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Towards zero-emission city logistics

a Dutch approach in the Amsterdam Area

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Outline Presentation

Intro Amsterdam Economic Board

National approach

- Dutch Climate Agreement
- Challenge of Factor 6
- Approach by segments

Local & Regional approach

- Amsterdam Clean Air Action Plan
- Green Deal Zero Emission City Logistics

Best practices/initiatives

(private/public/research)

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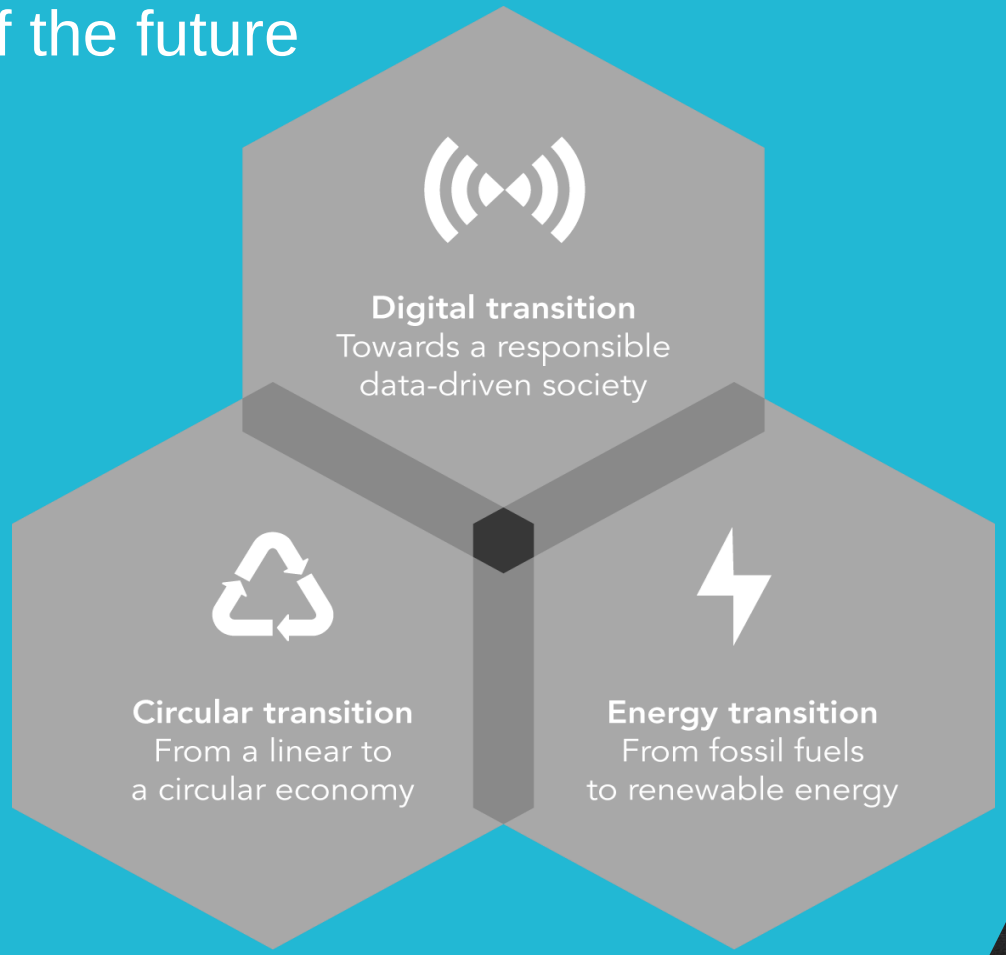
Amsterdam Economic Board

Accelerating transitions towards a smart, green and healthy Metropolis of the future



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Towards **a smart, green and healthy** Metropolis of the **future**

Contribution to solving complex metropolitan challenges to achieve large system changes

Collaboration between:

- government organisations
- Industry/companies
- knowledge institutions

On scale of the Amsterdam Area

Focus on metropolitan challenges within those transitions, working towards concrete results for 2025

Circular Economy	Energy	Mobility	Digital Connectivity	Health
• Closing chains (of raw materials)	• Energy system and infrastructure	• Zero emission and smart mobility	• Digital trust and data infrastructure	• From sick care to health care

Jobs of the Future: adaptive market of education and jobs

Ambitions for the six urban challenges

Circular Economy

- By 2025, the Amsterdam Metropolitan Area will lead the field in the area of smart solutions for the conservation of raw materials.

