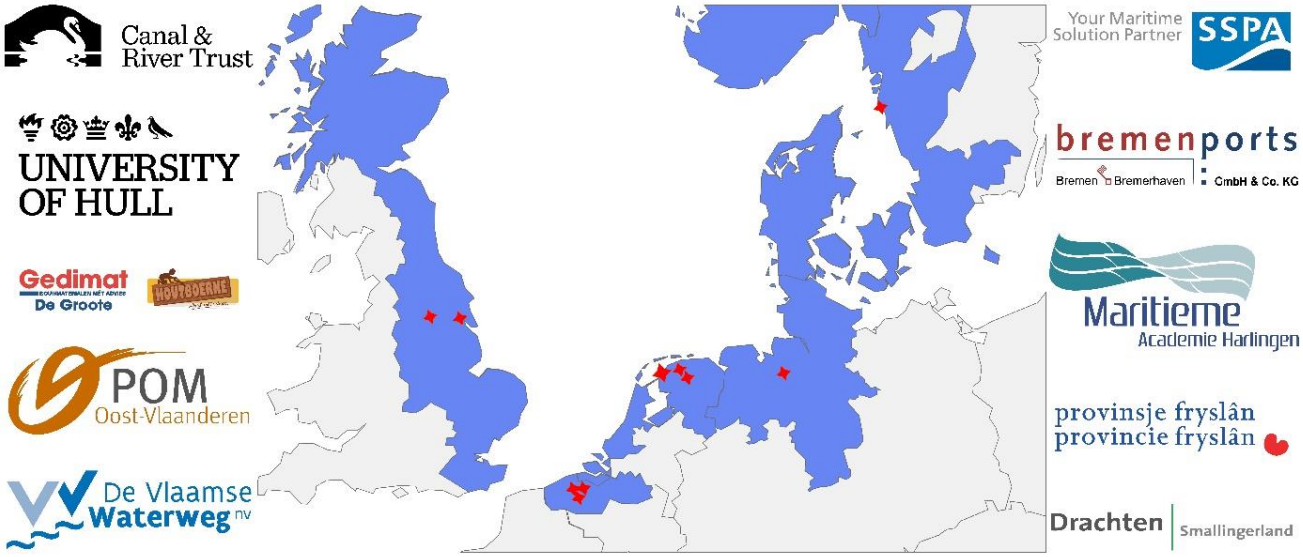
REPORT : Building of a zero emission urban boat in the European Interregproject North Sea Region : IWTS 2.0



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Brussels, 14 July 2021

Europe has always been the continent of scientists and innovators. We cannot always compete with the sheer size of our competitors, or, for example, the amount of natural resources they have. But we can rely on the most precious renewable resource in the world – and this is our ideas, our ingenuity, our innovative power of our people. It is this spirit that should give us the confidence that this generational change is not only realistic but also optimistic. We very often talk about taking our destiny in our own hands. This Package – this transition – is the true meaning of that. The more inclusive, the more successful it is today, the more we will have the freedom to act tomorrow, in the future.

SUMMARY

In the Interreg IWTS project (Inland Waterway Transport Solutions), which started in 2017, ten European partners from the North Sea region are working together, who are looking at all kinds of possibilities to reduce CO2 emissions. One of the solutions is to realize a modal shift from road to water. In this way, a contribution can be made to a sustainable future.

The historic city of Ghent struggles with busy traffic routes and must protect its beautiful medieval architecture by minimizing the use of heavy road traffic in the city center as much as possible. With the development of a new type of boat for city distribution, a solution has now been found for the logistical problems of cities such as Ghent. The investment in electric boating should contribute to a cleaner and quieter living environment in order to increase the quality of life in cities.

The electric ship for city distribution is 15 meters long and 4 meters wide. It has a capacity of 25 tons and sails mainly with construction materials, but is also available for other types of cargo. Crew and freight logistics are organized by De Groote-Houtboerke, responsible partner for the Living Lab in Ghent within the #IWTS project.

By using the electrically powered city boat, the emissions of CO2, Sox, Nox are reduced by 100%. In this way, traffic congestion is reduced and particulate emissions are reduced. A demonstration of this modal shift from road to water will hopefully inspire other entrepreneurs to develop similar concepts.

With the support of Europe and the efforts of larger cities such as Ghent, we can further develop a new kind of sustainable logistics. The development of this first electrically powered city distribution boat is a first step on a long road to completely emission-free city logistics.

Projectmanager Peter Geirnaert

INTRODUCTION

I am Andre De Groote, co-owner and manager of builders merchant in Ghent and chairman of FEMA, Federation of builders merchants in Belgium.

We are gathered here today to celebrate the first electrically powered urban distribution boat, developed within in the European Interreg North Sea Project, named " Inland Waterway Transport Solutions".

With its specific design, length of 14.90 m and 4 m wide, this Ghent city boat can transport 20 T of goods. Handling and freight logistics will be organized by us, together with other partners in the area of Ghent.

As a company, we joined the European IWTS project because we wanted to be close to the new developments in city logistics. The city of Ghent is struggling with traffic nuisance and congestion.

The city of Ghent introduced Low Emission Zones, time slots, permit applications, etc… in order to have a disruptive effect on traffic.

Our service of bringing building materials for the customer on site has always been on a very high level in our company. The different types of building materials that are shipped to the sites with an enormous diversity in volume, weight and treatment methods are a challenge. That is the reason why we are so interested in this evolution.

During the last 3 years following conclusions came to my mind :

First of all, as a builders merchant I am far too small to organize this on my own. I decided to invite my collegues, builder merchants in this story : being Bouwpunt OVB, Gedimat Van Vlaenderen and Victoir. All these companies have been working in Ghent for 3 generations and know this market very well.

Second, my collegues and I concluded that we, as a sector of builder merchants, are even too small to organize this type transport by waterway. The best placed player in this field is a pure logistic one.

In fact, the city of Ghent, should work together with the entire economic field and with all the economic actors present in a city, to streamline all flows of goods in and out a city. Only in this way is it possible to achieve profitable and sustainable urban distribution by waterway.

The city of Ghent is struggling with congested traffic routes and needs to protect its invaluable medieval architecture by minimizing the use of heavy road vehicles in the historic city center.
With the deployment of the urban boat, there is now an alternative to the city's logistics issues. The investment in electric boating must contribute to a cleaner and quieter living environment and increase the quality of live in the city of Ghent.

For us, as a CO2 Neutral company, sustainability is of great importance .
That 's why we choose for an electric driven urban boat in order to keep the transport of building materials on the water emission-free.

Charging the batteries comes from the 8000 square meter solar panels on the roof of our company. Moreover, we also invest in HVO (or Hydrogenated Vegetable Oil) powered Volvo trucks that pollute the air much less with CO2 and fine dust. HVO fuel is entirely made from renewable commodities and can, in his pure form, reduce in the whole chain (well-to-wheel) up to 90 % of CO2 emission.

In the coming years we want to roll out a lot of tests about the feasibility and efficiency of the urban boat "Green Wave" in Ghent.

As a company or sector we cannot achieve this alone. Therefore I do appeal on companies from all sectors to join forces in the nonprofit association Urban Waterway Logistics. This association was founded with a specific goal namely:

- *Establishing a study center on logistics in general, to do research on multimodal transport solutions .*
- *Setting up test projects to develop, to analyze and make profitable the logistics flow of products,*
- *The organization of logistics services both on land and on the water*

Even for the city of Ghent there is also a lot of obstacles to conquer : bridges that are low or do not open, lack of quays, quays who are too high, lack of infrastructure to load the batteries, and the organization of the last mile.

Efforts will be needed from both sides to make city logistics structurally sustainable.

The project objectives are :

- *To organize test pilots in the field of city-logistics*
- *To propose solutions for the organisation of citylogistics in Ghent;*
- *To optimise the consolidation of all different flows of goods.*
- *To establish a multimodal platform to promote environmentally friendly vehicles and vessels;*
- *To advice the city how to achieve these goals by means of adjusted legislative policy*
- *To increase the visibility and promote sustainable urban logistics.*
- *To stimulate and support the transport and distribution sector towards innovative and sustainable urban distribution;*

Together with all stakeholders, we can turn this into a good story.

The city is already making a lot of efforts to find sustainable solutions.

The urban boat "Green Wave" contributes also to less traffic congestion and particle emissions. By demonstrating this modal shift from road to water, we hope to inspire other entrepreneurs to adopt similar concepts.

The main challenge remains : to achieve together a CO2Neutral city logistics within a decade.

The project IWTS support is an important factor in achieving these goals. Without the help of Europe this is not possible.

We hope that all stakeholders will work together in the search for a profitable distribution model.

Andre De Groote

CEO Gedimat De Groote – Houtboerke NV

Voorzitter FEMA

1. General information about sustainability:

1.1. The European Green Deal

The EU aims to be climate-neutral by 2050 – an economy with net-zero greenhouse gas emissions. This objective is at the heart of the European Green Deal and in line with the EU's commitment to global climate action under the Paris Agreement.(1)

The transition to a climate-neutral society is both an urgent challenge and an opportunity to build a better future for all.

All parts of society and economic sectors will play a role – from the power sector to industry, mobility, buildings, agriculture and forestry.

The EU can lead the way by investing into realistic technological solutions, empowering citizens and aligning action in key areas such as industrial policy, finance and research, while ensuring social fairness for a just transition.

Commission's vision

The Commission set out its vision for a climate-neutral EU in November 2018, looking at all the key sectors and exploring pathways for the transition.(2)

The Commission's vision covers nearly all EU policies and is in line with the Paris Agreement (1) objective to keep the global temperature increase to well below 2°C and pursue efforts to keep it to 1.5°C.

As part of the European Green Deal, the Commission proposed on 4 March 2020 the first European Climate Law (2) to enshrine the 2050 climate-neutrality target into law.

EU strategy

All Parties to the Paris Agreement are invited to communicate, by 2020, their mid-century, long-term low greenhouse gas emission development strategies.

The European Parliament endorsed the net-zero greenhouse gas emissions objective in its resolution on climate change in March 2019 (3) and resolution on the European Green Deal in January 2020 (4).

The European Council endorsed in December 2019 the objective of making the EU climate-neutral by 2050, in line with the Paris Agreement (5).

Footnote

(1) https://ec.europa.eu/clima/policies/international/negotiations/paris_en
(2) https://ec.europa.eu/clima/policies/eu-climate-action/law_en
(3) European Parliament resolution of 14 March 2019 on climate change – a European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy in accordance with the Paris Agreement (2019/2582(RSP)) https://www.europarl.europa.eu/doceo/document/TA-8-2019-0217_EN.html
(4) European Parliament resolution of 15 January 2020 on the European Green Deal (2019/2956(RSP)) - https://www.europarl.europa.eu/doceo/document/TA-9-2020-0005_EN.html
(5) On 12 December 2019 the European Council adopted conclusions on climate change, the MFF, the Conference on the Future of Europe, EU relations with Africa, the WTO, Turkey and Albania. - https://www.consilium.europa.eu/en/press/press-releases/2019/12/12/european-council-conclusions-12-december-2019/

The EU submitted its long-term strategy to the United Nations Framework Convention on Climate Change (UNFCCC) in March 2020 (6).

1.2. National strategies

EU Member States are required to develop national long-term strategies on how they plan to achieve the greenhouse gas emissions reductions needed to meet their commitments under the Paris Agreement and EU objectives.

Stable long-term strategies are crucial to help achieve the economic transformation needed and broader sustainable development goals, as well as move towards the long-term goal set by the Paris Agreement – holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C.

All Parties to the Paris Agreement are invited to communicate, by 2020, their mid-century, long-term low greenhouse gas emission development strategies.

The Regulation on the governance of the energy union and climate action (EU/2018/1999) sets out a process for the Member States to prepare these strategies and new strategies every 10 years thereafter.

The long-term strategies should be consistent with Member States' integrated national energy and climate plans for the period 2021-30 (7).

The national energy and climate plans (NECPs) were introduced by the Regulation on the governance of the energy union and climate action (EU)2018/1999, agreed as part of the Clean energy for all Europeans package which was adopted in 2019.

The national plans outline how the EU countries intend to address

- energy efficiency
- renewables
- greenhouse gas emissions reductions
- interconnections
- research and innovation

This approach requires a coordination of purpose across all government departments and it provides a level of planning that will ease public and private investment.

As example I refer to the Belgian NECP (8)

Footnote :

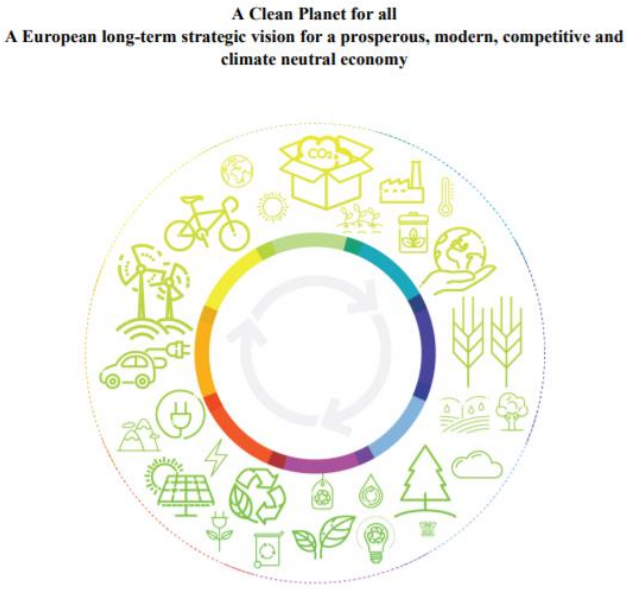
(6) Long-term low greenhouse gas emission development strategy of the EU and its Member States - https://unfccc.int/documents/210328

(7) https://ec.europa.eu/info/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

(8) Belgian Integrated National Energy and Climate Plan 2021-2030 - https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_parta_en.pdf en https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_partb_en.pdf

Key documents

More information about



The in-depth analysis in support of the Commission Communication Com (2018) (9)

Factsheets:

- Factsheet: Long-term strategy for greenhouse gas emissions reductionSearch for available translations of the preceding (10)
- Factsheet: Economic transitionSearch (11)
- Factsheet: Industrial transitionSearch (12)
- Factsheet: Societal transition (13)

Brochure: Going climate-neutral by 2050 (14)

European Political Strategy Centre study: "10 Trends reshaping Climate and Energy" – towards low emission mobility (15)

Footnote

(9) https://ec.europa.eu/clima/sites/default/files/docs/pages/com_2018_733_analysis_in_support_en_0.pdf
(10) https://ec.europa.eu/clima/sites/default/files/docs/pages/vision_1_emissions_en.pdf
(11) https://ec.europa.eu/clima/sites/default/files/docs/pages/vision_4_economic_en.pdf
(12) https://ec.europa.eu/clima/sites/default/files/docs/pages/vision_2_industrial_en.pdf
(13) https://ec.europa.eu/clima/sites/default/files/docs/pages/vision_3_social.pdf
(14) https://op.europa.eu/en/publication-detail/-/publication/92f6d5bc-76bc-11e9-9f05-01aa75ed71a1
(15) https://wayback.archive-it.org/12090/20191129091304/https://ec.europa.eu/epsc/publications/strategic-notes/towards-low-emission-mobility_en

The fundamental transformation of our transport systems towards zero-emission mobility requires an integrated multimodal approach explicitly aimed at boosting the uptake of more sustainable and less congested transport modes. (0)

Long recognised as one of the most CO2-efficient modes of transport (per tonnes of goods carried)(1) along with rail, inland waterway transport (IWT) is clearly seen as central to the Union's efforts to decarbonise the transport system. The European Green Deal (2) called for decisive action to shift a substantial part of the freight transported by road (currently accounting for 75% of inland freight) to inland navigation and rail, namely through measures to increase the capacity of inland waterways from 2021. Similarly, the Sustainable and Smart Mobility Strategy (3) adopted on 9 December 2020, which lays the foundation for how the EU transport system can achieve its green and digital transformation and become more resilient to future crises, underlined the need to increase the use of more sustainable transport modes, and indicated that inland waterway transport and short-sea shipping should increase by 25% by 2030 and by 50% by 2050. Zero-emission mobility is also the major objective of the Zero Pollution Action Plan adopted on 12 May 20214 (4) .

The already high modal share of inland waterway freight transport in some countries such as the Netherlands (42.7%), Romania (28.1%) or Bulgaria (31.8%) (6) , as well as the increasing use of inland waterway transport in urban logistics in some of the EU's most congested cities (7) , highlight the great potential of the sector where the conditions are right. It is of utmost importance to preserve these accomplishments and further seize untapped potential both along TEN-T corridors and in those inner cities where inland waterways can green the last mile of city logistics.

Footnote:

(0) COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - NAIADES III: Boosting future-proof European inland waterway transport – dd 24.06.2021 and also https://ec.europa.eu/clima/policies/eu-climate-action/law_en

(1) CE Delft STREAM study

(2) The European Green Deal, COM(2019)640 final

(3) Sustainable and Smart Mobility Strategy – putting European transport on track for the future, COM(2020)789 final

(4) Communication from the Commission :" Towards Zero Pollution for Air, Water and Soil", COM(2021)400 final

(5) Market Observatory report: https://inland-navigation-market.org/wp-content/uploads/2021/04/Market-report-2014-2019_Web_BD.pdf

(6) Modal split of freight transport - Inland Waterways 2019, Eurostat - Data Explorer (europa.eu)

(7) For example, urban logistics in Paris: http://www.inlandnavigation.eu/news/transport/sustainable-urban-mobility-and-circular-economy/ and http://www.inlandnavigation.eu/news/innovation/floating-city-warehouse/

In order to address the challenges faced by the inland waterway transport sector and deliver on the objectives of the European Green Deal and the Sustainable and Smart Mobility Strategy, the Commission is now putting forward an 'Inland Waterway Transport Action Plan 2021-2027', in line with the new multiannual financial framework and focusing on two core objectives: shifting more freight transport to inland waterways, and setting the sector on an irreversible path to zero-emissions, underpinned by a paradigm shift towards further digitalisation, as well as accompanying measures to support the current and future workforce.

Meeting these core objectives will require an integrated approach and a basket of measures incorporating transport, environmental, digital, energy and fiscal policies, backed up with financial incentives and Action Plan.

Given the age structure of the fleet, considerable investment will be needed to ensure that vessels meet environmental, climate and safety requirements in line with the increased ambition of the European Green Deal. However, the predominance of small owner-operators, the vast diversity of shipping solutions and hydro-morphological conditions across EU inland waterways, the lack of market-ready low-carbon alternative fuels, as well as the challenging economic situation mean that the sector faces numerous barriers to investing and organising itself to implement sector-wide innovative solutions.

Finally, as the final piece in the transport sector, the regional strategies foresee a transition towards zero-emission vehicles and energy carriers. With regard to passenger transport, both the Walloon and Flemish strategy mainly focuses on emission-free vehicles (either battery-powered or on hydrogen). For freight transport, both regions aspire to a complete decarbonisation of traffic, although it is recognized that the challenge here is greater and further, technological developments will be necessary. In addition to electrification and hydrogen, for heavier freight transport - also foresee a role for alternative fuels including bio and synthetic fuels.(1)

The mobility patterns in EU cities are changing, affected by technological, socio-demographic, cultural and environmental factors (2)

The new EU climate ambitions as well congestion, air quality, noise and road casualities require strengthened measures in urban mobility compared to 2013. Now in addition, the resilience of urban transport networks have been severely tested during the COVID-19 pandemic. This crisis has shown an additional need to re-think urban mobility to make it more sustainable, fair, inclusive and safer while at the same timepromoting active and healthy lifestyle, with important co-benefits for a clean energy transition. Therefore, there are both new and old challenges and opportunities in tackling urban mobility at EU level, and in particular in focusing on decarbonizing and digitalising transport, and also addressing important societal goals of affordability, accessibility, and inclusiveness of mobility as well as to ensure that every citizen can have and keep a good quality of life.

This initiative (New EU urban mobility framework – MOVE B.3) aims to create an enabling EU framework for Member States, regions and cities to develop safe, accessible, inclusive, smart, resilient and zero-emission urban mobility to achieve EU climate and transport policy objectives and targets, as set out in the European Green Deal and in the Sustainable and Smart Mobility Strategy. An important part will be the strengthened role of urban nodes on the Trans-European Transport (TEN-T) Network as vital enablers of sustainable, efficient and multi-modal transport.

Footnote:

(1) https://ec.europa.eu/clima/sites/lts/lts_be_nl.pdf
(2) https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12916-Sustainable-transport-new-urban-mobility-framework_en
(3) https://www.eca.europa.eu/Lists/ECADocuments/SR20_06/SR_Sustainable_Urban_Mobility_EN.pdf

1.3. From National Strategy to a climat commitment

Belgium is a federal state in which decision-making power is shared between a federal state, three regions (Walloon, Flemish, and Brussels-Capital Region) and three communities (Flemish, French and German-speaking Community. With regard to climate policy, the Regions have important responsibilities in areas such as rational energy consumption, promotion of renewable energy resources, public transport, transport infrastructure, urban and rural planning, agriculture and waste management. The federal state is responsible for large parts of the tax policy. She is also responsible for product policy (standards, fuel quality, labeling and performance standards for electrical appliances for household or industrial use use,). It is responsible for the country's energy security and for nuclear energy. She also oversees territorial waters, which means she also is responsible for the development of offshore wind farms.(1)

Ambition level of the regions - Belgium

In their long-term strategies, the different regions envisage the following, general emission reductions by 2050:

1. The Walloon long-term strategy aims for carbon neutrality by 2050, through a reduction of greenhouse gas emissions by 95% compared to 1990, supplemented by measures on Carbon Capture & Utilization and Negative Emissions);

2. The Flemish long-term strategy aims to reduce the greenhouse gas emissions of the sectors that are not covered by the EU ETS (so-called non-ETS sectors) by 85% by 2050 compared to 2005, with the ambition to move towards full climate neutrality. With regard to the ETS sectors, the Flemish Region registers within the context set by the EU for these sectors with a decreasing emission allowance under the EU ETS ;

3. The Brussels long-term strategy includes an approach to the European target of carbon neutrality in 2050, in the urban context of Brussels

In addition, each of the regional strategies emphasizes the importance of a modal shift as a cornerstone for realizing the proposed climate ambitions, with benefits in terms of air quality, mobility and use of public space. With regard to passenger transport, each region is committed to limiting the share of the individual passenger car in the modal split, in favor of alternative modes of transport such as active transport (walking and cycling), light electric vehicles (e.g. E-bikes, speedelecs, electric scooters, etc. …..) and shared modes of transport (public transport and shared vehicles.

For this, a qualitative provision of alternative modes of transport, adequate infrastructure and the promotion of combined mobility . The concept of ***Mobility-as-a-Service*** is also recognized as an important lever to achieving the desired combined mobility and increasing the occupancy rate of vehicles increase (resulting in fewer vehicle kilometers driven). Pursuit of freight transport both the Walloon and the Flemish strategy towards a shift from road transport to rail and waterways.

Footnote:

(1) https://ec.europa.eu/clima/sites/lts/lts_be_nl.pdf

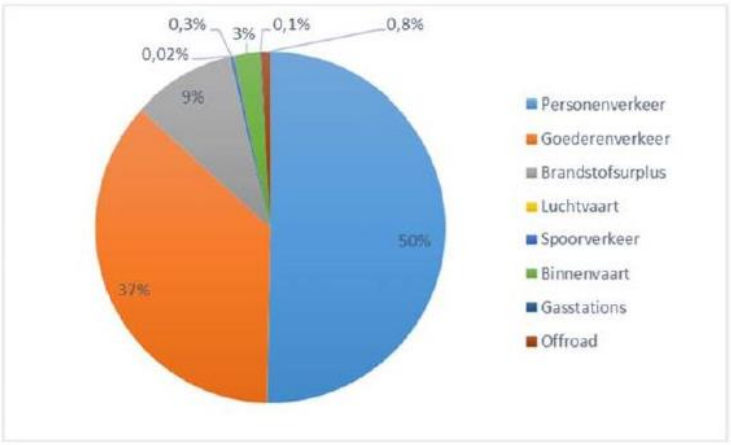
1.4. General introduction to the Interreg project

The Belgian Situation – Flemish region

As regards goods transport, road traffic continues to account for the largest proportion of transport volumes (1). The share of road traffic in total goods transport has increased from 75% in 2000 to 82% in 2016. **The more environmentally friendly modes of rail and inland navigation have therefore not succeeded in reducing the share of road traffic in total goods transport.** The non-ETS transport sector emitted 16.0 Mt CO2eq in 2017, or 37% of the total non-ETS GHG emissions in Flanders. Emissions in the transport sector are composed of emissions from passenger transport and goods transport by road, plus the relatively low emissions from rail transport, maritime transport ((national share of) marine navigation and inland navigation), petrol stations (caused by the compression or decompression of natural gas) and off-road vehicles at ports and airports (Figure 1-3). Only the consumption of fossil fuels is taken into account within the scope of non-ETS emissions. This means that electricity generation for electric transport (electric trains, trams and road vehicles) falls outside this scope.

