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

FREVUE

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.

Consortium

City + Policy

- Westminster Council (Co-ordinator)
- City of Amsterdam
- City of Lisbon
- City of Madrid
- City of Milan
- City of Oslo
- City of Rotterdam
- City of Stockholm
- Swedish Transport Adm.
- EMEL
- Transport for London

Co-ordination and Dissemination

- Hyer
- Polis

Logistics

TNT, UPS, Heineken, bring EXPRESS, Grupo Leche Pascual, ARUP, SEUR, CTT CORREIOS

Research

- Imperial College London
- TNO (NL)
- SINTEF (NO)

ICT Partners

ITENE, Atos

Vehicle Manufacturers

SMITH ELECTRIC VEHICLES, NISSAN

Grid Operators

Fortum, UK Power Networks

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

Acitivites:

- 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

City of Rotterdam

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

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

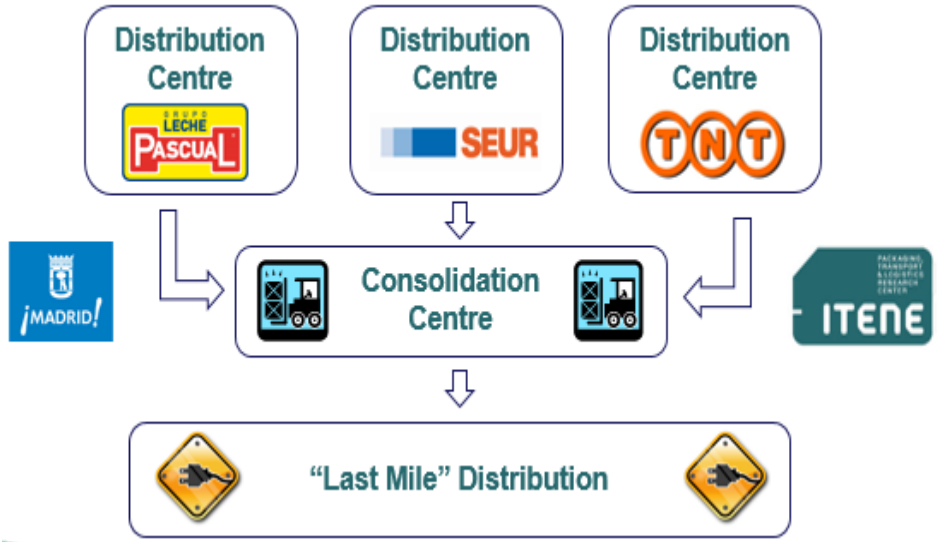
Madrid

- 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



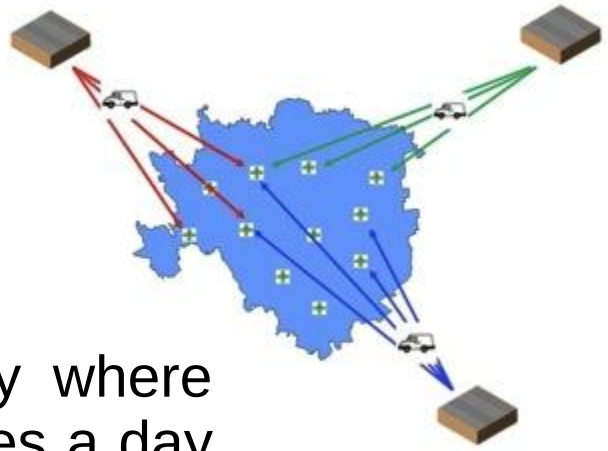
➢ Dynamic fleet management: real-time monitoring of the electric fleet to increase efficiency and productivity of the operations

Madrid

- Partners

Milan

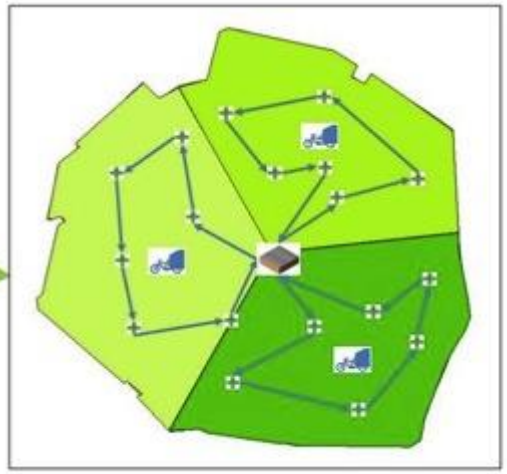
- Central Milan
  - Congested urban environment
  - Air pollution is significant
  - Existing regulation and policies e.g. congestion charge zone, vehicle restrictions
  - High overall volume of freight traffic
  - Lack of freight management generates unnecessary vehicle movements and resultant problems.
  - 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)



Milan

- 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

AreaC



  - 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

Milan

- Partners

Milano

Comune di Milano

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

bring

City of Oslo

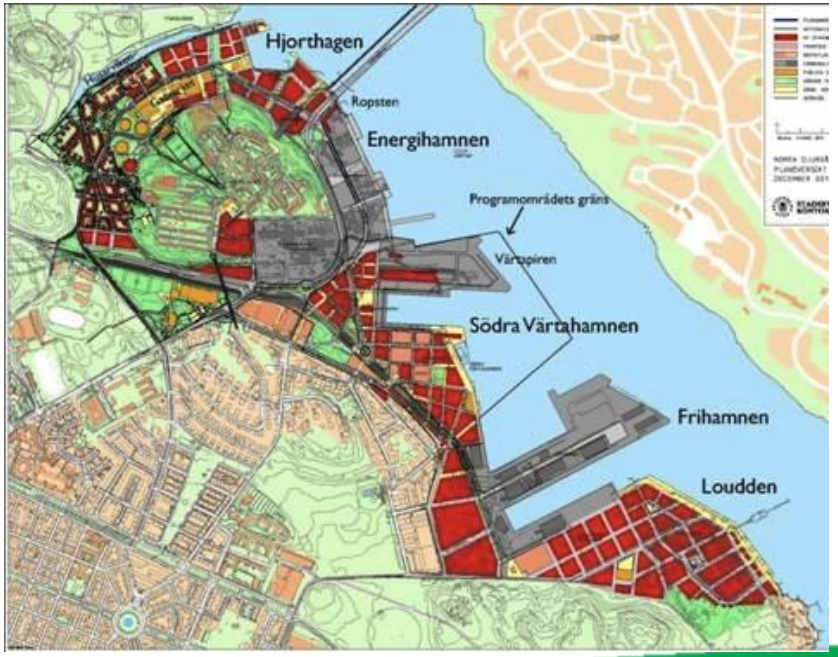
SINTEF

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

TRAFIKVERKET

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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