Proven Strategies to enable more efficient and low-carbon logistics

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Systems and sub systems

- Economic system describes logistics demand
- Energy system describes carbon intensity
- Specific sector characteristics – value density etc used to design supply chains
  - Corporate Supply chains focused on sustainable competitive advantage within the sector environment
  - Fleet configuration and physical network design to deliver the corporate strategy
    - Vehicles
EV: Infrastructure tensions

Freight Transport
- Charge on the move

Passenger Transport
- Charge and drive
Air Quality: HGVs vs LGVs

HGVs
- Fewer journeys
- Poor air quality performance at vehicle level

LGVs
- More journeys
- Better AQ performance at vehicle level
Technologies for reducing fuel consumption and CO2

Barriers to mainstream adoption (Technical, Economic, Political)

- Low Reduction of Greenhouse Gases
- Medium
- High

Vehicle Technologies
- High Capacity Vehicles
- Electrification
- Dedicated Bio Gas
- Dual Fuel
- Dedication
- Electric Hybrids
- Hydraulic

- Dedicated CNG with Bio Gas
- Hybrid
- Dedicated CNG
- CNG/LNG
- Advantages
- Disadvantages

Research to increase impact

Research to reduce barriers

Active solutions

Best solutions

- Smoother roads
- Tyre pressure
- Telematic
- Driver Feedback
- Routing

Sexy but...

- Smoother roads
- Tyre pressure
- Telematic
- Driver Feedback
- Routing

Dedicated Bio Gas

Electrification

Hydraulic

Driver Feedback

Routing

Telematic
Logistics measures for reducing fuel consumption and CO2

Best-case overall impact

Barriers to mainstream adoption (Corporate, Technical, Economic, Political)

Research to reduce barriers

Research to increase impact

Low

High

Drones

Routing

Retiming deliveries

Port Centric Logistics

Backhau

Last mile solutions

Urban consolidation centres

Co-Modality

Crowd sourced logistics

Co-loading

Physical Internet

Vehicle Fill

Home Delivery Of Groceries

Home Delivery Of Groceries

Retiming deliveries

Routing
A new approach: whole systems thinking

Data & whole systems approach critical to this approach
Unit load building in the pick process

Pallet configuration can make a big difference to outbound efficiency:
• Transport
  • Cube efficiency
• Customer
  • Customer friendly deliveries