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Cargo bikes in our cities



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VARIETY OF CYCLE TECHNOLOGIES AND BUSINESS MODELS



Dominant business models:
Docs, parcels and food
deliveries in dense urban areas,
mostly in big cities in Europe



MARLEENKOOKT E-COMMERCE MEAL DELIVERIES BY CARGOBIKE IN AMSTERDAM

BENEFITS

- *e-Cargobikes are very flexible, local retailers can deliver their goods to customers anytime and anywhere*
- *Most people react positively to sustainable businesses, adopting such bikes is likely to improve the retailers' image*
- *Investment in an e-cargobike is much lower than investment in a car. The same applies for maintenance, insurance, road tax, etc.*
- *No driving license is required, which is different from scooters, cars and vans.*

Source: www.bestfact.net

Source: www.marleenkookt.nl



TRIAL OF MALTA POST, 2018

Fleet of 8 Paxster
“quadricycles” tested
for parcels and letter
distribution in Malta

Pilot including
electric charging
infrastructure

Is a quadricycle a Cargobike,
a slow Electric Van, a light EV?



CLAIMED SAVINGS FOR THE PAKSTER IN THE PROJECT “SMART DISTRIBUTION LOGISTIK”, 2017-2018, GERMANY

- significantly lower operating costs compared to conventional vehicles
- up to 81% lower consumption costs
- up to 12% time savings on delivery trips
- acceleration of delivery through high manoeuvrability
- delivery without having to leave the vehicle

Source: <https://newmobility.world/en/e-mobility/paxster-the-light-ev-for-deliveries/>



POST NL, DHL, UPS & TNT ARE TESTING TECHNOLOGIES

- Multiple projects & investments started
- Post NL uses Segway based boxes and combines it with 2 other cycle types
- No cycle tech is currently leading the market



TXITA CYCLE BUSINESS COST ANALYSIS



Concept	2010	2011	2012
Expenses	-69,920.05	-164,553.08	-55,851.06
Suppliers	-33,759.83	-53,486.40	-15,719.71
Staff	-36,160.22	-111,066.68	-40,131.35
Incomes	67,294.85	108,643.88	34,581.22
Invoices	23,294.85	71,781.38	34,581.22
Subsidy CIVITAS	40,000.00	30,000.00	-
Subsidy EVE	4,000.00	5,690.00	-
Subsidy Webpage	-	1,172.50	-
Partial result	-2,625.20	-55,909.20	-21,269.84
Other incomes	41,432.70	121,463.59	7,655.84
Result**	38,807.50	65,554.39	-13,614.00
TOTAL*			90,747.89

- San Sebastian Donostia project with Txita
- UCC + Cargobikes and EV delivery business
- Costs data 2010 to mid-2012



