

Low Carbon Plan Meppel, Kampen, Zwolle

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About DUAL Ports

DUAL Ports is an Interreg North Sea Region project started in December 2015, with a duration of 3 years. In December 2018, DUAL Ports was extended until 2022 with an increase in partners, pilots and budget. DUAL Ports is based on the operational pilots in Regional Entrepreneurial Ports REP's). DUAL Ports will be measured in the concrete success of the pilots and the pilots' renderability to other REP's.

DUAL Ports addresses the Interreg Programs objective of promoting resource efficiency and stimulate the adoption of new products, services and processes to reduce the environmental footprint of regions around the North Sea.

A series of pilot reports

DUAL Ports consists of 16 pilot projects and 16 partners from the port industry, knowledge institutions and tech business within sustainable energy. In a series of publications, we are introducing each of the pilot projects highlighting the experiences, results and learnings from their work. Knowledge sharing is vital for the continuous development of sustainable energy and the publications of DUAL Ports pilot projects will be a source for further work.

Summary of pilot

The publishable summary should include:

- *A summary description of project context and objectives.* Our project consisted of describing steps in the ports of Meppel, Zwolle and Kampen to come to a low carbon port solution. Low Carbon use in the ports is based on an earlier plan which existed for the city of Meppel. This reports describes the steps Port of Zwolle took in operationalizing the plan, activate companies in the port to work according the policies and the steps Port of Zwolle took in implementing LNG, electrified diesel in the Port of Kampen.
- *A description of the work performed since the beginning of the project and the main results achieved so far.* The work which was executed is mainly the lobby amongst policy makers to unify the plans of the ports of Meppel, Kampen and Zwolle and the informative meetings which were organized for the companies in the Port of Zwolle to contribute to the low carbon plans. Much time was invested to talk about LNG terminal, LNG manifold and electrified diesel in the port of Kampen. With government (local and regional), companies (MCS) and other stakeholders.
- *The final results and their potential impact and use (including the socio-economic impact and the wider societal implications of the project).* The final result is that a substantial number of companies in the Port of Zwolle have operationalized their plans to lower carbon use, by installing Solar panels, LNG-operated equipment and other solutions. A plan to implement LNG-terminal, manifold or electrified diesel failed, since the business case proved not be feasible.
- *The address of the project public website and the partners' website if applicable* See Dual Ports website

Project Description

Describe your motivation for this pilot. Introduce your pilot project in general.

The objective in the policy papers of the Province of Overijssel and the Province of Drenthe, the regions where the port of Zwolle is located (Zwolle and Kampen, Overijssel; Meppel, Drenthe), is to collectively work on energy reduction, renewable energy stimulation and CO2 reduction. This has been written in policy papers Regional Energytransition (Drenthe, 2021) and Regional Energy transition concept (Overijssel, 2022). The collectivity must be founded in co-operation in the triple helix. Port of Zwolle is a hub to communicate to companies. The companies, located in the ports can be reached by Port of Zwolle as a network organization. Both companies and governmental bodies will work on activities to reduce energy use and change into renewable energy use. The goal is to use 50% renewable energy by 2030.

During the pilot phase, Port of Zwolle will organize meetings with companies to find best practices, lighthouse projects to stimulate the other companies in the ports to realize CO2 reduction or energy saving.

The Project's Objective

What was the target of your pilot project? Remember to include any technical facts and goals. To achieve a shared vision on low carbon energy, based on the low carbon energy plan of Gemeente Meppel. The requirements for a shared document are that three municipalities will back the plan. The mission for the Port of Zwolle management is to create a shared vision of the three municipalities. The place to discuss this is either the shareholders meetings or the stakeholder meeting with the various municipalities. Since the plan is to include SMEs and companies in the three ports in the plans, it is foreseen to organize 6 stakeholder meetings with participants from the triple helix.

Problem Definition

Why is the pilot necessary? What are the circumstances that requires a change?

The obligation to reach goals via funded projects provides a useful stick for the Board of Port of Zwolle to put the topic of Low Carbon ports in shared efforts on the agenda. It connects to the regional objectives of the Provinces of Drenthe and Overijssel and therefore creates leverage to talk to the three municipalities which form the Port of Zwolle.

The Process – From Concept to Completion

How was the process of pilot from planning, development to the implementation, please describe the project phases you were going through; highlight your milestones within the pilot.

