

DELIVERIES GOING CLEAN? POTENTIALS OF ELECTRIC VEHICLES IN URBAN FREIGHT TRANSPORT

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Wolfgang Aichinger, Difu, Berlin

Begleitforschung Elektromobilität in Modellregionen

Stadtentwicklung und Verkehrsplanung

AG E-Wirtschaftsverkehr



Elektromobilität im Wirtschaftsverkehr

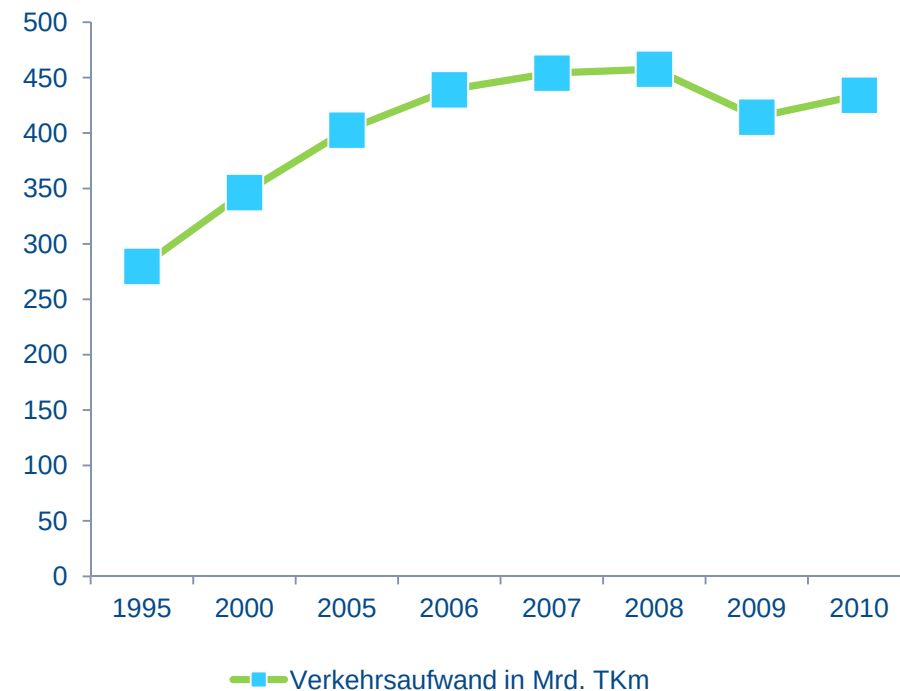
Chancen und Handlungsspielräume in den Kommunen

Veröffentlichung im Sommer 2014

FREIGHT TRANSPORT

- Roadborne freight transport is growing steadily
 - + 55 per cent growth in tonne kilometres from 1995 to 2010 in Germany
- Gains in efficiency are more than compensated
 - Lower CO₂ emissions per kilometre
- Energy consumption per Tkm remains steady

