

URBAN LOGISTICS IN SWEDEN: PERSPECTIVES FROM RESEARCH IN INDUSTRY AND CITIES

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Cities for Mobility
June 18, 2018
Stuttgart

RISE IN BRIEF

Present across the whole of Sweden. And beyond.

2,200 employees, 30 % with a PhD.

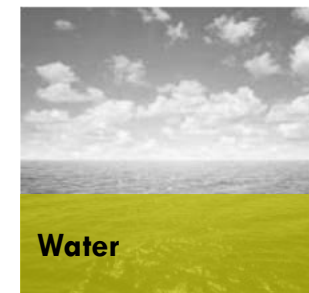
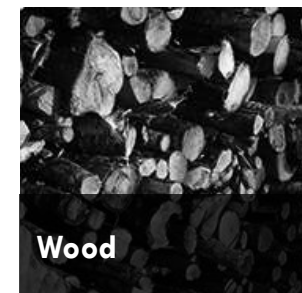
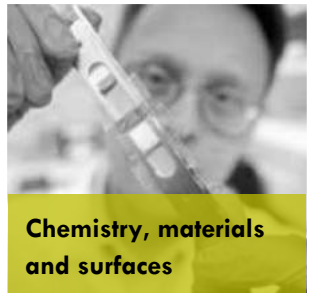
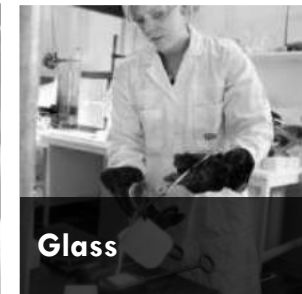
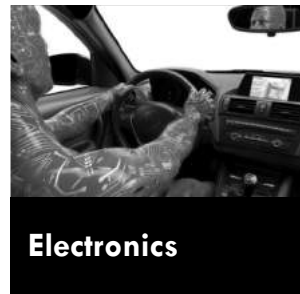
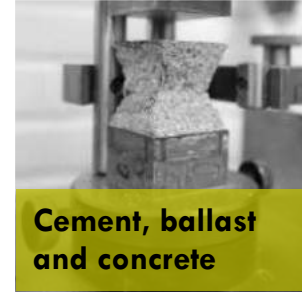
Turnover approx. SEK 2.5 billion (2016).

A large proportion of customers are SME clients, accounting for approx. 30 % industry turnover.

Runs 100s of test and demonstration facilities, open for industry, SMEs, universities and institutes (RISE is owner and partner in 60 % of all Sweden's T&D facilities).



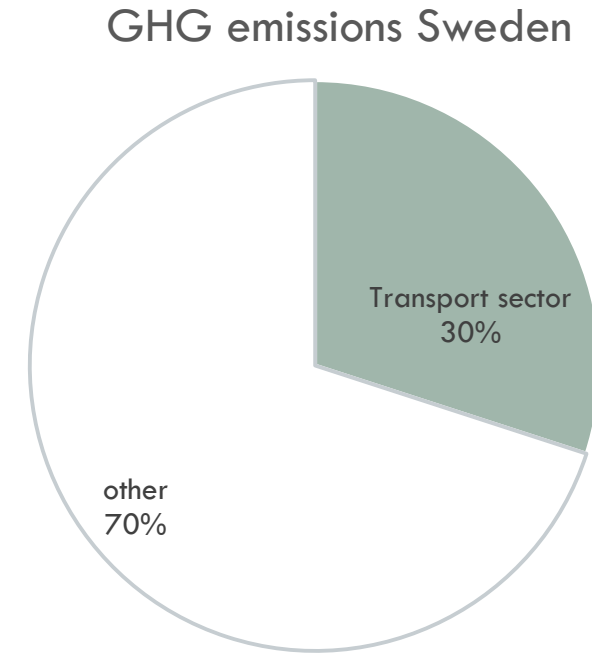
WITH OUR BROAD RANGE OF **COMPETENCIES AND UNIQUE EXPERTISE, WE CREATE ADDED VALUE**



transport mobility
infrastructure Autonomous
electric servitization seamless integrated
digital climate
intermodality urbanisation
travel vehicles energy
emissions