CO2 emissions from biofuels are regarded as zero in accordance with European and international inventory directives. Intra-EU aviation CO2 emissions in the period 2013-2020 are covered by the ETS regulations, while extra-EU aviation and maritime (bunkering) emissions are not covered by international climate agreements. GHG emissions in the transport sector therefore primarily relate to the consumption of fossil fuels for passenger transport and goods transport by road, rail (diesel trains) and inland navigation.

Figure 1-3. Distribution of Flemish non-ETS GHG emissions from transport in 2017



Personenverkeer	Passenger transport
Goederenverkeer	Goods transport
Brandstofsurplus	Fuel surplus
Luchtvaart	Aviation
Spoorverkeer	Rail transport
Binnenvaart	Inland navigation

Figure 1-3 clearly shows that road transport is a decisive factor in transport sector emissions as a whole. (2)

Footnote :

(1) MIRA report: https://www.milieurapport.be/sectoren/transport/sectorkenmerken/tonkilometers-vangoederenvervoer
(2) https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_partb_en.pdf

The trends in road traffic emissions in Flanders are shown in Figure 1-4.

Figure 1-4. Trends in GHG emissions from road traffic in Flanders for the period 1990-2017 (in Mt CO_2eq)

Emissie (Mton CO_2-eq)	Emissions (Mt CO_2eq)
Personenverkeer	Passenger transport
Goederenverkeer	Goods transport
Brandstofsurplus	Fuel surplus

Footnote :

(1) https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_partb_en.pdf

Information about the IWT network in Belgium

1,395 kilometers of navigable waterways in the Flemish Region

The Flemish Region has 1,395 kilometers of navigable waterways. Just under 1,000 kilometers of this is used for merchant shipping. Important waterways include the Ghent-Terneuzen Canal, the Albert Canal, the Scheldt-Brussels Sea Canal and the Upper Scheldt.

15% of inland waterways suitable for vessels with a payload of up to 18,000 tons

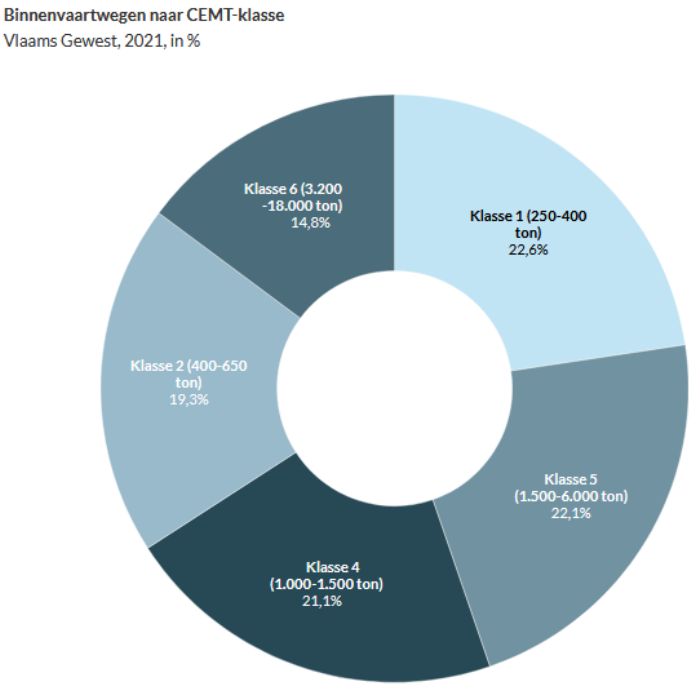
Inland shipping in Europe is divided into CEMT classes, in order to coordinate the dimensions of waterways in Western Europe. The class division was determined in 1992 by the 'Conférence Européenne des Ministres de Transport' (CEMT). Hence the term CEMT class.
The maximum dimensions of a ship are determined per class. This makes it clear under which bridges ships can and cannot sail and which canals and rivers are navigable or not due to draft and manoeuvrability.

In the Flemish Region, 15% of inland waterways belong to class 6. This means that ships with a loading capacity of up to 18,000 tons can sail there. Another 22% belong to class 5, suitable for ships with a carrying capacity of up to 6,000 tons.

Footnote:

(1) https://www.statistiekvlaanderen.be/nl/lengte-binnenvaartnet

IWT network in the Flemish Region in 2021 in ton and percentages (1)



Management of navigable waterways in Flanders (2)

The navigable waterways in Flanders are managed by different waterway managers

The waterway managers of the navigable waterways (rivers and canals) belong to the Mobility and Public Works policy domain. The waterway manager is responsible for the construction and maintenance of the waterways, shores, towpaths, bridges and locks.

They also issue permits, concessions or other permits for waterway infrastructure.

The Flemish Waterway – De Vlaamse Waterweg NV

The Flemish Waterway (De Vlaamse Waterweg) manages and exploits the navigable waterways and water-bound land in Flanders. The Flemish Waterway has three regional divisions:

East region

Region Central

Region West.

Footnote :

(1) https://www.statistiekvlaanderen.be/nl/lengte-binnenvaartnet
(2) https://www.vlaanderen.be/beheer-van-de-bevaarbare-waterlopen

Map of the working area of the Flemish Waterway with the 3 zones (1) and in the Policy memorandum of the Flemish government (3)

More information on the website of De Vlaamse Waterweg (2)

Department of Maritime Access

The Maritime Access Division of the Mobility and Public Works Department safeguards, manages and maintains all waterways ('maritime access routes') to the seaports of Antwerp, Ghent, Ostend and Zeebrugge.(4)

Agency for Maritime Services and Coast (MDK)

ensures safe and smooth shipping traffic on the maritime access roads to and from the Flemish ports. The agency is also responsible for the protection of the Flemish coast against flooding and strives for integrated and sustainable management of the coastal zone.(5)

Footnote:

(1) Map : https://www.vlaamsewaterweg.be/sites/default/files/2020-0343_werkingsgebied.pdfv

(2) https://www.vlaamsewaterweg.be

(3) Policy memorandum (Beleidsnota MOW 2019-2024, omgevingsanalyse (p. 9-14)): https://publicaties.vlaanderen.be/view-file/32241

(4) https://www.maritiemetoegang.be/

(5) https://www.agentschapmdk.be/en

2. FIGURES ON IW - CONSTRUCTION AND LOGISTICS SECTOR

IMPACT ASSESSMENT OF PLANNED POLICIES AND MEASURES

Projections of the development of emissions of air pollutants in accordance with Directive (EU) 2016/2284 On 25 October 2019 the Flemish Government finally approved the Air Policy Plan 2030. This plan contains measures to combat air pollution in Flanders and, in so doing, to reduce its impact on our health and the environment. The plan was prepared under Article 23 of Directive 2008/50/EC and under Directive 2016/2284. It contains emission projections and can be consulted at https://beslissingenvlaamseregering.vlaanderen.be/document-view/5DB31EC95084E700080003D9 .

The aim of both climate policy and air policy is to reduce emissions of certain substances into the air, namely greenhouse gases and pollutant emissions. As most of these emissions come from the same sources, there is a close relationship between the Flemish Energy and Climate Plan and its Air Plan. As a result, both Flemish climate policy (reduction of GHG emissions) and Flemish energy policy (energy savings and increase in renewable energy) aim to reduce the use of fossil fuels.

Less consumption of liquid, solid and gaseous fossil fuels in industry, the transport sector, agriculture and heating of buildings will reduce NOX, SO2 and PM emissions (pollutants that are typically released during the combustion of fossil fuels). Solid biomass (a renewable fuel) is an exception as its combustion releases more emissions of certain substances than the combustion of certain fossil fuels.

This is particularly the case with the heating of buildings: wood is regarded as biomass but, although the emissions from its combustion can be deducted from greenhouse gases (unlike emissions from gas and heating oil boilers), its combustion significantly increases emissions of fine particulate matter and NOx.(1)(2)

(1)https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12916-Sustainable-transport-new-urban-mobility-framework_en

(2) The reduction of the GHG in Belgium will not be easy. Report of the Boston Group. https://www.vbo-feb.be/globalassets/actiedomeinen/energie-mobiliteit--milieu/energie/terugdringen-van-co2-uitstoot-in-belgie-is-mogelijk-maar-niet-eenvoudig-te-realiseren/belgiums-greenhouse-16.pdf

Emissions from other modes of transport are calculated in the scenario of the Flemish Government by taking account of the fact that, in the future, those modes will absorb part of the growth.

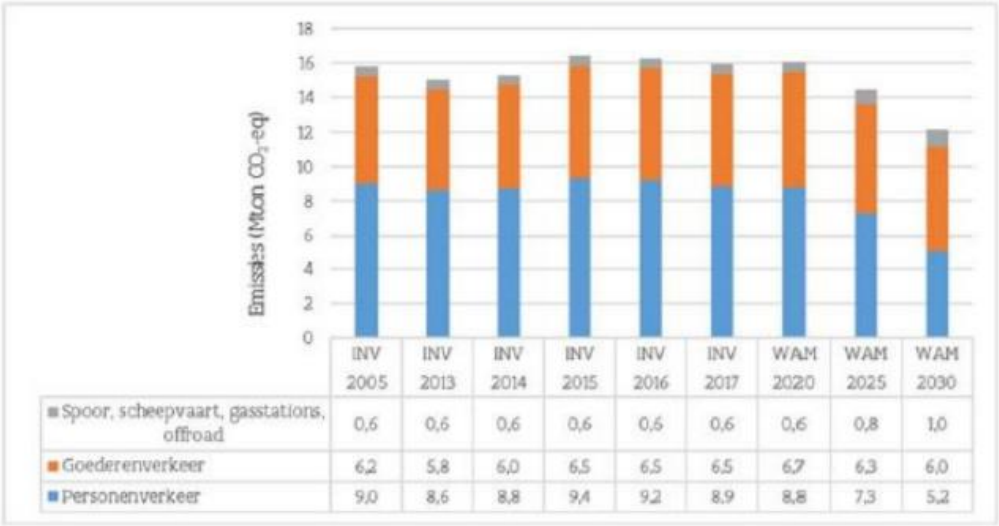
The following assumptions have been made, in line with the scenarios developed in the draft **Mobility Plan for Flanders:**

- The projections for inland navigation in Belgium indicate 100% growth in the number of tonnekilometres between 2013 and 2030.

- The projections for rail (diesel trains) indicate 140% growth in goods transport and 45% growth in passenger transport between 2013 and 2030 and a constant distribution between diesel and electric rail traffic.

Overall in the transport sector, the scenario points to a 23% reduction in GHG emissions between 2005 and 2030 (Table 2-1). However, significantly different trends are evident for road passenger and goods transport (Graph 2-2). Due to the reduction in traffic volumes and considerable greening of the vehicle fleet, a 43% reduction in emissions is predicted for passenger transport over the period 2005-2030. As for goods transport, 62 the increase in vehicle-kilometres and relatively limited greening of the fleet will result in a reduction in emissions of only 3% between 2005 and 2030.

Graph 2-2. Overview of actual emissions and WAM projections in the transport sector (including fuel surplus) 2005-2030



Emissies (Mton CO_2-eq)	Emissions (Mt CO_2eq)
Spoor, scheepvaart, gasstations, offroad	Rail, shipping, petrol stations, off-road
Goederenverkeer	Goods transport
Personenverkeer	Passenger transport
INV	INV
WAM	WAM

Footnote :

(1) https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_partb_en.pdf

It is in the transport and buildings sectors that the greatest impact on the various indicators can be seen. As a result, for transport, significant further reductions in air pollutant emissions are predicted, such as an additional reduction of 31% in NOx compared with the BAU (business-as-usual) scenario.

To achieve the stated GHG emission reduction targets in the transport sector, additional investment costs of EUR 13.2 billion to EUR 16.4 billion will be needed over 10 years (up to 2030).

Switching to zero-emission vehicles and sustainable modes of transport may increase value added and employment in the sector.

Reducing the number of road vehicle-kilometres may have the opposite effect on these indicators. The net effects on value added, employment, purchasing power and competitiveness have not been calculated.

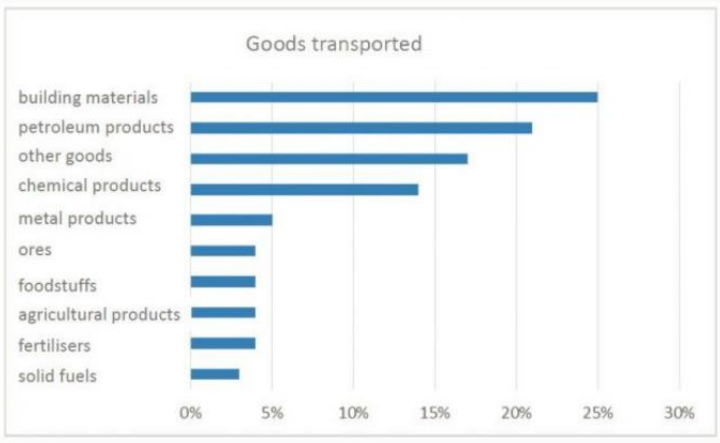
The next table summarizes the situation of the fleet dry cargo vessels, that belonged to investors registered in Belgium as of 31/12/2015 (source ITB).

Category	towing barges		Motor vessels			push barges		total	
	number	tonnage	number	tonnage	capacity KW	number	tonnage	number	tonnage
25/250 t	0	0	0	0	0	17	3.170	17	3.170
251/450 t	0	0	135	49.559	30.079	30	11.125	165	60.684
541/650t	0	0	75	42.587	23.924	29	16.679	104	59.266
651/850t	0	0	56	40.894	22.476	5	3.802	61	44.696
851/1000t	0	0	34	31.590	16.846	4	3.786	38	35.376
1001/1500t	0	0	187	231.534	123.863	24	29.545	211	261.079
1501/2000 t	0	0	56	94.532	47.421	8	14.103	64	108.635
2001/2500 t	0	0	43	96.034	47.286	23	53.542	66	149.576
2501/3000 t	0	0	43	118.662	59.752	45	127.974	88	246.636
3001 en +	1	3.565	77	282.746	125.133	70	252.661	148	538.972
TOTAL	1	3.565	706	988.138	496.810	255	516.387	962	1.508.090

The number of independent inland navigation boatmen diminishes year by year. In 2014 the number decreased by 53, or 4%, in comparison to the number in 2013.

Graph (B): age of independent inland navigation boatmen (B)

In Flanders 66.860.769 tonnes were transported via inland navigation in 2015 (source: PBV, 2016). The goods transported are:

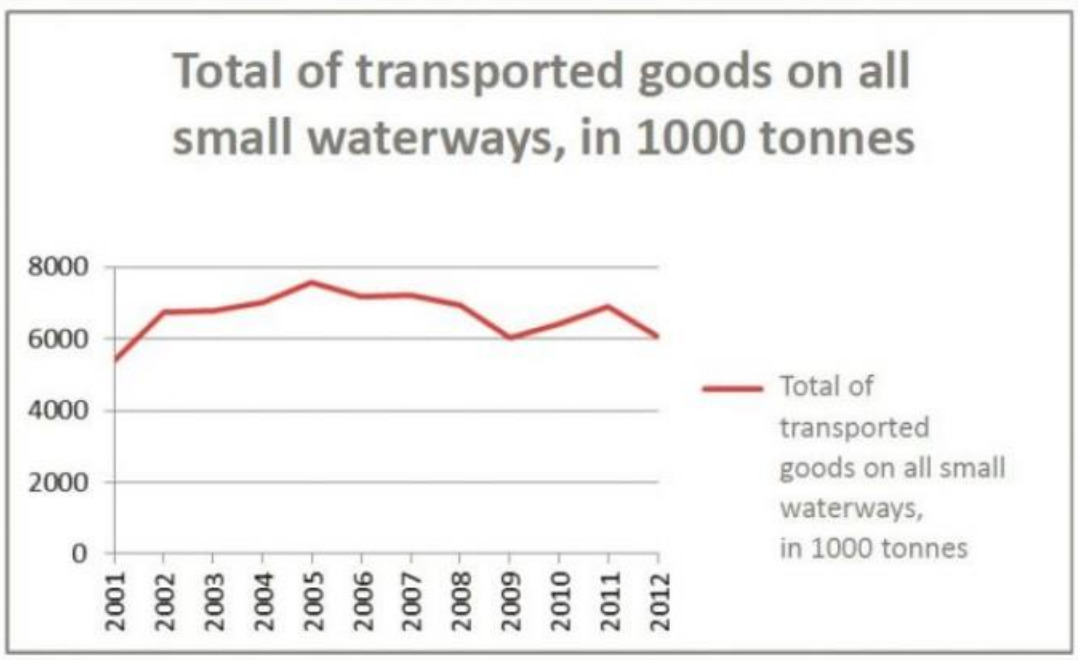


Footnote :

(1) https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_partb_en.pdf

The largest category remains building materials. Containers are listed under ‘other products’, which is the fastest growing category.

Transport via small waterways has been diminishing in Flanders over the last years, as illustrated by the graph below. In this sailing area 6.056.500 tonnes of goods were transported in 2012 (source: study by W&Z and DS regarding the potential and usage of the small waterways).(1)



Smart and liveable cities and urban centers – ClimatActionPlan Flanders 2050 (2)

Within the various transport regions, important social functions must be accessible to everyone in a smooth and safe manner with sustainable (collective) means of transport or a combination thereof. That is why we are committed to a spatial organization that focuses on core strengthening, proximity and mixing of functions.

New developments are based on existing networks (public transport and bicycle, etc.), near collective transport hubs and places with concentrations of facilities.

In the field of urban logistics, we are committed to a complete integration of the various goods flows (retail, waste flows, construction logistics, e-commerce, services, etc.) and where possible on the integration of the flows of people and goods. Together with all involved actors we focus on smart consolidation and transhipment (via urban distribution centers, microhubs or temporary hubs), greening the means of transport, developing innovative concepts, or other solutions that lead to reliable, safe, readable and economically viable systems.

Footnote:

(1) .http://www.watertruckplus.eu/Q&A/modal-shift-split?lang=de

(2) https://ec.europa.eu/clima/sites/lts/lts_be_nl.pdf

In the field of urban logistics, we are committed to a complete integration of the various goods flows (retail, waste flows, construction logistics, e-commerce, services, etc.) and where possible on the integration of the flows of people and goods. Together with all involved actors we focus on smart consolidation and transhipment (via urban distribution centers, microhubs or temporary hubs), greening the means of transport, developing innovative concepts, or other solutions that lead to reliable, safe, readable and economically viable systems.

By 2050 we will thus realize the transition to a green, efficient and combi-modal supply. In addition, we use technological innovations to make logistics more sustainable (e.g. deliveries with drones, hyperloops, 3D printing,).(1)

Footnote:

(1) https://ec.europa.eu/clima/sites/lts/lts_be_nl.pdf

3. Guiding the development of mobility (1)

In de National Energy and Climat Plans of the memberstates of the European Union (NECP) the states make a prognose about their energyconsumption ,sustainable promeses and challenges for the future in line with the European Strategy “Going climate-neutral by 2050” (1).

The Belgian government wants to be a pioneer in making society more sustainable.(2)

By 2030, the number of road kilometres will be reduced to a maximum of 51.6 billion vehiclekilometres. This entails a reduction of 15% from 2015 for passenger cars and vans, and the increase for lorries being limited to a maximum of 14%.

- Developing a multimodal transport system:
    - For commuting, the share of sustainable modes of transport will increase to at least 40% (car use limited to a maximum of 60%; the current figure for car use is 71%).
    - **In the highly urbanised transport regions of Antwerp, Ghent and the Flemish periphery, the share of sustainable modes of transport will be at least 50%.**
    - For goods transport, 6.3 billion tonne-kilometres will be shifted from the road to alternative modes of transport (water or rail transport). The share of rail and inland waterway transport in the modal split will increase to 30%.
    - The various maritime ports will make extensive use of sustainable modes of transport. The share of these modes (rail, river and estuary) will increase by around 5-10% (from 2013).

- Encouraging sustainable travel and transport behaviour:
    - In cooperation with the transport regions, we will bring about a modal shift (by developing a costeffective and demand-oriented public transport network and by continuing the rising trend of investment in cycling policy).
    - Together with sectoral organisations, businesses and associations, we will support actions that encourage the public and business to abandon their cars in favour of alternative modes of transport and that allow them to easily switch from one mode of transport to another, thus reducing the number of road kilometres. We will also work together with the Federal Government and the other Regions on this issue.
    - With regard to goods transport, we will encourage sectoral organisations and businesses to focus on further optimising loading.
    - We will also make considerable efforts to influence ‘irrational choice behaviour’.

- A Flemish integrated network of high-quality, wide and safe cycle paths and highways will connect residential centres, schools and major employment hubs and will therefore take full advantage of the high potential of cycle use for commuting to work or school.

Footnote :

(1) https://op.europa.eu/en/publication-detail/-/publication/92f6d5bc-76bc-11e9-9f05-01aa75ed71a1
(2) https://ec.europa.eu/energy/sites/ener/files/documents/be_final_necp_partb_en.pdf

A SWOT analysis is a useful tool to provide a clear analysis of the inland shipping sector in Belgium. Below is an overview of the analysis of inland shipping, and an analysis of the possibilities for urban distribution via the waterway in the testbed of Ghent.

SWOT analysis (or **SWOT matrix**) is used as a tool for evaluation of the strategic position of a city or organization. It is intended to specify the objectives of the business venture or project and identify the internal and external factors that are favorable and unfavorable to achieving those objectives

SWOT assumes that strengths and weaknesses are frequently internally-related, while opportunities and threats commonly focus are due to the external environment. The name is an acronym for the four parameters the technique examines:

- ***S**trengths*: characteristics of the business or project that give it an advantage over others.
- ***W**eaknesses*: characteristics of the business that place the business or project at a disadvantage relative to others.
- ***O**pportunities*: elements in the environment that the business or project could exploit to its advantage.
- ***T**hreats*: elements in the environment that could cause trouble for the business

We have added to our SWOT :

PESTEL analysis (political, economic, social-cultural and technological) is a strategic tool for understanding market growth or decline, business position, potential and direction for operations.

The basic **PEST analysis** includes four factors:

- ***Political factors*** relate to how the government intervenes in the economy. Specifically, political factors have areas including tax policy, labour law, environmental law, trade restrictions, tariffs, and political stability. Political factors may also include goods and services which the government aims to provide or be provided (merit goods) and those that the government does not want to be provided (demerit goods or merit bads). Furthermore, governments have a high impact on the health, education, and infrastructure of a nation.

- ***Economic factors*** include economic growth, exchange rates, inflation rate, and interest rates. These factors greatly affect how businesses operate and make decisions. For example, interest rates affect a firm's cost of capital and therefore to what extent a business grows and expands. Exchange rates can affect the costs of exporting goods and the supply and price of imported goods in an economy.

- ***Social factors*** include the cultural aspects and health consciousness, population growth rate, age distribution, career attitudes and emphasis on safety. High trends in social factors affect the demand for a company's products and how that company operates. For example, the ageing population may imply a smaller and less-willing workforce (thus increasing the cost of labour). Furthermore, companies may change various management strategies to adapt to social trends caused from this (such as recruiting older workers).