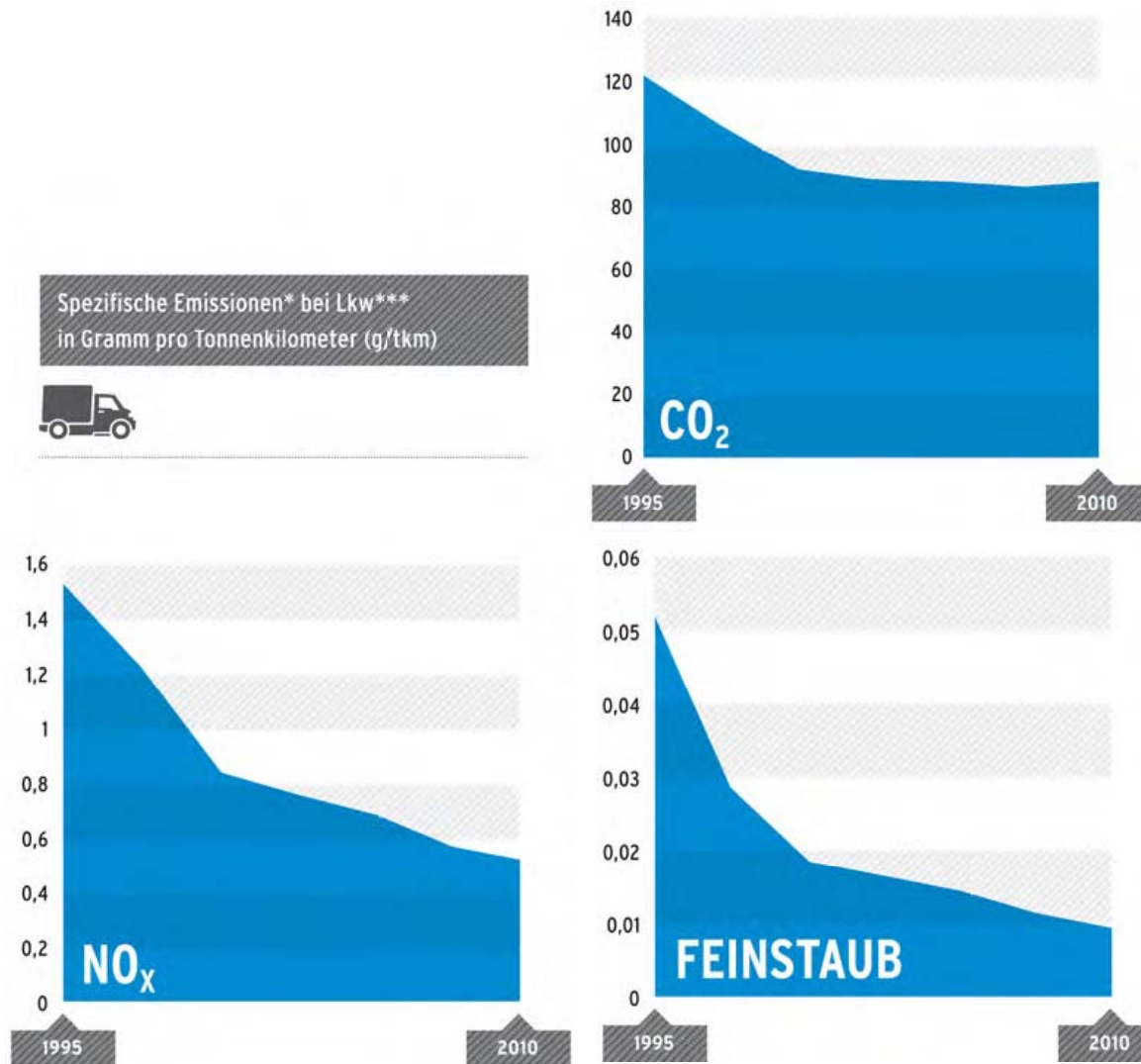
**Straßen-Güter-Verkehrsaufwand
in Mrd. TKm**



Source: Daten zum Verkehr, UBA

FREIGHT TRANSPORT

Spezifische Emissionen* bei Lkw***
in Gramm pro Tonnenkilometer (g/tkm)



Source:
Daten zum Verkehr, UBA

PRESSING URBAN ISSUES LINKED TO FREIGHT TRANSPORT

- Fight climate change
 - 1/4 to 1/3 of local green house gas emissions (GHG) derive from vans and lorries
- Improve air quality
 - 1/2 of local air pollutants derive from vans and lorries
 - EU to fine cities with poor air quality by 2015
 - WHO estimates a global 7 million premature deaths p.a. due to air pollution

PRESSING URBAN ISSUES LINKED TO FREIGHT TRANSPORT

- Reduce noise pollution
 - 1/2 of local noise emissions derive from vans and lorries
- Redistribute urban space
- Improve road safety
- Reduce maintenance costs for local roads

OPPORTUNITIES OF ELECTRIC VEHICLES

- EVs do not emit local GHG or air pollutants
- Noise emissions are lower at slow speeds
- Downsizing and other innovations in logistics can provide further benefits
 - reduced traffic
 - less space required
 - less strain on roads,...
- Cost-driven businesses might adopt EVs once they are competitive

CONSTRAINTS

- Limited availability of suited vehicles !!!
- Currently higher initial costs !!!

WHAT CAN COMPANIES DO?

Innovative HGV are being tested in Dortmund



Credits: CWS boco

Further information:
Sebastian Stütz,
Fraunhofer IML Dortmund

WHAT CAN COMPANIES DO?



EVs are already today a viable option for many delivery companies

WHAT CAN COMPANIES DO?



Credits: Caritas Dortmund

E-bikes can use shortcuts and do not require parking

Further information:
Kerstin Pleus, Caritas Dortmund

WHAT CAN COMPANIES DO?