TRANSPORT'S CRUCIAL ROLE

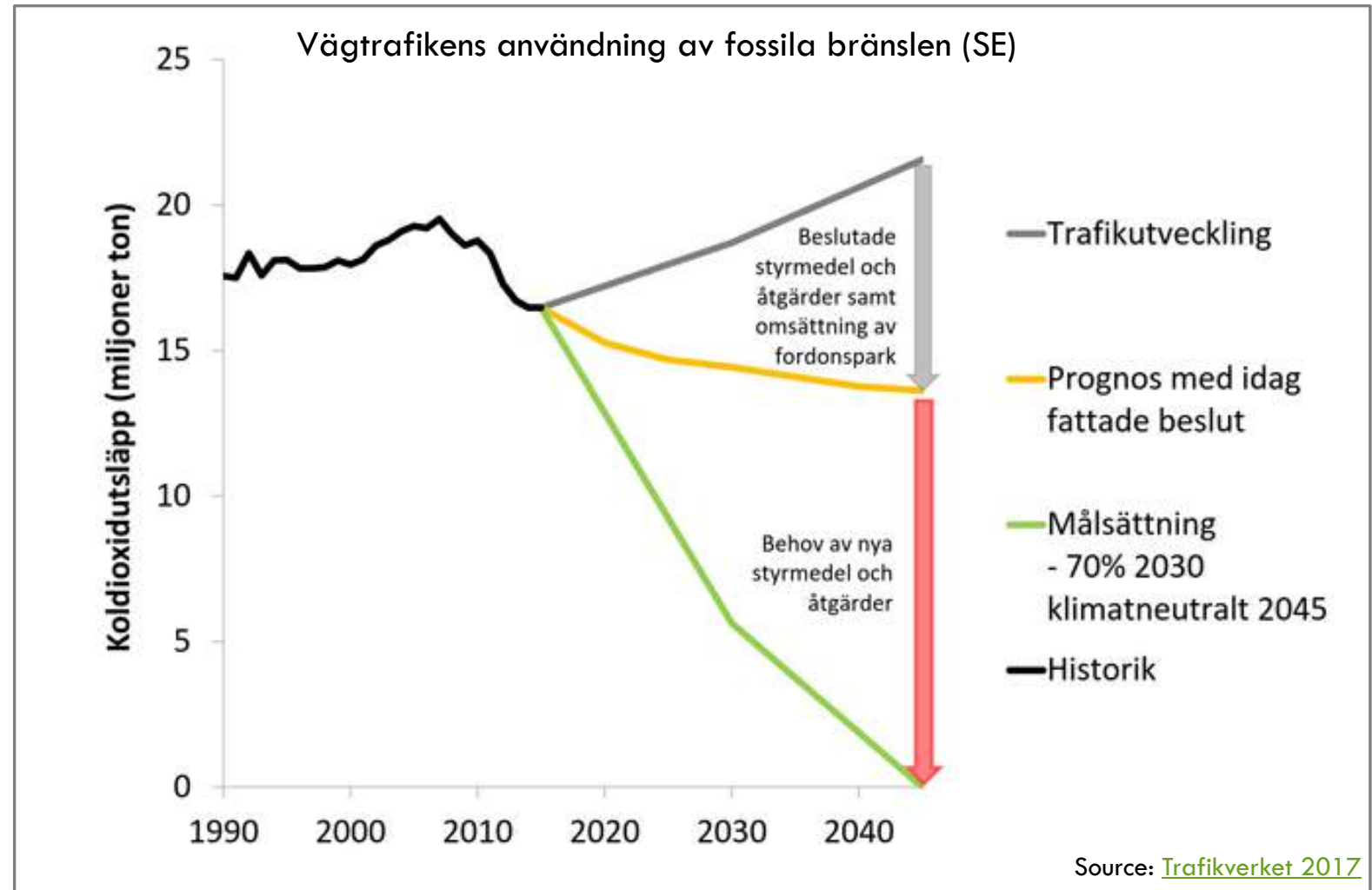
“ The largest contribution to GHG effect in Sweden comes from fossil fuels.