- ***Technological factors*** include technological aspects like R&D activity, automation, technology incentives and the rate of technological change. These can determine barriers to entry, minimum efficient production level and influence the outsourcing decisions. Furthermore, technological shifts would affect costs, quality, and lead to innovation.

- **Environmental factors** include ecological and environmental aspects such as weather, climate, and climate change, which may especially affect industries such as tourism, farming, and insurance. Furthermore, growing awareness of the potential impacts of climate change is affecting how companies operate and the products they offer, both creating new markets and diminishing or destroying existing ones.

- ***Legal factors*** include legislation about anti-discrimination, consumers, antitrust issues, industrial relations, and health and safety . These factors can affect how a company operates, its costs, and the demand for its products.

SWOT analysis for the IW transport sector in general in Belgium:

STRENGHTS	WEAKNESSES
Environmentally friendly character	Capital intensive
Government support	High transshipment costs
Safety	Valotial Market
Reliability	Limited profitability
Network & Infrastructure	Low Speed
Transhipment	Draft Channels and Rivers
Cheap	Natural Barriers
	Waiting Times
	Limited working hours

OPPORTUNITIES	THREATS
IT-systems	Competition other modes of transport
Intermodality	Fragmentation of the sector
Sustainable mobility	Smaller ships are disappearing
Modernization and scaling up	Lack of influx of young generation
Containertransport	Rise in freight and fuel prices
New freight transport	
Innovative projects & improvements	
Roadtransport	

Footnote :

(1) Bron: Eigen samenstelling o.b.v. Van Mierlo & Macharis (2005) en Cornillie & Macharis (2006)

STRENGTHS of the IW transport sector in Belgium

The biggest advantage of transport via inland shipping is that it is more environmentally friendly than transport by road. This implies that the external costs are lower. External or social costs are caused by accidents, noise, pollution, climate change, infrastructure and traffic congestion.

According to the European Commission, the external cost of inland waterway transport is EUR 5 per tonne-kilometre in 2011, whereas this is EUR 12.35 for rail transport and EUR 24.12 for road transport.
Inland shipping causes less noise nuisance, less pollution; more efficient fuel consumption and less Co2 and Nox emissions.
Moreover, inland shipping also has a higher level of safety than other modes of transport, resulting in fewer accidents (Bruyninckx et al. 2012)

In addition, inland shipping as a sector is a reliable mode of transport. There is already an extensive network of infrastructure works in Belgium, as well as waterways and terminals that also have international connections. Moreover, the waterways in Belgium are often still congestion-free. The Flemish inland waterways are usually also close to other European trade routes. Furthermore, it also appears that 80% of all Flemish companies are located at a maximum of 10 kilometers from a navigable road (Bruyninckx, et al., 2012).

The inland shipping sector has a lower variable cost over a greater distance. This means that inland shipping has a better loading capacity for large quantities that have to be transported over a long distance. Precisely because the inland waterways are used more intensively, there is a lower average cost.

WEAKNESSES

The weaknesses of the inland shipping sector include the high investment costs in infrastructure and the high transhipment costs. Often there is also a lack of transshipment options to transport goods to the last recipient. Due to the fragmented nature of the inland shipping sector, it operates in a complex and volatile market. In addition, the inland shipping sector continues to be regarded as a sector with limited profitability. (Van Mierlo & Macharis, 2005)

In inland shipping, the goods are transported to their final destination at a low speed. As a result, inland shipping is less suitable for certain categories of goods and inland shipping is not likely to be used for short-distance transport. Moreover, inland shipping does not always fit within the framework of Just-in-time (JIT) production. Other aspects that make inland navigation more difficult are the draft of canals and rivers, which are sometimes not deep enough. There are also natural conditions, such as the weather and tidal effects, that play a role.
It can also be mentioned that ships cannot always pass through because there are rules regarding working hours and because there are waiting times at certain locks, bridges and ports (Van Mierlo and Macharis, 2005).

Finally, there are a few market characteristics that can be experienced as negative. For example, inland shipping is characterized by a heterogeneous character with many small players, including many family businesses. The image of the sector is also not equally positive everywhere, since inland shipping is also seen as an outdated sector.

OPPORTUNITIES

The opportunities in inland waterway transport are the new developments in computer systems.
In addition to the current systems such as RIS and AIS, even more innovative tracking systems will be developed in the future to make inland navigation run more smoothly within a country and between countries themselves.
There is an ongoing trend in modernization and scaling up in the sector.
Not only canals, locks and bridges are being widened, but ships themselves are also becoming larger and equipped with more modern techniques.

This also includes the explosive growth of container transport in recent years. In terms of the type of goods, there are more and more goods that can be transported by inland shipping, such as construction materials with pallets, waste and recycled materials.
Innovative projects will also help determine the complexity and future of the inland shipping sector.(Cornellis & Macharis, 2006)

Finally, the rising cost of road transport and road congestion can be seen as an opportunity, as this will make companies increasingly opt for inland shipping to move their goods. In the long term, even more companies will set up their storage and transhipment sites near waterways (Van Mierlo and Macharis, 2005)

THREATS

In the list of threats to the sector, competition from other modes of transport is still considered a major threat. In addition, it can be seen that the sector is very fragmented and that more and more small players are disappearing, which are often essential to maintain the inland navigation sector (secretariat of the Central Commission for the Navigation of the Rhine).

An important threat is also the shortage of influx of new staff. It is difficult to attract the younger generation to a profession in inland navigation. In addition, it is also difficult to find sufficient capable workers on the labor market for all positions in the sector.

Although training and education of IW staff is not yet standardized, the European Commissions DG MOVE is about to set those standards for the entirety of IWT personnel in close cooperation with the Central Commission for the Navigation on the Rhine (CCR) (current revision of the EC directive 96/50/EC on IWT crewing - with direct involvement of the Maritime Academy of Harlingen), focusing on an competence based educational standard, which very well facilitates the use of advanced IWT simulators. Smaller waterway navigation is not yet in the focus of any of the crewing-related legislation authorities (see project Interreg NSR – www.northsearegion.eu/iwts2.0)

SWOT analyse van het Living Lab in Ghent

SWOT analysis Testbed Ghent	with SOAR ambitions (Strengths, Opportunities, Aspirations and Results)						
	PESTLE Factors						
	Political	Economic	Social	Technologica	Legal	Environmental	Aspirations or our ambition
Strengths :							
Mobility plan	x				x		waterway city distribution part of mobility plan
Expel heavy transport	x					x	no heavy road transport in the city center
Sustainable transport modus	x			x		x	social responsible companies will select sustainable solutions
Engagement ship-owners		x		x			alternative for road transport
CO2 reduction	x	x	x			x	zero CO2 emissions
Noise reduction			x			x	social awareness
Increased traffic fluidity		x	x			x	no traffic jams
Wide array of applications : people transport, parcel delivery , garbage collection, logistic support during construction works of different type or during events (power supply, other 'event' services), publicity ,...		x					waterway city distribution offer open for all appliations
No or few other prior marine traffic in the city (Ghent)	x				x		legislation facilitating city waterway distribution
Enabling new business models	x	x	x	x		x	city waterway distribution part of all city transport solutions
Sustainable solution (long term investments)	x	x	x	x		x	sustainable community
OPEX (low cost of ownership)		x					cheapest sustainable solution
Safety (traffic)	x		x	x			less traffic victims
Complementary to other sustainable businesses (stores, food, ...) in the city		x	x				social responsible companies

	PESTLE Factors						
	Political	Economic	Social	Technological	Legal	Environmental	Aspirations or our ambition
Weaknesses :							
Rentability transport		x					condsider wider piccture
Support of conditional subventions	x	x					??
Investments necessary by public services, cities, ...	x						political long term commitment
Infrastructure : Power supply , docking, ...	x			x			new interreg support
Risk of collision	x				x		give way to city waterway distribution
Obstacles (bridges, water locks, ongoing works sites,...)				x			avoid obstacles
Tides and currents				x		x	consider currents and tides
Charging time		x		x			smart solutions
Loadingunloading installation		x		x			share infrastructure
Transport of goods to and from the loadingunloading dock		x		x			combine sustainable solutions
Authorizations	x		x				political long term commitment
CAPEX		x					consider wider picture

	PESTLE Factors						
Opportunities :	Political	Economic	Social	Technological	Legal	Environmental	**Aspirations or our ambition**
Profitable story on the long term		x					consider wider picture
Monopoly in the project with the city	x						contract with the city
Consolidation with larger city distribution		x					cooperation with logistic chain
Existence of a LEZ	x		x			x	waterway city distribution part of mobility plan
Mobility plan							waterway city distribution part of mobility plan
Itinerary (urban waterways network)		x					smart solutions
Presence of harbour		x		x			consider wider picture
Energy efficient solutions	x	x		x			Energy awareness among transport decision-makers
Linking energy flows	x	x		x			Energy efficiency awareness among transport decision-makers
Variety of activities is possible/existing already : people transport, parcel delivery , garbage collection, logistic support during construction works of different type or during events (power supply, other 'event' services), publicity ,... , home delivery (bikes)	x	x	x	x	x	x	waterway city distribution offer open for all appliations
Sustainable long term investments becoming popular		x					long term commitment
Politically interesting topic	x		x				Sustainable cities and Climate change

	PESTLE Factors						
Threats :	Political	Economic	Social	Technological	Legal	Environmental	**Aspirations or our ambition**
No coherent vision and no commitment of stakeholders	x	x	s		x		sustainable community
Obtain short term profit		x					long term commitment
Use by the city of the captains of industry							??
Manoeuvrability				x	x		smart solutions
Sailing time (itinerary)		x		x			smart solutions
Electricity prices (congestion)		x		x			energy efficiency awareness among
Black out	x	x	x	x	x		among transport decision-makers
Batteries (LCA, weight & volume)				x		x	smart solutions
Fossil fuelled boats	x					x	sustainable cities and Climate change
Tourist boats		x	x		x		concurrence city waterway distribution

4. GENERAL INTRODUCTION TO THE PROJECT IWTS 2.0 – partner DGH

What is your main role in the project?
WP : 4

- Supplying data sets of vessel voyage data
- Organizing long distance modal shift with construction and building material by implementing an integrated smaller CO2 neutral barge concept. (vessel and designated berth for loading and unloading)
- Defining data and quays for loading and unloading in the city of Ghent

WP : 6

- Implementing several modal shift for long distance transport of construction and building materials in the region of Ghent

C.1.2.What is the project's approach in addressing these shared challenges and/or joint assets

· WP 4:Developing innovative smaller barges and dedicated transshipment solutions .

Small barge concepts with sustainable propulsions will be developed and tested. Thanks to international NSR cooperation these barges can be deployed in all NSR regions. Engineers,

experts, users of barges are involved to make sure the technical, operational references are met.

Managing authorities will be involved from the start to make sure regional certifications rules are in place.

Each freight needs different transhipment solutions, for these barges normal containers are too big and pallets will damage freight. Special solutions will be developed to transhipment concrete building blocks and paper products.

By involving users and experts from UK, SE, NL, BE, DE different regional settings are the basis for a joined development.

- WP 6 Regional IWT modal shifts and adaptation of proven concepts by the relevant #IWTS partners (short term) and third parties (long term) running through WP 3,4,5

To achieve sustainable modal shifts by implementing the innovative barges and transshipment concepts and minimum intrusion waterway adaptations for standardized vessels, as well as dedicated educational content developed in the WP's 3-6 into the standard workflows of the respective #IWTS partners in order to prove their effectiveness. Creating additional long term modal shifts by disseminating and promoting the new proven concepts to outside parties to serve as as good practice examples for successful modal shift.

#IWTS creates a critical mass for innovation by developing a range of inland waterway solutions that are complementary to each other and have potential for up-scaling. Differences in deployment of inland waterway transport and expertise amongst partners are considerable, closing these gaps by connecting expertise, concepts and know how, are the key to success in #IWTS.

Number/Title	Period
4. Developing innovative smaller barges and dedicated transshipment solutions	Aug/2017 - Jul/2020

Responsible Beneficiary	De Groote – Houtboerke NV

Description

Objective:

To, develop and promote use of innovative barges and transhipment concepts. Realize short term solutions by implementing small barge concepts and matching port infrastructure. Realize long term solutions by identifying and promoting long term potentials/capacities such as new links between existing smaller waterways.

Aiming at short and long term results, a three fold approach has been developed, for realizing a sustainable increasing modal shift freight stream from road to water.

1. **Short term: Barges for smaller waterways:**
   DGH, SSPA,MAH willl pilot, evaluate and develop new small barge concepts.
2. **Short term: Innovative transshipment solutions:**
   POM,FRY,MAH will develop, pilot and evaluate innovative and integrated transshipment solutions for construction material and paper products as well as for Milk Powder which will make these commodities IWT ready. WEZ will asses this process from a managing authority's perspective
3. **Long term master planning policies:**
   By linking and improving IWT infrastructures, potentials increase significantly. Based on feasibility research and credible business planning (WP4) long term scenario's will be proposed and included in regional policies, business and master plans.

Activities and Deliverables (C.5.1)

Activity	Indicator	Deliverable	Target
1. Implementation of a smaller, adaptable CO2 neutral barge into every day operations of DGH Smaller, adaptable CO2 neutral barge will be implemented and long term assesed in the standard work flow of DGH. This ensures a mature and proven concept, which is viable as role model for outside parties	Working practice change	Implementation of smaller, adaptable CO2 neutral barge concept into real live operations of a commercial company Real live and long term testing of the concept	1

WP 4: Small Barges

Involved Beneficiaries: GHB, GSL, MAH, POM, SSPA, VW, FRY

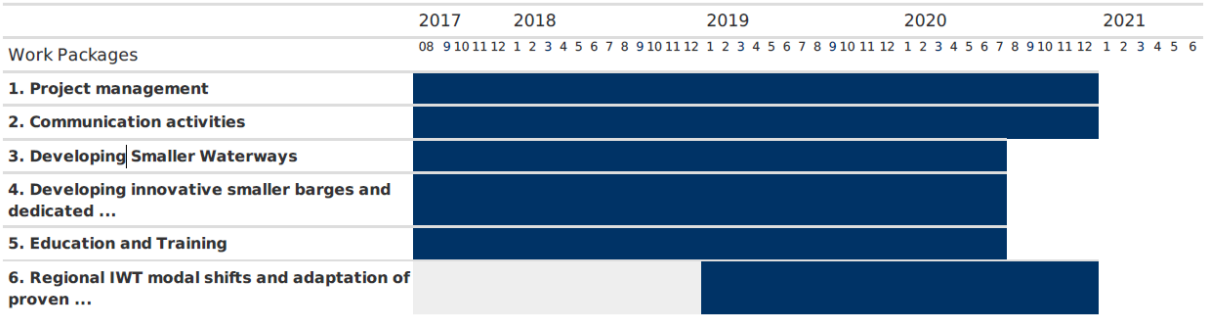
All scored indicators are according to the IWTS application and attained by IWTS financed activities.

Activity	Explanation	Indicator	Deliverable	Target
1. Develop smaller, adaptable CO2 neutral barge concept.	Development of a smaller, adaptable CO2 neutral barge concept (including dedicated berth). This includes the construction planning for the actual vessel and berth, but also an concept for possibilities to use it.	Pilot/demonstrations	Finished development and planning for the construction of an smaller, adaptable barge concept by GHB. - Development of an elaborated user concept for the barge. -Also intensive testing of construcion and user concept on MAH Simulator.	2
10. Assesment of the developed vessel and transschipment solution by WEZ out of the perspective of a managing authority	Assess barge andtransshipment concepts from managing authority perspective and so contribute toconcepts that can meet more regional standards.	Pilots/ demonstrations	Assessment of barge and transshipment concepts developed under WP 4 from managing authority perspective and so contribute to concepts that can meet more regional standards.	4
2. Construction and testing of the smaller, adaptable CO2 neutral barge concept developed in WP 3.1.	Physical construction and pilot testing of a smaller, adaptable CO2 neutral barge concept by DGH and sub partners.	Pilot/Demonstration	Construction and pilot testing of a smaller, adaptable CO2 neutral barge and dedicated berth.	1
3. Report on the outcomes of the testing of the smaller, adaptable CO2 neutral barge concept.	Issuing a report on the outcomes of the pilot testing of the barge concept developed, build and tested under the WP's 4.1 and 4.2.	Report / Strategy	Report on the outcomes of development, construction and testing of a smaler, adaptable CO2 neutral barge concept. Dissemination of the advantages and possibilities of the vessel and user concept.	1
3.a. Report on the outcomes of the testing of the smaller, adaptable CO2 neutral barge concept (sub).		Number of readers	Report of Pilot testing findings. Dissemination of promotional material of the barge to the interested public.	200

Timetable :

C.6 Time plan

C.6 Indicative time plan



5. CHANGEMENT IN THE CONSORTIUM OF THE PROJECT

THE MISSION OF PARTNER DE GROOTE – HOUTBOERKE IN THE PROJECT

The mission of the company is to supply building materials, with advice, to the professional contractor. Our added value lies in the service we provide to the customer and the professional advice on construction products and construction techniques. We combine a diversified range of wood and building materials from a wholesaler with the service of a family business.

We are traditionally a family business that has a personal relationship with employees, suppliers and partners. We focus on quality and craftsmanship in the production departments for wood and stone as well as in the store and during deliveries to the site.

Due to the close contact with our customers, we can offer a tailor-made service in which we can relieve the customer as much as possible in terms of the timely delivery of the building materials.

Our vision

Together with our extensive team, we are working on a strong, well-functioning organization where everyone has their place in the company structure.

We focus on quality, safety, craftsmanship and respect for People and Planet (OR People and Environment). As a company we work completely CO2 Neutral, partly due to our vision on the sorted collection of waste, sensible use of energy, use of efficient underfloor heating for offices and workshops, trucks on HVO fuel, ... and large investments in our solar roof. We want to further expand this vision in the future and set an example for our customers and supplier partners.

We are committed to long-term sustainability because we want to help guarantee the future for the next generations.

Based on this vision of sustainability, we opted to go all out for sustainable solutions when building the new company building, such as:

- Rainwater heating – 5,000 m² of offices, showrooms and production workshops are heated by extracting heat from buffered rainwater

- 8.000 m² solar panels on the roof of the building

- Exchange of all diesel and gas forklifts with electric forklifts
- The new trucks are with HvO, because there is no electric alternative on the market yet. The abbreviation HVO stands for 'Hydrotreated Vegetable Oil'. This type of diesel fuel is produced on the basis of hydrotreated vegetable oils and residual waste, such as animal fats.

For all these efforts, we received the Zero-Emission label from the hands of the aldermen of the city of Ghent, after a thorough review of the company.

From left to right: deputy of the province of East Flanders Jozef Dauwe, co-manager Peter Piers, Founder Houtboerke Roland Brossé, alderman of the city of Ghent for Environment, Climat and Energy Tine Heyse and CEO Andre De Groote

As a company, we seek to operate according to the principles of Corporate Social Responsibility which is a process by which companies voluntarily strive for business and social improvement by systematically incorporating economic, environmental and social considerations into their business operations in an integrated and coherent manner, involving consultation with stakeholders are part of this process.(1)

There were possible we try to support the Sustainable Development Goals as defined by the United Nations

(3)

Footnote:

(1)cfr. https://economie.fgov.be/nl/publicaties/maatschappelijk-verantwoord

(2) https://www.un.org/sustainabledevelopment/sustainable-development-goals/ and also https://www.sdgs.be/nl

(3) Picture from the UN website : https://www.un.org/sustainabledevelopment/development-agenda/

COVID-19 CHANGES EVERYTHING

At the end of February 2020 the pandemic COVID-19 has reached a worldwide impact on the people and the world economy.
Measures have been taken all over the world to contain the pandemic.

During the Council of Ministers of Belgium on Friday 6 March 220, the federal government approved various measures to support companies and self-employed people affected by the consequences of COVID-19. (1)

These measures are aimed at:
* Enable affected companies to make their employees temporarily out of work in order to maintain employment
* Provide arrangements for distribution, deferral and exemption from payment of social security contributions, withholding tax and tax for companies and the self-employed

During this first wave of the Corona crisis, the construction sector has been hit hard. The construction companies are not among the sectors where company closures are mandatory, such as hotels and restaurants, but 44 percent of the construction companies have chosen to shut down their activities completely. Another 38 percent is on the back burner and only 18 percent of the construction industry is still fully active. These figures were distributed by the Construction Confederation after polling their members.

Due to the Coronacrisis, DGH was closed down and fighting for its economic survival. In order to still be able to deliver the small transport vessel for the transport within Gent in Belgium, we need to take a new partner onboard, which is able to do the necessary investments, even in this time.

(1) https://economie.fgov.be/nl/themas/ondernemingen/coronavirus/informatie-voor-ondernemingen/coronavirus-de-economische

INTRODUCTION OF A NEW PARTNER SHIPOWNER TESCO

Changement of engagement for building the vessel.

This partner is an established IWT shipping company based in the Netherlands (TESCO) who is willing to build the proposed vessel and is also willing and able to co-fund this endeavour. TES would be entering the project as a sub-partner of the lead beneficiary (MAH). To this end, they took over the budget designated to build the barge from DGH.

The vessel will remain in the testarea of Ghent. It will be used for developing the 3.0 model, design the concept of a loading system, design and build the connection with the loadingsystem on the urban vessel and the infrastructure, and be used as test and researchvessel for autonomous sailing in other European projects.

During the autumn of 2021 and year 2022 the vessel will also being used by European research institutions for testing of the use of the GALILEO positioning system for automated sailing.

CHANGEMENT OF BUDGET – Redistribute budget of UOH

The partner UOH was, due to internal reasons, not able to fulfill his obligations and commitments in the project. They have reported to step out of the project.

At that end the budget has been redistributed among other partners who like to work out more deliverables. Budget has been redistributed towards the new project partner TES for the construction of the vessel and to cover personell- and other costs.

MAJOR CHANGE – A NEW DELIVERABLE AND MORE BUDGET FOR BUILDING THE URBAN VESSEL

The leadpartner proposes the following new deliverable which also might be a bridge to a following project IWTS 3.0.

The goal of this new deliverable is a capitalisation of IWTS 2.0 results and setting course for the future, contribute to future regional and EU IWT policy.

The activity is a SWOT analysis of IWT in IWTS regions, common transnational challenges, opportunities and how to manage them with a vision to 2030.

Reason for change with a new deliverable

IWTS was well on track and delivering results, however a bird eyes view was missing at the moment. The leadpartner want to get more understanding about lessons learned, capitalize the results of the project IWTS 2.0 and so contribute to future regional and EU IWT modal shift developments.

Work Package		6 Regional IWT modal shifts and adaptation of proven concepts by the relevant #IWTS partners (short term) and third parties (long term) running through WP 3,4,5
Parent activity		SWOT analysis on potentials for larger role of IWT in European Modal split, including future modal shifts, alternative propulsion systems and growing automation in the sector. The SWOT will be made for the relevant IWT partner regions in IWTS.
Title		Capitalisation of IWTS 2.0. results, setting course for the future, contribute to future regional and EU IWT policy, by making a SWOT analysis with future perspectives.
Deliverable indicator		Report / Strategy
Deliverable name and description		SWOT analysis on potentials for a larger role of IWT in the European Modal split – also meant as a preparation exercise for a potential follow up project to #IWTS 2.0 Result: one comprehensive report.

See the final SWOT analysis in the annexes.