ACCESS REGULATIONS TO PEDESTRIAN AND CYCLE STREETS



Example of Rotterdam
Sust. Logistics Plan

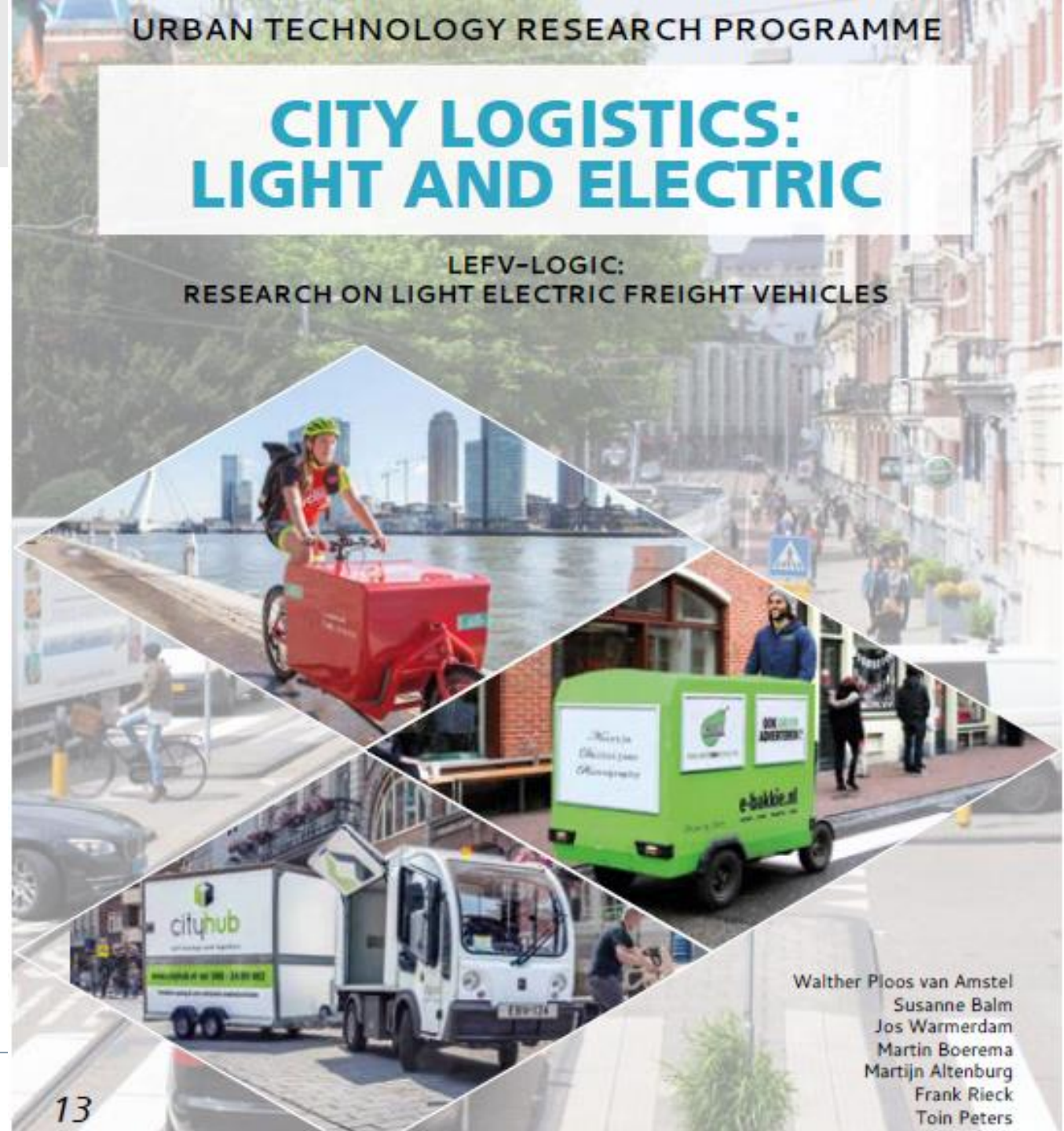
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USE OF LIGHT ELECTRIC FREIGHT VEHICLES FOR CITY LOGISTICS

“A LEFV is a bike, moped or compact vehicle with electric assistance or drive mechanism, designed for the distribution of goods in public space with limited speed”

Source: sestran.gov.uk/wp-content/uploads/2018/09/lefv-logic.english.pdf



CITY LOGISTICS: LIGHT AND ELECTRIC

LEFV-LOGIC:
RESEARCH ON LIGHT ELECTRIC FREIGHT VEHICLES

Walther Ploos van Amstel
Susanne Balm
Jos Warmerdam
Martin Boerema
Martijn Altenburg
Frank Rieck
Toin Peters