“ The transport sector contributes to 30 % of Sweden's GHG emissions

TRANSPORT'S CRUCIAL ROLE

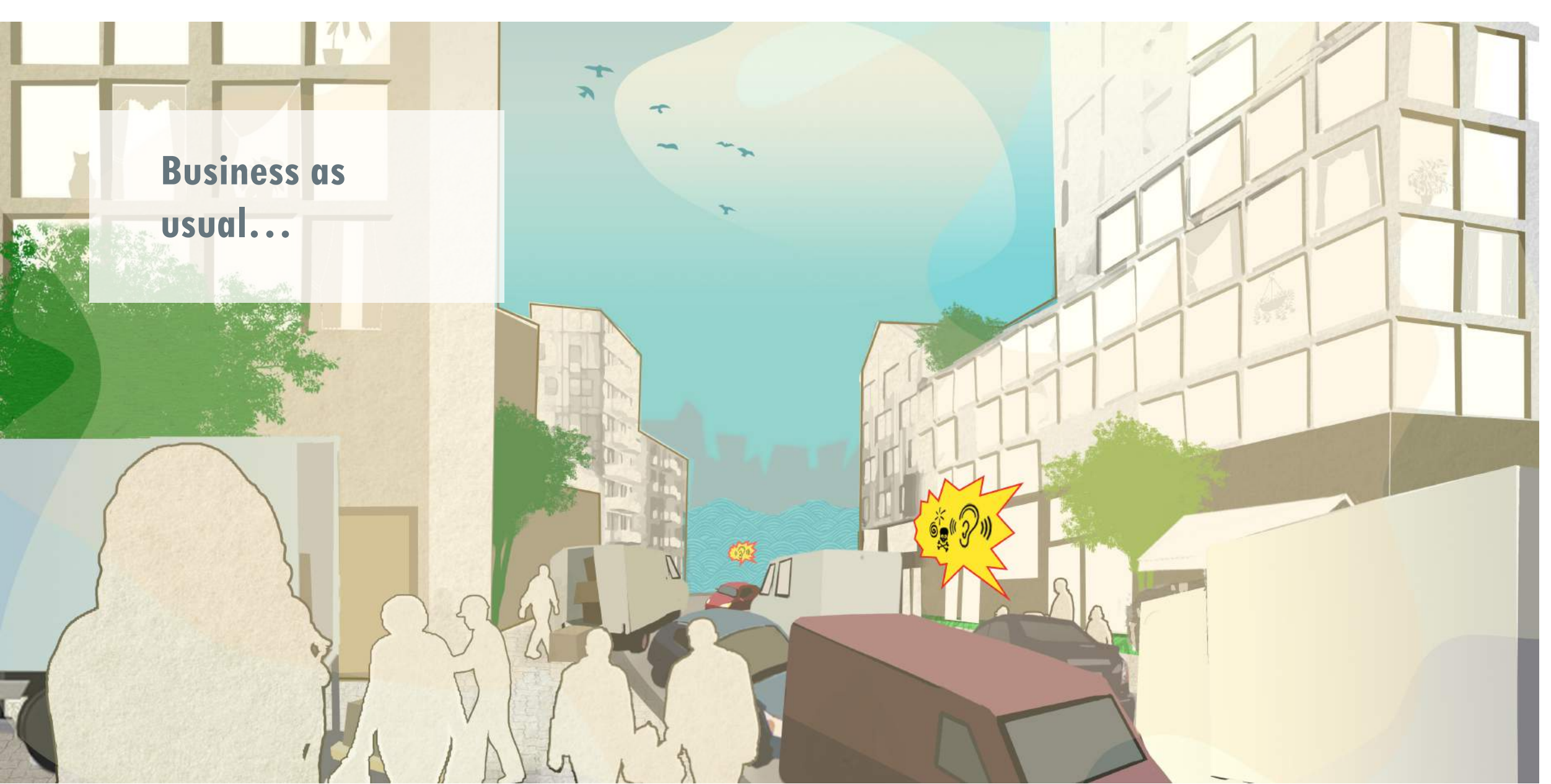
“ Technological innovations and measures will not be enough to achieve climate neutrality. We also need a new approach in planning and societal development as well as our infrastructures.