Energy

By 2025, the Amsterdam Metropolitan Area has made major steps towards a flexible, robust and afordable energy system

Mobility

- By 2025, urban transport in the Amsterdam Metropolitan Area will be zero emission.

Digital Connectivity

- By 2025, the Amsterdam Metropolitan Area will be the most important place in Europe for data-driven innovation.

Health

- By 2025, inhabitants of the Amsterdam Metropolitan Area will be able to expect two additional, healthy life years.

Jobs of the Future: adaptive market of education and jobs

By 2025, the Amsterdam Metropolitan Area will be the most successful region in Europe in terms of utilising, retaining and attracting talent.

Dutch National Climate Agreement (summer 2019)

By 2030, the Netherlands aims to reduce its (GHG) by 49% compared to 1990 levels

Measures by sector: Building Environment, Industry, Mobility, Electricity, Agriculture and Land Use

For Mobility:

- All new passenger cars to be emission-free by 2030;
- Incentives for EV through taxation measures;
- Modal shift from car to bicycle / public transport;
- *Smart solutions will enable logistics to organise more efficient and sustainable transport*
- ***In 2025, zero-emission logistics zones will be established in 30-40 larger municipalities***.

The challenge of Factor 6

Worldwide, 60% of the oil consumed is used in the transport of people and goods.

In the Netherlands, the transport of goods is expected to grow 22% to 50% by 2050

If the sector fails to act,
its CO_2 emissions will continue to rise.

1/3 hinterland, 1/3 national roads, 1/3 city logistics

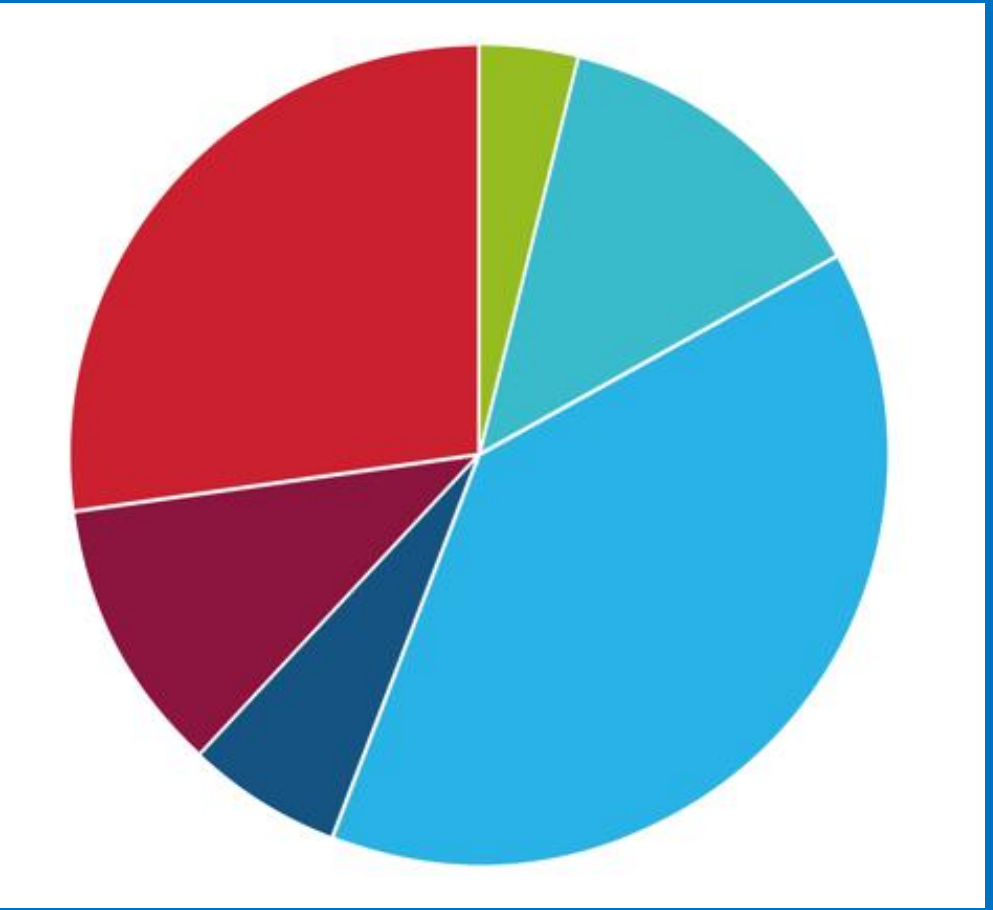
The transport sector in the Netherlands needs to improve its CO_2 productivity by a factor of 6 by 2050 (compared to 1990 levels).