MAIN CONCLUSIONS OF THE LIGHT ELECTRIC VEHICLE PROJECT ON FUTURE GROWTH CONDITIONS

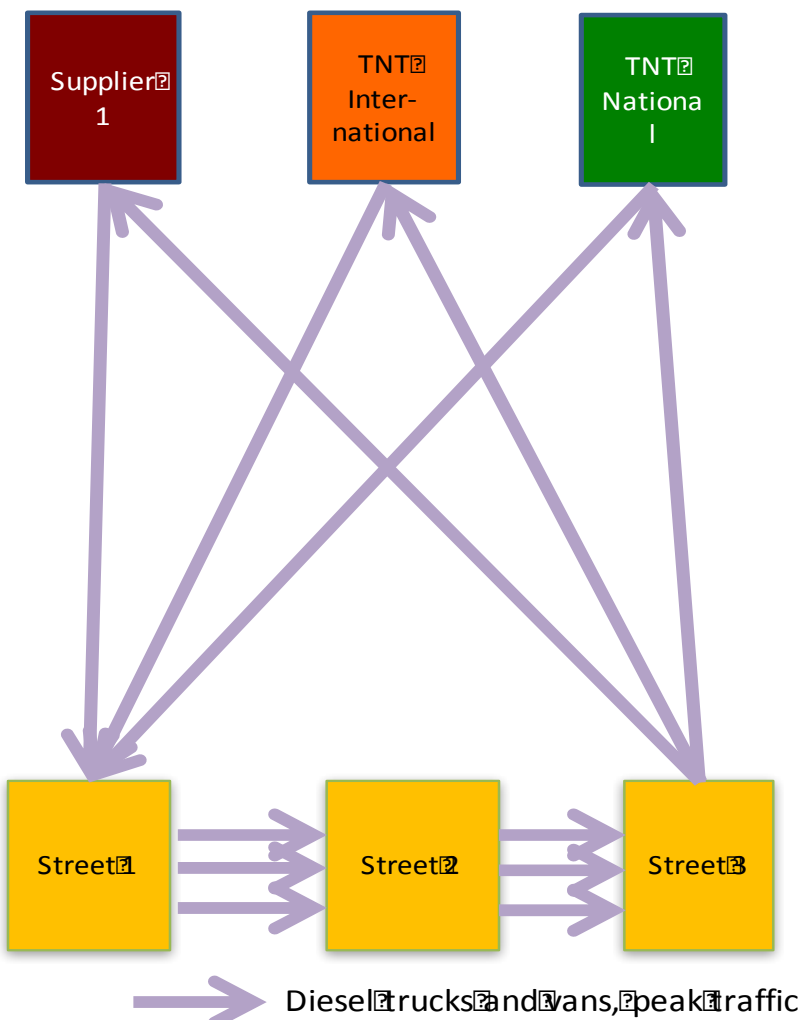
- Light Electric Vehicles could replace 10-15% of delivery vehicle movements
- Different logistics concept
 - Works if delivery can be performed faster than with a conventional vehicle, low volume and weight, high density of customers
- Technology must be developed further
- Policy can stimulate the adoption
 - Urban infrastructure and traffic rules need to be adapted for an increase in Cargo cycles
- The growth of LEFV use requires a scalable business model
 - LEFVs have been successfully deployed in market segments where
 - low weights and volumes are transported,
 - operational excellence is key
 - contributes to a distinctive social and innovative value proposition.



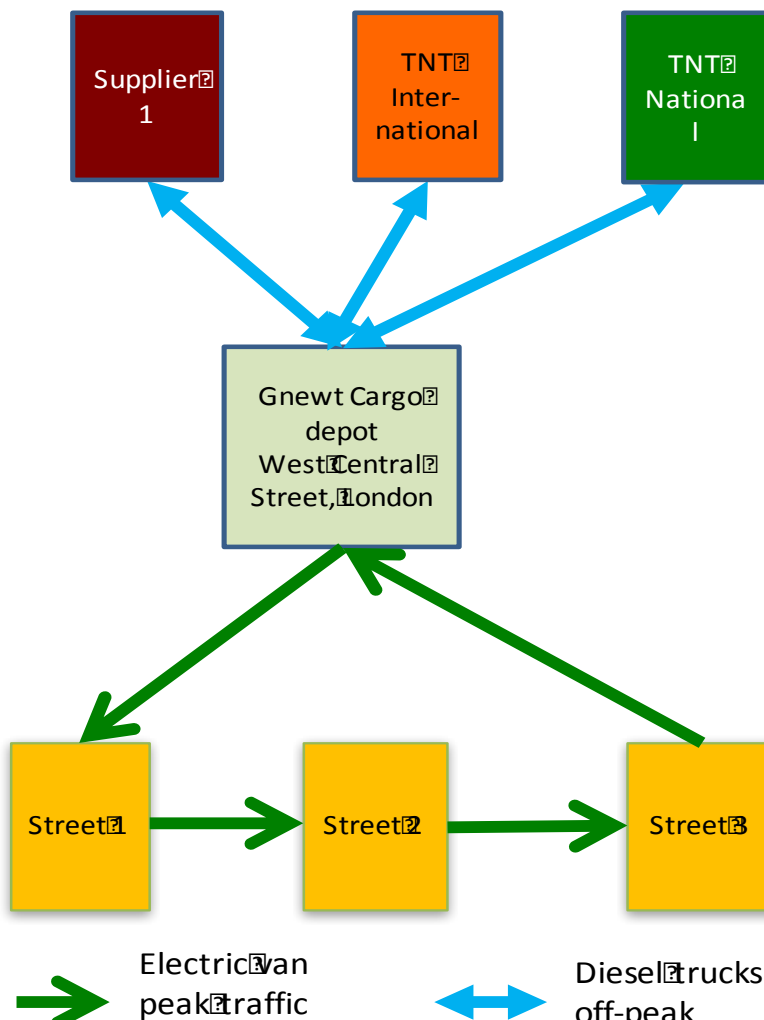
Logistics Model of Gnewt Cargo: multi-carrier, multi-depots, consolidation of deliveries