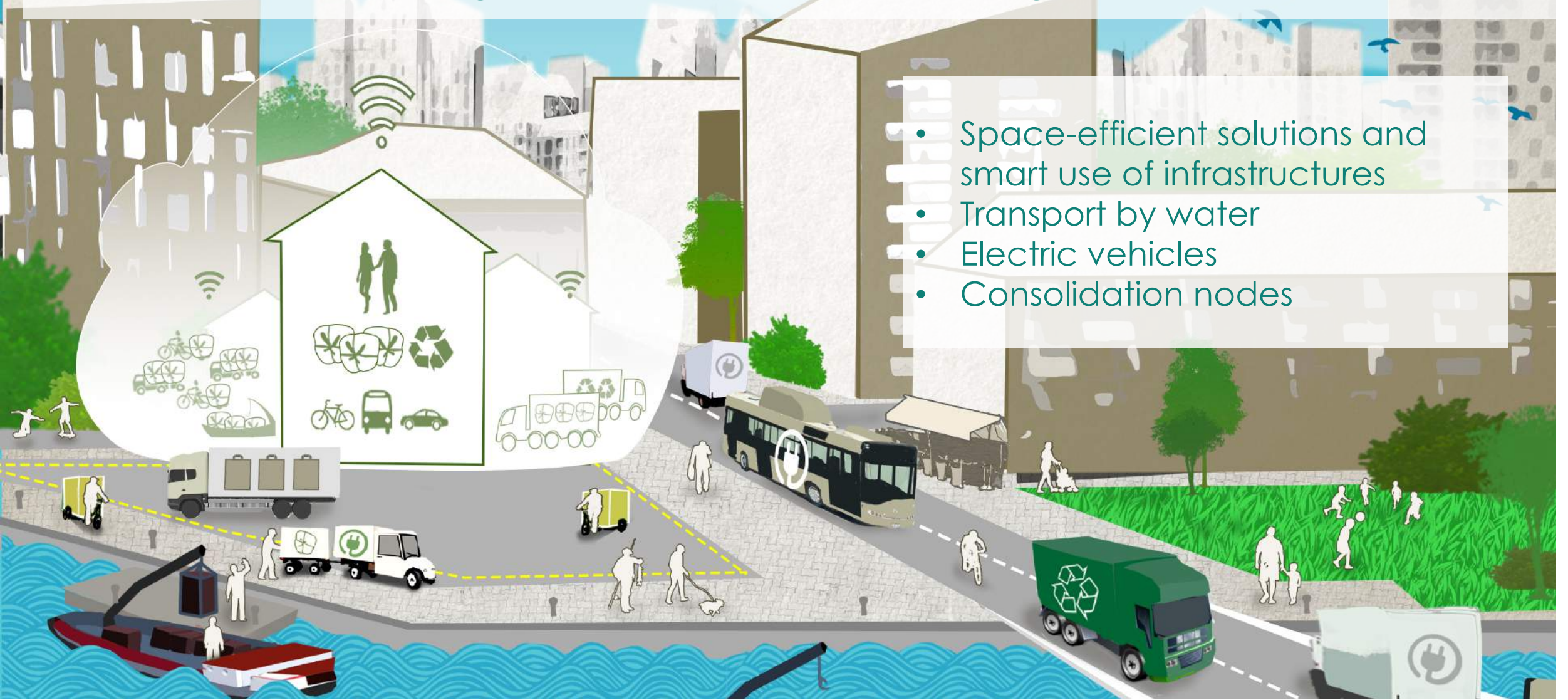
DENCITY

**Business as
usual...**



vs. innovativa lösningar & effektivare planering

- Space-efficient solutions and smart use of infrastructures
- Transport by water
- Electric vehicles
- Consolidation nodes

