



Interreg
North Sea Region
#IWTS 2.0

European Regional Development Fund



EUROPEAN UNION

#IWTS: Mobilising small waterway transport potentials

#IWTS 2.0 is an Interreg VB North Sea Region project. 10 partners from the region seek to enhance smaller waterway transport potentials in a transnational context.

New waterway-, barges- and training solutions will enable green modal shifts from road to water.

Total budget
€ 3.462.734

Project duration:
01/08/2017 to 30/06/2021

July 2020

Newsletter No 4

Starting to adopt #IWTS solutions



www.northsearegion.eu/iwts20



WORKPACKAGE SMALL BARGES DEVELOPMENT OF A ZERO EMISSION VESSEL

Date : 19 june 2020

Due to the Coronacrisis one of the partners within the project, De Groote Houtboerke (DGH), suffered a setback. The company had to close down for several months and they were not able to fulfill their obligation to build an urban boat. Fortunately, a new partner was soon found: TESCO. Negotiations with TESCO started up and that ended in a strong co-operation between De Groote Houtboerke and TESCO. This eventually led to a major change, which was approved by the Joint Secretariat. From May this year both parties are working together in the #IWTS Interreg North Sea Region project.

The company was established in 1991 as the Overmeer Transport Group and based in Amsterdam. Tesco (or abbreviation of The European Shipment Company) has a fleet of 6 dry cargo vessels between 1.100 and 1.800 tons. TESCO is specialized in middle size inland shipping and offers alternative transport solutions in the city.



TESCO AND MAR- ITIME ACADEMY OF HARLINGEN ARE WORKING TOGETHER WITH- IN THE PROJECT NOW AND THE SHIP IS BEING BUILD

Thanks to preparations, exploring and assessing Inland Water Way modal shift opportunities in the region of Ghent, TESCO could start building in May. The ship will be ready in August and moved to Gent for testing and setting up pilot-cases (at the end of May 2021).

The vessel design, adapted to the inland waterways of the city of Ghent, is a flatship model with capacity of 20 T and is made of aluminum. With a size of 14.95 m x 4 m and a draft of 0.4 m it is perfectly fit for the shallow watercourses in the medieval city. The propulsion with a fully electric engine with a battery pack of 20 KW which make the ship CO2 neutral. The sailing capacity will be 8 hours at a speed of 8 km per hour. With the full mission simulator of the Maritime Academy of Harlingen, Ghent waterways will be digitalized and assessed for inland waterway transport. A digital model of the barge will be built, sail and identify hindrances and opportunities. At the same time students of the Maritime Academy will learn to navigate

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on small waterways. The ship will start sailing manned, but we aim at autonomous sailing in future.

The ship can transport small bulk goods (pallet goods), small building materials, small containers, big bags (20 tons). Testing will start at De Groote Houtboerke in Ghent beginning September 2020 with all kind of materials. We aim at autonomous sailing in the future.



IWTS WELCOMES NEW SHIPPING COMPANY TESCO

"The European Shipment Company (Tesco) BV was founded in 1991 and stands for the management and operation of inland vessels through ownership or management, where service is key. The shipping company was established as a subsidiary of a multimodal logistics service provider Overmeer Transport Group (OTG). TESCO became independent in 2014.

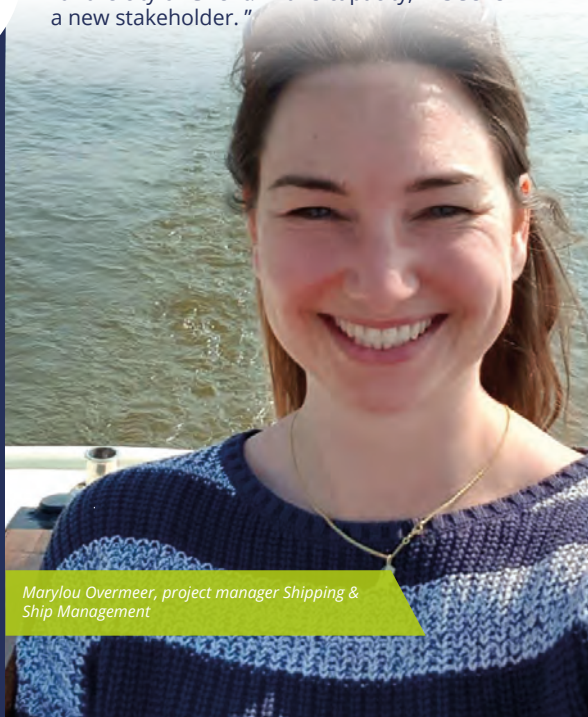
At this moment the fleet consists of 6 ships, varying between 1120 tons and 1825 tons. TESCO not only manages its own fleet, but also the ones of other shipping companies. The company offers support and guidance in the buying and selling of vessels, in administrative work and also gives advice to new business and start-ups."

