iTransfer
sustainable ferry travel

Sustainable ferry transport:
delivering innovative passenger transport solutions across rivers and estuaries in the North Sea Region

www.itransferproject.eu

The **Interreg IVB North Sea Region** Programme

Investing in the future by working together for a sustainable and competitive region

European Regional Development Fund
Investing in your future

Many commuters travel by road causing congestion and delays on Europe's urban routes. North Sea islands, such as Terschelling and Helgoland, located in environmentally protected areas, need enhanced accessibility by sustainable ferry technology. Regional public transport authorities seek to make better use of water transport for passengers to help reduce congestion and CO_2 emissions, improve air quality and provide better services.

iTransfer (Innovative Transport Solutions for Fjords, Estuaries and Rivers) aims to make ferry transport more freely accessible and sustainable, and encourage more people to travel by water. In areas in the North Sea Region (NSR) there are opportunities to replace existing vehicle routes with passenger ferries. Travelling by ferry is more sustainable, easier and quicker. It can also provide lifeline services to remote communities.

iTransfer seeks to better understand the market demand for passenger ferries, and explore solutions to deliver a viable and sustainable transport alternative to road. This includes developing green ferry technology to make operations more efficient, reducing CO_2 emissions and other pollutants, and promoting greener transport choices. The project also looks to integrate ferry travel with other transport modes to improve accessibility throughout the region, and provide guidance to streamline tendering requirements.

Led by the Institute for Sustainability, iTransfer is funded by the EU Interreg IVB NSR programme and comprises 16 partners from Belgium, Germany, the Netherlands and the UK. The project focuses on improved access and connectivity for people around the NSR. Project partners are working on the following key areas:

Developing new ferry connections:
improving accessibility, choice and reducing road congestion.

Improving sustainability of passenger transport in the NSR:
enhancing efficiency of existing ferry operations by applying new technologies, changing behaviour to reduce fuel consumption and emissions, and developing innovative sustainable ferry designs.

Increasing efficiency of public transport networks:
linking ferry operations with other transport modes, developing integrated public transport options, offering more choice, and lessoning environmental impact.

Better mobility and barrier free access to public transport:
developing landing infrastructure to ensure that ferries are accessible to everyone.

Raising awareness of sustainable ferry transport:
promoting the ease and benefits of ferry transport, sharing best practice among operators, and helping to address the challenges they face.

Encouraging a more supportive policy framework for public transport by ferry:
Encouraging transport policy to support sustainable ferry transport and addressing procurement issues to promote a level playing field for ferry operations.

A joint knowledge base on ferry operations:
collaborating and sharing knowledge on current and emerging issues related to sustainable operations.

For more information on the project visit **www.itransferproject.eu**

Opposite: Hal över, Germany
Front cover: TESO ferries, Netherlands

Project activities: case studies

Developing sustainable NSR ferries

The need for cleaner and more efficient vessels has led to sustainable technology being a fast-paced and developing area of the maritime industry. Understanding the operational conditions for vessels, and the latest solutions available, gives both ferry designers and operators a greater knowledge of current and future opportunities, and helps drive nnovation in this sector.

Developing ferry connections

In order to develop efficient and sustainable ferry connections, it is necessary to have suitable infrastructure in place. However, today's ferry landing equipment does not always meet current standards for disabled use, sustainability, operational use and connectivity with other public transport modes. iTransfer will demonstrate the opportunities available for ferry crossings and attract new operators to the sector, by developing innovative designs to address technically challenging landings.

Maid of the Forth, Scotland

Gravesend's pontoon, UK

Case study:
Efficient operations and sustainable design

The spiralling cost of marine diesel, as well as a desire to manage its environmental footprint, has encouraged Weserfähre, operating on the River Weser between Bremerhaven and Nordenham, to find new ways of reducing fuel consumption.

Fuel-flow meters were installed to measure fuel consumption and provide the bridge team with real-time measurement. A specially tailored simulator enables ferry staff to calculate and optimise fuel consumption and reduce CO_2 emissions across the route. By changing behaviour, efficient operations led to a reduction in emissions by 640 metric tonnes between 2011 and 2013.

Rederij Doeksen and Damen Shipyards have collaborated to develop a vision for a green ferry that has minimal impact on the natural environment. The partners have developed the concept and tested hull shapes, materials and alternative fuels such as electric power, gas, and renewables such as wind or solar power.

iTransfer provides a forum for companies to pool their knowledge and experience in an open environment to enable best practice and solutions to industry challenges to be shared. This knowledge base will be used by Maid of the Forth, TESO and Ostend when looking at the different challenges to improve the efficiency of their vessels.

Case study:
Accessible ferry landings and new routes

Gravesham Borough Council's ferry pontoon at Gravesend was designed to facilitate a fully accessible passenger ferry operation across the Thames. This service is an alternative to a 20 mile congested road journey. The pontoon allows barrier free ferry access, providing easier and quicker travel choices, which helps reduce emissions.