**Booming e-cargo-bikes
substitute motorized vehicles
& cut down costs**

Further information:
Johannes Gruber, DLR Berlin



Credits: DLR Berlin

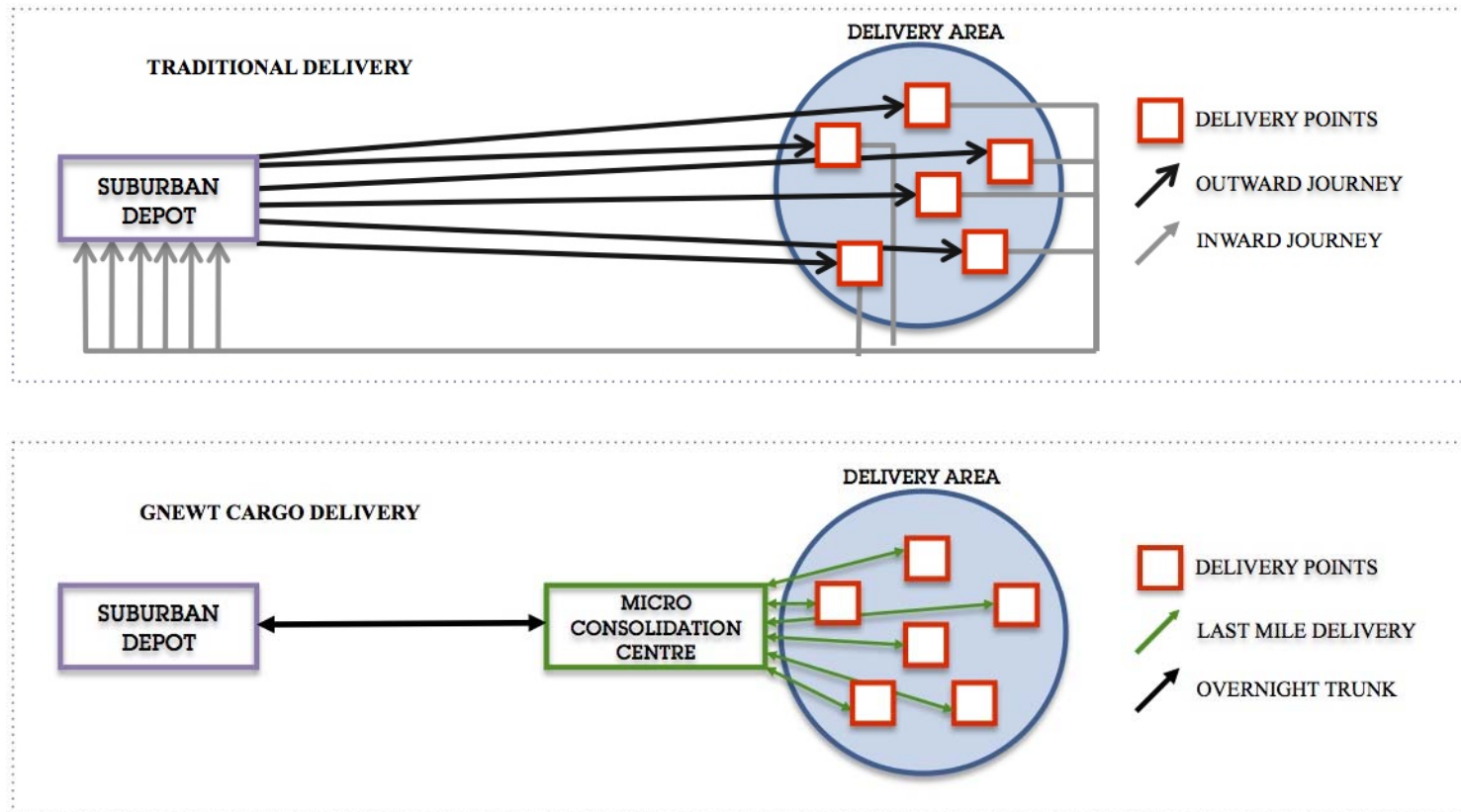
WHAT CAN COMPANIES DO?



EVs combined with urban hubs are a sound business model for the last mile

WHAT CAN COMPANIES DO?

Credits: gnewt cargo



EVs combined with urban hubs are a sound business model for the last mile

WHAT CAN CITIES DO?

Communicator

Regulator

Provider

User

- Task groups
Stuttgart, Dortmund, ...
- Networking
City of Hamburg & Chamber of Commerce
City of Wuppertal & Local Businesses
- Research and Development



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WHAT CAN CITIES DO?

Communicator

Regulator

Provider

User

- Low emission zones
50 x in Germany, London, ...
- Delivery zones
Dortmund
- Delivery times



WHAT CAN CITIES DO?

Communicator

Regulator

Provider

User

- Test vehicles
Bremen, München
- Urban Hubs
Berlin



WHAT CAN CITIES DO?

Communicator

Regulator

Provider

User

- Municipal fleets
Dortmund, Hamburg, ...
- Procurement

beschaffung-info.de



CONCLUSIONS

**Yes, there are potential benefits
for cities and businesses ...**

... especially when considering city logistics, e-cargo-bikes, ...

but they can be constricted by ...

... a limited availability of suited EVs

... a need to adapt business models and logistic concepts

Still, cities can support this new technology if ...

... assessing cost-effectiveness from a local perspective

... designing reversible measures in case competitiveness of EVs rises

... taking further measures to improve
urban freight transport into account

THANK YOU FOR YOUR ATTENTION!

Comments? Questions? Good practice?

Wolfgang Aichinger
Deutsches Institut für Urbanistik
Zimmerstraße 13-15
10969 Berlin
aichinger@difu.de
030 39001 299