"TESCO sees many opportunities and possibilities and we like to offer our knowledge and experience in management, guidance and support to other companies. We also have a lot of experience in managing nautical technical repairs, arranging and mediating storage and transshipment locations."



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Marylou Overmeer, project manager Shipping & Ship Management: "As a recent new stakeholder in the IWTS project, I can introduce myself and the project to you. During a conference in Amsterdam last year, I met Peter Geirnaert (Urban Waterway Logistics (UWL) and Carl Verhamme. We discovered that we have many common ideas in regard to urban logistics and water transport. With the development of a small merchandise boat, especially for inner-city urban distribution, these ideas turned out to perfectly match De Groote-Houtboerke's question to realize a boat for the city of Ghent. In this capacity, TESCO is a new stakeholder."



Marylou Overmeer, project manager Shipping & Ship Management

"WE AS TESCO BELIEVE IN THE FUTURE FOR INLAND SHIPPING ON THE SMALLER WATERWAYS."

Green Wave Urban Transports (GWUT) BV was established in 2019. The aim of GWUT is to provide optimal and clean goods transport in inner and peripheral environments for citizens, local government and companies. In doing so, we make maximum use of the available waterways. We develop CO₂-neutral, new types of ships from 15 meters up to 50 meters ourselves, but we also work with partners with their own additional (green) transport modes and with partners for hub locations. With this we want to offer a total solution from door to door, in the western part of the Netherlands and inner city areas.



GREEN WAVE
URBAN TRANSPORTS

Green Wave

By using an electric boat for the city of Ghent, we can offer an alternative to logistics issues in the city. The investment in electric sailing should contribute to a cleaner and quieter living environment and a habitable city of Ghent. The electric boat, called 'Green Wave', is 15 meters long and 4 meters wide. It has the capacity to carry 20 tons of goods in a load. The Green Wave will initially be navigated by a skipper. In time it is the intention to let the boat sail unmanned through the city of Ghent. We aim at charging the barge batteries with solar panels that are already installed on the roofs of the GHB company.



"#IWTS: Mobilising small waterway transport potentials"

SHARED INVEST- MENT OF 15 MILLION EUROS IN VAAR- WEG HEGEWAR- REN

handover to the Municipality of Smallerland, the Province of Friesland and port-related companies in Drachten.

The Municipality of Smallerland and the port-related entrepreneurs jointly provide 15 million euros for a possible new waterway in and around the city of Drachten. This waterway is considered important for De Hegewarren, an area in the municipality of Smallerland.

In the past period, the Municipality of Smallerland and the Province of Friesland, together with the larger port-related companies, have looked into options for fleshing out the investment of 15 million euros. The realization of a waterway (class Va) along or through De Hegewarren is a particular contender.

The money will be used, among other things, to make the waterway accessible to larger ships. Nowadays mainly class 4 ships sail through the waterway, but for the port's future-proofing it is desirable that these become class 5 ships, according to the entrepreneurs.

The next step in the area development of the port is to build a simulator environment of the Drachten Vaarweg. In the simulator environment, it will be tested whether class 5A ships up to 90 x 10.50 meters and with a draft of 2.75 meters can sail through the current waterway. IWTS partner Municipality Smallerland had an excellent role by managing public and private stakeholders, supporting with feasibility research. The Maritime Academy of Harlingen will do the simulations.

WATERWAYS FRIESLAND



FROM ROAD TO WATERWAY: DEVELOPMENT LOAD CARRIERS ENSURES BETTER TRANSPORT OF CONCRETE SLABS

"It took a long time, but it looks like we're going to meet the targets." Klaas Rozendal, Sr. Policy officer / shipping advisor from the Province of Fryslân, believes that the development of transport on small waterways is going too slow. In this article, he explains why.