Limits of the system of data collection

BEFORE starting using Gnewt cargo



AFTER starting using Gnewt cargo



CHINESE URBAN LOGISTICS: CYCLING DELIVERIES WITH E-MOTORBIKES

Food (and parcels)
deliveries
with zero emission,
100% electric
Motorbikes in cities

Combustion
motorbikes are no
more allowed
in large cities

Chengdu, Sept 2018



CYCLING AS PART OF A SUSTAINABLE LOGISTICS PLAN: PROCESS SUGGESTIONS FOR NATIONAL AND LOCAL GOVERNMENTS

- Determine a Baseline, where we are now, issues with cycles
- Discuss a series of potential measures with stakeholders
- Start with a pilot (for example on a new cycle lane or a new cycle freight business)
- Continue with more beneficial solutions which would make a difference on longer term
- Draw lessons from pilot, collect evidence and evaluate data, and then scale - up
- Draft a plan with stakeholders and work in a Logistics Network
- The Logistics Plan is a Plan document, integrated into the wider Transport Strategy context



SUMMARY ROLES IN PREPARING LOGISTICS PLANS

FOR NATIONAL GOVERNMENT AND CITIES, RETAILERS AND OPERATORS

- Funding for infrastructure in cycle lanes
- Support cities with favourable framework conditions
- Regulation of access to city centres with clean vehicles and cycles
- Legislation beneficial for cycling (subsidies, less penalties)
- Funding for trials, tests and pilot programmes (for local authorities such as local development agency and cities)
- Funding for data collection and evaluation (consultancies and industry) and research (academics)
- Coordinate and collaborate with multiple stakeholders, at least with the 3 key groups transport industry, cities, research



- **Policies and strategies:** *Not one single solution, combination of solutions is best*
- **Infrastructure and planning:** *Cycle lanes and street design*
- **Access control and loading bay:** *Favorable rules for EV & cycles*
- **Cargo cycles in urban deliveries:** *Vehicles needs to be mass produced*
- **Emissions and traffic reduction:** *Not only reducing emissions, cycles reduce greatly on street driving space, and parking space requirements*
- **Deployment of innovative distribution concepts:** *Starting bottom up pilot projects & innovations, then scale up business models that are profitable*
- **Freight survey and monitoring:** *Before-after approach*



REFERENCES: BEST PRACTICE GUIDES

LEFV Logic (2018): CITY LOGISTICS: LEFV-LOGIC: RESEARCH ON LIGHT ELECTRIC FREIGHT VEHICLES sestran.gov.uk/wp-content/uploads/2018/09/lefv-logic.english.pdf

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SUGAR ‘Sustainable Urban Goods Logistics Achieved by Regional and Local Policies’ (2011) Handbook.

<http://www.cei.int/sites/default/files/attachments/docs/Sustainable%20Urban%20Goods%20logistics%20Achieved%20by%20Regional%20and%20local%20policies%20-%20SUGAR/SUGAR%20Final%20Publication.pdf>



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