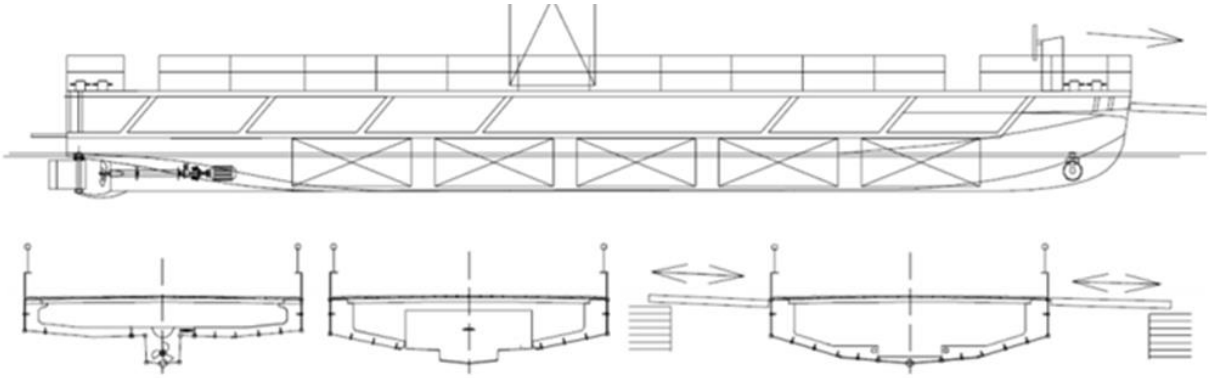
6. DESIGN OF AN URBAN BOAT

The innovative Urban Boat developed in this project, is the result of the deep research of the testbed in the inner city of Ghent and on the other hand a good co-operation with the other new partners in the project TES, who worked out the technical details of the concept into the design and building of the hull.

The vessel design, adapted to the inland waterways of the city of Ghent, is a flatshipmodel with a capacity of 20 T and is made of aluminum.

With a size of approx. 15 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 battery pack of 20 KW which make the ship CO2 neutral. The sailing capacity is 8 hours at a speed of 8 km per hour.



The ship will start sailing manned, but is to be sailing autonomous in future. The ship can transport small bulk goods (pallet goods), small building materials, small containers, big bags (20 tons).

Testing of the capacity of the urban vessel by OHL in Ghent with all kind of materials, will deliver some treads and opportunities.

Due to the preliminary investigation, the sizes and positions of the ship have been adapted to the testbed in Ghent. But due to the fact that bridges in the city center cannot open, more ballast will be needed to let the ship lie deeper in the water. Because the quays differ so much, research is still needed for an applicable loading and unloading system. The loading- and unloading places in the city center are being mapped out together with the city of Ghent and the Flemish water authority.

Because the emission-free city boat will be used in various tests on autonomous sailing, but also in scientific research, setting up pilots and demonstrations, for further development of a new logistic chain, the urban boat will be tested extensively.

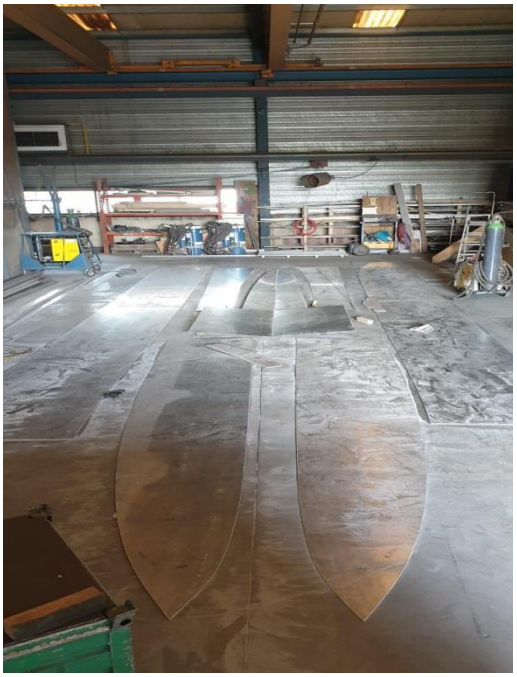
In the economic life, goods flows can also be tested from sectors other than construction materials.

Many goods are now brought into the city through their own logistics chain. Further research into bringing together various flows of goods and organizing good return logistics can help to structure city distribution in a sustainable way.

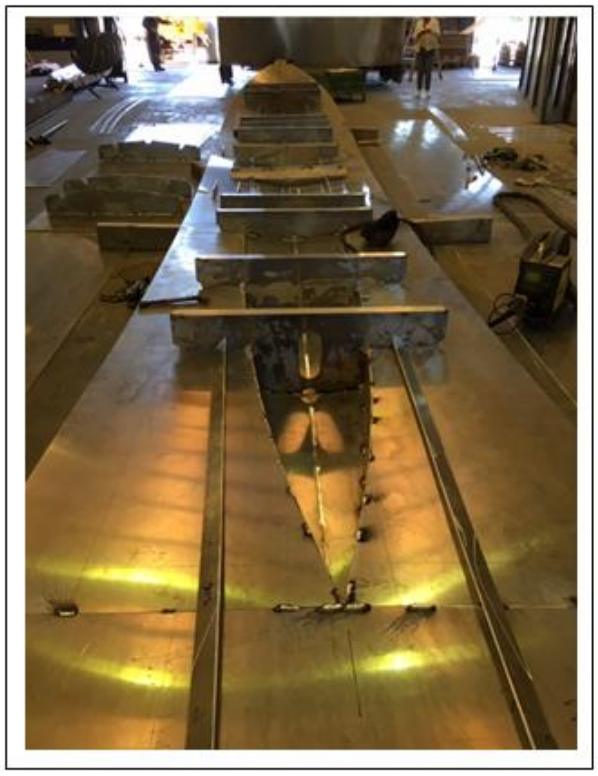
BUILDING OF A BOAT

After tailoring the design of the boat to the specific needs of the waterways in the city of Ghent, the nautical architect established the final design.

After that, the shipyard was able to get to work cutting the aluminum plates and welding the boat



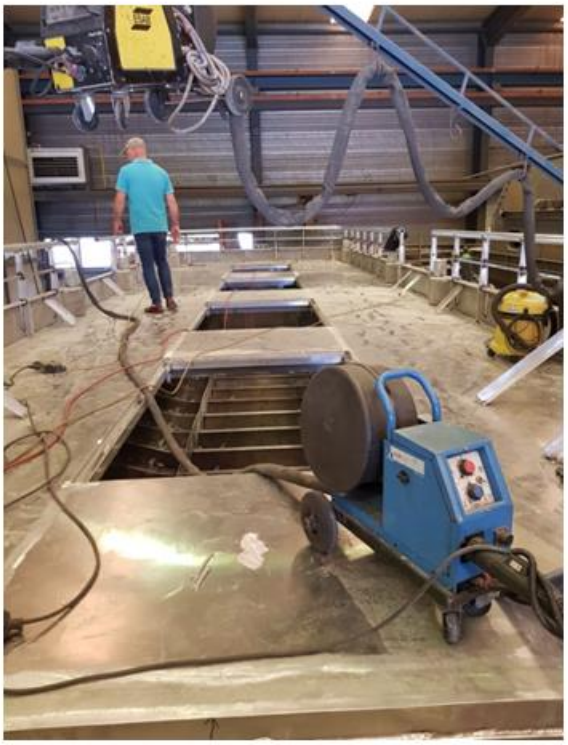
Laying the keel of the hull



Welding the hold of the hull

Covering the deck with alu plates

Finishing deck and welding place for rubber protection



Sandblasting the hull

Finishing shutters and preparation technical installation

Problem when the boat was in the water : the bow thruster is above the weterline : Problem solved by putting 3 tons of ballast in the bow.

7. TESTING IN LIVING LAB GHENT

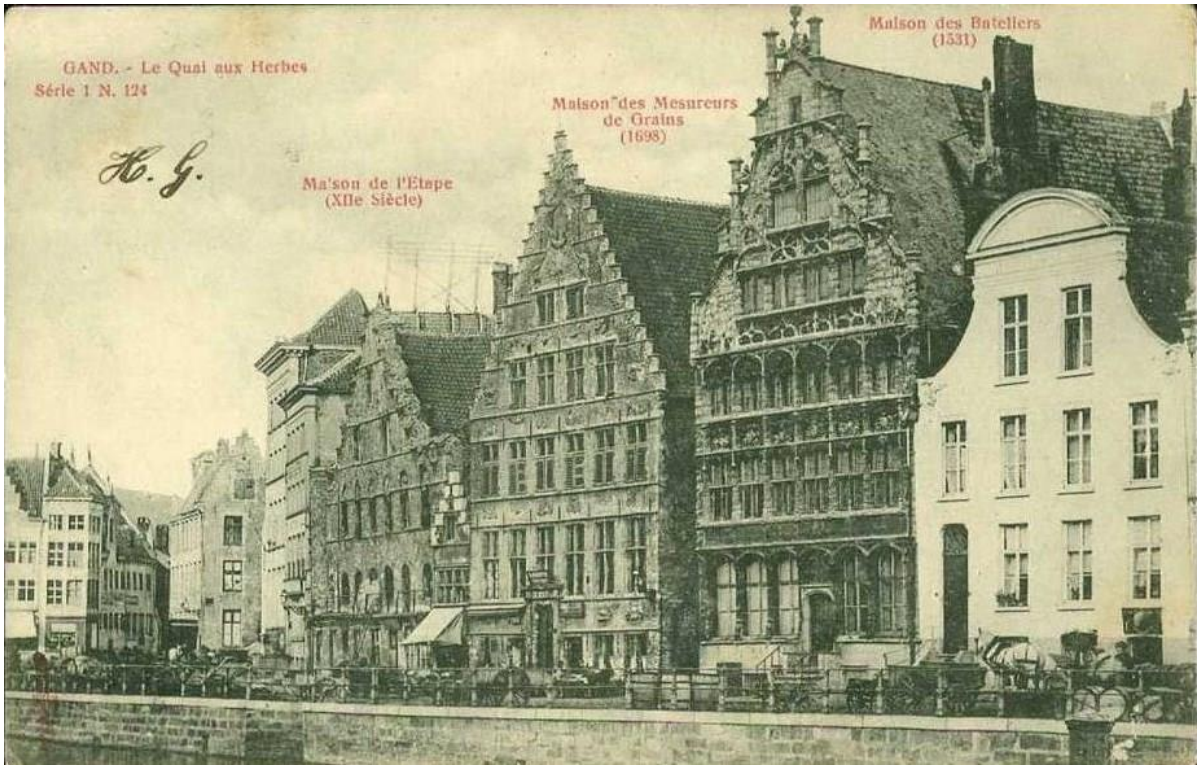
1. Test bed Ghent – A little history

Ghent is an old medieval structured city, based on Roman remnants. Inland waterways appear as fine-meshed blue veins on the city plan and have been used for transporting goods from outer city towards the inner-city marketplaces for centuries.

Tow barges in the old harbor of Ghent at the “Graslei”. These boats were pulled by horses or people who walked ashore next to the waterway on the "towpath".

Around 150 warehouses were known in the 16th century in the vicinity of the Graslei

View on the old harbour at the “Graslei” late 19th century



View of the old warehouses for grain, wool,... and all kinds of goods in the old harbor on the "Graslei" that were cleared before they went on the market or continued their journey. The wealthy guilds had imposing trading houses built along the quay on the Graslei and Korenlei. On the Graslei are the gothic Guild House of the Free Schippers (1531), the Korenmetershuis (or the house to weigh grain (1692)), the Tolhuisje (Taxhouse)(1682), the Stapelhuis (Stack house) (12th century) and 't Spijker near the Hooiaard. Along the Korenlei is the Guild House of the Unfree Schippers (1740) and several large mansions. The emerging success of the potato in the 18th century was a competitor for bread and grain, so that the supply of grain to the old port in Ghent lost importance.

Old pictures from “Databank city of Ghent/Archive” (Beeldbank Stad Gent/Archief)

During the 1960 – 70’s, a lot of these waterways had been filled up to make space for parking lots.

However, after 40 years of parking use, there had been a drive to return the landscape to its former self and a lot of work was done to transform the city infrastructure. Many bridges were restored, and old canals dug out again to be used for pleasure boating and tourist attractions.

Ghent is a specific medium city (approx 250.000 inhabitants and 75.000 students) with an old medieval city center and a finemazed waterway system. In the testarea we have a seacanal (between Ghent (B) and Terneuzen (Netherlands), canals, rivers, canals with tidal action with a wide range of infrastructure.

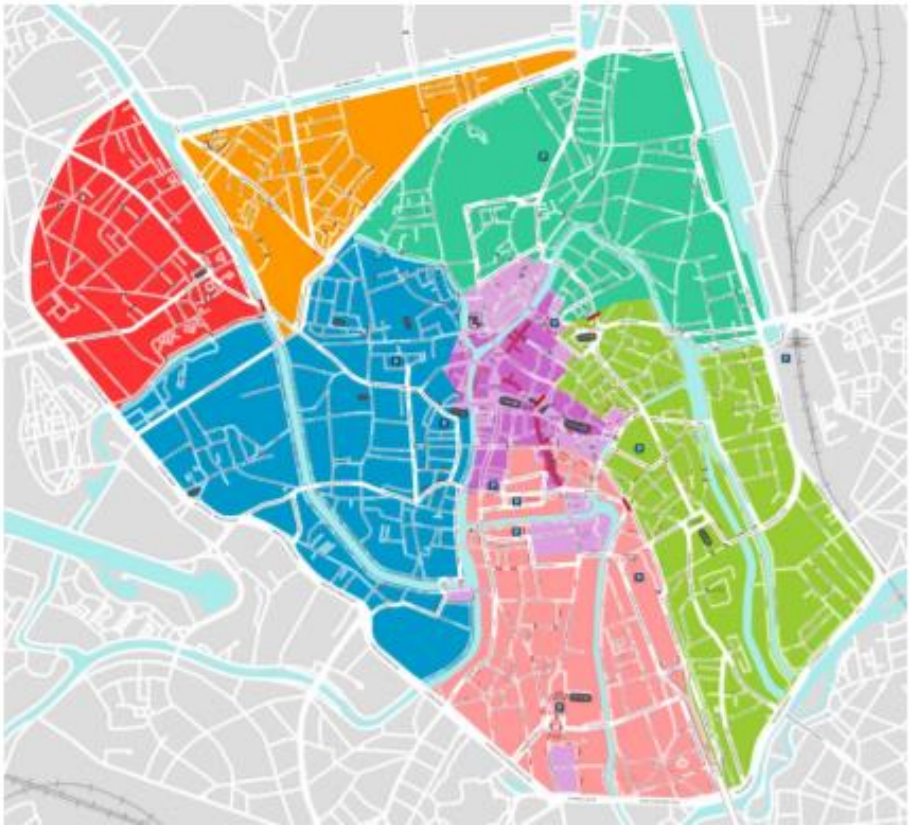
Ghent has recently developed a global mobility plan, a traffic circulation plan and a vehicle parking plan for the circulation of vehicles in the old city center.(1)

- The **Mobility Plan** is the overarching concept and includes the strategic vision of the City of Ghent to manage traffic throughout its territory.
- **The Circulation Plan**, which was introduced on 3 April 2017, is part of the Mobility Plan and concerns the area within the city ring road (R40). The Circulation Plan is a detailed plan to regulate the flow of traffic in and out of the city. The Circulation Plan aims to relieve the city center of through traffic by dividing the area within the city ring into sectors and by changing driving directions. This allows road users who need to be in the center to reach their destination quickly. At the same time, the car-free area is considerably larger.

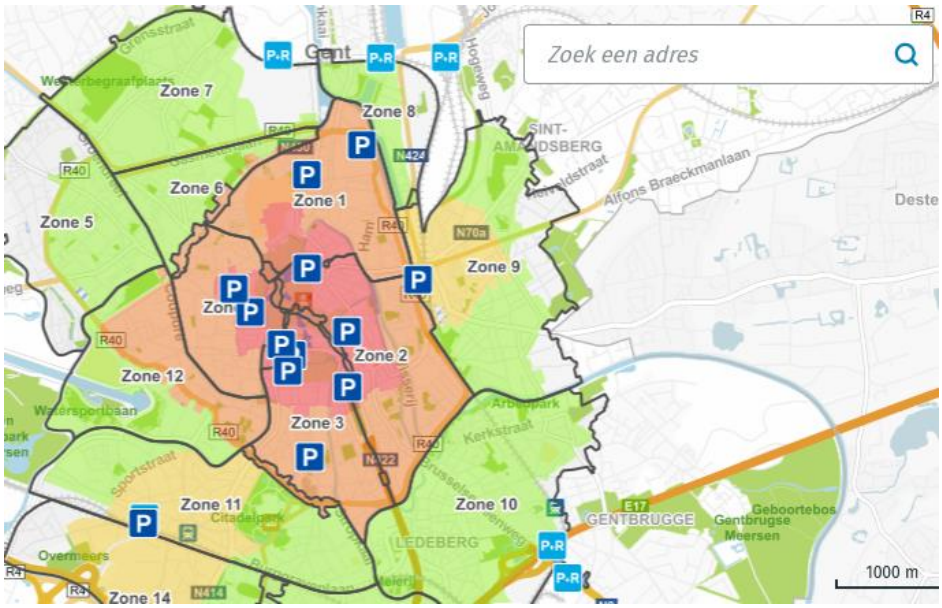
Footnote :

1. https://stad.gent/nl/mobiliteit-openbare-werken/mobiliteit/plannen-projecten-subsidies-cijfers-scholenwerking/mobiliteitsplan-circulatieplan-en-parkeerplan-gent

Circulationplan : you can only move with a vehicel in 1 cell in the city. If you want to change from area, then you have to drive again to the main R40 road.

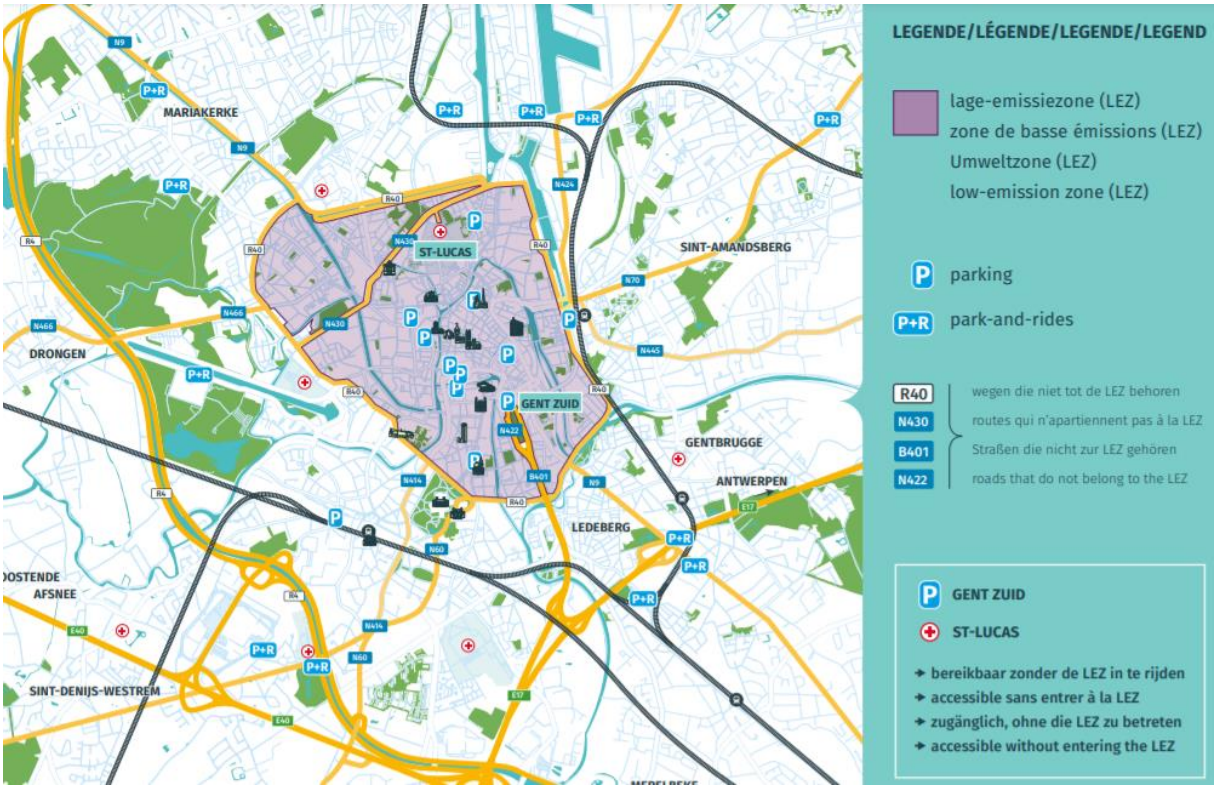


- **The Parking Plan**, which was rolled out in the first half of 2016, is also part of the Mobility Plan. It deals with - as the name suggests - all parking measures of the City of Ghent. This applies to both bicycle and car parking. For example, there are new parking rate zones and machines, different limits for the resident zones, extra park-and-rides, more bicycle sheds, and so on.

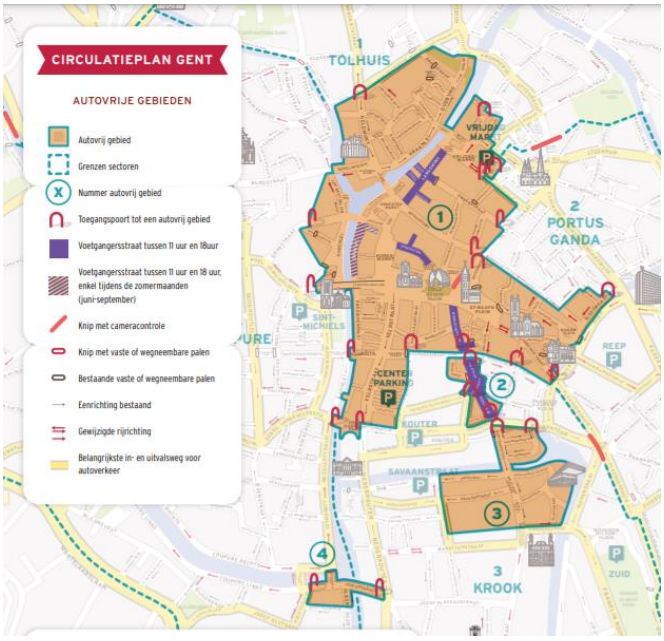


.* Since January 1, 2020, there is also **the low-emission zone**. This means that the most polluting cars (EUR 4 and lower) are no longer allowed to enter the zone within the city ring road (R40).

If you want to enter the city you have to buy a tcket when your car is EUR 4 and less.



- There **5 trafficfree area's** in the city. If you have to be in one of these car-free areas with a motorized vehicle, you always need a permit. The license is linked to a number plate. This is delivered digitally and is free. The permit only gives the right to enter one car-free area to:
    - Load and unload
    - Pick up people



The above data from the city shows that it is by no means easy to get goods in and out of the city. Alternatives are currently only available for electric vehicles, hydrogen vehicles and mopeds.

Transport companies and companies that want to transport goods in and out of the city have to take a lot of rules into account, which means that there is a strong decline in freight transport. There are few or no alternatives, making transport over the waterway with electrically powered vessels a perfect solution.

- The city has designed **a global vision on the use of water** in the city (1)

Aside the other aspects of water in the city, water as a carrier of mobility is an important issue in this study.

An important challenge for the Ghent of tomorrow is to manage mobility and in particular the spatial impact as well as the influence on the health of the city, its inhabitants and visitors.

The mobility policy of the city council is aimed at reducing personalized car use, but expanding it with numerous alternative modes such as car sharing, optimal bicycle accessibility and public transport. As a partner for this broad spectrum of mobility modes, water must also become an important carrier for an alternative approach to the city. This should not only focus on recreational visits, but should also claim a role in the day-to-day functioning of the city.

Furthermore, one of the core tasks of the waterauthority “De Vlaamse Waterweg” as a waterway manager consists of taking initiatives and developing measures to develop and promote waterway mobility, in particular increasing the share of freight transport via the waterways, as well as promoting and supporting initiatives in favor of inland navigation and its innovation. The Vlaamse Waterweg and the city of Ghent therefore opt for the use of the waterway in the context of the functional approach to the city center for both people and goods.

Both authorities fulfill a complementary task, in order to optimize safety, water management, functional and recreational use, commercial interpretation and shared use by citizens, the amenity value, their role in a climate-robust city and the image value of the waterways. In order to manage the current use and future functions on and along the water in a targeted and sustainable manner, there is a need for an integrated vision for all stakeholders, residents, visitors and users of the waterways in the metropolitan area of Ghent.

The vision memorandum consists of a number of thematic objectives and ambitions, each of which is given a separate chapter in this policy vision.