"The aim of IWTS is to promote the small waterways and to stimulate their use. Practice often shows that inland barge skippers have a fairly traditional attitude when it comes to development, they are mainly focused on growing towards larger vessels. Investing in a smaller ship does not seem worthwhile. It therefore seems as if we are phasing out the small ships. There is no need for this. Visit the Princess Margriet Canal (a large canal in and around Leeuwarden) on a regular day and you will find more than 80 ships passing by. There is great deal of work in the province, especially for smaller ships!" As a policy officer, Rozendal hears and speaks to many people and tries to provide more insight into the possibilities. "When it comes to non-bulk goods, there is little interest in investing. This makes it simply more difficult to get goods and material to smaller waterways. Conversations with entrepreneurs have shown that there are carriers who want to transport their finished concrete products by ship."

Leeuwarden is a large logistics region. Trucks cause a lot of vehicle loss hours, you are often stuck in traffic with large equipment. The next step is a good business case with achievable goals, so that the concrete slabs from the factory flow in a smooth line on to the ship and then again to the next factory or destination with as little CO2 emissions as possible.



Nowadays, the transport of the concrete floor channel plates is done by truck, even over long distances. Inland shipping is better suitable for this. Due to the vulnerability of the concrete product, special load carriers were developed for inland waterway transport. Currently, in a pilot, 'construction logistics by ship', concrete floor channel plates are placed on so-called flat racks. The 110-meter-long container ships, which sail in scheduled service between Leeuwarden and Rotterdam, load concrete floor channel plates onto the standard flat racks as the fourth layer on the containers. Together with a hydraulic mobile cranes company, transporter Combex is developing a new load carrier to facilitate handling from the factory. By using the load carrier we expect to have less chance of damaging the product.

If the pilot is successful, regular transport will take place from Leeuwarden to Rotterdam. "The ambition is, with a maximum weight, to test 3 times a week to ship concrete floor panels via the smaller waterways to Rotterdam. Unloading takes place in the port and the last mile is covered by axle. In the long term, we also want to transport sand and gravel." According to Rozendal, the development of the project took longer than planned, but that also has its advantages. "We took the time to research and do tests. With the current Corona crisis, it will be challenging whether companies can proceed to a definitive Modal Shift after the pilot phase."







IDENTIFYING NEW WATERWAY OPPORTUNITIES

De Vlaamse Waterweg (DVW) is one of the partners in IWTS 2.0. project. Specifically in work package small waterways we have conducted the potential of the small waterways (CEMT I and II) in Flanders. DVW also researched the existing good flows by heat mapping (GIS study). Through this work we have identified 2 concrete cases to realize a modal shift from road to water. This concerns Wienerberger and De Brabandere.

WIENERBERGER



Wienerberger is a leading international supplier of building materials and infrastructure solutions. Given the fact that some (large) factories are located on the water, as are several (large) customers, there was a reasonable potential for modal shift in the case of Wienerberger. That is why Wienerberger has contacted De Vlaamse Waterweg and opted for an inland shipping route Beerse-Brussels and Brussels-UK.

This route by the small waterway CEMT II, canal Dessel-Turnhout-Schoten, is a success story. So far 180.000 tonnes or 26 mln ton km are transport by inland navigation since 2018.

The forecast is that in 2020 and 2021 around 70,000 tons will be transported on an annual basis. This offers an extra 10.150.000 tonkm. In the forecast, the evolution regarding Brexit and COVID-19 will have its impact on this flow of goods.



DE BRABANDERE

Group de Brabandere consists of 5 companies: Road Construction De Brabandere nv, Betoncentrale De Brabandere bvba, Transport De Brabandere nv, Flandres Béton sarl and Flandres Béton Transport sarl. One of the sites of the Brabandere is located in Veurne, channel Plassendale Nieuwpoort (CEMT I). CEMT I is the smallest waterway in Flanders, the dimensions are:

Due to the research performed in work package 3 smaller waterways, we encountered a number of potential goods flow. Two Swedish students and De Vlaamse Waterweg visited De Brabandere on 4 October 2018.

The following flows were identified from these conversations and the work performed in work package 3 smaller waterways:

- tar-containing asphalt 30,000 tons to the Netherlands
- ground - 10,000 in Belgium
- concrete base 25,200 tons Belgium-France

The question was to map the flows of goods and especially the transnational flows of goods through the thesis research. Meanwhile the thesis research is conducted.

