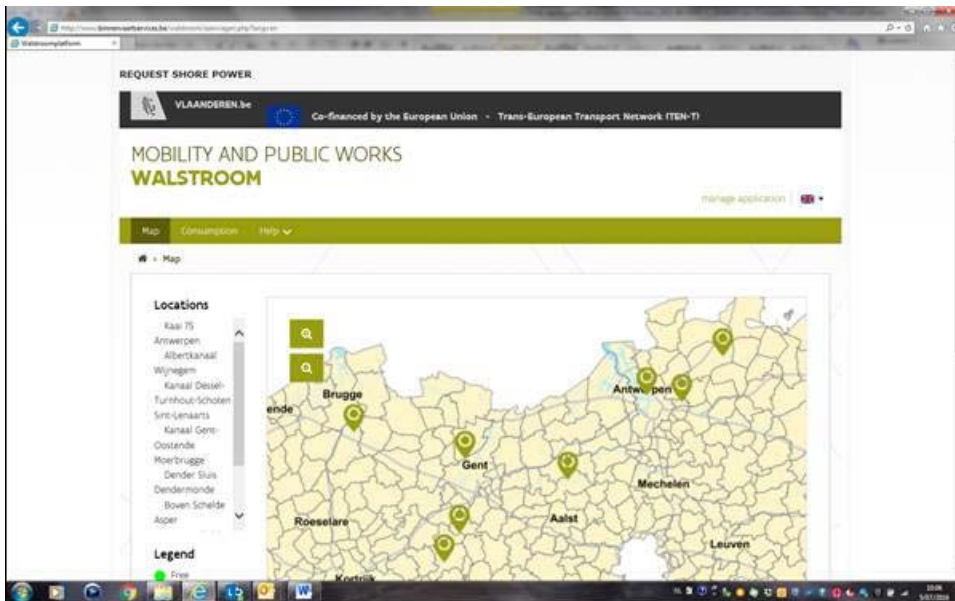


Figure 1. Central Management System

Second specific objective:

A pilot project (activities 3 and 4) consisted of installing and adapting shore power boxes in three locations that were connected to the Central Management System (being developed as part of activity 2). The locations are located in Port of Antwerp, the waiting port of Evergem and the waiting port of Wijnegem (Figure 2).



Figure 2. Locations of the pilot shore power installation

Shore power supply in Port of Antwerp

The shore power installation consists of:

- 7 shore power boxes. Each box is equipped with 4 independent connection points (2 connection points with a supply of 230V/32A and 2 connection

points with a supply of 400V/32A), which ships can use to connect to the electrical grid when at berth.

- 2 high power shore power boxes for connecting tanker ships at quay 75. Each high power shore power box consists of 3 connection points (2x 63A 400V and 1x 125A 400V).
- 3 shore power cabinets for River Cruises with a total of 8 recharging points have been installed at the Kattendijkdock.



Figure 3. Shore power installation in Port of Antwerp

Shore power supply in “Ringvaart om Gent - sluis Evergem - wachthaven”

In October 2015, Waterwegen en Zeekanaal NV has finalised the installation of 3x2 shore power boxes in Port of Evergem (Figure 4). The Port of Evergem is now equipped with a total of 32 connection points with three types of connections: 16A 1Phase, 32A 3Phase and 63A 3Phase.



Figure 4. Shore power installations in the waiting port of Evergem

New shore power supply to be installed in “Albertkanaal/wachthaven Wijnegem”

16 shore power boxes were built and installed at the location "Albertkanaal/Wachthaven Wijnegem" (Figure 5), with a total of 32 connection points with three types of connections: 16A 1Phase, 32A 3Phase and 63A 3Phase.



Figure 5. Shore power installations in the waiting port of Wijnegem

Third specific objective:

A study has been conducted to propose a strategy to stimulate the expansion of shore power in Flanders. The study conducted by REBEL group started on 01/07/2015 and had 3 primary goals:

- ✓ determining the needs and concerns of the users
- ✓ developing a strategy for the expansion of a shore power supply network along the inland waterways and in the seaports of the Flanders Region
- ✓ determining the most appropriate locations for the expansion of the shore power supply network in Flanders

This study started from the assessment of the potential demand of the inland waterway sector (river cruises excluded) for shore power, based on available traffic figures (2014) from the waterway authorities and ports. In order to estimate the potential need for shore power, a uniform calculation method has been developed, linked with an expert segmentation of waterways and ports. This allows the need per segment to be determined, taking into account the limited traffic data (of Waterwegen en Zeekanaal nv and nv De Scheepvaart).

The study shows also that investing in shore power supply is not at all an informal financial commitment for the inland shipping sector. Strictly taking into account the return in terms of project cash flows, it appears no positive results are booked for any waterway/port segment. In other words, in order to make the

necessary or desired investments possible, grants will be inevitable and/or existing financial reserves will have to be addressed.

Survey of the inland shipping sector within the context of this study shows that the end users have yet to be convinced of the added value of shore power. This issue will be discussed with the partners of the Flemish Shore Power Platform (which is involving also skippers organisations and stakeholders) to find out a strategy to convince the user of the added value of shore power.

Based on the result of this study a list of actions (financial, and legal and policy actions) to promote the use of shore power has been approved by the Flemish Shore Power Platform and will be implemented in the coming years.