

Utilisation of Electric Trucks and Vans in the North Sea Region

E-Mobility NSR Conference in Gothenburg

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European Union



The European Regional Development Fund



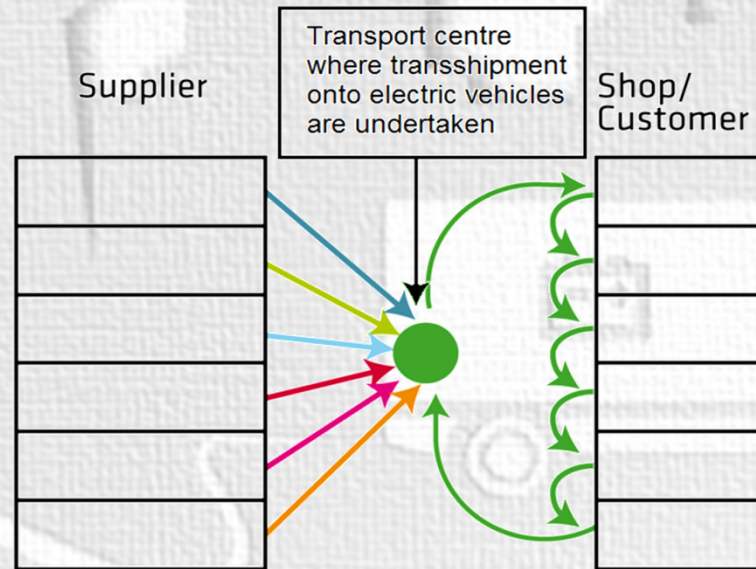
e-mobility NSR

FDT – Association of Danish Transport and Logistics Centres

- Is a non-profit public similar organisation approved by the Danish Ministry of Transport.
- Encompass eight Transport and Logistics Centres located in Denmark
- Works with added value logistics services
- Has its headquarter in Aalborg in the North of Jutland.



Transport Centres and Freight EV's



EU White Paper for Transport

Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system

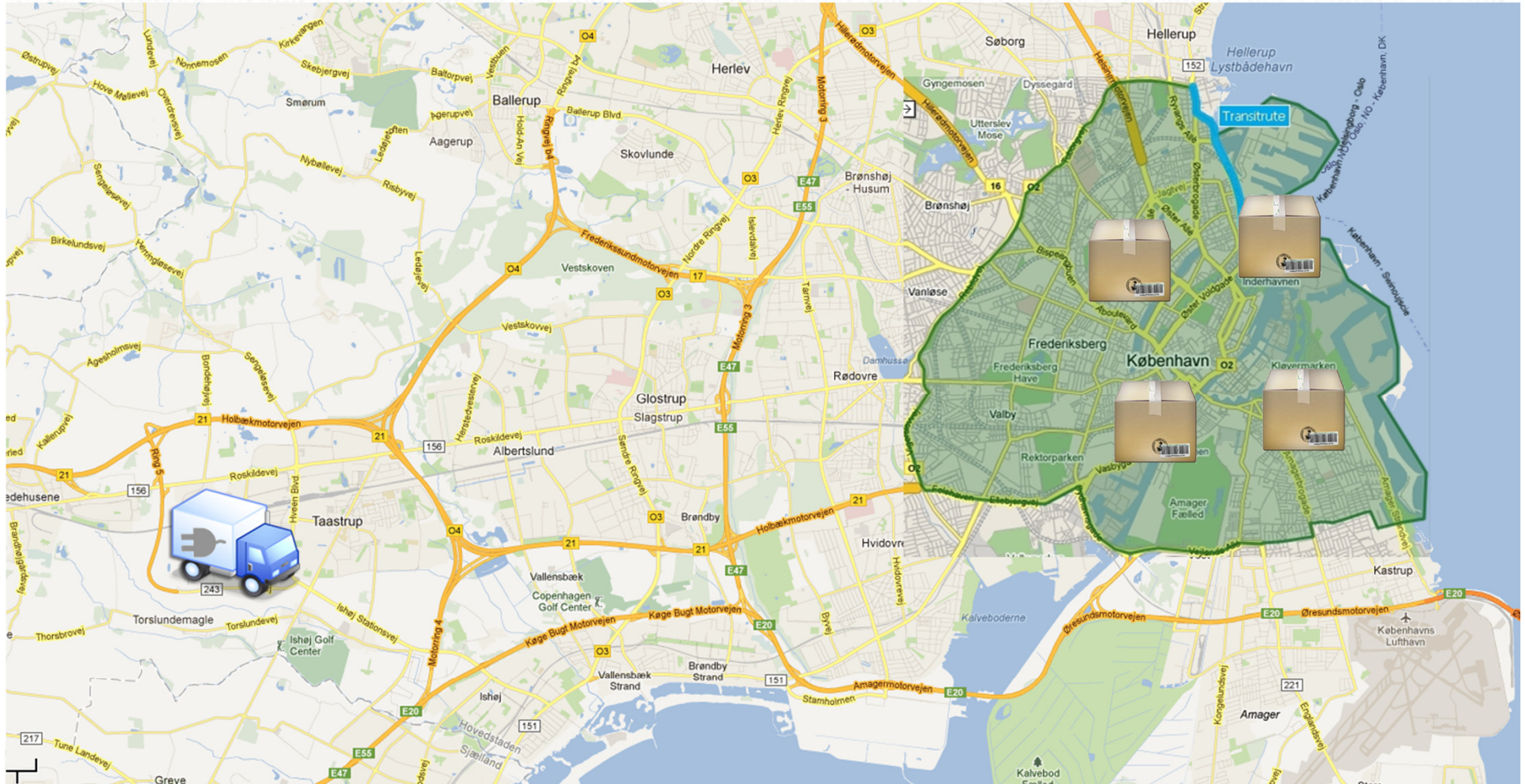
- **A Vision for a competitive and sustainable transport system**
- ***Goals for a competitive and resource efficient transport system; benchmarks for achieving the 60% GHG emission reduction target***
 - *“Halve the use of ‘conventionally-fuelled’ cars in urban transport by 2030*
 - *Phase them out in cities by 2050;*
 - *Achieve essentially CO2-free city logistics in major urban centres by 2030.”*