A sixfold increase in CO_2 productivity is required in the Netherlands to achieve CO_2 the reduction targets for the EU28

Segments City Logistics

(GHG emissions per segment)

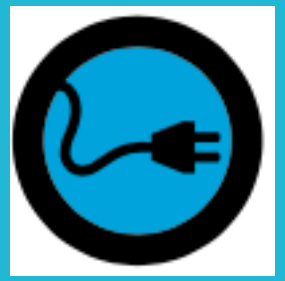
- Parcels and Express (4% > 9% in 2050)
- Temperature Controlled (13% > 19% in 2050)
- General Cargo and Retail (39%)
- Waste Logistics (6%)
- Facility Logistics (11%)
- Construction Logistics (27%)



City of Amsterdam
Clean Air Action Plan (2019)

Communication
- Publicity campaigns to raise awareness
- Municipality as a forerunner/role model

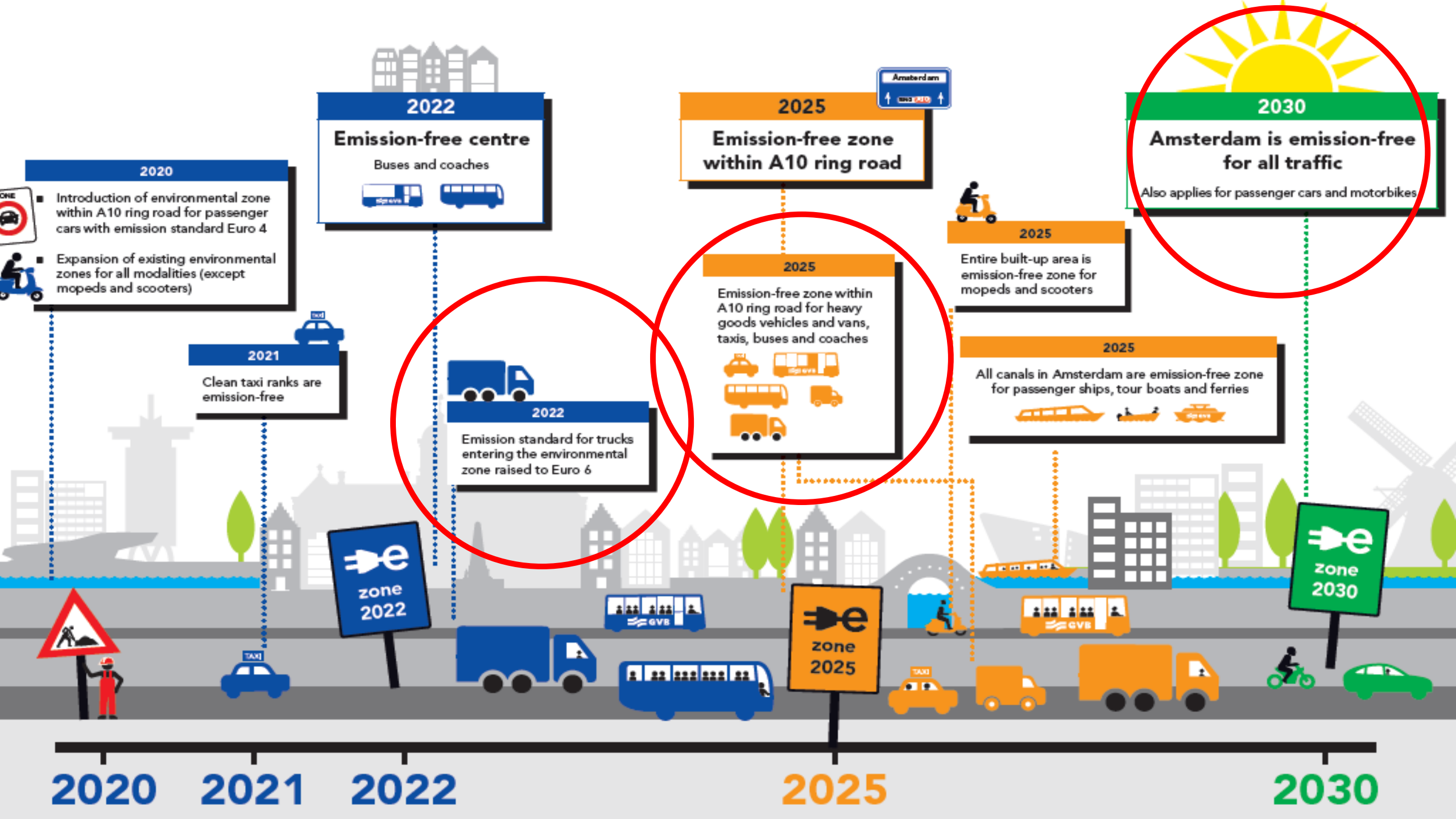
Stimulation
- Subsidies for various target groups
- Privileges for e-drivers (parking permits)
- Specific measures in most polluted streets