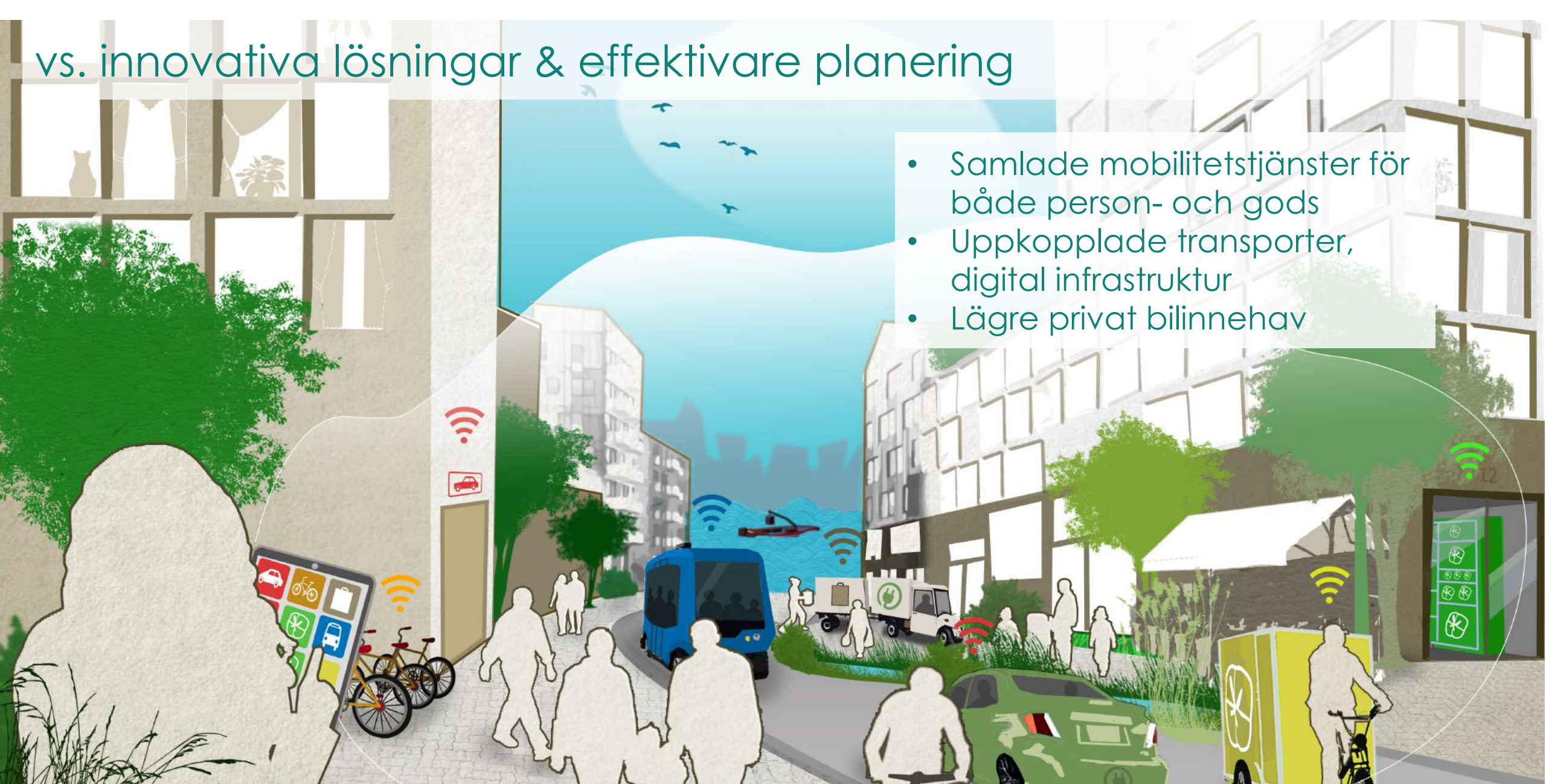


Frihamnen, Göteborg

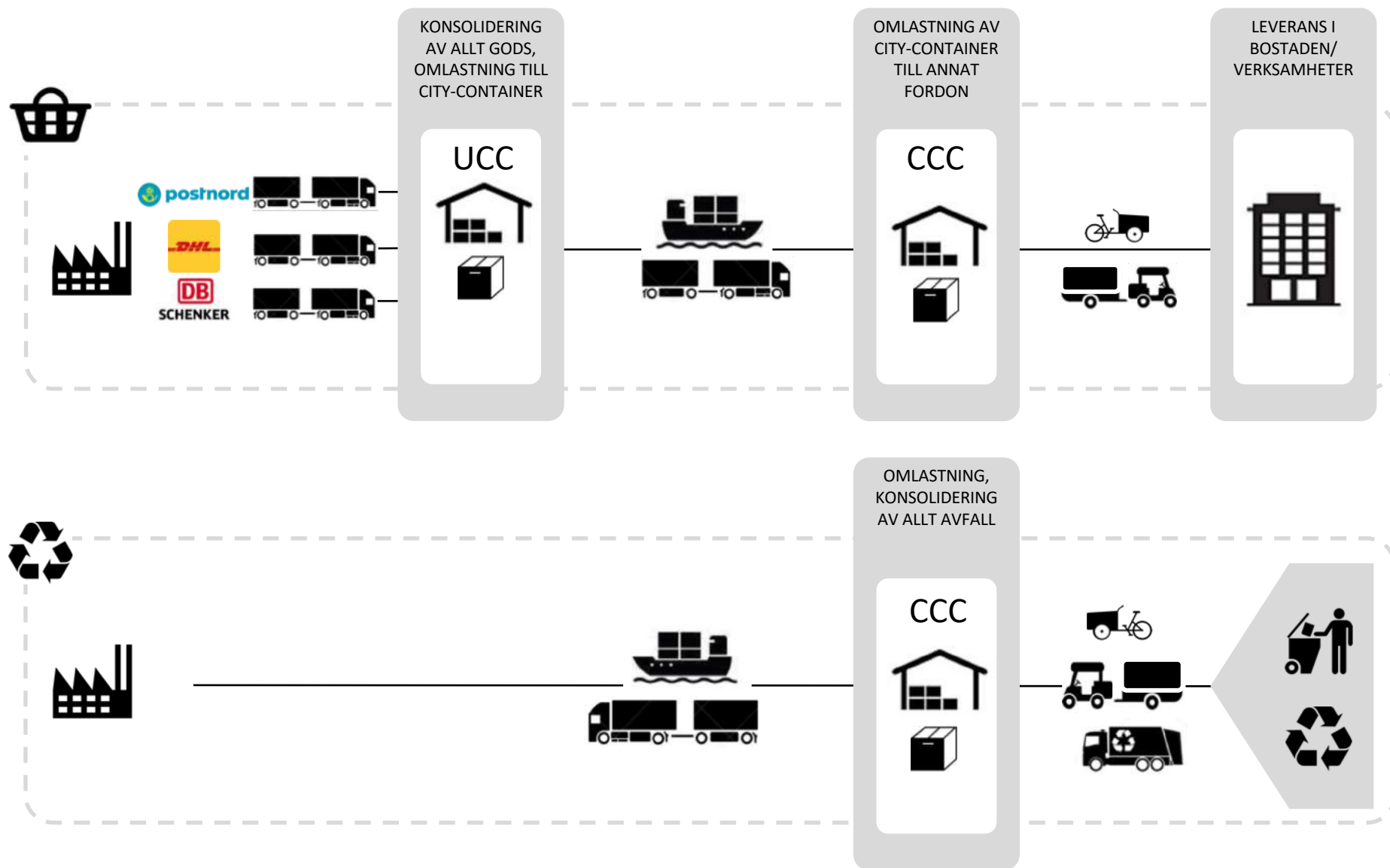


vs. innovativa lösningar & effektivare planering