Initial situation

The municipality of Meppel has expressed the ambition to become carbon neutral in the coming years. In order to achieve this, the municipality drew up the report 'From climate sensitive to climate conscious'. The report describes the steps which could ultimately lead to a carbon neutral Meppel and its region in 2040. The municipalities of both Kampen and Zwolle have a similar report and statement. In the report the municipality also states that it would like to operationalize these objectives for the port of Meppel. In a later stage (2015), both Kampen and Zwolle seconded this statement and expressed their wish for a sustainable industrial harbour with the ambition low carbon neutrality. The province of Drenthe has the ambition to develop a sustainable freight transport network with water transport as the major growth sector. National government, Province of Overijssel and Province of Drenthe therefore want to encourage transport by water and strengthen the network of inland ports. The 'Port Vision Zwolle-Kampen-Meppel' was published in 2012 and refreshed in 2015. The ports of Zwolle, Kampen and Meppel fulfil an important function in the economic growth of the region. Therefore, the ports can also play an important role in the energy transition. Unfortunately, there are no research figures available about CO2 exhaust. It is difficult to establish a base line for quantitative purposes.

Results

Results and achievements during the project period of DUAL Ports

Business case LNG-Terminal

Together with several companies in the port of Zwolle, the management has discussed the possibility of a LNG-terminal in the port of Kampen. Especially the demand from a company called MCS resulted in enthusiasm. Meetings with municipality of Kampen, Province of Overijssel and Province of Drenthe resulted in the possibility of co-financing. As of September 2019, a study revealed that the business case to establish a LNG terminal in the Port of Zwolle (Kampen) was not feasible. Demand was seen at MCS, but MCS proved to be the only shipowner to sail with LNG propulsion. MCS could dedicate one ship for LNG and was willing to invest. Other shipowners in the north sailing in Overijssel and docking at Kampen, Meppel or Zwolle proved not to start with LNG propulsion. The management of port of Zwolle has shortly researched the possibilities to invest in a manifold, but also that investment proved to be idle. The available funding for establishing a LNG terminal could not be used.

Electrified Diesel

As of September 2020, electrified diesel proved to be in demand. Port of Zwolle management suggested to the advisory board to start researching a battery swap terminal for container batteries. Diesel propelled engines can be made hybrid, where they use the electrified systems in ports for maneuvering. Batteries can be swapped at logistical logical places. Port of Zwolle opted to become one of those in the north of the Netherlands. In another Interreg project (Grendel, Danube Transnational Program), a factsheet with information was prepared: [factsheet electrified diesel](#). The investment costs of MCS or other companies would be 30.000 to add wiring on a ship to make it electrified. On top of that the company should invest in batteries. This is high costly. A study¹ of TNO revealed that the Netherlands should sail with at least 50 ships to realize a sound business case. As Northern Netherlands is too scarcely equipped with ships, the business case cannot be made. An investment from Port of Zwolle makes no difference because the investment in batteries and a swap station is millions of euros.



¹ TNO 2019 R10454 Feasibility study for a zero emission, battery-electric powertrain for the Gouwenaar II

Co-operation with companies in Port of Zwolle

Various meetings with companies in the Port of Zwolle have been organized.

3 in 2016
4 in 2017
4 in 2018
4 in 2019
1 in 2020
0 in 2021
2 in 2022

These networking meetings have been organized as yearly congress, seminar (knowledge sharing) or workshop. The attendance in congress meetings is 150-200 people, seminars 25-35 and workshops 7-20 people. In total we have reached all companies in the Port of Zwolle and also many people besides these companies.

The results were that after 2018, 12 SMEs in the port installed solar panels on their rooftops. This strongly contributes to the low carbon emission plans of the government. A large company, Wehkamp, started with the change to Green Energy. Wehkamp opened a new factory/distribution center and placed 5.000 solar panels on the roof. The company realized rainwater flushed toilets and created charging units for bikes, scooters, and cars.



Co-operation with Scania Zwolle

The production plant of Scania in Zwolle decided to work on the largest solar panel sunroof in the Netherlands. They installed as of 2017 22.000 solar panels (equalizing 6 Mwp output) on their rooftop to come to a full green production line. In this [video](#), you will get an impression of the magnitude. Scania uses its expertise and shared their decision model with other Port of Zwolle entrepreneurs in various workshops in 2019 and 2021.