Facilitation
- Expanding network of charging points
- 62 highspeed chargers by 2026
- Strategy to guarantee reliability network

Regulation
- Expanded environmental zones (part from national harmonisation)
- Tackling pollution at the source

'Tackling pollution at the source'
'Better air, better climate'
'Fewer, smarter and cleaner'


2020
Introduction of environmental zone within A10 ring road for passenger cars with emission standard Euro 4
Expansion of existing environmental zones for all modalities (except mopeds and scooters)
2021
Clean taxi ranks are emission-free
2022
Emission-free centre
Buses and coaches
2022
Emission standard for trucks entering the environmental zone raised to Euro 6
2025
Emission-free zone within A10 ring road
2025
Emission-free zone within A10 ring road for heavy goods vehicles and vans, taxis, buses and coaches
2025
Entire built-up area is emission-free zone for mopeds and scooters
2025
All canals in Amsterdam are emission-free zone for passenger ships, tour boats and ferries
2030
Amsterdam is emission-free for all traffic
Also applies for passenger cars and motorbikes
zone 2022
zone 2025
zone 2030
2020
2021
2022
2025
2030

Regulation: Emission-free zones

2022

Emission standard for trucks entering the environmental zone raised to Euro 6

Emission-free zone within the A10 ring road in 2025

For buses, coaches, passenger ships, taxis, vans and heavy goods vehicles, pleasure craft, public ferries (mopeds and scooters in the entire built-up area)

Emission-free Amsterdam in 2030

For buses, coaches, passenger ships, taxis, vans and heavy goods vehicles, pleasure craft, public ferries, mopeds and scooters, passenger cars and motorbikes.

‘Zero emission city logistics’: a regional ‘triple helix’ challenge on the scale of the Amsterdam Area

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connecting innovators

1 8

Totaaloverzicht | Bouw | Food/Vers | Retail | Afval | Facilitair

’Green Deal Zero Emission City Logistics AMA’

To achieve a new approach to city logistics, innovations are required that involve a combination of:

Organization
new ‘triple helix’ collaboration on logistics concepts, freight bundling, urban consolidation centers, etc.

Regulations
delivery time windows, emission free zones, licences, permits, etc.

Technology
Smart solutions and zero-emission vehicles

Behavior
Does an online order always have to be delivered straight away?


Smart and
sustainable
purchasing
Food service
by e-car
100% ELEKTRISCH
TRANSPORT

June 2019: the parties involved in the 'Green Deal Zero Emission City Logistics' share the aim of supplying goods to our cities with zero emissions, as far as possible, by 2025.