A first generic objective, which applies to every water space on Ghent territory, concerns ***the preservation and creation of space for water and the consequent climate adaptation***. This objective aims to protect and protect the city of Ghent against flooding and flooding. At the same time, this also contributes to mitigating dehydration and heat stress.

In addition to perpetuating and strengthening volumetricity, this policy vision also requires room for future-oriented movement on and along water. ***Mobility*** is currently a particularly topical and acute theme. The decades-long focus on motorized and individual mobility on land has reached its limits, requiring alternatives to be sought. Water transport, together with other sustainable transport modes, must form a future-oriented alternative.

This policy vision then speaks about ***the economic value of the waterway***. Many sustainable economic developments have an important connection with water, including transport and logistics.

In line with the economic perspective, the fourth thematic ambition encompasses people's desire to stay on the water. This concerns ***a vision on living, working and recreation on the water***, as well as a clear framework for temporary intakes of water for activities.

Building on the thematic objectives for the entire water network of the city of Ghent, the subsequent chapters focus on specific segments of the water structure. Starting from the relationship between built-up space, public space, riverbank structures and the water surface, the entire water structure of Ghent's city center can be divided into spatially and functionally coherent entities.

That is why, in part II, this policy vision describes the spatial and functional future perspective of a number of urban water spaces, based on the individuality of the place. Ten urban water spaces are defined for the city of Ghent, each of which has its own character, use, history or other form of coherence, but these are described in an equivalent manner.

Below we take a closer look at the importance of the waterways in the testbed for the mobility and economy of the city. The Ghent water system is diverse and ubiquitous. The city center of Ghent has an intricate network of small watercourses that enter the dense center in a fairly organic way from outside the urban area. In the northern part of Ghent there are more rectilinear canals and docks. The network is connected by the pronounced and curvilinear Ringvaart as a central carrier for numerous shipping movements as well as for water storage. This diverse set of watercourses and water use has one overarching property, they tolerate little fluctuation in water level because the slightest fluctuation has consequences for use on land and the interaction with the water. That is why the city of Ghent is protected from water peaks and strong fluctuations. This is done through the locks that are located at strategic points within the Ghent water system. This results in ***the existence of three water houses*** on Ghent territory.

Figuur 3 panden (bron: De Vlaamse Waterweg)

In order to really develop the waterway as a complementary and complementary mobility structure with regard to bicycle traffic, public transport and motorized road traffic, and this for a wider audience, a logical and readable water structure will have to be deployed in the first instance. Use is closely related to comfort, efficiency and clarity. From this perspective, this mobility vision starts with concretizing on the one hand the optimal routes on the water and the water segments where this is no longer desirable. Supplementary and reinforcing for this clear waterway structure, the memorandum also defines the nodes on the urban water network where a so-called gateway function can strengthen the water structure and make it readable.

DELIVERY TO THE CITY BY WATER

Approaching the city by water is not limited to bringing people into the city centre. Increasing the quality of life in the center by reducing motorized vehicles on the road can also have an effect in reducing freight transport and thus goods. The Ghent city council and the waterauthority want to use every opportunity to organize the temporary delivery of work, construction sites and events over water.

SUPPLY THE CITY THROUGH WATER

Building further on the ambition to stimulate and facilitate deliveries by water, this vision has the ambition

to achieve a more constant supply of everyday goods, namely urban distribution. The delivery of

goods by water need not be limited to temporary delivery to sites. A sustainable and extensive system of urban supply, starting from transfer points on the outskirts of the city and the delivery of goods by water to the heart of the city, is a second important ambition. That is why intelligent distribution centers are being provided on the outskirts of the city, from which first-and-last-mile delivery is organized with the aim of organizing the supply of shops in the city center in a more environmentally friendly, sustainable and efficient way, as well as oriented developments in e-commerce and to send efficiently. City distribution should be organized bimodally, i.e. by road and by water, in order to create social, economic and operational added value. City supplies by water have two important aspects: on the one hand, this includes the temporary storage of very large volumes on the outskirts of the city (including postal parcels and building materials) and on the other hand, a fine-meshed distribution to and from the city centre.(1)

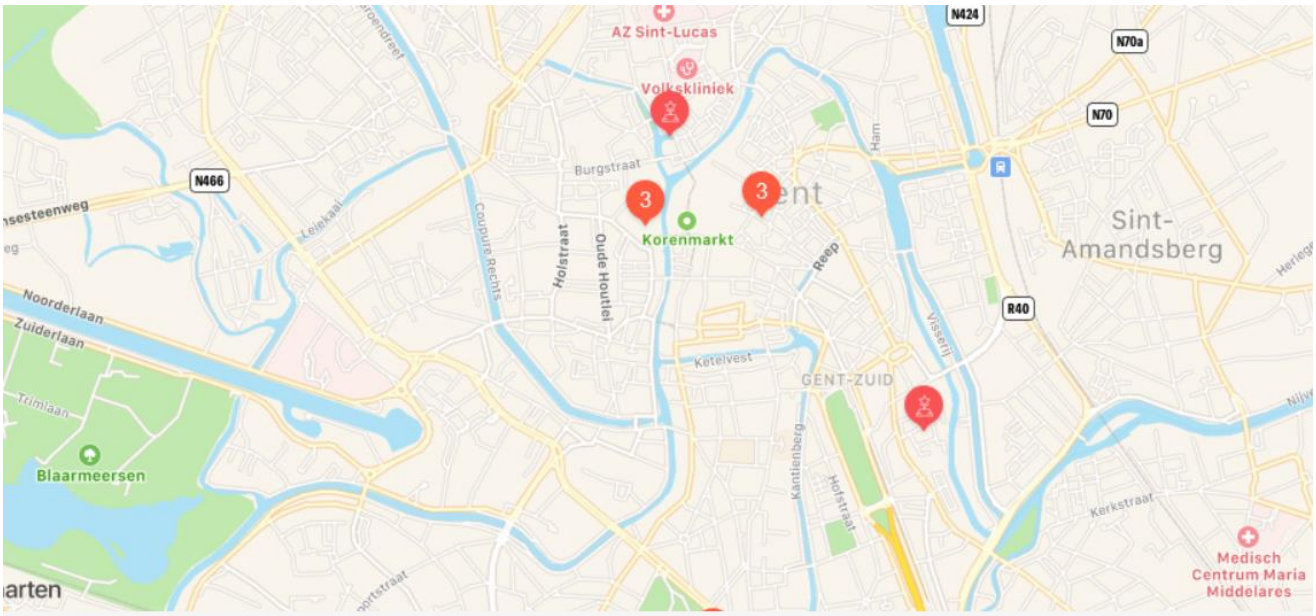
Footnote:

(1) Cfr. https://stad.gent/nl/wonen-verbouwen/stadsvernieuwing/beleidskader-stadsvernieuwing/water-de-stad

2. Living Lab in Ghent - Proof of concept

De Groote-Houtboerke has faced several challenges in developing a zero-emission vessel.

First, we had to deal with the specific character of the City of Ghent's inland waterways that sat within the pilot area.



To develop the best design for an urban vessel for city distribution, significant analysis of the city's infrastructure had been required, e.g., width and depths of the canals and rivers, vertical clearance under the bridges, load- and unload infrastructure, possibilities of the last mile, current strengths, and weaknesses etc. (see the SWOT and PESTEL analysis)

3. Arrival of the urban boat in Ghent – Reception by the Alderman of the city

Dispatched from a Netherlands shipyard, the urban boat reaches its new home in the City of Ghent.

To support the objectives of the project, we have linked in with a consortium of companies and policy makers from the city of Ghent and continue to engage with a wider audience as much as possible to support the integration of a sustainable, zero-emission boat into mainstream urban logistics.

We have presented this European Interreg project IWTS 2.0 to Aldermen, who are lending their expertise in supporting measures to facilitate the development of the project's pilots.

gent: Sofie Bracke 

Alderman for policy on the economy, economic services, harbour, sustainable business, and retail

gent: Filip Watteeuw 

Alderman of policy for mobility policy, taking the public road for terraces and street trading and during the Ghent Festivities, urban roads, bridges, and urban planning.

They have now enthusiastically received the first electrically powered boat for city distribution in the Ghent city centre. Further sea trials and tests with goods are to be carried out together with other services of the city and early adopters from the Urban Waterway Logistics consortium.

Together with the other relevant services of the city, they closely monitor the pilots and further developments with a view to establishing future applications in urban distribution via the waterway.

4. **Reception of the urban boat in Ghent by partner in the project De Groote – Houtboerke and the consortium of traders of construction materials Urban Waterway Logistics**

In close collaboration with the city, an evaluation will be carried out on how we can optimally open the waterways and infrastructure ashore for goods transport via the waterway. This type of transport is an important link in the logistics chain in getting goods into the city in a sustainable way.

To achieve this endeavour, the early adopters, the traders in building materials in Ghent (Gedimat Van Vlaenderen, Bouwpunt OVB, and Gedimat De Groote - Houtboerke) have started a further collaboration with the shipping companies Blue Line Logistics, Tesco and Sogetrans. Many companies support our initiatives and participate in developing tests for the delivery of their goods to the city (BoooT, E. Van Wingen, Wienerberger, Saint Gobain Isover, FEMA, Zero Emission Solutions, and many more).

With the efforts of this consortium, we hope to champion a sustainable supply to the medieval city centre via the waterway. In this way, we hope to contribute in a broader sense to the structural sustainability of city supplies. The consortium hopes that other sectors will also join the initiative and help organize test trips.

According to the WP6 of the project IWTS 2.0 and specific Activity 1 De Groote – Houtboerke has to implement the new developed boat into his working practice.

Activity 1. describes the *"Implementation of a smaller, adaptable CO2 neutral barge into everyday operations of the company De Groote – Houtboerke. The Smaller adaptable CO2 neutral barge will be implemented, and long term assessed in the standard workflow of De Groote – Houtboerke. This ensures a mature and proven concept, which is viable as role model for outside parties*."

During the years in which the project developed, the company recognized that developing a sustainable vessel is not a singular objective. Given the impact on the logistics flow of the company, the possibilities, and the limitations that the city offered, it became clear that the company should use this boat much more widely.

The challenges posed by the project "developing a CO2 neutral ship" is not a singular task in the logistics flow of the company either. There is still a great need for research into mooring and unloading, mapping loading, and unloading locations, looking for solutions for a sustainable "final destination" delivery, ... and so much more.

Due to the progressive insight into the course of the project, it was therefore decided to seek a connection with the city of Ghent, but also with research institutions and other companies. This 3H approach has proven to be an efficient approach to use the urban boat in daily transport.

That is why De Groote - Houtboerke, together with other Ghent companies, has joined the consortium of URBAN WATERWAY LOGISTICS companies. This organization is an open platform where further research can be done, together with the city of Ghent, and where necessary developments can be worked out.

5. Goods to be transported – setting up the pilot studies

Aside from deciding what type of boat should be developed, the more pertinent question of what type of goods could be transported via the waterways required answering.

A large study was undertaken concerning what type of goods could be taken out of the regular logistic flow of road transportation and moved towards transport over water. From this, a long list of possible goods were earmarked to be tested in the pilot phase of the project.

Beside the needs of the suppliers of goods, we need to also take into consideration the requirements of the city and the needs of the end customer.

Together with the consortium of traders in building materials, we will mainly pilot the transport of goods for the construction market in Ghent. Since these goods are usually heavy and require specific manipulation techniques, this is a good research basis for carrying out the tests. Other types of goods from sectors such as parcel delivery, retail, etc. require a different approach.

6. Demonstrations and usecases - Results

To describe the functional and non-functional needs of the demand side on the envisioned test operation, a set of usecases was written.

These use cases were research driven, and prompted by a thorough survey of our stakeholders and the logistics market in the region.

For this IWTS 2.0 project we have split the use cases into 3 main categories:

Functional use cases

These use cases translate what has to be echieved in the envisioned test. More specific : based on what will we be able to say the test was succesful of not and what do we want to get out of the test.

Boundery condition use cases

This covers all which has to be guarenteed within the framework of the test, such as balance test or mandatory safety aspects

Process use cases

These entail all procedures to adhere to, to be allowed to execute the test. Among others this encompasses which permits to obtain, which parties to consult of inform about the operations, so that they can take the necessary actions within their responsibilities.

In order to test the boat for urban distribution, it was presented to the stakeholders. Government organizations as well as research institutes and companies participated in a presentation of the benefits of using inland navigation to transport goods in an urban environment.

We have carried out many test runs in the city center to promote the operation of Interreg and show the results of the international cooperation.

Overview testing and demonstrations with the urban boat in testbed Ghent	
Number of tests to map the infrastructure in Ghent	15
Number of tests to map the loading and unloading options	10
Number of loadingtests with 8 T - 10 T - 20T,...	5
Number of proposals to contractors	10
Use of real work test to yards on the water	10
Number of building materials manufacturers willing to participate in a model for citydistribution	3
Number of building materials dealers willing to participate in the model	5
Number of Federations willing to participate in a model	4
Number of companies in the retail (Hotels, restaurants,...)	4
Number of government services who are planning a test	4
Number of organisations in Social Ecoomy who have planned a test	3
Number of research institutions who want to use the vessel for research and piloting	5
Number of companies that supports the use of the urban boat in the city of Ghent for citydistribution via Urban Waterways Logistics	20

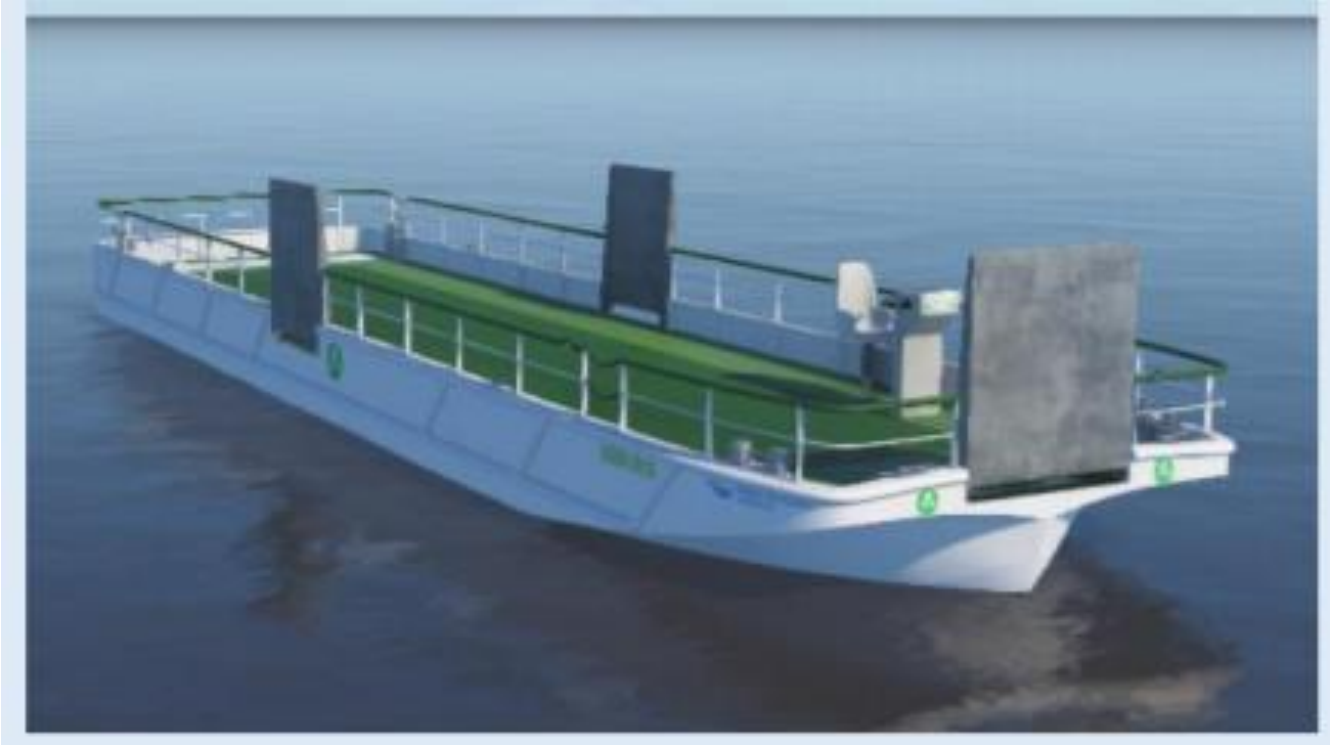
RESULTS

- URBAN BOAT
    - Good in balance
    - Ready for further development of a universal loadingsystem
    - Connection with loadingsystem on shore
    - Ready for remote control
    - Ready for GALILEO
    - WORK TO BE DONE :
        - Better balancesystem : tanks in the hull
        - Make railings fold down
        - Not suitable for containers – adjust deck strength
        - Increase speed vs. stability
- INFRASTRUCTURE
    - Special attention neede for loading and unloading zones
    - Special attention needed for opening and working of the bridges
- COOPERATION from UWL and other partners with CITY OF GHENT & WATERAUTHORITY De Vlaamse Waterweg

7. Education & Training

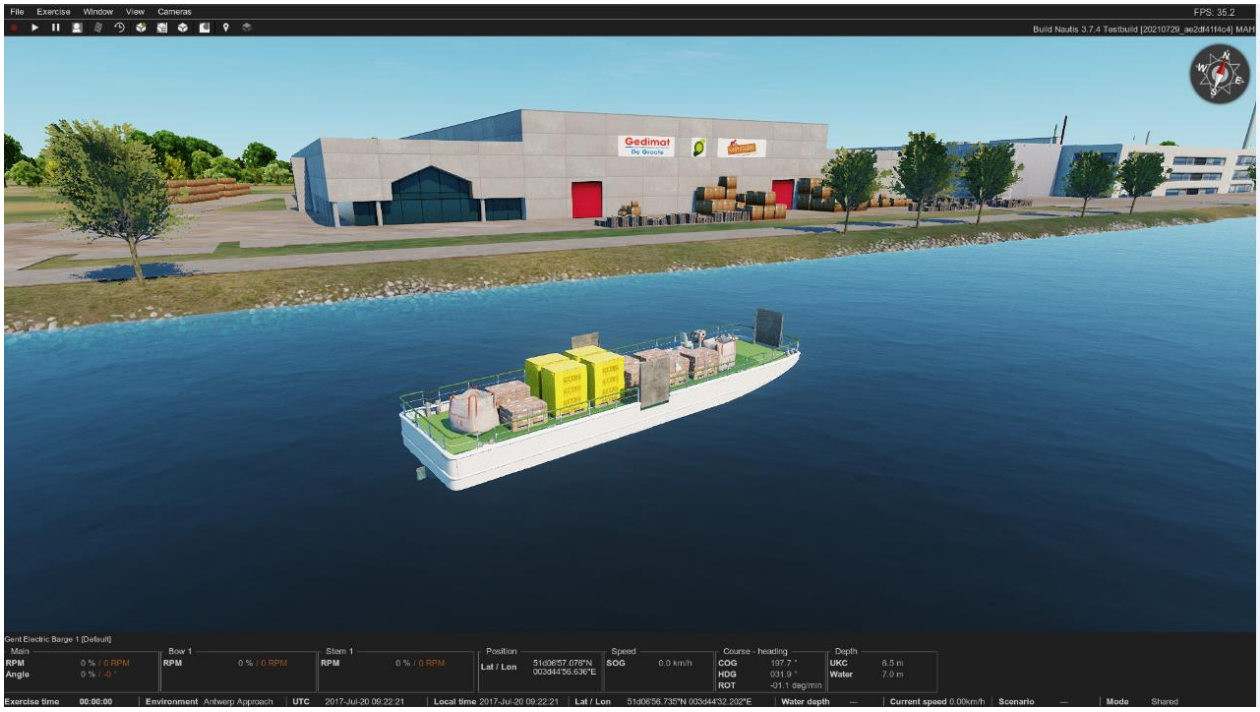
At the Maritime Academy Harlingen, various training courses are given for experienced and less experienced inland shipping personnel. The training courses take place at the inland navigation simulator center of the Maritime Academy Harlingen. This is done in the most realistic environment possible, for this we use the most advanced inland navigation simulator in the world.

In the IWTS 2.0 project, the Maritime Academy in Harlingen has developed 3D software to be able to perform sailing simulations with the urban boat on their own simulator device.



Maritime
Academy Harlingen
Inland waterway training & research centre

Under the leadership of staff member Jorn Boll and simulation expert Pieter Zandhuis, lesson packages are developed to train young people on their way to a career in the maritime sector.


File Exercise Window View Cameras
FPS: 35.2
Gedimat
Gent Electric Barge 1 [Default]
Main
RPM 0 % / 0 RPM
Angle 0 % / -0 °
Bow 1
RPM 0 % / 0 RPM
Stern 1
RPM 0 % / 0 RPM
Position
Lat / Lon 51d06'57.678"N 003d44'56.636"E
Speed
SOG 0.0 km/h
Course - heading
COG 197.7 °
HDG 031.9 °
ROT -01.1 deg/min
Depth
UKC 8.5 m
Water 7.0 m
Exercise time 00:00:00
Environment Antwerp Approach
UTC 2017-Jul-20 09:22:21
Local time 2017-Jul-20 09:22:21
Lat / Lon 51d06'56.735"N 003d44'32.202"E
Water depth —
Current speed 0.00km/h
Scenario —
Mode Shared

8. Future challenges

In the future, we still have many challenges to overcome at various links in the logistics chain, e.g., developing the “before and after” transportation of goods, loading and unloading systems for the boat and on land side, etc.

Specific challenges for which solutions must be found are the docking of the goods, the development of an economically feasible and efficient last mile system, the lifting of goods, etc. These studies can be the scope of new projects.

Furthermore, on the landward side, there are challenges for which solutions must be found, e.g., bridges that are too low or can no longer be opened, quays that are too high, etc.

Defining load – and unloading places in the city for common use in the logistic chain is also a challenge.

Because we have adapted the vision for construction logistics and expanded the project to both government and industry, the chance that the project will be absorbed by economic life has become much greater.

We work together for a better, sustainable, and environmentally friendly society.

8.CONCLUSIONS

In 2010 Europe 2020 puts forward three mutually reinforcing priorities:

- Smart growth: developing an economy based on knowledge and innovation.
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

The targets are representative of the three priorities of smart, sustainable and inclusive growth but The Commission was putting forward seven flagship initiatives to catalyse progress under each priority theme, of which the following was important for our project:

– "Innovation Union" to improve framework conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs.

In 2010 the Commission stated : “Smart growth means strengthening knowledge and innovation as drivers of our future growth. This requires improving the quality of our education, strengthening our research performance, promoting innovation and knowledge transfer throughout the Union, making full use of information and communication technologies and ensuring that innovative ideas can be turned into new products and services that create growth, quality jobs and help address European and global societal challenges. But, to succeed, this must be combined with entrepreneurship, finance, and a focus on user needs and market opportunities.”

This combination of entrepreneurship, financing by Europe in Interreg and market opportunities has led a company like DGH to become a partner in IWTS 2.0 and contribute to a ready-to-market model of an electrically powered boat for city distribution. Due to the hand-on approach, inspired by the entrepreneurial spirit of DGH and the fellow companies in the Urban Waterway Logistics consortium, the innovative boat can be used in daily economic life and can be used in a logistical flow.

A lot of research still needs to be done into loading and unloading systems, autonomous sailing, last mile solutions, etc. where Europe can provide support.

By building the zero emission boat, we have also already contributed to the Green Deal of Europe and hope that our innovative developments can be used throughout Europe.

APPENDIX

List of attachments

1. Map with height of the bridges in Ghent
2. Overview legislation in function of building an urban boat
3. Press releases for IWTS 2.