Deliverables and milestones

The measurable results include the number of meetings which were organized by the Port of Zwolle. In total 18 physical meetings were organized in the form of a congress, seminar or workshop. In total 1300 people participated. A total of 200 unique visitors registered, so many persons attended multiple events. Next to the events, the management of port of Zwolle visited all companies in the port during the period of the project, to learn about the progress of each company. Once human capacity in the port of Zwolle increases, a measurement can be done about the current CO2 emissions to be able to obtain quantifiable measurements.

Sustainability

The goal of the attention port of Zwolle paid to low carbon use and green energy solutions is to fit into the "Green Economy", into the Regional Energy Strategy of both Province of Overijssel and Province of Drenthe. This strategy results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low on carbon emissions, resource efficient and socially inclusive. Its growth in income and employment is driven by public and private investments which reduce carbon emissions and pollution, enhance energy, and resource efficiency and prevent the loss of biodiversity and ecosystem services.

This resulted in the new strategy for the Port of Zwolle goals as well. Port of Zwolle will be the logistical hub for circular entrepreneurship. Port of Zwolle aims to become a circular port, with renewable energy, sustainable resources and climate adaptation. We will realise these goals in co-operation with all the entrepreneurs in our ports, our region and with other stakeholders and partners.



Port of Zwolle is a central player in the regional commitment to create the new sustainable energy strategy. The interconnectivity between the stakeholders and projects is symbolised in the picture above. The 4 icon projects directly stem from the Dual Ports project objectives. These four icon projects are:

1. New port of Kampen will serve as battery for the region
Port of Zwolle wants to realize a new port in the Melmerpolder near Kampen that generates more energy than it consumes. This new port will then function as a battery for the Zwolle region. This iconic project is therefore a frontrunner when it comes to sustainable port development in the Netherlands. The Zwolle region wants to be energy neutral from 2050 and comply with the Paris Climate Agreement. The municipality of Kampen even wants to be energy neutral by 2035.
2. New port of Meppel will become a resource hub
Port of Zwolle wants to realize the new circular port Oevers S near Meppel. This is where the region's resource hub is being developed. The place where waste materials are made suitable for reuse, so that they acquire new value as raw materials: an upcycle hub. This node contributes to a waste-free Zwolle Region by 2030. The new port in Meppel has a modern infrastructure for a circular industry.
3. Hessenpoort as an experimental garden for climate adaptation
At the large-scale business park Hessenpoort, the area development is aimed at a physical testing ground for climate adaptation. The node will be a demo site for CO2-neutral transport, sustainable energy generation and use and circular construction. Because the experimental garden is set up as a prototype for the IJssel-Vecht delta, it is also a demonstration delta for water issues. With this plan, Port of Zwolle is in line with Zwolle's ambition to be a climate-adaptive Hanseatic city by 2025.
4. Circular SME-Lab for city and region
Port of Zwolle is developing a regional transition workplace with NICE: the circular SME LAB. Companies can go there for knowledge, capacity, exchange, and inspiration. With a special learning and work program they discover what circularity can mean for their company. Learning by doing is central to this. NICE deploys students

from regional MBO, HBO and WO knowledge institutions in the SME LAB, so that young talent can develop for a circular economy and is retained for the region.

Conclusions

Significant progress has been made towards the achievement of low/zero carbon emissions. Especially the co-operation between various stakeholders in the region has been boosted. The best results are achieved by both Scania and Wehkamp in the region. They have invested massively in solar panels and other sources to become energy neutral. The Port of Zwolle has been pushed by Dual Ports to discuss energy neutrality on a political level and has demonstrated that it can play a key role in the process of transition in the region. This has resulted in a new strategy for the Port of Zwolle which fit in the new Regional Energy Strategies. These plans have been adopted by both Provinces and cities where port of Zwolle is located. In fact, these are national strategies. Port of Zwolle now is positioned centrally in the energy strategy and will play a decisive role in the coming 10 years to reach climate neutrality.

In summary, despite numerous setbacks and delays, such as Covid 19, Brexit, a large problem in the supply chain, increasing prices etc., we recognize that we are now at the forefront of fulfilling the desire for the energy transition in the region. We are in this fortunate position due to our participation in the successful Dual Ports project.

Contact information

For more information about the Pilot Project: please contact the DUAL Ports partner:

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