Zero Emission
Stadslogistiek

Zero Emission Stadslogistiek

ORAM ondernemend amsterdam
gemeente Zaanstad ZNSTD
ZOEV CITY CITY DOCK
cityhub
izipack
bam
Provincie Flevoland
Gemeente Amstelveen
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BOUWCENTER RAB
Gemeente Aalsmeer
Provincie Noord-Holland
Port of Amsterdam
PURMEREND
Gemeente Waterland
breikers Amsterdam Duurzaam Bereikbaar
Gemeente Almere
Gemeente Landsmeer
GEMEENTE VELSEN
HULSHOFF
PARCLS.COM
Gemeente Wormerland
BIG DATA VALUE CENTER OPEN INNOVATION CENTER
JOHAN CRUIJFF ARENA
apenkooi
Rutte www.ruttegroep.nl
GO!-NH Accelerator sustainable innovation
AMS AMSTERDAM INSTITUTE FOR ADVANCED METROPOLITAN SOLUTIONS
voedsel verbindt
OV IJMOND
DURA VERMEER
Meerlanden
rai AMSTERDAM
WAALPAAL
eVa
VAN KEULEN
SimplyMile groene distributie
STREETSCOOTER
gemeente Haarlemmermeer
VAN 'T HEK
Rabobank
gemeente Ouder-Amstel
Leasi
Green Wave Urban Transports
VA Vervoerregio Amsterdam
gemeente Heemskerk
Gemeente Uithoorn
gemeente beverwijk
IJmond bereikb>>r
Gemeente Diemen

Approach and initiatives Amsterdam Economic Board

2018

- Building a '**Coalition of the Willing**' with commited regional frontrunners on smart & clean city logistics
- Zero Emission City Logistics through **6 segments** ("from parcels to construction logistics")
- Initiative for **competition** "Smart and Clean Contruction Logistics in the Amsterdam Area"

2019

- Initiative three '**Round Table Sessions**' for policy makers (32 municipalities, 2 provinces) to create more awareness and commitment.
- **Signing moment** commitment '**Green Deal Zero Emission City Logistics**' by 60 public and private organisations and Knowledge Institutes on June 17th 2019
- Building an active triple helix **Green Deal Community** (current action)
- Organising **quarterly Meet-ups** for policy makers, companies/entrepreneurs and reseachers to inspire, share knowledge and work together ('living labs')

Green Deal Community: current and near future topics

- Exploring to set up **“zero emission zones”** in (larger) regional cities by 2025
- Fostering **EV-charge facilities** on local and regional scale (incl subsidies)
- Regulating **handling/loading** zones in public space
- Aligning **ITS-solutions (Data/IOT)**, **Intelligent Access** and **Logistic Time Zones**
- Sustainable logistics as part of public and private **procurement (purchasing)**
- Exploring opportunities for **Hydrogen Fuel Stations** and creating ‘critical mass’.
- Stimulating development of regional “**Logistic Hubs**” or “Urban Consolidation Centers”
- Finding **new ‘modes’** for city logistics: water (rivers, canals, etc.)
- Fostering **innovation** (Autonomous Vehicles, ‘Roboats’, etc)