However a further analysis of the goods flow and bottlenecks is necessary before an effective transshipment is possible. De Vlaamse Waterweg and the Brabandere expect to complete this good flow analysis in the autumn of 2020 in order to proceed to effective transshipment in 2021.

Possible bottlenecks are:

- the product codes of the goods flow (especially if it was to / from the Netherlands when it came to fly ash)
- cost price calculation
- frequency
- infrastructural bottleneck: no quay near the site in Veurne and a road located right next to the waterway (Canal Plassendale-Nieuwpoort).

Opportunities:

- River Terminal Wielsbeke is nearby in terms of frequency/volume
- the Watertruck+ push barges are active nearby

Within IWTS 2.0, we as De Vlaamse Waterweg are of the opinion that both the Wienerberger and De Brabandere can realize a number of important transnational goods flows, or as in the case of the Wienerberger, that has already happened. That is certainly of added value for the IWTS project.



CONTAINERS AND FEEDSTUFF INLAND SHIPPING IN NORTHERN GERMANY

An example showcasing the innovation challenge by Bremenports for more information, www.project-iwts20.eu

Sabrina and Frank, two Bachelor-students in Transportation and Logistics, conducted research into development opportunities in the North West Region of Germany. In two case studies, they examined the current transport from ship to shed and discussed about different modal splits when it comes to inland shipping.

"Talking about Inland Waterway Transportation I tend to think about the River Rhine only", muses Sabrina, a student in her last year of a Bachelor-course in transportation and logistics. "Sure, the River Rhine is one of the longest rivers in Europe and it takes approximately 80% of the transport volume on inland waterways in this region", was the quick answer of Frank, her fellow student. "Although this river just makes up 10% of the navigable waterways", he added.

Feedstuffs Imports by Barge

The River Rhine, with its large seaports and strait canals, is natural cargo consolidator. But what to say about all the other harbours and rivers and their potential?

In the first case study Sabrina and Frank investigate, besides the River Rhine, what Inland Waterway Transportation (IWT) can offer in other regions of Europe.

The key advantages of using inland shipping lay in the specific locations of the ports, using the sailing schedules and exploring the benefits of companies on inland waterways and ports.

"Inbound, overseas imports of raw material are delivered to the Port of Brake first. The local terminal operator, J. Müller AG, takes care of discharging large bulk carriers with grain or other ingredients of feedstuff. Large silos with a total capacity of 650,000 t provide ample storage capacity, until barges of around 1,000 t payload capacity and 85 meter (m) in length transport the cargoes upriver, for example to Oldenburg."



Discharging at Oldenburg. Source: AGRAVIS

PORTS OF BREMEN AND BREMER- HAVEN

In the previous case, Sabrina and Frank have discussed inland shipping over short distances and for bulk commodities. In this case they turn to containers. The challenge for smaller waterways lays in size and loading capacity of the vessels. Most Europe-class ships are limited to 60 TEU. The competitiveness of inland shipping, compared with road and rail, could greatly be increased if operators were able to deploy larger vessels. Larger vessels need longer river stretches, which can be challenging in area development. Another restricting element is insufficient bridge clearances for larger 110 m-vessels.



Ports of Bremen and Bremerhaven. Source: Bremen Ports



**BREMEN
BREMERHAVEN**
ZWEI STÄDTE. EIN LAND.

QUOTE

"From the port Bremerhaven, inland shipping can venture almost freely into Western Europe along this waterway stretching 1,000 km to the South right into Switzerland. Other ports, which do not benefit from this geographical advantage, but nonetheless have access to Western Europe's river and canal network, aim to emulate this prominent affinity towards an environmentally friendly transport mode. But what are the challenges?"

More information about the case studies Containers and Feedstuff Inland Shipping in Northern Germany can be found on:

<https://northsearegion.eu/iwts20> or on <https://project-iwts20.eu>

SWEDEN: DEVELOPMENT OF AN ELECTRIC VES- SEL CONCEPT

IWTS partner SSPA developed an electric vessel concept for inland shipping on the river Göta älv between the port of Gothenburg and Trollhättan. In collaboration with the University of Gothenburg, Avatar logistics and Seadvice, the opportunities for the existing, still unused waterway have been explored.

