



# RESEARCH ON URBAN GOODS TRANSPORT

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# Challenges

- Increasing urbanisation
  - Shortage of land/space
  - Emissions and restrictions on use
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- Challenges in urban goods transport
    - Lack of coordination
    - Lack of/inaccessible areas for loading/unloading
    - Inefficient goods receptions
    - Unpredictability and unexpected events





# What to do?

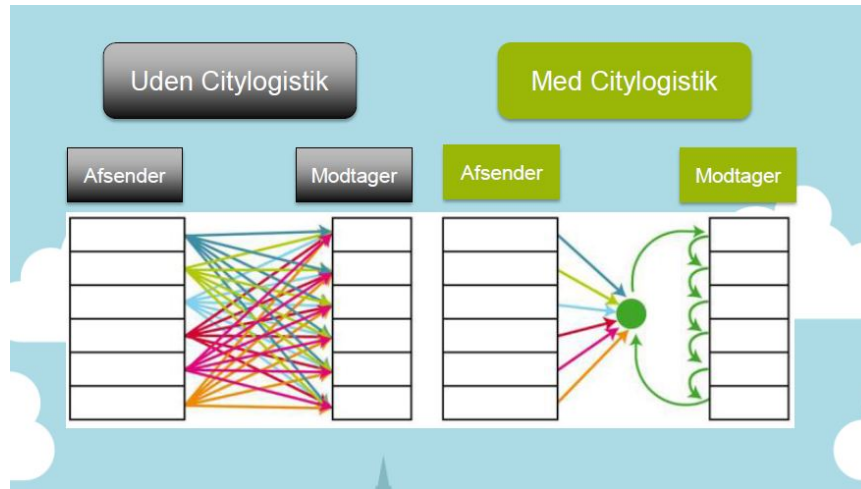


# SINTEF projects on (urban) goods transport

Project	Contents
Green Goods Transport	Calculating environmental impacts and accounts for transport companies
SMARTFREIGHT	Management through ICT, information between authorities and transport operators
PRINT	Prioritising commercial transport in urban areas
GOFER	Solutions for managing and regulating goods transport in urban areas
GAZ	Environmental pricing in low emission zones based on actual emissions
Green Distribution in Oslo	Identify and demonstrate solution for green urban distribution
NONSTOP	Automatic control of heavy vehicles
FREVUE	Demonstrating electric vehicles for urban distribution
DYNAMO	Provide information on activities in transport system to authorities and transport operators
NORSULP	Facilitate processes towards sustainable urban logistics plans in Norwegian cities
Urban Puzzle Pilot	Using data from transport operators to describe transport activities in cities
AZEL	Initiative to accelerate zero-emission logistics

# Urban zone: urban consolidation centre

- More than 50 UCCs established since to 1970s



Picture: CityLogistik KPH

- Positive impacts on economy, environment and climate
- Largest barrier: economic viability

# City centre: access restrictions

- Access restriction to impact traffic volumes or emissions
  - Access control
  - Pricing
  - Combinations of pricing/access control

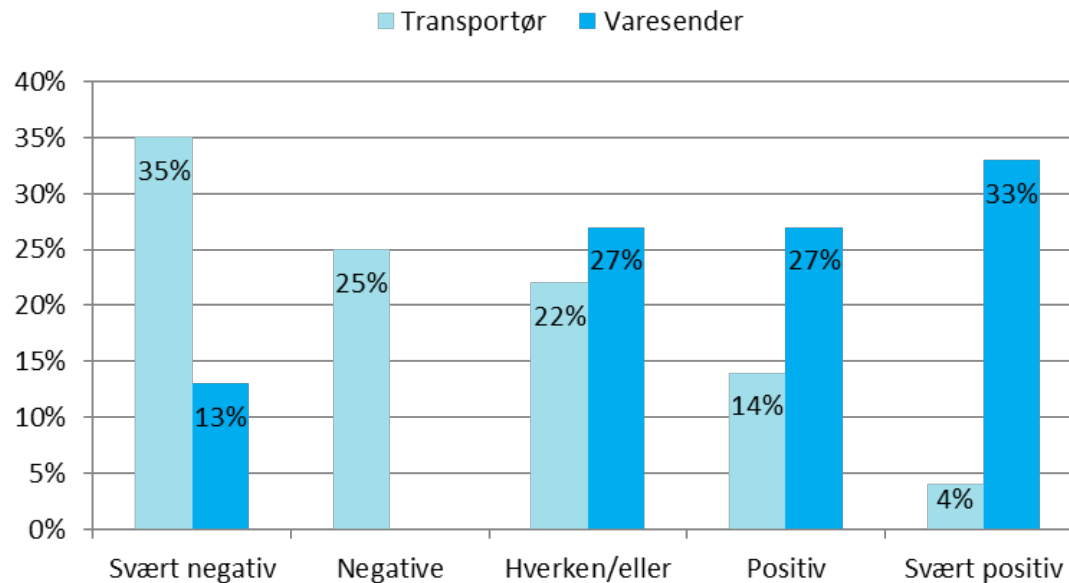
	Trafikkavvikling	Klima/miljø	Andre*	Omfatter varetransport
<b>Area Licence Based</b>	92 %	76 %	56 %	48 %
<b>Ringbasert</b>	92 %	58 %	58 %	70 %
<b>Punktbasert</b>	100 %	50 %		50 %
<b>Lavutslippssone</b>	36 %	91 %	15 %	64 %