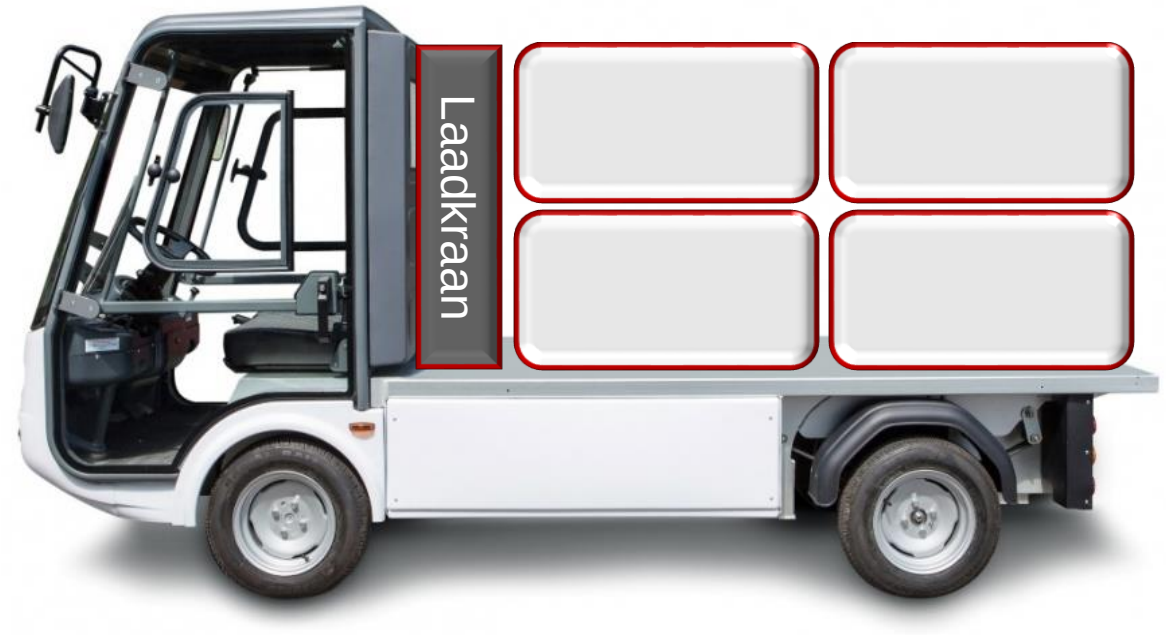
Research: LEFV-LOGIC

Light Electric Freight Vehicles in Amsterdam

What is the impact of the introduction of light electric vehicles in Amsterdam?

https://vimeo.com/207259009

https://vimeo.com/240834536



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Private initiative City Hub

Sustainability of purchasing / procurement

Amsterdam Universtity of Apllied Science &
University of Amsterdam & Deudekom/PostNL

- **80 college buildings**
- **12.000 suppliers** (food, drinks, printed matter, facility services, etc.)
- **90.000 delevery trips a year**
- **2.8 milion kilometers every year**
- **= 70 times circling the earth!**

Solution: ‘Last mile’ zero emission consolidation hub!

https://www.youtube.com/watch?v=MLLSDZ1p0a8

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Private initiative: DHL

Zero emission technology / DHL

Working with new technologies, like EV opportunities, requires some getting used to. New technologies sometimes offer new perspectives

https://www.youtube.com/watch?v=Q9tBANKrkGM

Private initiative: Amsterdam Logistics City Hub

A new distribution location on the Nort sea Canal to support environment-frindly delevery of packages, buiding materials and catering supplies over the waterways. In addition to transport by water, there wil also be electric vehicles.