COM (2011) 144 Final

Concept of distribution with EV's

- No CO₂ and noise emission
- Vehicles can enter city centres also during night hours
- Vehicles are loaded at transport centres/ terminals outside the city centres
- Charging spots are placed at strategic locations, next to the biggest loading and unloading sites (stores)
- At present the largest electric trucks produced by OEM's have a payload up to 8-10 tonnes
- With a range of minimum 80-100 km, distribution in most European cities can be performed on one charging before returning to the Transport Centre.

Distribution with EV's



Distribution with EV's

Total distance driven (50 km)

Zero gram of CO₂ emission

No noises and smells

Night distribution possible

EU's CO₂ emission goals achieved

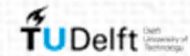


Therefore...

When developing solutions for electric vehicles, a **combined focus on both electrified car solutions and electrified urban freight solutions** is an obvious opportunity, which is utilised in the E-Mobility NSR project

The regional studies produced by TU Delft, Hamburg School of Applied Science, ZERO and FDT **delivers the latest overview and reflections on utilisation of electric vehicles** in combination with freight logistics and goods transportation in urban areas.

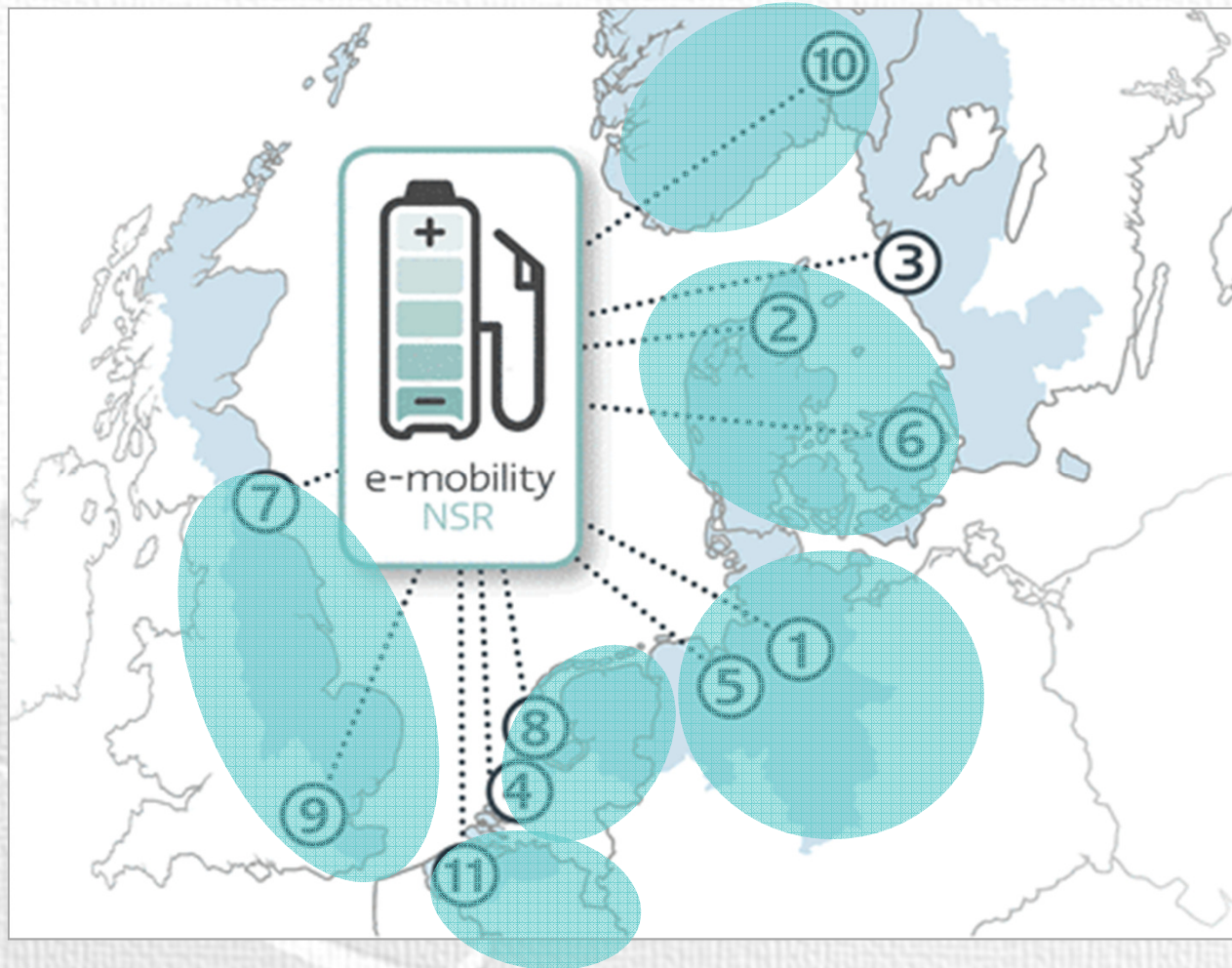
The regional reports are compiled into one report, which enables analysis of common findings from the reports.