Andre: tjene inn midler for å finansiere infrastruktur. Gjelder særlig bomringer

# City centre: low emission zones

- Three types of low emissions zones
  - Pricing: all can buy access
  - Access restriction based on vehicle category
  - Emission based pricing: pricing based on emission category
- .. and dynamic pricing in regulating access?
  - Pricing based on a vehicle's actual emissions

Holdning til dynamisk prising



# Street level: multiple use lane

Periode	Funksjon
08.00-10.00	Kollektivprioritering
10.00-17.00	Varelevering
17.00-21.00	Kollektivprioritering
21.00-08.00	(Beboer)parkering



- Prioritise use through variable message signs
- Reduced travel times with 12-15%
- Reduces delivery times in urban goods distribution
  - Reduced fuel consumption
  - Reduced emissions
  - Reduced costs

(source: BESTUFs.net)

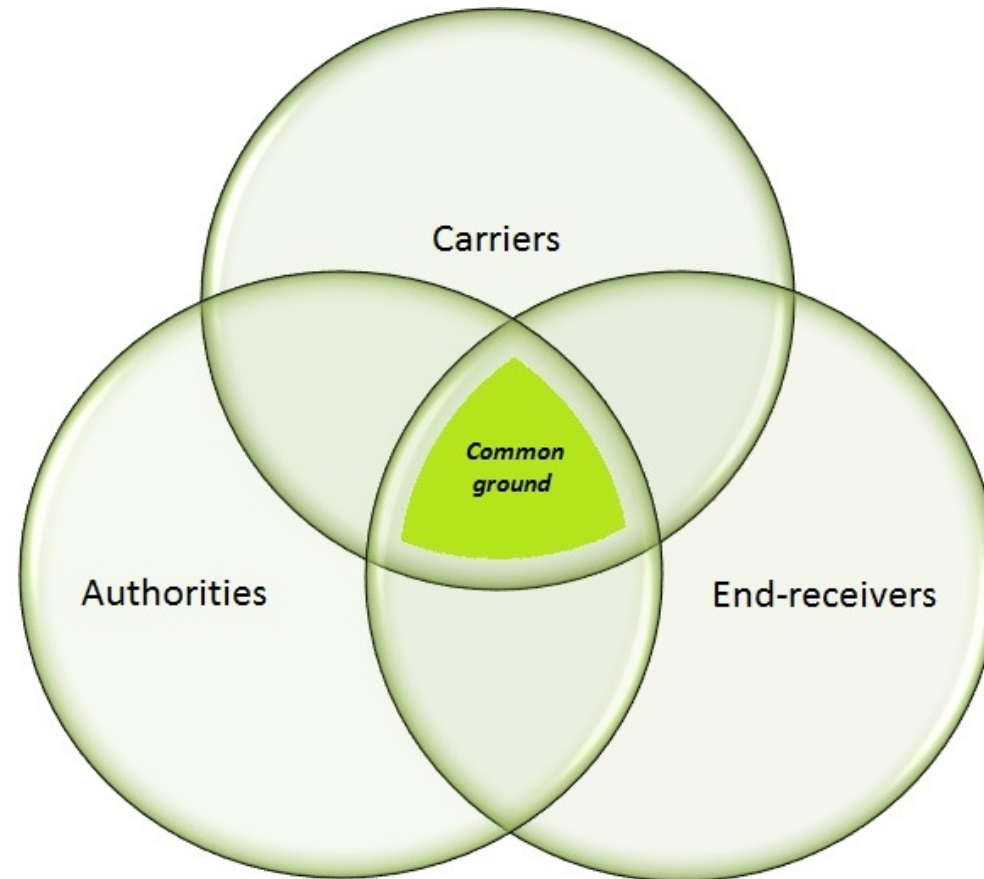


# Delivery times: night and evening deliveries

	Fordeler	Ulemper
<b>Transportører</b>	<ul style="list-style-type: none"><li>• Kostnadsreduksjoner &gt; høyere utgifter</li><li>• Nøkkelkontrakter/låssystemer</li></ul>	<ul style="list-style-type: none"><li>• HMS, arbeidstidsbestemmelser</li><li>• Forutsigbarhet i leveranser</li><li>• To konsoliderings- og leveringsregimer</li></ul>
<b>Varemottakere</b>	<ul style="list-style-type: none"><li>• Arbeidsfordeling utover dagen</li><li>• Mindre støy og forstyrrelse for kunder</li><li>• Teknologi og nøkkelkontrakter</li><li>• Incentiver for butikkjeder</li></ul>	<ul style="list-style-type: none"><li>• HMS, arbeidstidsbestemmelser</li><li>• Uforutsigbare leveranser</li><li>• Personell må være tilstede hvis ikke tekniske løsninger for varemottak</li></ul>
<b>Myndigheter</b>	<ul style="list-style-type: none"><li>• Lavere utslipp</li><li>• Bedre arealutnyttelse</li><li>• Fremmer miljøvennlig transport</li><li>• Støyreducerende tiltak</li><li>• Økt sikkerhet i gatebildet</li></ul>	<ul style="list-style-type: none"><li>• Konflikt med mål om levende by</li><li>• Arealutnyttelse, konflikt med parkering</li><li>• Krever vedlikehold døgnet rundt</li><li>• Lover og regler</li></ul>

# Find common ground!

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Teknologi for et bedre samfunn