https://youtu.be/2c0YbemhhQo

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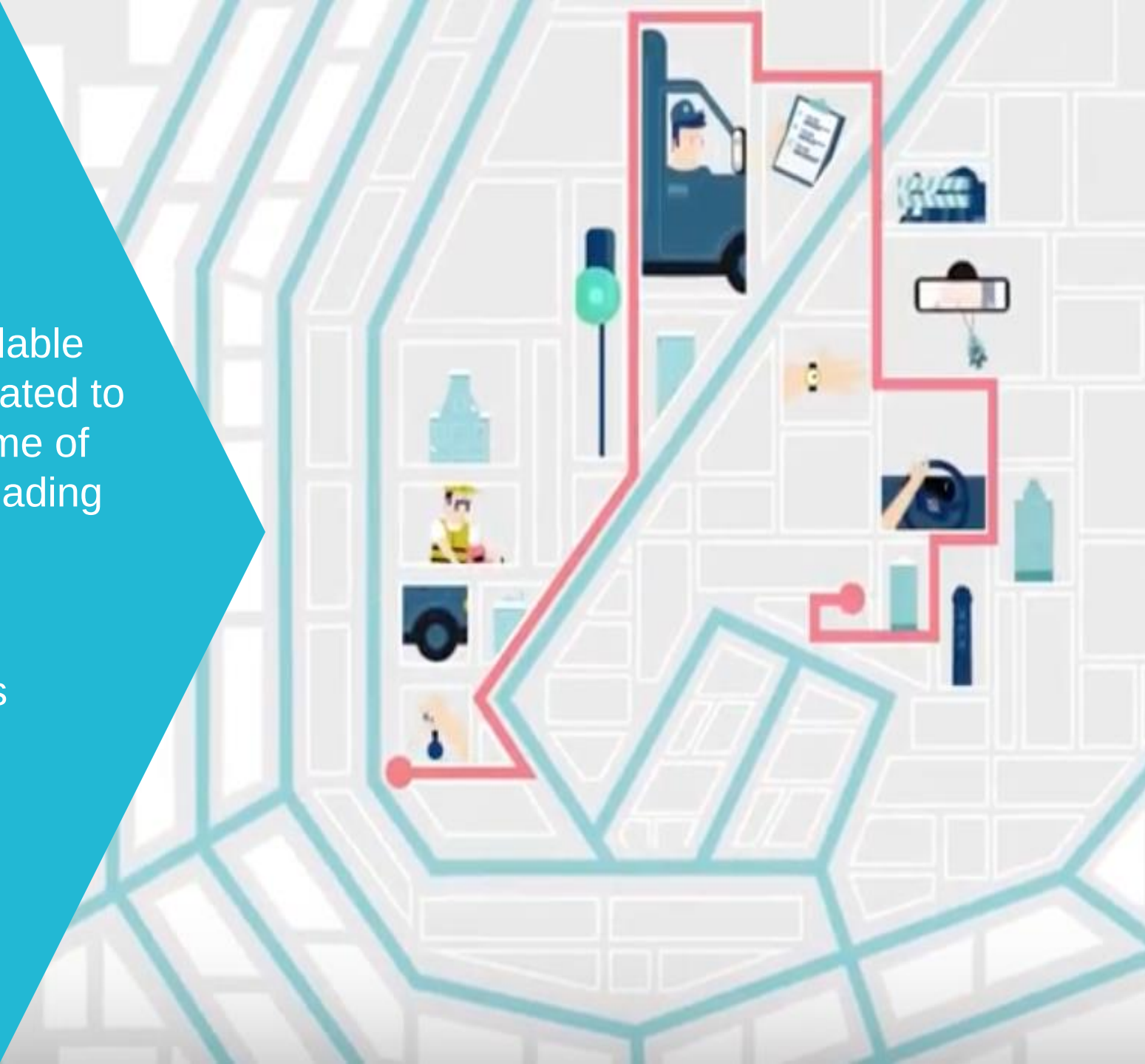
Research: ‘ITSLOG’

Smart use of (un)loading zones

The project will determine whether available loading and unloading zones can be related to the actual position and the estimated time of arrival of trucks on the loading and unloading zone, at the store or home address.

- Just in time arrival of goods
- Avoiding occupied (un)loading zones
- Avoiding congestion/waiting hours

https://www.youtube.com/watch?v=rjABBlIFCGo



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Research: “Oude Pijp”

AUAS & City of Amsterdam

Amsterdam’s “Oude Pijp”, is an increasingly crowded neighborhood of 800 by 800 meters and 15,000 inhabitants. No fewer than 1,000 carrier vehicles make deliveries each day.

Conclusion:
800 of those vehicles drive into the neighborhood make just one delivery, and in by far the most cases it concerned transport on own account.

That is hardly sustainable….
How do we solve that?

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Research: ‘Door survey’ Zuidas Business District

Survey at three large companies in Zuidas gives insights in:

- number of stops per hour
- per product group

Interventions:
Bundling/minimising unnecessary transport through *a shared pickup point & a ‘hub’*