Gravesham drew on the expertise of iTransfer partners to modify and improve the original design. This experience has been shared so the approach can be replicated. Ostend and East Lothian Council will use the lessons learned when looking at the different tidal challenges facing their own landings.

SEStran has established a 'ferry connection' toolkit that identifies the key areas to explore when developing new routes. It draws on the latest research to assess requirements for a passenger ferry, and provides advice on how to establish a fully integrated service. The toolkit identifies core principles to test and develop business cases for new connections, which is an important and vital first step to attracting operators to the market.

Partners will use the toolkit in Gravesend, Ostend, Bremerhaven, and North Berwick. Sharing transnational experience is of benefit to all partners in developing and assessing their proposals.

Integrating transport modes: water and land

Convenient links between ferries and other transport modes is essential for streamlining passengers' journeys. Integrating ticketing systems, as well as the interchanges between transport modes, can contribute to developing new links between land and water-based transport.

Optimising ferry policy

The project is also exploring existing policies related to ferry operations. The project brings together diverse experience from operators, marine designers and local authorities who may make recommendations based on their experiences. iTransfer will explore how the tendering process for ferries can be improved and examine the effects of EU policy regulations on the process.

Ferry routes in Germany

Sustainable ferry design by TESO, Netherlands

Case study:
Delivering integrated solutions

Partners are exploring approaches to create efficient and easy ways for passengers to check times, and book tickets across multiple journeys. This includes the integration of public transport fare systems, allowing the use of the same ticket for ferry, bus, and train journeys.

The Bremerhaven Tourist Board, along with Helgoland and Hal över, has carried out a survey of ferry passenger expectations on the ferry routes from Bremerhaven to Helgoland and Bremen to Bremerhaven. This resulted in an evaluation report, which outlines the approach and findings from the survey.

As a result, Hal över is developing an innovative ticketing system for the ferry service between Bremen and Bremerhaven. Currently the leisure route requires passengers to book parts of the journey separately. The improved system aims to take into account ferry capacity both at the landing port and on the vessel. The capacity information will then be integrated with an online ticketing system to allow customers to book each part of the journey at the same time, without ferries being overbooked.

This model has been shared as an example of best practice with iTransfer partners.

Case study:
Tendering ferry service

SEStran is pooling experience in a tendering toolkit, which makes recommendations based on the needs of a ferry service and helps to improve sustainability through the procurement process.

Using the toolkit, Kent County Council (KCC) has been developing a tender to find a new provider for the Gravesend to Tilbury passenger ferry service across the Thames.

A tender process has been established through sharing best practice. Invaluable knowledge and advice has been received from iTransfer partners to guarantee the service will provide a sustainable ferry link. The process will also ensure the ferry service is as financially sustainable as possible. Tendering this long-standing and important public passenger service will ensure both KCC and Thurrock Council receive best value for money.

Alongside tendering and procurement guidance, the Institute for Sustainability and University College London (UCL) are looking at the policy and regulatory landscape and using tools such as carbon cost modelling to assess their impact on commerical ferry operations.

Project partners

Lead partner

1 Institute for Sustainability (UK)

The Institute for Sustainability is an independent charity established in 2009 to support cross sector collaboration and innovation in the delivery of sustainable places to live and work. Activity is in the areas they believe present the greatest challenge – and opportunity – to creating sustainable cities and communities. This includes transport, responsible for a quarter of CO_2 emissions produced in the UK each year.

Partners

2 AG Port of Oostende (Belgium)

The Port of Oostende is a multi-functional shortsea green port that bridges the UK with the Benelux, Germany and France. Roll-on, roll-off passenger ferries and green energy are core business, as is on-going building and maintenance of offshore wind parks. Cooperation with Oostende's university brings starting energy companies into the inner port.

3 Erlebnis Bremerhaven GmbH, Bremerhaven Touristik (Germany)

Bremerhaven is the largest city in Germany on the North Sea coast. Bremerhaven Tourist Board is a service provider of all relevant information on everything that is offered in and around Bremerhaven for tourists and local people. This includes details on arranging travel for groups, companies and travel agents, individual tourists and families.

4 Damen Shipyards (Netherlands)

Damen was established in 1927, and has grown into a multinational shipbuilding group. Damen has acquired a leading position in shipbuilding, based on its unique, standardised design concept. This modular construction approach immediately gave the ability to offer customers well-proven, innovative vessels at competitive prices. Damen provides hulls and components from stock, leading to very short delivery times.

5 Gravesham Borough Council (UK)

Located at the heart of the Thames Gateway, Gravesham has been involved in focused regeneration activity for more than 25 years. The council's commitment to working in partnership has linked environmental improvements with economic enhancements and it is from this background that the Council received recognition through the award of Beacon status for town centre regeneration.