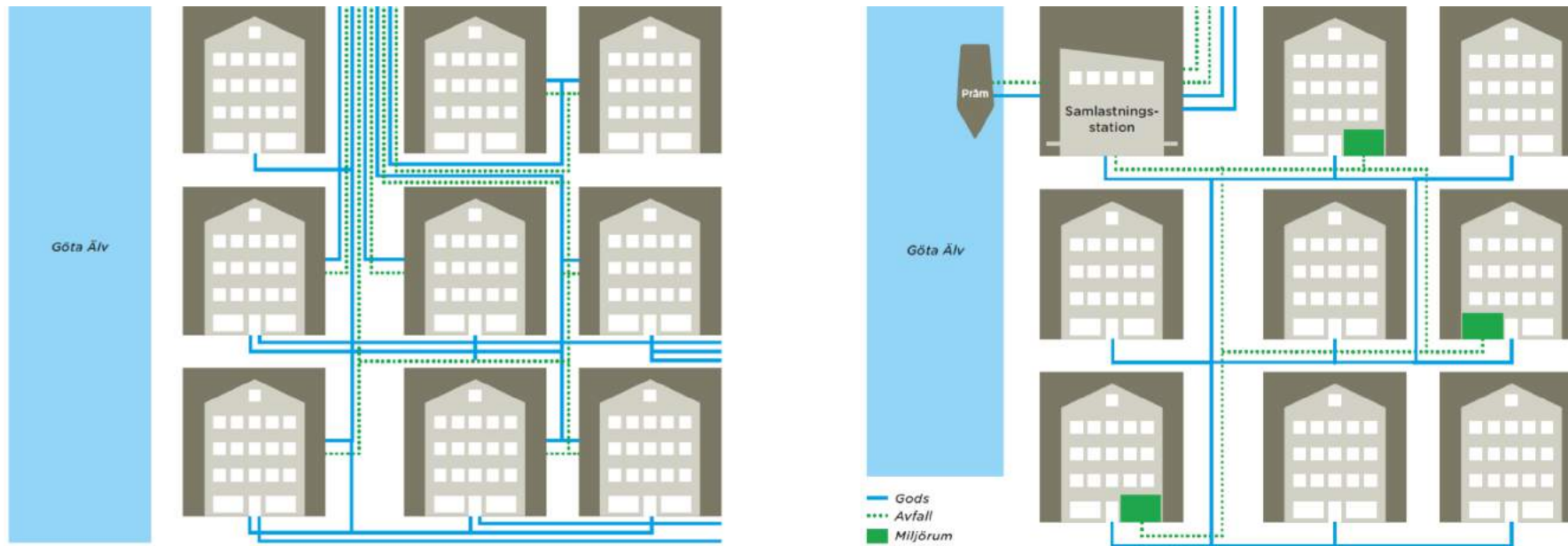
- Samlade mobilitetstjänster för både person- och gods
- Uppkopplade transporter, digital infrastruktur
- Lägre privat bilinnehav