Our Vision for A Clean Planet for All

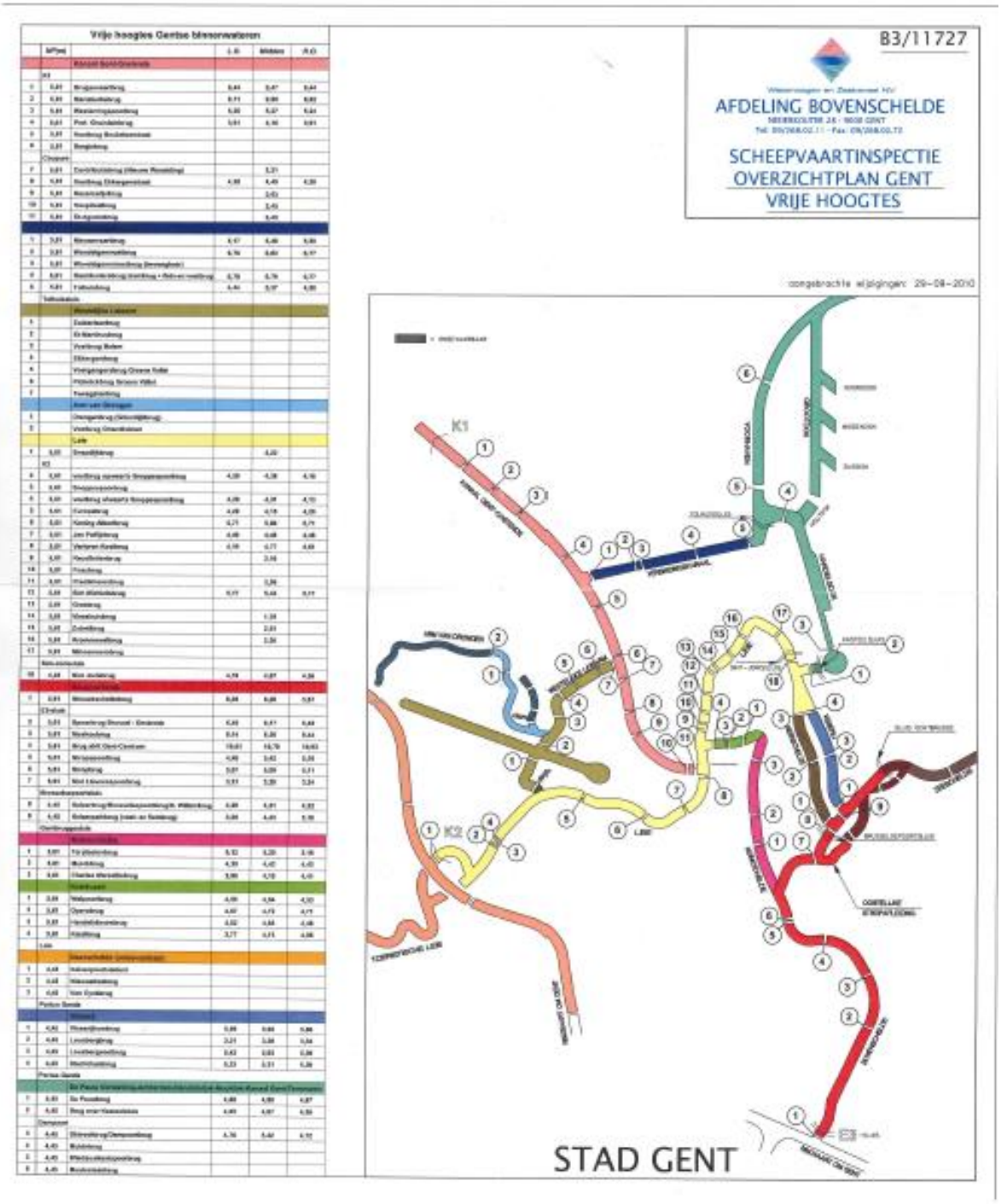
November 2018

*"As Europeans, **we want to leave a healthier planet behind for those that follow**. We obviously cannot turn a blind eye to the climate challenge; we must look to the future."*

Jean-Claude Juncker, State of Union address
September 2018

The European Union has been at the forefront of addressing the root causes of climate change and the strengthening a concerted global response in the framework of the Paris Agreement. Our long-term strategy for the reduction of greenhouse gas emissions, as requested by the European Council in March 2018, confirms our lead in global climate action. It **presents a vision to achieve climate neutrality by 2050, through a fair transition encompassing all sectors of the economy**. It underlines the opportunities that this transformation offers to European citizens and its economy, as well as identifies and anticipates challenges along the road.

MAP WITH HEIGHTS OF THE BRIDGES IN GHENT



a. Legislation and judicial aspects concerning the propulsion system and the boat

We have studied the European legislation concerning the propulsion :

- **Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC**
  - **Based on resource legal**
    - celex:12016E114 - Consolidated version of the Treaty on the Functioning of the European Union#PART...
  - **Amends resource legal**
    - celex:31997L0068 - Directive 97/68/EC of the European Parliament and of the Council of 16 December ...
    - celex:32012R1024 - Regulation (EU) No 1024/2012 of the European Parliament and of the Council of 25...
    - celex:32013R0167 - Regulation (EU) No 167/2013 of the European Parliament and of the Council of 5 F...
  - **Repeals**
    - celex:31997L0068 - Directive 97/68/EC of the European Parliament and of the Council of 16 December ...
  - **Published in**
    - oj:JOL_2016_252_R - Official Journal of the European Union, L 252, 16 September 2016

The regulation concerning the specifications of new build vessels is mentioned in :

European regulation :

- European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN)
- Richtlijn 2005/44/EG van het Europees Parlement en de Raad van 7 september 2005 betreffende geharmoniseerde River Information Services (RIS) op de binnenwateren in de Gemeenschap
- Richtlijn 2006/87/EG van het Europees Parlement en de Raad van 12 december 2006 tot vaststelling van de technische voorschriften voor binnenschepen
- Richtlijn 82/714/EEG van de Raad, gewijzigd bij Richtlijn 2006/137/EG van het Europees Parlement en de Raad van 18 december 2006, bij Richtlijn 2008/59/EG van de Raad van 12 juni 2008, bij Richtlijn 2008/87/EG van de Commissie van 22 september 2008, bij Richtlijn 2008/126/EG van de Commissie van 19 december 2008,
- Richtlijn 2009/56/EG van de Commissie van 12 juni 2009,
- Richtlijn 2009/46/EG van de Commissie van 24 april 2009,
- Richtlijn 2012/48/EU van de Commissie van 10 december 2012,
- Richtlijn 2012/49/EU van de Commissie van 10 december 2012 en
- Richtlijn 2013/22/EU van de Raad van 13 mei 2013][1], en
- Richtlijn 97/68/EG van het Europees Parlement en de Raad van 16 december 1997 betreffende de onderlinge aanpassing van de wetgevingen van de lidstaten inzake maatregelen tegen de uitstoot van verontreinigende gassen en deeltjes door inwendige verbrandingsmotoren die worden gemonteerd in niet voor de weg bestemde mobiele machines, gewijzigd bij richtlijn 2004/26/EG van het Europees Parlement en de Raad van 21 april 2004,

National legislation :

- Koninklijk besluit betreffende de technische voorschriften voor binnenschepen.
- Wet van 15 maart 1971 betreffende de scheepvaartrechten te heffen op de waterwegen onder beheer van de Staat, artikel 11;
- Wet van 5 juni 1972 op de veiligheid van de vaartuigen, artikel 17ter, § 1, ingevoegd bij de wet van 22 januari 2007;
- Koninklijk besluit van 1 juni 1993 tot vaststelling van de technische voorschriften voor binnenschepen;
- Koninklijk besluit van 8 maart 2007 betreffende binnenschepen die ook voor niet-internationale zeereizen worden gebruikt;
- Koninklijk besluit van 21 april 2007 betreffende de vermindering van het zwavelgehalte van sommige scheepsbrandstoffen die worden gebruikt door binnenschepen;
- Koninklijk besluit van 7 december 2007 tot vaststelling van de tarieven van de retributies voor prestaties inzake het certificeren van vaartuigen voor de binnenvaart;
- Ministerieel Besluit van 11 april 1997 tot uitvoering van artikel 7, § 2, van het koninklijk besluit van 1 juni 1993 tot vaststelling van de technische voorschriften van binnenschepen;

General regulations regarding the use of the waterways

This legislation regarding the use of waterways in Belgium can be found on the following sites

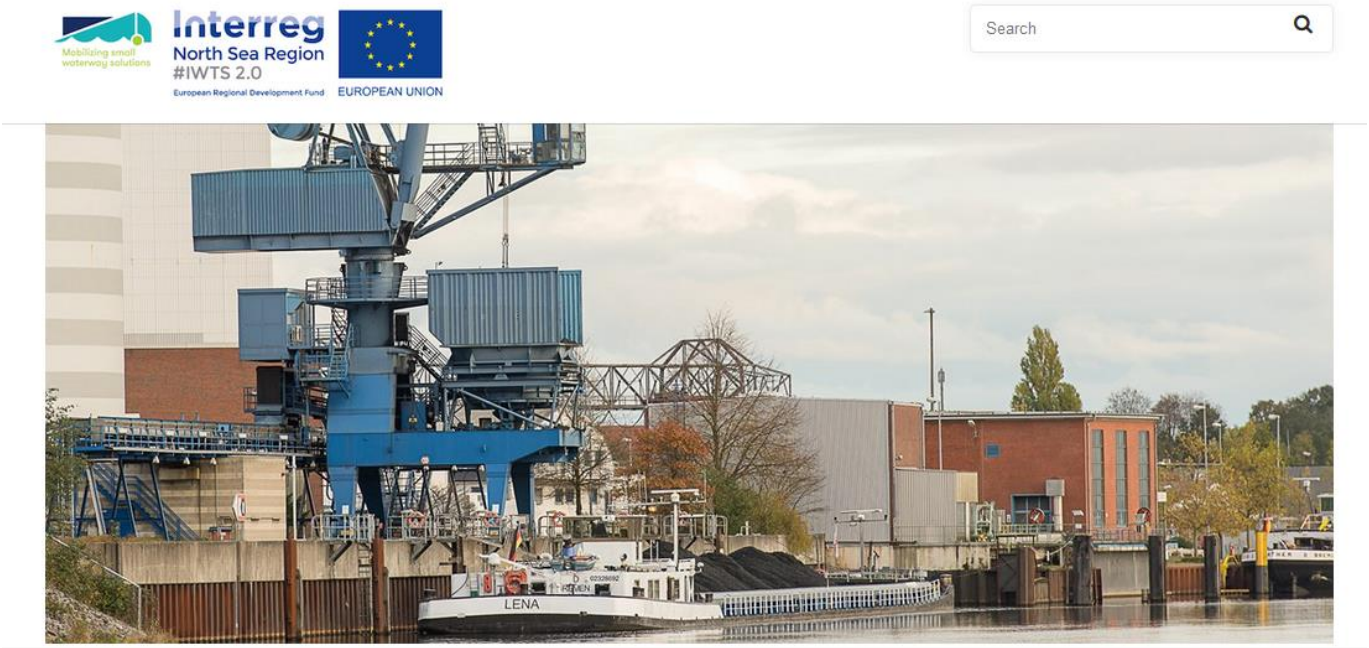
1	Règlement général des voies navigables du Royaume	www.mobilit.belgium.be (navigation / réseau belge des voies navigables / règles de conduite) www.itb-info.be (info / réglementation / réglementation de base des voies d'eaux intérieures belges)
2	Règlement général de police pour la navigation sur les eaux intérieures	
3	Règlement international pour prévenir les abordages en mer	
4	Règlement de police et de navigation pour la mer territoriale belge, ports et plages du littoral belge	
5	Règlement de navigation du canal de Gent à Terneuzen	
6a	Règlement de police de l'Escaut maritime inférieur	
6b	Règlement de navigation de l'Escaut maritime inférieur	
8	Règlement de navigation de la Meuse mitoyenne	
9	Règlements particuliers	
7	Règlement de police et de navigation du canal de Bruxelles au Rupel et du Port de Bruxelles	www.mobilit.belgium.be (navigation / réseau belge des voies navigables / règles de conduite)
10	Havenpolitieverordeningen, Antwerpen	www.itb-info.be (info / réglementation / Réglementation de base des voies d'eaux intérieures belges)
12	Verordening voor de haven van Zeebrugge, het zeekanaal en de dokken van Brugge	
11	Algemene politieverordening van de haven, Gent	www.itb-info.be (info / réglementation / réglementation de base des voies d'eaux intérieures belges) www.havengent.be

Local regulations in the test bed

In Ghent, the city has drawn up a vision statement regarding the use of water in the city.

Cfr. https://stad.gent/nl/wonen-verbouwen/stadsvernieuwing/beleidskader-stadsvernieuwing/water-de-stad

https://northsearegion.eu/iwts20/news/newsletter-no-4-july-2020/



IWTS2.0 › News › Newsletter No 4 - july 2020

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Newsletter No 4 - july 2020

26 August 2020 - Published by Haije Mintjes

Read it here or download the newsletter with the link underneath:

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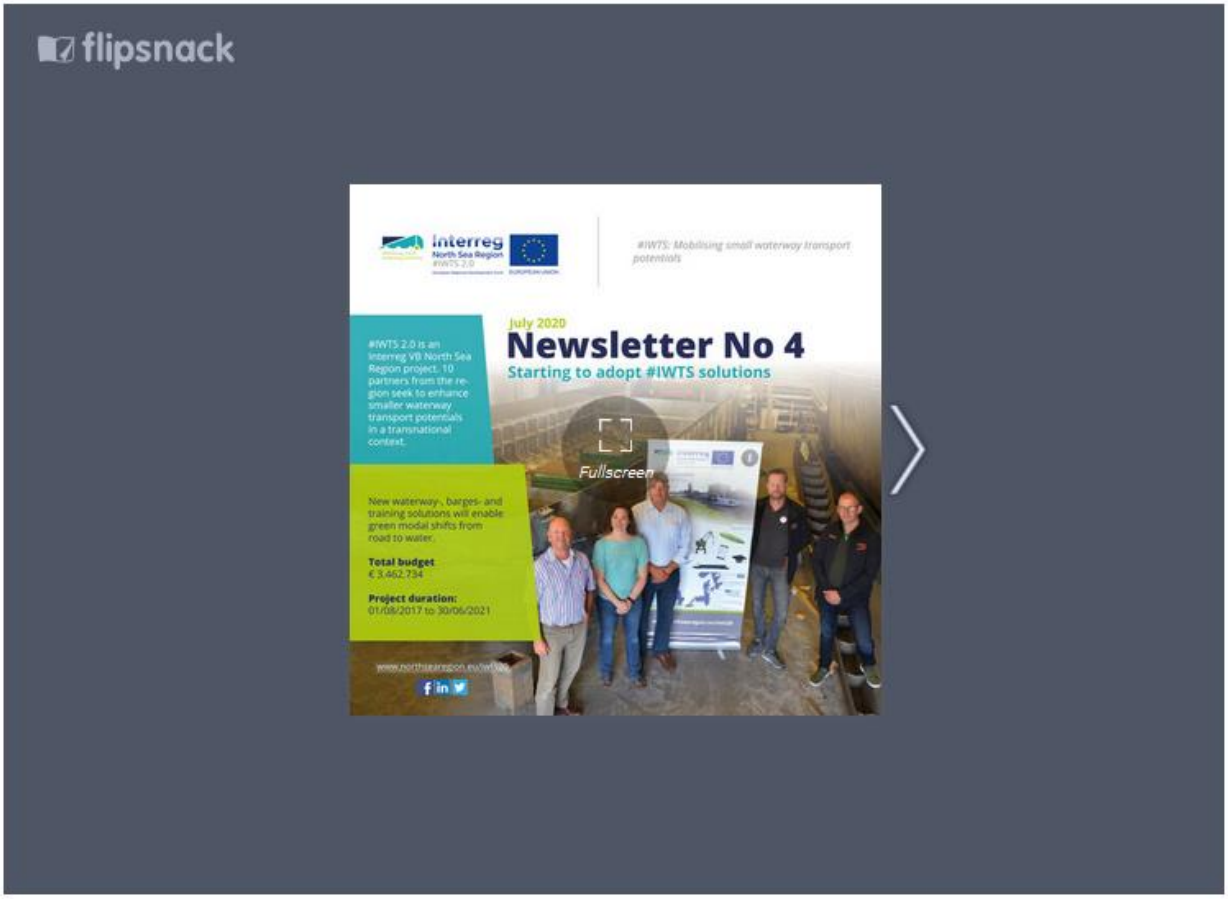

ORKPACKAGE SMALL BARGES
DEVELOPMENT OF A ZERO EMISSION VESSEL

Date : 19 June 2020

Due to the Corona crisis 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 collaborating 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 mid-size inland shipping throughout Europe and offers alternative transport solutions for the inner cities and urban surroundings.

TESCO AND MARITIME ACADEMY OF HARLINGEN ARE WORKING TOGETHER WITHIN 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-opportunities (starting by the end of May 2021).

The vessel design, adapted to the inland waterways of the city of Ghent, is a flatshipmodel with a cargo 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 smaller waterways in the medieval city. The propulsion is fully electric and with a battery pack of 20 KW installed, makes the barge CO2 neutral. The sailing capacity will be 8 hours at a speed of 8 km p.h.

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, to identify hindrances and sailing

#IWTS: Mobilising small waterway transport potentials

opportunities en route. At the same time students of the Maritime Academy will learn to navigate on small waterways. The ship will start sailing manned, but the aim is autonomous sailing in the future.

The barge will be able to transport small quantities in bulk, all sorts of palletized material, small containers, big bags and is ideal to transport construction materials.

Testing will start by De Groote Houtboerke in Ghent beginning September 2020 with all kind of materials.

https://northsearegion.eu/iwts20/events/livestream-launching-green-wave-october-20-2020-at-2-pm/

IWTS2.0 › Events › LIVESTREAM launching Green Wave, October 20, 2020 at 2 p.m.

IWTS2.0

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Events

- LIVESTREAM launching Green Wave, October 20, 2020 at 2 p.m.
- Small Waterways Innovation Day
- Are you up to the Challenge?
- IWTS Mid-Term Conference 15 October 2019

Output library

E-library

Contact

LIVESTREAM launching Green Wave, October 20, 2020 at 2 p.m.

Event duration: 1,5 hour
Venue: Heerewaarden yard

Please find information below about the launch of the emission free Green Wave barge.

The Interreg #northsearegion @northsearegion #IWTS2.0 project, aims at greening inland waterway transport. Lead partner of this project is the Maritime Academy Harlingen. In a transnational cooperation TESCO will operate the full electric barge Green Wave, the barge will be sailing in the City of Ghent with building materials and other freights. Freight logistics and manning will be organized by De Groote-Houtboerke in Ghent. By deploying the Green Wave barge we will reduce its Co2, Sox, Nox emissions with 100%, we will contribute to less road traffic jams and particles emissions in Ghent. By showcasing this modal shift from road to water we will inspire other entrepreneurs to adopt green wave similar concepts in their regions.

NOCHTEND

GENT

Elektrische boot vervoert tot 20 ton bouwmateriaal

Op de Gentse wateren is sinds kort een opvallende nieuwe elektrische boot te zien. De Green Wave brengt bouwmaterialen in de binnenstad.

BART MOERMAN

Het schip is een samenwerking tussen enkele Gentse handelaren in bouwmaterialen. Ze slaan de handen in elkaar met rederijen en enkele andere partners uit binnen- en buitenland onder de naam Inland Waterways Transport Solutions. "Als we de stad duurzamer willen maken, moeten we ergens beginnen", zegt projectleider Peter Geirnaert. "In Gent zijn er heel wat binnenwateren, het is zonde om daar niets mee te doen."

De elektrisch aangedreven Green Wave kan tot 20 ton vervoeren. Omdat de boot slechts 15 meter lang en 4 meter breed is, kan hij perfect manoeuvreren door de binnenwateren. "De Green Wave is speciaal ontworpen voor Gent", zegt de projectleider.

Proefproject

Gedimat De Groote-Houtboerke is een van de bouwhandelaren die in het project stapten. Medezaakvoerder André De Groote maakt een eerste balans op: "We zijn volop aan het testen. Goederen op een boot zetten en afleveren in de binnenstad, is nog niet zo eenvoudig. Zo zijn lang niet alle kades in Gent voorzien op laden en lossen. We zijn voortdurend in contact met de Stad, want ook zij volgt het project op de voet. Samen werken we aan een duurzaam en rendabel project."

Momenteel vervoert de Green Wave enkel bouwmaterialen maar als het van de initiatiefnemers afhangt, blijft het daar niet bij. Mogelijk kunnen later ook pakjesbedrijven of andere transporteurs gebruikmaken van het schip. Peter Geirnaert: "Hopelijk inspireren we ook andere sectoren om mee te doen." (mdd)

Green Wave: emissieloze stadsdistributie over water in Gent

De Gentse binnenstad werkt aan emissieloze stadsdistributie over water. Centraal staat een elektrisch schip, dat is ontstaan uit het project Inland Waterway Transport Solutions for Smaller Waterways (IWTS 2.0). Deze 14,95 meter lange en 4 meter brede Green Wave heeft een laadcapaciteit van 20 ton.


Een van de testvaarten met de Green Wave. (foto De Vlaamse Waterweg)

Na enkele maanden testen met de elektrisch aangedreven *urban boat* zijn onlangs met succes enkele proefvaarten gedaan met bakstenen, zand en pleisterkalk. Samen met de stad Gent en De Vlaamse Waterweg zal platform Urban Waterway Logistics nu de laad- en losinfrastructuur in Gent in kaart brengen en kijken welke laad- en lossystemen geschikt zijn. De Green Wave oat zal de komende jaren aan meerdere proeven deelnemen om de stedelijke distributie van bouwmaterialen te realiseren.

Aandeel binnenvaart verhogen

Binnenvaart kan een belangrijke rol spelen om de mobiliteit, bereikbaarheid en leefbaarheid van een stad te verbeteren, denkt Lydia Peeters, de Vlaamse minister voor Mobiliteit en Openbare Werken. "Door in te zetten op innovatie en duurzaamheid kan dit type vaartuigen het aandeel van de binnenvaart verhogen. Dat draagt niet alleen rechtstreeks bij aan de *modal shift* van de weg naar de waterweg, maar maakt steden ook veiliger voor fietsers en voetgangers."

De Vlaamse Waterweg wil met nieuwe vaarconcepten steeds meer waterwegen inzetbaar maken voor goederenvervoer. Tegelijk stimuleert de vaarwegbeheerder bedrijven om de binnenvaart te gebruiken voor goederenvervoer. Ze werken daarvoor samen met partners uit binnen- en buitenland, zoals onder andere met de POM Oost-Vlaanderen in het IWTS 2.0-project. Binnen dit project wordt onderzocht hoe bedrijven geholpen kunnen worden bij een verschuiving van hun goederenstromen naar het water.

Nieuwe vaartuigen

Zo werd recent een studie afgerond die industrieterreinen in kaart brengt die over water bereikbaar zijn. Ook bestaande openbare kades zijn geïnventariseerd. Met de uitkomsten wil De Vlaamse Waterweg haar beleid rond kaaimuren en bedrijventerreinen verder verbeteren. De POM Oost-Vlaanderen brengt ondertussen ook de behoeften en knelpunten voor een modal shift naar binnenvaart in kaart. De ontwikkelingsmaatschappij ontwikkelt en test daarnaast een aantal overslagmogelijkheden.

"We investeren samen met alle mogelijke partners voortdurend in innovatieve vervoersconcepten waardoor binnenvaart ook meer en meer geassocieerd wordt met kleinere volumes en vervoer van pallets en afgewerkte producten", zegt Chris Danckaerts, gedelegeerd bestuurder van De Vlaamse Waterweg.

Daarom ondersteunt de vaarwegbeheerder de ontwikkeling van nieuwe types vaartuigen zoals Green Wave. "Een goed voorbeeld van een nieuw type vaartuig: het is een compact schip voor stadsdistributie dat voldoet aan de laatste milieunormen. Het vult de huidige vloot dus perfect aan", aldus Danckaerts.