As part of the IWTS-project tasks, a battery electric inland waterway vessel for container transport on the river Göta älv has been developed. The vessel is designed for operating the route between the port of Gothenburg and Trollhättan, with a distance of 45 nm. The relatively short route makes pure electric transport viable. The route is in protected waters with foreseeable weather conditions. The locks in Trollhättan set the maximum size of the ship. The objective has therefore been to develop a vessel with maximum cargo capacity and with a size possible to go through the locks.

The electric vessel concept for inland shipping.



Development of innovative logistics concepts

The Swedish part of the IWTS 2.0 project focuses on the development of innovative logistics concepts for coastal and inland shipping that looks beyond current limitations in existing business models, legislation, goods flow characteristics and vessel concepts. Apart from Interreg North Sea Region, also VINNOVA, the Sweden's Innovation Agency, and Region Västra Götaland support the Swedish part of the research with funding. Collaboration partners in Sweden have been the University of Gothenburg (School of Business, Economics and Law), Avatar Logistics and Seadvice.



View of decks in fore. Green marks divisions against ballast water tanks.

ABOUT THE VESSEL

A battery electric inland waterway vessel concept has been developed. The vessel is planned to carry 160 TEUs (twenty-foot containers) between the port of Gothenburg and Trollhättan, with a frequency of five times/week. The vessel has the largest possible dimensions (length 87.9 meters x width 13.4 meters and draft (max) 5.35 meters) allowed for passage through the locks in Trollhättan, and is designed for lean manning, ice class 1C and entirely electrically propelled.

The vessel has a battery capacity of 6.1 MWh, which is enough capacity for one single journey between the two ports. The amount of batteries is large and will be an expensive investment.

The study shows that it is possible to transport a large number of containers on pure electric power if the distance between the ports is reasonably short.

More information is provided in the Battery electric inland waterway vessel report.



Locks of Trollhättan from south (source: www.sjofartsverket.se)

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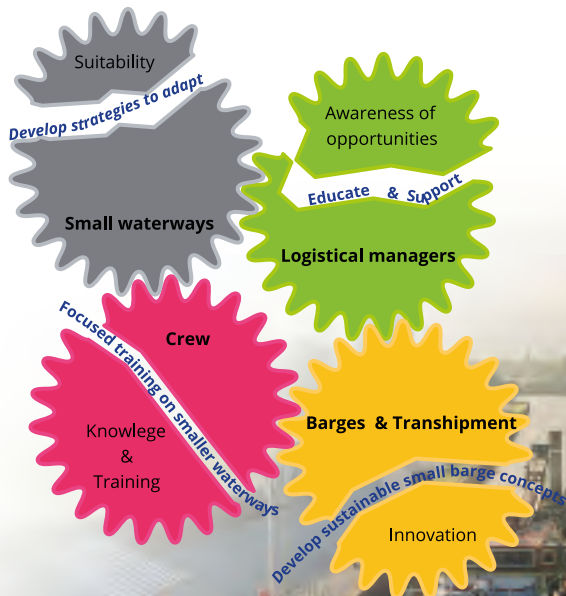
Göta älv river, Port of Gothenburg (in blue),
Lilla Edet (in red) and Trollhättan (in black)



(source: www.sjofartsverket.se)

#IWTS 2.0

Inland navigation provides an environmentally friendly way to serve transport needs in a growing, and increasingly digital logistics industry across Central Europe. The project #IWTS 2.0 – IWTS for Inland Waterway Transport – brings together public infrastructure managers, private barge operators and training institutions to offer a fresh perspective on inland shipping.



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#IWTS 2.0

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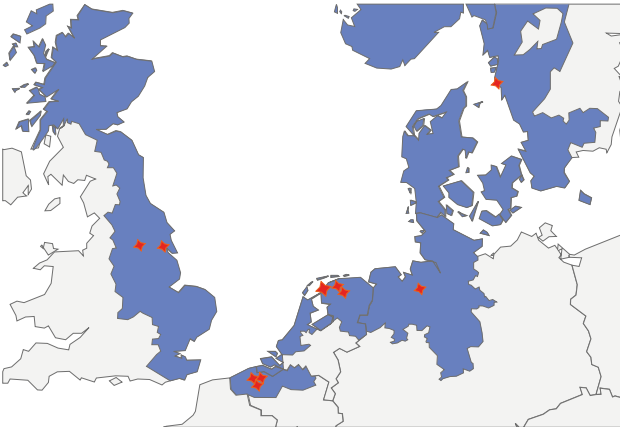
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