

# BESTFACT BEST PRACTICE CASE QUICK INFO URBAN FREIGHT

N°CLI\_151

## NAME OF CASE

Zero-Emission Beer Boat in Utrecht

## KeyWords:

Freight Consolidation and Transshipment; Implementation of Low Emission Technologies; Business-to-Business (B2B) Solution; Last-mile Deliveries; Environmental Standards and Policy; Freight modal shift

## Case Logo:



## Description:

The beer boat concept was introduced in the city of Utrecht in 1996 in order to perform efficient last mile operations in the delivery of beer to catering and drinking establishments, thereby preserving the historical centre of the city, relieving the pressure on road traffic and complying to labour laws (for carrying barrels and crates).  
In 2010, the City of Utrecht updated the beer boat with an environmentally-friendly electric boat. Building on its success, in 2012 the City introduced another zero-emission boat for use in carrying other products including waste.

## Benefits:

- Flexible deliveries (no two-tonne axle load weight restriction, no time windows, no one-way traffic systems)
- Reduced emissions ( $CO_2$ ,  $NO_x$ ,  $PM_{10}$ )
- Reduced congestion
- Reduced road space occupancy for truck and van loading and unloading activities
- It also supports the preservation of the bridges and roads of the historical centre

## Success Factors:

- The practice is cost- and time-efficient
- The transport costs have decreased, the city accommodates the last mile deliveries using one vessel
- The delivery time window for the centre has been extended
- The end-customer costs are low as it is publicly subsidised
- Decreasing the road mileage previously covered by diesel trucks led to

## Supported Strategic Targets:

- Competitive logistics and transport system
- Flexible last-mile logistics
- Reduced pollutants emissions
- Reduced greenhouse gas emissions
- Reduced congestion (and street space occupancy)

## Starting Point/Objectives/Motivation:

The City of Utrecht is characterised by its rich cultural heritage and a high density of canals in the historical centre. At the same time, the large number of small businesses located in its centre increases the local cargo transportation needs, leading to road congestion, high emissions and damage of the local infrastructure as previously all their transportation needs were covered by trucks.  
For these reasons, the City decided to devise various urban distribution measures for alleviating the road traffic including: delivery windows, one-way traffic, two-tonne axle load restriction and alternative means of transport. The City used its existing canal infrastructure to shift urban traffic from road to waterways and first deployed the beer boat in 1996. This boat was replaced by a zero-emission boat in 2010.  
In order to shift cargo from road and conform with the labour laws, the City used the beer boat to supply food and drinks to local businesses based along the canals of Utrecht. The solution covered the last mile deliveries from four breweries and one catering industry wholesaler to 65 local stores (a B2B model). The boat was a solution to the different time restriction schemes in the centre of Utrecht as it allowed deliveries outside these time windows while complying with the loading restrictions. Using an installed hydraulic electric crane, the boat driver can unload the cargo while avoiding carrying the barrels, thus respecting the labour legislation.  
With electric energy, the boat reduces emissions in city centre.

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## Case Description (Cont.):

The project was implemented by the Municipality of Utrecht, and offered a subsidised, low cost transport solution, also including SMEs, in the centre of the city, with positive effects on decongesting the roads and decreasing the emissions.

However, transferring this solution to another city requires a high original investment (financial barrier), existing infrastructure network and clear business model.

By using electricity, the vehicle itself imposes technical limitations which, nonetheless can be sorted out easily by scheduling and overnight charging.

## Case Description (Cont.):

The electric beer boat has a length of 18.8 metres and a width of 4.2 metres, uses green energy and can be driven up to 8-9 hours on one charge. It can carry 18 tonnes of cargo (40-48 containers). The boat uses an electric hydraulic crane for unloading deliveries.

The boat has reduced emissions of CO<sub>2</sub> by 17 tonnes, NO<sub>x</sub> by 35 kg and PM<sub>10</sub> by 2 kg per year.

Due to the success of the beer boat project, in 2012 the Municipality of Utrecht decided to expand the project and buy another electric boat that could carry greater volumes to transport - among other products - waste from the city centre.

## More information:

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## Transport mode or supply chain elements:

### Transport mode:

- Inland waterways vessel

### Main actors involved:

#### Project leader and carrier:

- City of Utrecht (Department of Public Works)

#### Stakeholders:

- Four breweries
- One catering industry wholesaler
- 65 final customers

## Pictures: Zero Emission Boat deliveries in Utrecht, Netherlands



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