Bouwmaterialen

Het Green Wave-project komt voort uit de samenwerking van verschillende partners, vooral leveranciers van bouwmaterialen maar ook uit andere sectoren, met het platform Urban Waterway Logistics. Het gaat onder meer om Gedimat De Groote-Houtboerke, Bouwpunt OVB, Gedimat Van Vlaenderen, Wienerberger, Ebema, Saint Gobain, Isover, Tesco, BLL, Van Wingen en Zero Emission Solutions. Samen onderzoeken ze manieren om in Gent en andere steden een duurzame stedelijke logistiek te ontwikkelen en een optimale belading van de vaartuigen.

"Samenwerking dringt zich ook op met andere partijen in de logistieke keten met name het voortransport en de *last mile*-belevering", legt André de Groote, afgevaardigd bestuurder van De Groote-Houtboerke uit. Het gaat dan bijvoorbeeld over elektrische vrachtwagens en bestelfietsen. Door het grote gewicht en soms grote volume bij bouwmaterialen is daar extra onderzoek en investeringscapaciteit nodig.

Duurzaamheid staat bij de partners hoog in het vaandel: "We willen een bottom-up stimulans zijn voor duurzame belevering van werven en klanten. Daarbij horen niet enkel emissiearme voertuigen op LNG, HvO en andere brandstoffen maar ook emissieloze vaartuigen", besluit De Groote.

IWTS 2.0

IWTS 2.0 staat voor *Inland Waterway Transport Solutions: mobilising small waterway transport potentials* en werkt aan oplossingen voor transport per binnenvaart. Voor grote goederenvolumes is vervoer over watere een economisch en klimaatvriendelijk transportalternatief. Desondanks blijven vele Europese waterwegen niet of ondermaats gebruikt. IWTS 2.0 wil hierin verandering brengen.

Het project focust daarom op de bewustmaking van de mogelijkheden die de binnenvaart kan bieden, innovatie in de ontwikkeling van kleine schepen en in overslagmethodes, bedrijven ervaring helpen opdoen rond het gebruik van binnenvaart en de aanmaak van opleidingsmateriaal voor de binnenvaartsector.

Projectpartners zijn Maritieme Academie Harlingen (NL), POM Oost-Vlaanderen (B), SSPA (S), University of Hull (vK), Bremen Ports GMBH & Co KG (D), De Vlaamse Waterweg (B), Canal and Rivertrust (vK), Provincie Friesland (NL), gemeente Smallingerland (NL), De Groote-Houtboerke NV (B).

17 juni 2021

The Green Wave - First electric ship for Flanders

De Vlaamse Waterweg nv supports the development of new types of vessels such as Green Wave, which was developed within the IWTS 2.0 project. De Groote-Houtboerke had a big challenge in developing a zero emission vessel named “Green Wave”. Green Wave is a good example of a new type of vessel: it is a compact vessel for urban distribution that meets the latest environmental standards. The first electrically powered urban distribution vessel was developed thanks to close cooperation between Tesco and De Groote-Houtboerke NV. The compact vessel is 14.95 metres long and 4 metres wide. The Green Wave has a capacity of 20 tonnes and is designed to carry all kinds of loads across small waterways, right into the city centre. The Green Wave is currently carrying out a number of test runs.

QUOTE of the Flemish Minister for Mobility and Pubic Works, Lydia Peeters:

“Inland shipping can play an important role in improving the mobility, accessibility and liveability of a city. With innovative concepts such as Green Wave, it is even possible to make deliveries via (small) waterways right into the city centre. “

"By focusing on innovation and sustainability, this type of vessel can increase the share of inland navigation. This not only directly contributes to the modal shift from road to waterway, but also makes cities safer for cyclists and pedestrians."

As a waterway manager, we are strongly committed to innovation, sustainability and increasing the modal shift for the future. That is why we already started research into alternative fuels and propulsion systems in inland shipping last year. In 2019, De Vlaamse Waterweg nv drew up a vision note in which alternative fuels are included as an action point. Since the spring of 2020, De Vlaamse Waterweg nv has been actively researching the added value of alternative fuels for inland shipping.

The research currently focuses on 3 pillars:

- achieving greening in the inland shipping fleet in order to be emission-free by 2050 (CCNR) and greening of our own fleet by 2030.

- creating possibilities for refueling with alternative fuels (bunkering) and other possibilities in terms of greening by means of multipurpose filling stations, shore power cabinets, possibly fast chargers, ... for inland vessels

- adapting the legislative framework to be able to adapt inland vessels to alternative propulsion/fuels and also the possibility to certify these vessels.

GENT

Aantal Propere Pierkes meer dan verdubbeld

Het aantal Propere Pierkes — Gentenaars die zich engageren om hun buurt mee proper te houden — is in twee jaar tijd meer dan verdubbeld. In 2019 stonden er een kleine 400 Gentenaars geregistreerd en dit jaar gaat het om ruim 900 Gentenaars.

«Gentenaars zijn duidelijk bereid om hun buurt mee proper te houden», zei schepen Bram Van Braeckevelt (Groen) dinsdagavond in de commissie milieu als antwoord op een vraag van gemeenteraadslid en partijgenoot Bert Misplon. «We hebben een sterke toename gezien van het aantal Propere Pierkes.»

In 2019 registreerde Ivago 397 Propere Pierkes, eind 2020 liep dat aantal op naar 653 en nu zijn het er ruim 900. «Ik zou uiteraard liever hebben dat er niets te rapen viel voor hen, maar ik ben wel heel blij dat zo veel burgers zo begaan zijn en willen meewerken aan een propere stad. Op naar het duizendste Propere Pierke, voor haar of hem hebben we alvast een verrassing in petto.»

De schepen gaf nog mee dat er overal in Gent Propere Pierkes zitten maar dat ze in het centrum, Mariakerke en Wondelgem minder vertegenwoordigd zijn. *(JDHG)*

WETTEREN/LAARNE

WICHELEN/MELLE

Opnieuw reserveren voor kringloopwinkel en recyclageparken

Vanaf zaterdag 27 maart kunnen bezoekers enkel nog na een telefonische afspraak langskomen in de kringloopwinkel in Wetteren (09/366.14.27). Er worden maximaal 7 bezoekers per halfuur toegelaten. Wie herbruikbare goederen komt brengen, kan dit aan de rode poort van het magazijn. Daar kan slechts één klant per kwartier langskomen.

DRIE HANDELAARS VERVOEREN BOUWMATERIAAL OVER WATER

Deze boot houdt werfverkeer van de weg

GENT

In de Gentse wateren vaart sinds kort een bijzondere boot rond. De Green Wave wordt elektrisch aangedreven en brengt bouwmateriaal naar werven in de binnenstad. «Intussen kregen we al vragen van Leuven en Brugge om daar hetzelfde doen», zegt coördinator Peter Geirnaert trots.

CEDRIC MATTHYS

De elektrische boot vervoert bouwmateriaal binnen de stadsring. Foto's Cedric Matthys

«We hebben zo veel water maar maken er nog veel te weinig gebruik van,» Schepen voor Mobiliteit Filip Watteeuw (Groen) is alvast te vinden voor het nieuwe initiatief van drie Gentse handelaars in bouwmateriaal. Vanaf deze zomer willen Gedimat De Groote-Houtboerke, Bouwpunt OVB en Gedimat Van Vlaenderen een deel van hun goederen per boot vervoeren. «Dit is een efficiënte manier om vrachtwagens van de weg te houden», juicht Watteeuw toe. «In steden als Amsterdam is transport over de grachten al veel meer ingeburgerd. Ik ben tevreden dat nu ook in Gent iemand het initiatief neemt.»

Peter Geirnaert coördineert het project.

Het project, Urban Waterway Logistics gedoopt, krijgt 150.000 euro subsidie van de Europese Unie. Hiermee kunnen de ondernemers ongeveer de helft van de boot bekostigen. «Voor ons is dit een testproject», legt coördinator Peter Geirnaert uit. «Intussen kregen we al vragen van Leuven en Brugge om daar hetzelfde doen, maar we willen eerst zien of het concept in Gent werkt. Voorlopig mikken we vooral op het gebied binnen de ring. We onderzoeken momenteel welke kades geschikt zijn om de goederen te kunnen lossen.»

Veel bruggen

De Green Way, zoals de boot heet, kan in totaal twintig ton aan materiaal vervoeren. Het schip vaart ongeveer aan 8 kilometer per uur en wordt aangedreven door drie ton batterijen. De boot is op maat van Gent gebouwd. «Onze stad telt heel wat bruggen», zegt Geirnaert. «Door de lage diepgang kan de Green Way er perfect onder varen. Ook is het schip erg wendbaar. Het is slechts 15 meter lang en 4 meter breed en kan zo gemakkelijk manoeuvreren. Dat is nodig want onze grachten zijn vaak smal en ondiep.»

We onderzoeken nu welke kades geschikt zijn om de goederen te lossen

PETER GEIRNAERT

Voorlopig zal het elektrische schip enkel bouwmateriaal vervoeren, maar economieschepen Sofie Bracke (Open Vld) ziet het al grootser. Vandaag wordt bijvoorbeeld al vaker sloopmateriaal per boot afgevoerd, denk maar aan de Belgacom-toren, en Bracke hoopt op termijn de volledige logistiek te herdenken. «Dagelijks doorkruisen er zo'n 200 bestelwagens Gent-centrum om 20.000 pakjes aan de deur te leveren. Ook daar moeten we een oplossing voor verzinnen. We werken op dit moment aan een stadsdepot waar alles centraal toekomt en dan per fiets wordt uitgestuurd. Al die initiatieven samen zullen Gent ten goede veranderen.»

Fema - Feproma
557 volgers
1 w •

+ Volgen •••

Lancering eerste elektrische cargoboot voor #stadsdistributie in #Gent.
Nieuwe samenwerking tussen onze leden, de Gentse handelaren in #bouwmaterialen van de groep #Gedimat en de groep #Bouwpunt in het kader van Urban Waterway logistics.
Samen met de stad Gent zet Urban Waterway Logistics zich in om met de nieuw ontwikkelde elektrisch aangedreven, volledige #emissieloos, bouw- en andere materialen de stad in en uit te voeren. Meer info: https://lnkd.in/e4ZvkGY

#elektrischecargoboot #elektrische #UrbanWaterwayLogistics #bouw

Flows

Gentse bouwhandel test elektrisch schip voor stadsdistributie

Vandaag om 12:31

Share Tweet Share

Een klein elektrisch vrachtschip van de Nederlandse werf Euroship wordt binnenkort door bouwhandel De Groote-Houtboerke getest in de Gentse binnenstad. Vooraleer het commercieel kan ingezet worden, moeten nog heel wat hindernissen overwonnen worden.

Het elektrische schip 'Green Wave' wordt de komende jaren getest in de Gentse binnenstad - © De Groote-Houtboerke

De plannen van de Gentse bouwhandel om de binnenvaart te gebruiken om bouwmaterialen te vervoeren, kregen vorm toen het bedrijf vier jaar geleden verhuisde naar een site langs het kanaal Gent-Terneuzen. “We hebben toen beslist om wat te gaan doen met het kanaal. De stad Gent had toen ook plannen om een aantal waterwegen in de stad opnieuw open te leggen. Dus gingen wij kijken hoe we stadslogistiek over het water konden organiseren”, legt André De Groote van de gelijknamige bouwhandel, uit.

Bruggen te laag, kaaien ontbreken

"In het begin dachten we dat het gemakkelijk zou gaan. Het schip is er, maar er zijn nog heel wat hindernissen en frustraties die moeten weggewerkt worden. Zo zijn er bruggen die te laag zijn of niet open kunnen en kaaien die ontbreken of te laag zijn. Er is nog een diepe kloof tussen wat de overheid in gedachten heeft en de realiteit. Als privéondernemer zetten we stappen, maar het is niet gemakkelijk. Dit is echt pionierswerk. Er zijn zoveel betrokken partijen: de stad, De Vlaamse Waterweg, de provincie enzovoort. Die moeten elk hun verantwoordelijkheid nemen en in gang schieten. We hadden ook op samenwerking gerekend met de Gentse haven, maar die is meer gericht op zeevervoer. We zitten in een sector die voornamelijk gerund wordt met vrachtvervoer over de weg, zo goedkoop mogelijk en 'just in time'. Logistieke trajecten over water vergen een andere benadering. Je kan dat niet zomaar een-op-een overbrengen", benadrukt De Groote.

Nog enige jaren

De 'Green Wave' komt binnenkort naar Gent om gedurende een aantal jaren tests uit te voeren in het kader van twee Europese projecten: een voor 'groene' schepen en een ander voor nieuwe vormen van stadsdistributie. "We verwachten dat het nog enige jaren kan duren vooraleer we echt met dit elektrische schip in de Gentse binnenstad kunnen varen", besluit De Groote.

Koen Heinen

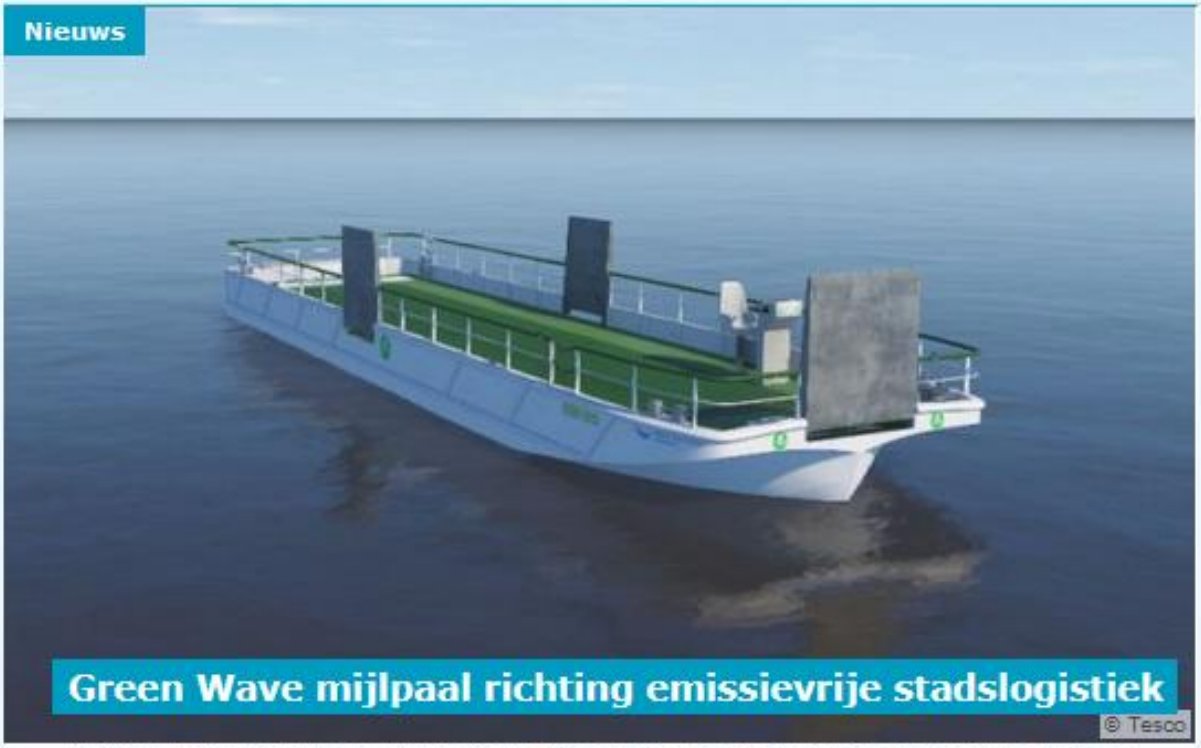
MARITIEM NEDERLAND

Platform voor het gehele maritieme cluster

HOME NIEUWS ARTIKELEN OPINIE SECTOREN DOSSIERS EDITIES

Home // Nieuws // Green Wave mijlpaal richting emissievrije stadslogistiek

Nieuws



Artist impression van de Green Wave, die wordt ingezet voor de stadslogistiek in het centrum van Gent.

Redactie | woensdag 14 oktober 2020

Binnenvaart, MET Event

Op 20 oktober doopt minister Van Nieuwenhuizen (IenW) het volledig emissievrije schip Green Wave op de werf van Euroship in Heerewaarden. De Green Wave is ontwikkeld door The European Shipment Company (Tesco), in samenwerking met partners uit het project Inland Waterway Transport Solutions, een Interreg-project in de Noordzeeregio. Het schip gaat varen in de binnenstad van Gent en is een mijlpaal in de ontwikkeling van emissievrije stadslogistiek.

In het Inland Waterways Transport Solutions-project (kortweg #IWTS) dat in 2017 van start ging, werken tien Europese partners uit de Noordzeeregio samen die kijken naar mogelijkheden om de uitstoot van CO2 te verminderen. Leidende partner in #IWTS is de Maritieme Academie Harlingen.

Emissievrije stadslogistiek

De Amsterdamse binnenvaartrederij Tesco sloot zich onlangs bij #IWTS aan. Met de oprichting van Green Wave Urban Transports (GWUT) in 2019 wil Tesco emissievrije stadslogistiek hoog op de agenda zetten, om hiermee bij te dragen aan het verduurzamen van binnensteden. GWUT onderscheidt zich door nieuwe kleine scheepstypen te ontwikkelen, die voldoen aan de laatste milieunormen en inzetbaar zijn in de krappe grachten en vaarwegen van steden. Een van die nieuwe scheepstypen is de zogenoemde 'Urban Boat' die model staat voor de Green Wave die is gebouwd op de werf van Euroship in Heerewaarde (Gld).

Niet Amsterdam maar Gent krijgt de primeur. De stad Gent kampt met drukke verkeersroutes en moet haar middeleeuwse stadscentrum beschermen door zwaar wegverkeer zoveel mogelijk te minimaliseren. Met de Green Wave is nu een oplossing gevonden voor de binnenstedelijke logistieke uitdagingen. De investering in elektrisch varen moet bijdragen aan een schonere en stillere leefomgeving om daarmee ook de leefbaarheid van steden te vergroten.

Green Wave

Het volledig elektrisch aangedreven schip Green Wave is 15 m lang en 4 m breed. Het casco is van aluminium. Het schip heeft een capaciteit van 20 ton en vaart voornamelijk met bouwmaterialen, maar is ook beschikbaar voor andere soorten vracht. De Groote-Houtboerke, een van de partners binnen het #IWTS-project, zorgt voor de bemanning en vrachtlogistiek. In de nabije toekomst moet het schip ook onbemand en volledig autonoom kunnen varen.

Door gebruik te maken van de Green Wave wordt de uitstoot van CO2, SOx en NOx met 100 procent verminderd. Op deze manier worden verkeersopstoppingen teruggedrongen en de uitstoot van fijnstof verlaagd. Met deze demonstratie van de modal shift van weg naar water, zullen hopelijk ook andere ondernemers geïnspireerd worden vergelijkbare concepten te ontwikkelen.

Livestream doopceremonie

De feestelijk tewaterlating en doop van de green Wave is op 20 oktober vanaf 14.00 uur te volgen via een videoverbinding.

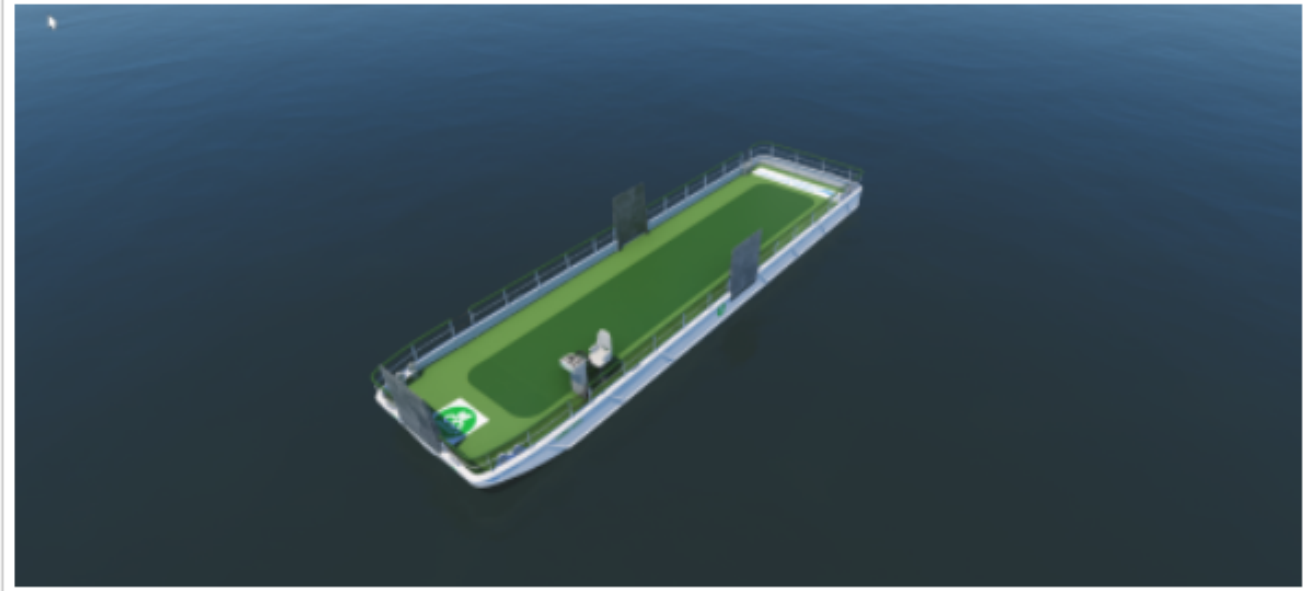
HARLINGER COURANT

Nieuws

Feestelijke doop volledig emissievrij schip Green Wave

9-10-2020 om 11:15

Op 20 oktober 2020 vindt de feestelijke tewaterlating van het volledig emissievrije schip Green Wave plaats bij Euroship in Heerewaarden (GLD). De Green Wave is ontwikkeld door The European Shipment Company (TESCO) BV, in samenwerking met partners uit het project Inland Waterway Transport Solutions, of kortweg #IWTS. #IWTS is een Interreg-project in de Noordzeeregio. De Maritieme Academie Harlingen is leidend partner in dit project #IWTS.



In het #IWTS-project, dat in 2017 van start ging, werken tien Europese partners uit de Noordzeeregio samen, die kijken naar allerlei mogelijkheden om de uitstoot van CO2 te verminderen. Een van de oplossingen is het realiseren van een modal shift van weg naar water. Op die manier kan een bijdrage geleverd worden aan een duurzame toekomst.

TESCO werd opgericht in 1991 en is gevestigd in Amsterdam. Het bedrijf sloot zich onlangs bij het #IWTS-project aan. Met de oprichting van Green Wave Urban Transports (GWUT) in 2019 wil TESCO emissievrije stadslogistiek hoog op de agenda zetten, zodat op korte termijn gewerkt kan worden aan het verduurzamen van binnensteden. GWUT onderscheidt zich door nieuwe, kleine scheepstypen te ontwikkelen, die voldoen aan de laatste milieunormen en inzetbaar zijn in de krappe grachten en vaarwegen van steden. De Green Wave zal in het stadscentrum van het Belgische Gent gaan varen.

Betere leefomgeving

De historische stad Gent kampt met drukke verkeersroutes en moet haar fraaie middeleeuwse architectuur beschermen door het gebruik van zwaar wegverkeer in het stadscentrum zo veel mogelijk te minimaliseren. Met de Green Wave is nu een oplossing gevonden voor de logistieke problemen van steden zoals Gent. De investering in elektrisch varen moet bijdragen aan een schonere en stillere leefomgeving om daarmee ook de leefbaarheid van steden te vergroten.

Green Wave

Het elektrische schip Green Wave is 15 meter lang en 4 meter breed. Het heeft een capaciteit van 20 ton en vaart voornamelijk met bouwmaterialen, maar is ook beschikbaar voor andere soorten vracht. Bemanning en vrachtlogistiek wordt georganiseerd door De Groote-Houtboerke, een van de partners binnen het #IWTS-project.

Door gebruik te maken van de Green Wave wordt de uitstoot van CO2, Sox, Nox met 100% verminderd. Op deze manier worden verkeersopstoppingen teruggedrongen en de uitstoot van fijnstof verlaagd. Door een demonstratie van deze 'modal shift' van weg naar water, zullen hopelijk ook andere ondernemers geïnspireerd worden vergelijkbare concepten te ontwikkelen.