Today's normal vs. Dencity system



Today's normal vs. Dencity system



- 1000 vs. 200 vehicle movements in Frihamnen area!
- Opening up for feeding from waterway (Göta älv)

AP1: Nollemissionsleveranser



AP2: Urbana vattenvägar



AP3: Möjliggörande infrastruktur



AP4: Urbana tjänster & leveranser



AP5: Systemintegration & utvärdering



Innovations and pilots:

Logistics:

- Demonstration of a fully electric truck (Volvo)
- Demonstration of urban waterway delivery
- Pilot of a full-service building

Others:

- Mobility service index, mobility broker role and infrastructure
- "DenCity cloud"
- Business model for Älvstadsleveransen
- Systemic assessment and evaluation

CYKELSTADEN: THE FUTURE ROLE OF ELECTRIC-POWERED CARGO BIKES

Demonstration of four-wheeled weather-protected e-cargo-bike

Cooperation with manufacturer Velove ("Armadillo" bike)

Analysis of terrain uses and topography in Göteborg Stad

Roadmap with barriers and key actions for facilitating electric cargo bikes in city



RESEARCH ACTIVITIES

Action plan with key measures to overcome barriers for adoption of electric cargo bikes in cities

Vad gör vi?



Intervjuer med användare för att identifiera vad som fungerar bra och dåligt

2017



Intervjuer med tillverkaren för att förstå designval och teknik

2018



Intervjuer med staden för att få kunskap om trafik- och cykelplanering

2018



Framtagande av handlingsplan med förslag på hur lastcykelns behov kan inkluderas i trafikplaneringen

bidrar till



- Nya användningsområden
- Minska trängsel
- Fossilfri fordonsflotta

RESULTS



Goods transport

- + Replaces some trips by car
- + Employees enjoy the cargo bike
- Needs to clear trottoarkanter
- Difficult to integrate bike into daily routines

Passenger transport

- + Works fine when giving kids a ride
- Cannot compete with normal (e)bike or public transport
- Difficult to integrate into daily routines



- Requires support and incentives from employer to persuade employees to integrate the bike into daily routines and get used to it
- Requires infrastructure on-site in order to encourage use

MAIN BARRIERS FOR E-CARGO BIKES

Parking

- Need more or less same features as car parking - but very hard to find.
- Storing bike at place of work/service also poses a problem

On the road

- cargo bikes need more space than expected
- important to give way to other bikers
- Trottoarkanter as a physical barrier

Politics/Göteborg City

- Difficult to develop policies for a low use transport mode
- Overall low expertise on bikes as a mode

Real estate & private sector

- difficult to add cargo bike places to existing buildings
- Real estate does not prioritise bikes and lacks knowledge

AUTONOMOUS REFUSE TRUCK

Cooperation of Volvo and Renova
2017

Truck drives from one bin to the next
– employee can focus on collecting
bins instead of driving the vehicle

Based on autonomous mining truck
technology



EINRIDE

Autonomous truck T-Pod: self-driving or remote control

Fully electric truck without cabin (range: 240 km, load: 20 t)

Partnerships with Lidl (Varberg, 2017) and Schenker (Jönköping, fall 2018)

Plans to have 200 T-pods operate between Gothenburg and Helsingborg by 2020





THANK YOU!

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