FREVUE
Freight Electric Vehicles in Urban Europe
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FREVUE

- Demonstration of Urban Freight Electric Vehicles for Clean City Logistics
- Led by Westminster City Council, London – through Cross River Partnership
- 30 Partners across 8 cities
- Duration: March 2013 - Sept 2017
- Budget: €14.2million
Demonstration will include:

- 127 vehicles: small vans, 3.5 tonne to 18 tonne vehicles
- Different sectors: food, retail, waste, post
- Public & Private organisations: local freight operators through to multi-national logistic companies
- A range of logistic models
- Alternative charging modes - fast, time-shifted, dynamic response - to overcome the long EV charge times and short ranges that have hampered early EV uptake while minimizing the grid impact.
Amsterdam/Rotterdam

Objective:

- Amsterdam Air Quality Program department: Developing policies and implementing measures to improve air quality.

- Rotterdam’s sustainable mobility policy aims at facilitating the economically very important main-port distribution activities whilst reducing the environmental impact of traffic.
Amsterdam/Rotterdam

Challenge:

- In Amsterdam, every day approximately 3,500 trucks and 25,000 vans drive into the city, contributing to congestion as well as air pollution.
- Amsterdam has a delicate medieval centre, narrow winding streets and small cobblestoned bridges.
- In terms of logistics, there is a lack of experience with larger electric vehicles.
- Heineken runs 24 trucks all over the Netherlands (100-250 km/day) and TNT Express and UPS operate 41 large diesel vans in Rotterdam and Amsterdam with an average of 60 stops/day.
Amsterdam/Rotterdam

Activités:

- Prove that urban freight deliveries can be 100% electric
- Deploy 24 large EV (from 3.5t vans to 18t trucks)
- Explore exceptions for time-window, parking and weight regulations, more flexible night-time delivery permission
- Establish reliability and technical feasibility of large electric trucks in beverage distribution
- Test (in-vehicle) ICT solutions and intelligent charging systems
- Use electric trucks for waste transport
Amsterdam/ Rotterdam

• Partners

City of Amsterdam

TNT

UPS

Heineken
Lisbon

• Central Lisbon
  ➢ Old city centre with traditional road layout
  ➢ Small urban spaces with heavy congestion
  ➢ Historic neighbourhoods with controlled access
  ➢ Constraints on logistic movements
Lisbon

• Actions
  ➢ Electric light goods vehicles for:
    ➢ Municipal servicing
    ➢ Postal services
  ➢ ‘Smart’ on-street loading bays: using smart technology for vehicle detection and real time information management opportunities
  ➢ New regulations for loading and unloading
Lisbon

- Partners
London

- Central London
  - Very poor air quality
  - 4500 deaths per year linked to poor air quality
  - Highly congested road network
  - Inefficient freight operations
  - Constrained electricity grid
  - Strong regulatory environment
London

Activities:

- New consolidation centres served by electric freight vehicles will be implemented as well as the expansion of existing, smaller centres.
- Guidance will be produced on how consolidation centres can be developed and implemented by local authorities throughout London.
- Better understanding and solutions regarding the impact of large scale EV charging on the electricity grid and mitigation of impacts.
London

Activities:

- 16 new electric freight vehicles will be introduced in different operating environments
- Methods for expanding the operation into different sectors, e.g. local government
- How urban consolidation centres can improve freight operations
- Solutions to potential grid constraints from the increasing electrification of transport
- How planning policy can encourage the development of enhanced freight management
London

- Partners

Transport for London
City of Westminster
CROSS RIVER PARTNERSHIP
Imperial College London
ups
UK Power Networks
ARUP
Madrid

- Metropolitan area
  - Third largest European urban area
  - Important logistic hub for whole of Spain
  - Increasing freight challenges
    - Narrow streets, congestion, competing demands for road space
  - Supportive policy environment
Madrid

- **Activity**
  - Consolidation centre for food/drink (Leche Pascual), post and parcel (TNT and SEUR) distribution
  - Light commercial through to heavy goods vehicles
  - Last mile delivery in EV from consolidation centre
  - Dynamic fleet management: real-time monitoring of the electric fleet to increase efficiency and productivity of the operations
Madrid

- Partners
Milan

- Central Milan
  - Congested urban environment
  - Air pollution is significant
  - Existing regulation and policies e.g. congestion charge zone, vehicle restrictions
  - High overall volume of freight traffic
  - Lack of freight management generates unnecessary vehicle movements and resultant problems.
  - Inefficient existing logistics of drugs delivery where distributors deliver to pharmacies several times a day (6 times at least for each of 60 chemist’s shops existing inside Area C)
• Activities

- Implementation of freight consolidation centre
- Area C” is the restricted traffic zone in the center of Milan.
- EFV linking depots to consolidation centre and end customer
- Electric vehicle fleet will be organised by allotting a van to each Distributor for exclusive use, for the transfer of drugs to the Nearby Delivery Area for the last mile delivery
- Optimising vehicles’ load factor and minimising general costs and vehicles’ journeys
Oslo

- Municipal area
  - Pollution and emission problems – particularly in winter
  - Supportive policy environment for EVs
  - City has extensive EV infrastructure programme
  - There is a lack of experience from using electric vehicles as part of a commercial fleet and lack of knowledge of their performance in cold climates.
Oslo

- Activities
  - Large potential market for EV logistics
  - Extreme climatic conditions
  - Evaluate vehicle range and effectiveness in logistic operations
  - Manage charging requirements in 24 hour operational environment
  - Reduce local emissions by using electric vehicles as part of Bring Express’ fleet for use in distribution of goods and parcels.
Oslo

- Partners

City of Oslo

bring

SINTEF
Stockholm

Objective:

- Minimising the environmental impact of the Royal Sea Port development (a major mixed-use scheme in an old harbour area of Stockholm).

- The Royal Sea Port development will include
  
  - ~ 35,000 workplaces
  - ~ 12,000 apartments
  - a ferry terminal
  - a place for cultural events
  - shopping and other services
Stockholm

Outcomes

• Develop a consolidation centre for the construction phase that all low load vehicles will use
• The consolidation centre for construction will include 1-2 electric vans and 1-2 heavy vehicles.
• One fast charging point will be deployed in the area to support charging facilities at the UCC as well as 2 standard charging units
• Establish permanent consolidation centres for ongoing logistics in the new development
• Implement and evaluate new policies such as reserved loading / unloading areas for EVs
Stockholm

- Partners

TRAFFIKVERKET
Conclusions

The demonstration projects have been designed to ensure the range of conditions that are common across Europe are covered, including:

- goods deliveries (including food, waste, pharmaceuticals, packages and construction goods)
- novel logistics systems and associated ICT (with a focus on consolidation centres which minimize trips in urban centres)
- vehicle types (from small car-derived vans to large 18 tonne goods vehicles)
- climates (from Northern to Southern Europe)
- diverse political and regulatory settings that exist within Europe
Conclusions

- The project will demonstrate solutions to the barriers currently inhibiting uptake of EVs in the sector.

- ICT development will play an important role in the project
  - Provide a central resource for the effective governance
  - Online data capture and transfer to partners
  - Support assessment areas:
    1. Technical performance
    2. Economics of the demonstrators
    3. Systemic and environmental impacts
    4. Social and attitudinal impacts
    5. Policies, procurement, governance
Next Steps

• 2013 - 14
  ➢ Assessment Framework
  ➢ Vehicle Order and Delivery

• 2014 – 2016
  ➢ Demonstration
  ➢ Data Collection

• 2016 - 2017
  ➢ Reporting and Closeout
Thanks for your attention

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