Arjen Mintjes, directeur van de Harlinger Maritieme Academie, verzorgt de introductie bij de tewaterlating van de Green Wave. De tewaterlating zal live uitgezonden worden: https://vimeo.com/event/358510

PREMIUM

De Green Wave, de vrachtboot met elektrische aandrijving. © copyright Marc Bolsius

Fluisterstil vrachtschip uit Heerewaarden vaart een werkdag op 4000 kilo batterijen

HEEREWAARDEN/GENT - Hij is 15 meter lang, 4 meter breed en kan 20.000 kilo vracht vervoeren over smalle, ondiepe waterwegen. In Heerewaarden is een Europese primeur in de vaart genomen: het elektrische vrachtschip Green Wave. Gent krijgt de primeur.

Bertjan Kers 21-10-20, 07:00 Bron: BD

En dat is een heerlijk vooruitzicht voor de mensen die wonen aan aan een van de vele waterwegen in de oude Vlaamse stad. Het schip gaat voor minder vrachtwagens zorgen. Vracht voor bouwplaatsen er kan binnenkort geruisloos en zonder uitstoot worden aangevoerd.

> **Waterrijke steden kunnen grachten en kanalen weer gebruiken waarvoor ze 400 jaar terug voor bedoeld waren**
>
> - Kees Cornelissen, Euroship Heerewaarden

Het 15 meter lange en 4 meter brede schip moet een goed alternatief gaan worden voor vrachtverkeer. De vracht die de Green Wave kan hebben is vergelijkbaar met een truck met zeecontainer. Maar grote trucks kunnen zelden in het hart komen van waterrijke steden als Gent of Amsterdam. ,,Waterrijke steden kunnen grachten en kanalen weer gebruiken waarvoor ze 400 jaar terug waren bedoeld", zegt scheepsbouwer Kees Cornelissen.

Dak vol zonnepanelen

De Amsterdamse vrachtvervoerder Tesco Shipping kwam op het idee voor het schip. Ook André de Groote, de baas van de Gentse bouwmaterialenhandel De Groote - Houtboerke had er oren naar, want spullen de stad in krijgen is een steeds groter probleem. ,,Gent probeert op allerlei manieren vrachtwagens uit de stad te weren." Elektrisch varen is wat De Groote betreft een prima oplossing. En zijn dak vol zonnepanelen zijn genoeg om het schip 's nachts op te laden, zodat het er weer 8 uur tegenaan kan.

De Groote heeft meer bedrijven uitgenodigd om aan te haken. ,,De komende jaren gaan we testen en experimenteren. Gent heeft nog wel wat hindernissen te nemen, zoals te lage bruggen en te weinig kades waar we kunnen lossen."

Grote golven

Minister Cora van Nieuwenhuizen van Infrastructuur en Waterstaat is enthousiast over het innovatieve schip. ,,Duurzame oplossingen voor de binnenvaart staan bovenaan onze lijst. Dit kleine schip gaat grote golven veroorzaken."

Gent test transport van bouwmaterialen via het water uit met een elektrische boot

Ward Schouppe

In Gent is een pilootproject begonnen om bouwmateriaal via het water tot op de werven te brengen. Het is de bedoeling om zo vrachtverkeer uit de stad te weren, minder uitstoot te hebben en ervoor te zorgen dat er weinig overlast is voor de mensen die aan de bouwwerven wonen. Er zal een jaar getest worden.

Aan het Oud Gerechtsgebouw in Gent is de allereerste elektrische vrachtboot uitgevaren die moet uittesten of het mogelijk is om via de binnenwateren bouwmaterialen te vervoeren. De boot is eigenlijk een vlot met een elektromotor die draait op batterijen. Er is dus geen schadelijke uitstoot. In een eerste fase van het pilootproject worden er balans- en batterijtesten uitgevoerd. Als de boot helemaal gebruiksklaar is, komen er nieuwe testen met echte ladingen bouwmateriaal tot 1 ton zwaar.

OOST-VLAANDEREN

Afvoer 125 miljoen kilo bouwafval oud Belgacomgebouw milieuvriendelijker: "We gebruiken het water in Gent"

wo 10 feb 10:26

De testboot kost 300.000 euro en is voor de helft betaald door Europa. De andere helft betalen verschillende bouwbedrijven samen. Ze vormen voor dit project een vzw Urban Waterway Logistics. Voorzitter Peter Geirnaert is erg enthousiast. "Deze testen zijn erg belangrijk want we gaan nu echt onderzoeken hoe we vlot kunnen laden en lossen zonder al te veel overlast te creëren. We gaan ook in kaart brengen welke aanpassingen er nog moeten gebeuren, want niet alle bruggen, sluizen, rivieren of kanalen zijn nu geschikt voor dit vlot."

Minder bestelwagens

De stad Gent ziet ook een enorm potentieel. "Gent heeft een heel fijnmazig waternetwerk. Dat biedt grote kansen die we nu nog niet grijpen. Daarvoor zullen we als stad ook nog moeten investeren. We moeten ook zorgen dat de goederen van de losplaats makkelijk op hun bestemming raken. We gaan die extra inspanningen doen, we moeten onze rivieren gebruiken", klinkt het bij schepen Filip Watteeuw (Groen).

vrt NWS

> De bedoeling is om in de toekomst dagelijks goederen via het water te vervoeren in de stad
>
> **Peter Geirnaert, voorzitter Urban Waterway Logistics**

Gent ziet met de huidige coronacrisis ook het aantal kleinere bestelwagens in de stad fors toenemen. Het zijn vaak vrachtauto's die pakjes bezorgen die online besteld werden. "Elke dag zijn er nu 20.000 van die bestelwagens die door de stad rijden. Als we die transporten slimmer kunnen bundelen, ook via het water, is dat een grote winst", zegt schepen Sofie Bracke (Open VLD).

Gent pionier in Vlaanderen

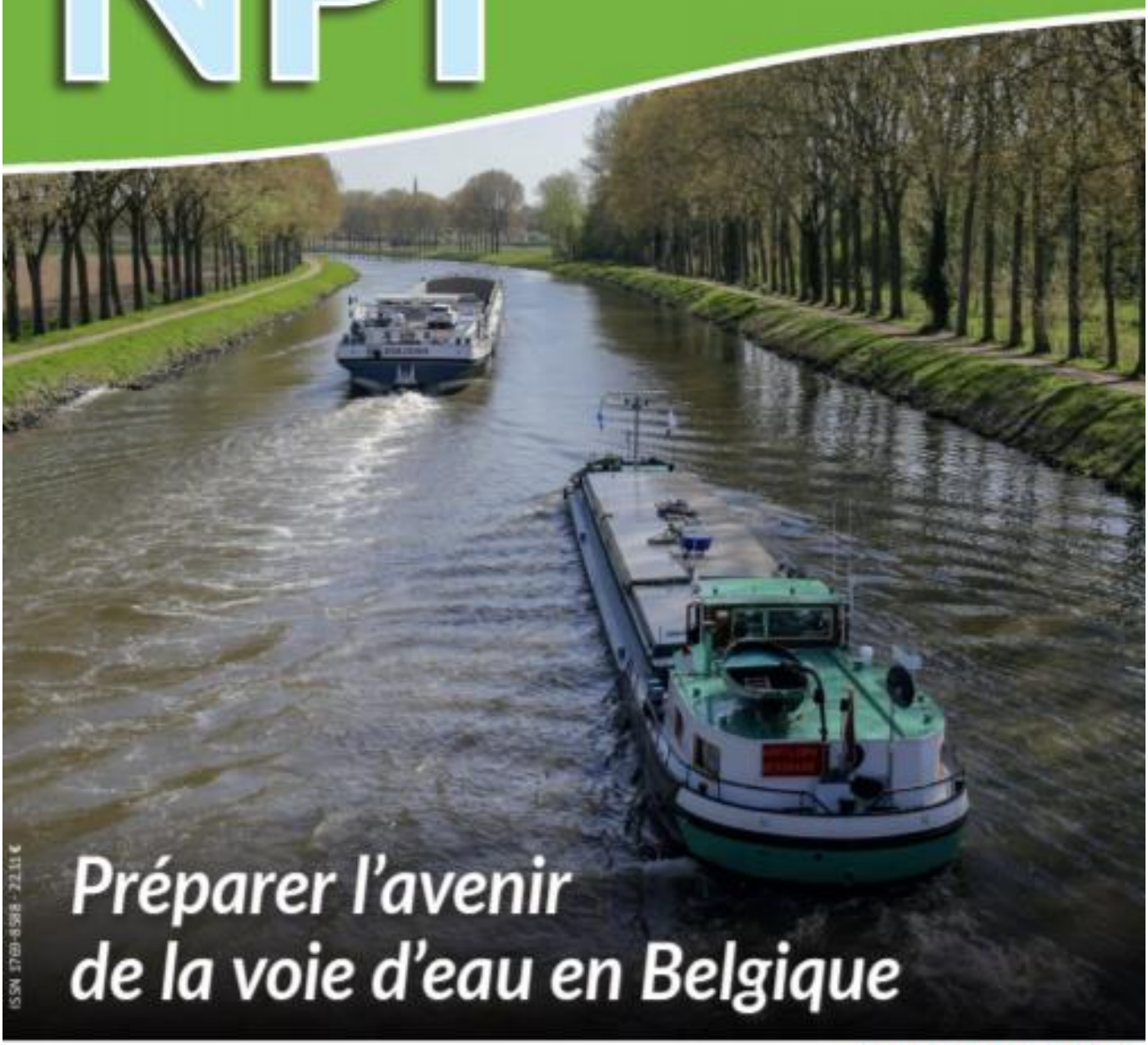
Gent mag als eerste stad het elektrische goederentransport uittesten. Maar ook andere steden met veel water zijn geïnteresseerd. Onder meer Brugge, Mechelen en Leuven kijken met grote nieuwsgierigheid naar het pilootproject. De resultaten daarvan zullen binnen een jaar besproken worden.

Meer weten over

Radio 2 Economie Ward Schouppe Mobiliteit Gent

NPI

NAVIGATION
PORTS &
INTERMODALITÉ



Préparer l'avenir de la voie d'eau en Belgique

ISSN 1769-8588 - 22,11 €

AVRIL 2020 • N° 1615

Enquête

Port Sète-Sud de France et canal du Rhône à Sète

France

Le logiciel Fluide se fait l'avocat du fluvial

France

Le potentiel des croisières fluviales à Arles

Le réseau navigable au sein de la ville permet souvent la circulation d'unités de taille non négligeable, mais les ponts et écluses et le manque de dragage peuvent poser problème.

Gand veut miser sur la distribution urbaine

La ville de Gand a fait de la distribution urbaine par la voie d'eau un des axes stratégiques de sa politique de mobilité. Les entrepreneurs prêts à se lancer demandent aux pouvoirs publics de les soutenir en prenant des mesures d'accompagnement qui incitent au transfert modal, et en les aidant à combler l'écart financier avec le transport routier.

Sur le papier, Gand offre un champ d'action idéal pour la distribution urbaine par la voie d'eau. Celle-ci y est nettement plus présente qu'à Bruxelles ou Anvers, par exemple, et la ville a multiplié ces dernières décennies les efforts pour lui rendre une place plus grande dans la cité. Située au confluent de la Lys et de l'Escaut et directement connectée à des voies navigables comme le canal maritime vers Terneuzen (classe VI), le Ringvaart et le canal vers Bruges et Ostende (classe V), ainsi qu'au complexe portuaire de North Sea Port, Gand constitue, en outre, la plaque tournante du trafic fluvial dans la partie occidentale de la Flandre. Sur sa périphérie, il y a place pour des points de consolidation d'où pourraient opérer des navettes de taille adaptée pour l'approvisionnement des chantiers, entreprises, commerces, restaurants, hôtels, écoles... du centre-ville.

Conscients de ces atouts et du potentiel qui s'y rattache, la ville et *De Vlaamse Waterweg*, le gestionnaire flamand des voies navigables, ont formulé une vision stratégique pour le développement multifonctionnel et durable de « *l'eau dans la ville* ». Elle tient compte de la spécificité de chaque zone, tout en s'intégrant dans la vision plus large élaborée au niveau régional. La mobilité des personnes (les écoliers, par exemple) et le transport de marchandises y figurent en bonne place. Le défi n'est pas facile à relever. Cela tient en partie à des données physiques : le territoire gantois se partage en trois bassins distincts en termes de niveau d'eau (dont un est soumis au jeu des marées via l'Escaut maritime) ; les écluses qui les relient, sont souvent petites, parfois vétustes ; de nombreux ponts enjambent les cours d'eau et leur hauteur libre est variable (2,5 et 4,8 m sont les normes les plus pratiquées) ; par manque de dragage, le tirant d'eau officiel de 1,6 mètre est très loin d'être partout respecté ; le gabarit affiché pour les voies navigables au cœur de la ville (classe I et II) ne correspond donc pas toujours, loin s'en faut,

à la réalité. Enfin, bien sûr, même si Gand a déjà pris des mesures pour réglementer leur utilisation, le camion et la camionnette demeurent des concurrents formidables pour la distribution urbaine, vu les surcoûts qu'implique le recours à la voie d'eau pour le pré-acheminement, le dernier kilomètre et la manutention.

L'ambition est de faire la part plus belle à la voie d'eau tant pour l'approvisionnement structurel du centre-ville que dans le cadre de travaux publics, de chantiers de construction et des livraisons liées à l'e-commerce que pour des événements plus ponctuels comme le festival des Fêtes de Gand, qui occupe durant une dizaine de jours en juillet le cœur historique de la ville. « *Avec des bateaux innovants, des concepts de transport intelligents et des techniques de transbordement adaptées, il existe un grand potentiel pour faire de la voie d'eau un vecteur important pour la livraison de marchandises en milieu urbain* », affirme le document présentant la vision stratégique de la ville et *De Vlaamse Waterweg*.

Un projet de bateau

Il parle aussi de la création de centres de distribution en bordure de la ville et de points de transbordement en son centre comme maillons d'une logistique bimodale « *plus écologique, plus durable et plus efficace offrant des plus-values sociétales, économiques et opérationnelles* ».

Filip Watteeuw, l'échevin du parti écologiste **Groen** en charge de la mobilité, indique que les plans d'action qui doivent donner vie à la vision stratégique, sont en cours d'élaboration. La logistique de la construction figure en tête des flux visés, mais les autres, avec leurs spécificités propes, ne seront pas oubliés. Un des obstacles à surmonter est le manque de familiarité de bon nombre de parties impliquées avec la distribution fluviale. « *Elle tombe souvent en dehors du cadre logistique classique. Faire venir un camion est tellement plus facile et on sous-estime généralement les coûts, tant internes qu'externes, que cela entraîne* ».

« *Nous avons encore un long chemin à faire* », déclare pour sa part Peter Geirnaert. Il anime le consortium ***Urban Waterway Logistics*** (UWL) qui a remporté l'appel d'offres lancé par la ville à la fin 2018 pour développer la logistique fluviale. « *Les entreprises se préparent activement au passage à la voie d'eau. Elles réclament toutefois une approche pragmatique, fondée sur des critères de viabilité économique* ». Le consortium s'appuie pour l'heure sur quatre entreprises gantoises du secteur du bâtiment, avec le renfort de l'armement fluvial néerlandais Tesco. D'autres entreprises devraient les rejoindre prochainement et apporter d'autres flux (colis, produits de grande consommation, déchets, etc.) qu'UWL veut combiner dans des tournées garantissant un usage maximal des unités utilisées.

L'initiative bénéficie d'aides européennes à hauteur de 200 000 euros dans le cadre du programme IWTS 2.0 pour la réalisation d'une unité adaptée au contexte gantois et baptisée ***Gentmax***. Elle s'inscrit en outre dans le programme Avatar pour une distribution urbaine zéro émissions. Des essais portant notamment sur l'évacuation de déchets par la voie d'eau seront lancés dès cette année. Mais le véritable test interviendra à partir de la mi- ou fin 2021 avec le lancement d'un premier *Gentmax*. Différentes options sont encore à l'étude. Le bateau – une unité transformée – devrait faire 10 à 15 mètres de long et moins de 5 mètres de large et avoir des tirants d'eau et d'air aussi réduits que possible. Sa capacité se situera aux alentours des 10 tonnes. « *S'adapter à l'infrastructure existante est la seule solution possible* », explique à ce propos le responsable d'UWL. Sa propulsion se fera par un moteur diesel classique ou électrique (le poids des batteries influe sur la capacité d'emport).

La navigation autonome – sur des cours d'eau fréquentés par d'autres usagers (jusqu'à des kayakeurs et des planchistes à la belle saison) - ne pourra être introduite que lorsqu'elle aura atteint une plus grande maturité, estime Peter Geirnaert.

Imposer la voie d'eau

« *Une collaboration à tous les niveaux reste essentielle* », ajoute Peter Geirnaert. Il renvoie en particulier à la nécessité, pour les pouvoirs publics, de prendre des mesures qui limitent encore plus fortement le recours au camion et renforcent ainsi l'attractivité du bateau, d'une part, et à des aides qui permettent de combler l'écart de prix toujours appréciable entre la route et l'eau, d'autre part. « *Tant que ces deux conditions ne sont pas remplies, nous ne dépasserons pas le stade des tests sans lendemain* ».

Filip Watteeuw ne le contredit pas : « *Faciliter, stimuler, expérimenter... ne suffit pas et le sur-mesure coûte toujours cher. Même si nos moyens ne sont pas illimités, nous devrons aider financièrement au transfert modal. Il faut faire des choix clairs et oser les imposer. Mais cela suppose aussi que des alternatives au camion soient disponibles, accessibles au plus grand nombre et d'une capacité suffisante. C'est aussi sur cet obstacle-là que nous butons aujourd'hui. Les dix années à venir seront cruciales. Il faut que dans dix ans, la voie d'eau offre un nouveau visage et joue une rôle économique fort dans la ville* ».

Jean-Louis Vandevoorde

À Gand, la navigation touristique illustre tant le potentiel de la voie d'eau pour la distribution urbaine que les limites dont il faut tenir compte.

ANDRÉ DE GROOTE - GEDIMAT-DE GROOTE

DUURZAME STADS-DISTRIBUTIE VIA DE BINNENWATEREN

HET GROOTSTE OBSTAKEL IS DE MACHT VAN DE GEWOONTE

Het nieuwe bedrijfsgebouw in de Gentse Kanaalzone vormde voor Gedimat-De Groote een opportuniteit om te experimenteren omtrent duurzame stadsdistributie via de binnenwateren. Dit met de bedoeling futureproof te zijn, snel te schakelen én mee te sturen. Niettemin stellen zich diverse uitdagingen. André De Groote (bedrijfsleider Gedimat-De Groote): "Het transport op zich is geen probleem, wel de *last mile*. En het grootste obstakel is de macht van de gewoonte".

André De Groote (bedrijfsleider Gedimat-De Groote): "Zolang er geen verplichtingen zijn, verandert er weinig. Maar weet dat deze zone stadsdistributie zal aankomen. En dat is mijn best voorbereid."

ENERGIEPOSITIEF BEDRIJF

Bouwmaterialenhandelaar Gedimat-De Groote verhuisde in 2016 naar zijn nieuwe thuishaven in de Gentse Kanaalzone, samen met Houtboerke. André De Groote (bedrijfsleider Gedimat-De Groote) over de fusie: "We zijn met vier vennoten bij Gedimat-De Groote/Houtboerke. De families De Groote en Houtboerke vonden elkaar zeven jaar geleden rond een nieuw project. Door het samenbrengen van hout en bouwmaterialen vormen we de *missing link* in het totaalplaatje naar de bouw toe. We zochten echter een nieuwe stek. Het vorige terrein in Wondelgem (De Groote) en Gent (Houtboerke) was immers sterk verouderd. De huidige locatie telt 26.000 m², waarvan 11.000 m² bebouwd is. We beschikken over een toonzaal, een bouwshop, een kantoor- en vergaderruimte, een eigen houtzagerij, een natuursteenzagerij en 6.000m2 overdekte stock met drive-in. We zijn een energiepositief bedrijf. Zo worden onze gebouwen verwarmd en gekoeld via een warmtepomp met water uit het kanaal. We lozen geen afvalwater, enzoverder."

OP DE EERSTE RIJ ZITTEN

De aankoop van de grond gaf het bedrijf toegang tot het water. André De Groote: "Ik ben overtuigd van het groeiende belang van watertransport. We schreven in op het Europees IWTS-project *(Inland Waterway Transport Solutions)*. Gaandeweg maakten we heel wat mee en leerden we veel bij. De hoofdoelstelling was om op de eerste rij te zitten zodat we weten wat er op ons afkomt, snel kunnen schakelen en de stad mee sturen. Zeker gezien Stad Gent bezig is met een transformatie omtrent het binnenbrengen van goederen in de stad. We wonnen ook een stadsproject rond distributie van bouwmaterialen over de binnenwateren. De projecten vormden de drijfveer om dieper in te gaan op dit alles. Zo namen we recent twee vrachtwagens in gebruik die op HVO-Biodiesel rijden. Dit laat toe om op een verantwoorde manier in de stad te rijden."

OBSTAKELS

Het IWTS-project focuste op kleine schepen die gericht zijn op duurzame stadsdistributie. Het einddoel was het bouwen van de Green Wave. Dit schip is ongeveer 15 meter lang en 4 à 5 meter breed, heeft 20 ton laadvermogen en vaart volledig elektrisch. André De Groote: "De bedoeling is om projecten aan elkaar te koppelen. Na het schip volgde een project rond autonoom varen. Gaandeweg zagen we dat de infrastructuur van de Stad nog niet conform is. Bovendien zijn er de talrijke beleidsniveaus (stad/provincie/gewest …) die een obstakel kunnen vormen. Ik denk aan het laden en lossen in de

"HET IS NOODZAKELIJK DAT ER EEN DISTRIBUTEUR AAN TAFEL ZIT. EEN PARTIJ DIE GESPECIALISEERD IS IN HET SAMENBRENGEN VAN VERKEERSTROMEN."

stad, het aanpassen van kaaien, baggeren en dergelijke meer. Het is een heuse uitdaging om met alle partijen tot een akkoord te komen. Het transport op zich is geen probleem, wel de last mile. We zoeken geleidelijk aan oplossingen en willen de sociale economie inschakelen. De Stad geeft subsidies om personen in beweging te brengen omtrent het vinden van nieuwe transportmodaliteiten, om de meerkost ergens te overbruggen en de pijnpunten in kaart te brengen."

Kan de beroepsfederatie van bouwmaterialenhandelaren FEMA, waarvan André De Groote voorzitter is, een rol spelen? "FEMA kan partijen in contact brengen. Via het project *Build over water* is 12.500 ton palletvervoer over het water vervoerd. Dat lukt uiteindelijk, maar de uitdaging is om er een duurzaam en blijvend project van te maken. Het grootste obstakel is de macht van de gewoonte. We moeten afstappen van het klassieke denken. Ik haal steeds het voorbeeld aan van een klein Zwitsers stadje, Saas Fee, waar alles wordt afgezet aan de rand van de stad, ook beton. Het gaat vervolgens met elektrische wagentjes de bergen in. En het werkt, maar de duurzame filosofie is er daar altijd geweest."

DEEL VAN EEN GROTER GEHEEL

André De Groote: "Uit de ervaring die ik opdeed doorheen de projecten, leerde ik dat wij als handel in bouwmaterialen te klein zijn om iets dergelijks te organiseren. Het is van cruciaal belang om de economie van de stad mee te hebben in dat geheel. Een stad die incentives geeft, maar ook verplichtingen oplegt. Ik hamer er ook al lang op dat het noodzakelijk is om een distributeur aan tafel te hebben. Een partij die gespecialiseerd is in het samenbrengen van verkeersstromen. Mijn klein aandeel van stromen moet aansluiten bij de grotere stromen. Samenwerking en het slopen van muren tussen collega's is zeer belangrijk in dit verhaal. We kunnen wat op ons afkomt niet tegenhouden. Vandaar: geloof in samenwerking, zoek de grootste gemene deler en zoek massa. Durf je nek uitsteken, schuif je eigen ego opzij en werk actief mee aan een duurzame toekomst." ■

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