Hochschule für Angewandte Wissenschaften Hamburg
Hamburg University of Applied Sciences



Geographical coverage of the E-Mobility NSR studies



What has been analysed in the report

In **total 58 cases of EV utilisation** for freight distribution and goods transportation have been analysed.

Each case study followed the same analytical framework including:

- Status
- Participants
- Project description
- Goals
- Finance
- Technical specifications
- Results including:
 - Customer attitude
 - Impact



EV functionalities

In the described cases of using electric trucks and vans for transportation, many different purposes and services have been performed:

- Postal and package deliveries
- Home deliveries
- City distribution
- Food products (temperature cooled)
- Fast food deliveries
- Gardening services
- Waste disposal services
- Goods on pallets
- Laundry services
- Milk deliveries
- Recycling materials
- Furniture
- Bakery products
- Parcels
- Greenery
- Money deliveries
- Beverages
- Utility services

Drivers, Challenges and Opportunities

On a transnational level the compilation report reflects on Drivers, Challenges and Opportunities according to the following factors:

- Technical,
- Financial,
- Energy supply and infrastructure,
- Environmental,
- Process and logistics,
- ICT,
- Regulatory and
- Human factors



Examples of common Technical Drivers, Challenges and Opportunities

Technical drivers

- EVs are feasible for works requiring frequent stops, smaller vehicles and shorter distances (e.g. city distribution)

Technical challenges

- Mainly occur due to; range, low maximum speed and heating issues during winter
- The weight of the batteries should be reduced to limit loss of pay load.

Technical opportunities.

- More than 25 different brands and types of electric vehicles including trucks, vans and light urban vehicles are available. (All of these are described in the report)

Examples of common Regulatory Drivers, Challenges and Opportunities

Regulatory drivers

- EVs can enter Environmental Zones and perform logistics at a 24/7 operation.

Regulatory challenges

- Up until now, electric vans have been more expensive than fossil fuel equivalents. With new mass production of electric vans, prices will drop and electric vans will be more competitive with fossil equivalents
- Significant market uptake still requires public subsidies

Regulatory opportunities.

- Incentives for EVs, such as being able to drive in the bus lane, and free parking, can help improve the business case for electric vans.

Examples of common Human Factor Drivers, Challenges and Opportunities

Human factor drivers

- In general the electric freight vehicle contributes to an upgrade of the image and working conditions of a truck driver.
- Citizens have a positive attitude about electric freight vehicles, since the vehicles can drive without causing noise and smells.

Human factor challenges

- Drivers initial rejection of the EVs often turned to enthusiasm during the tests: drivers identified with the vehicle as future, clean and silent technology and enjoyed fail-safe and comfortable operation.

Human factor opportunities.

- The drivers of the electric vehicles have to learn how to drive the vehicle to use less of the battery capacity (savings up to 20 % possible)

**The report will be published mid
November 2012 and can be
downloaded from:**

www.e-mobility-nsr.eu

For further information – Please contact

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