6 Kent County Council (UK)

Kent County Council is the regional authority that governs the majority of the county of Kent in the south-east corner of England. As the main 'Gateway to Europe' it has a significant network of transport links and through iTransfer will exchange best practice and draw on the experience of the project partners in order to deliver best value for its customers.

7 Magistrat Bremerhaven (Germany)

Magistrat Bremerhaven is the local administrative body of the city of Bremerhaven. The operational implementation of structural measures in Bremerhaven is undertaken by several specialised public and private companies. The Department of Economic Affairs is the control and coordination centre within this network of actors. It is primarily responsible for the strategic and conceptual planning of Bremerhaven's economic policy.

8 Rederij Doeksen (Netherlands)

Rederij Doeksen operates the ferry service from, to and between Harlingen, Terschelling and Vlieland. Rederij Doeksen encourages durable cooperative ties with (island) entrepreneurs to make them attractive to tourists and to increase the number of visitors to the islands. Rederij Doeksen has formulated a number of core values these are: hospitality, safety, continuity, approachability, efficiency, affordable prizes and environmentally friendly operations.

9 SEStran (UK)

SEStran is a Regional Transport Partnership (RTP) comprising eight local councils in South East Scotland; Borders, East Lothian, West Lothian and Midlothian, Edinburgh, Fife, Falkirk and Clackmannanshire. As the Strategic Regional Transport Planning Authority, it aims to develop a comprehensive, sustainable transportation system to help businesses function effectively, and provide residents with improved access to health care, education, public services and employment opportunities.

10 Weserfähre GmbH (Germany)

The company Weserfähre GmbH, founded in 1910, serves the ferry line Bremerhaven-Nordenham. The ferries *Bremerhaven* and *Nordenham* connect Bremerhaven in the east with the village Nordenham and the larger cities behind to the west coast of the river Weser. It is the last ferry line on the river Weser at the mouth of the river towards the open North Sea

11 TESO (The Netherlands)

TESO (Texels Eigen Stoomboot Onderneming) has been operating the ferry service between Den Helder on the mainland and the island of Texel in the Netherlands since 1907. A total of 14 company vessels have been in use for the crossing between the island and the mainland. Due to increasing demand for crossings, the ferries have gradually become bigger and more modern over the years.

Sub partners

To Erlebnis Bremerhaven GmbH, Bremerhaven Touristik (Germany)

12 Helgoland (Germany)

Helgoland is a small island and a unique tourist destination in the fields of culture, leisure, history nature and (tax- and VAT-free) shopping in the North Sea, receiving a total of around 320.000 visitors per year. The Tourist Board Helgoland offers information on everything for tourists including hotel booking, tickets for groups, companies and travel agents, individual tourists and families.

13 Hal över (Germany)

Hal över operates passenger ships and -ferry services on the rivers Weser, Aller, Hunte, Lesum and Hamme in Bremen and Lower Saxony in the northern part of Germany. Hal över is operating the routes between Bremen and Bremerhaven, Oldenburg, Verden and Worpswede as well as two passenger ferry services in the city of Bremen with a fleet of all together ten ships.

To SEStran (UK)

14 Maid of Forth (UK)

The Maid of the Forth, established in 1981 provides spectacular sightseeing boat trips from Hawes Pier in South Queensferry, Edinburgh and daily trips to Inchcolm Island. Sights include the abundance of marine wildlife and views of Forth Rail Bridge. It is a family run business and has been under the ownership of Colin Aston since 1993.

15 East Lothian Council (UK)

East Lothian Council is a Scottish Local Authority serving a population of 98,000 to the East of Edinburgh and south of the Forth Estuary. Among other functions, it is the local transport authority and has responsibility for North Berwick Harbour which is the subject of improvement in the iTransfer project..

To Institute for Sustainability (UK)

16 UCL Energy Institute (UK)

The UCL Energy Institute delivers world-leading learning, research and policy support on the challenges of climate change and energy security. The approach blends expertise from across UCL, to make a truly interdisciplinary contribution to the development of a globally sustainable energy system. The Energy Institute is part of The Bartlett: UCL's global faculty of the built environment.
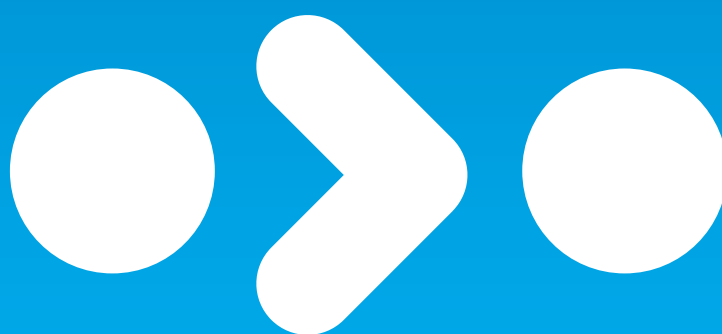
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