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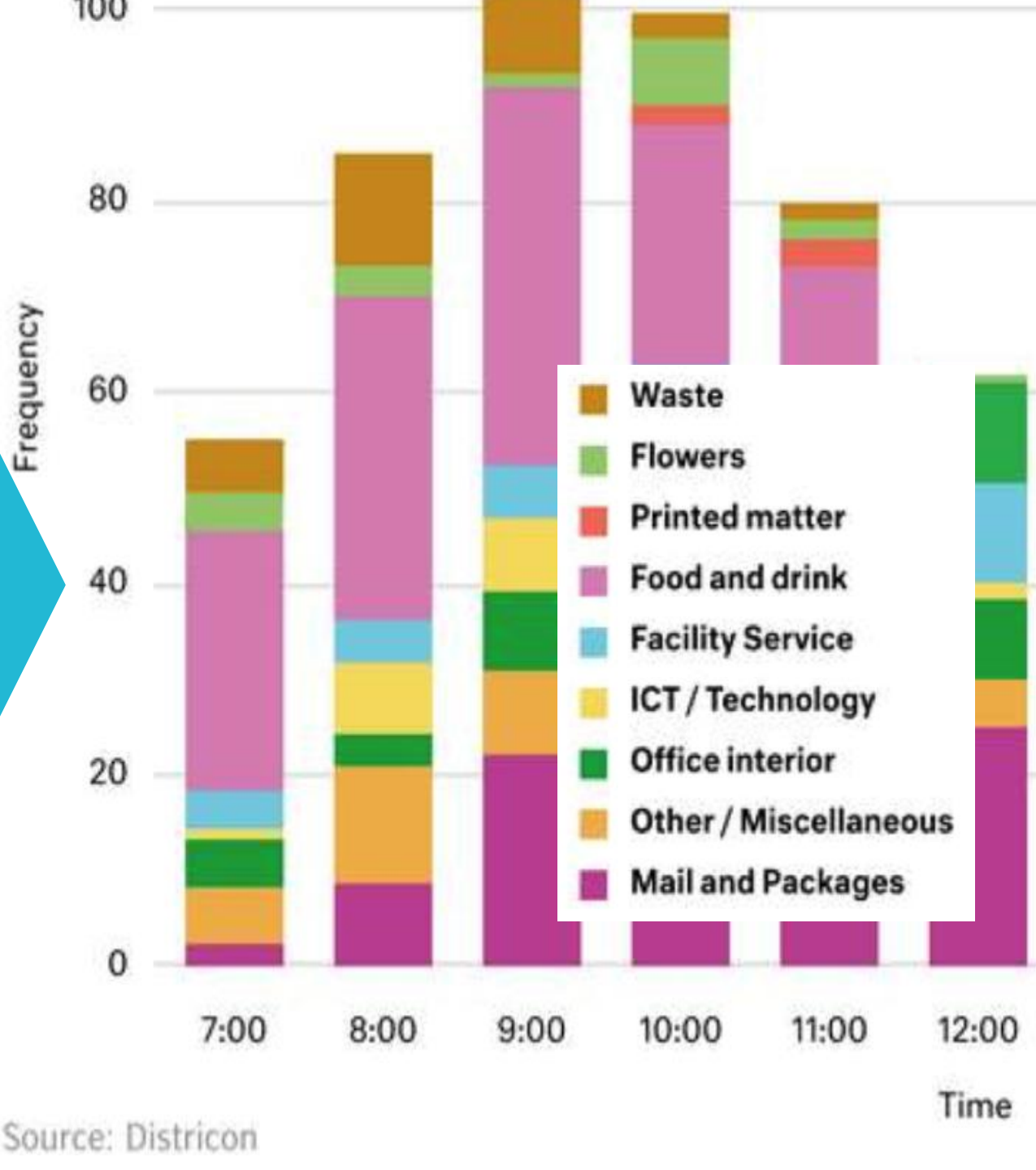

Start up:
Evanet Nano Hub”

Smart use of bus stop as logistics point

Using the bus stop as the central point.

Functions of pick up and drop off of humans and goods are combined and are enriched with a number of additional services.

Attractive for residents and travelers since they receive more regional services in one single, central point.

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Innovation & research: **Duwaal Project** (Hygro)

Hydrogen from wind

Network of 5 fuel stations in the North Holland region:

- Refuelling 350 & 700 bar
- Hydrogen cost price equal to diesel fuel costs
- 100 hydrogen trucks

Waste collection trucks & box trucks with cooling system

Operational lease including hydrogen

https://vimeo.com/249162216

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Innovation & research: **Roboat** (AMS Institute & MIT)

Roboat is the world's first major research program on autonomous floating vessels in metropolitan areas.

It allows for creating:

- dynamic infrastructure
- transportation of goods & people
- environmental sensing on Amsterdam's canals.

https://vimeo.com/296821657

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I amsterdam

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