Sustainable ferry transport:
delivering innovative passenger transport solutions across rivers and estuaries in the North Sea Region
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 CO₂ 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 CO₂ 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](http://www.itransferproject.eu)
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 CO₂ 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.

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 over, 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 over 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 commercial ferry operations.

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.
for a quarter of CO₂ emissions produced.

This includes transport, responsible delivery times.

innovative vessels at competitive prices.

ability to offer customers well-proven, concept. This modular construction on its unique, standardised design has grown into a multinational.

Damen was established in 1927, and families.

and travel agents, individual tourists booking, tickets for groups, companies and families. This includes details on

everything that is offered in and around Bremerhaven for tourists and to increase the number

unique tourist destination in the fields of culture, leisure, history nature and of the built environment.

Based on this background that the Council received recognition through the award of Beacon status for town centre regeneration.

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.

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