



Pedelects & Cycle Highways

Together a dream team
for future commuters.
(A comparison NL – DE)



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*„Position and Image of the Pedelec“
Velo-City session on June 15th 2017 in Nijmegen*

Comparison on Pedelecs*

Elektrische fietsen in NL

- **Longest experience in daily practice in Europe**, especially by the elderly
- **Evolved public discussion** on purposes and qualities
- **All kind of user groups**, also childrens' long ways to school instead of just school busses
- **Adequate cycling infrastructure** and smart mobility management action



* „Pedelec = Pedal Electric Cycle“

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Elektrofahrräder in DE

- **Late starter**, only ca. ¼ density of NL pedelecs by population
- **Quick evolving market**: now 0.4 Mio sold p.a., strong export bicycle industry
- **A regional state's industrial policy ambition** in Baden-Württemberg's cycling strategy, to become a technical front runner in global collaboration
- **Poor user data yet**, but several fine research projects

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Comparison on Cycle Highways

Snelle Fietsroutes in NL

- **High CROW standards** (in red) additionally to the well evolved quality cycling networks
- **Integrated mobility approach**, also big investing into bicycle parkings at railway stations
- **Heavy implementation** all over the country, beautiful bridges & tunnels
- **Re-discovered by national transport policy: 700 Mio € investment until 2025**
ca. 3-4 € per inhabitant and year



Comparison on Cycle Highways



Radschnellverbindungen in DE

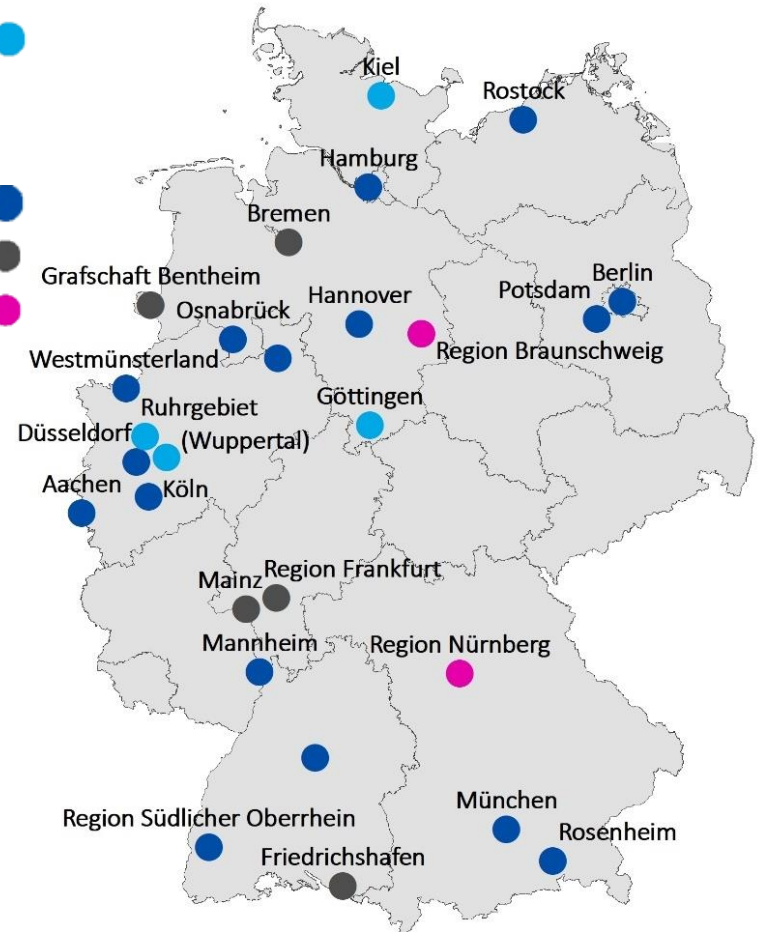
- **Greenways** on riverbanks and former railway tracks already well usable for commuters
- **Regional „minor“ standards** vs. FGSV tech. guidelines and Land NRW (similar to NL standards)
- **Many potentials‘ / feasibility studies**, but few real funding yet (except Land NRW’s legislation)
- **Since recently: 25 Mio € p.a. co-funding from federal infrastructure budget**
ca. 0,30 € per inhabitant and year

State of cycle highways, NL and DE



Source: SOAB, fietssnelwegen.nl (2015)

DE:
implemented (in parts) ●
planning/study (at reduced or different standards) ●●●



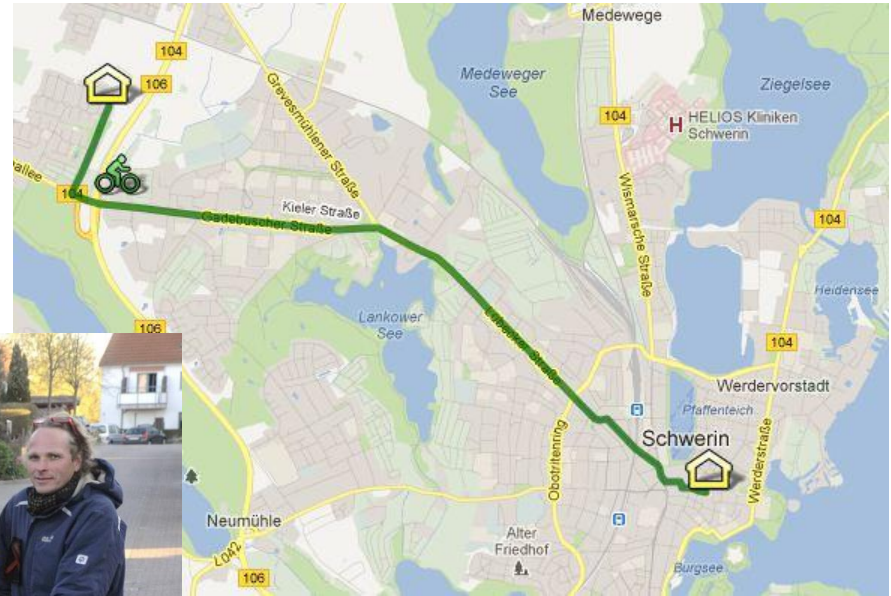
Source: Gwiasda / Erler 2016

Means „NL vs. DE 2:0“

So what 's next for DE, many years behind the NL?

- **Blaming the referee?**
„There are so powerful car manufacturing national champions in DE“
- **Trial and error in each of the Federal Länder?**
Diversity of regional solutions possibly to become a strength later?
- **Learning from the many neighbours?**
SE, DK, NL, BE, LU, FR, CH, AT, CZ, PL...
- **Cross-border exercise?**
Send Dutch consultants and *„Fresh Brains“* students NL -> DE
- **Cross-border infrastructure?** Euregios' cycle highways:
Heerlen-Aachen, F35 extension Enschede-Gronau-Ochtrup, ...
- **Join European expertise?**
e.g. by *„CHIPS“*, exchange on state of the art standards, ...

The „Schwerin test“, comparison of travel modes standard commuters' relation of 4 miles from housing area into Schwerin's city centre

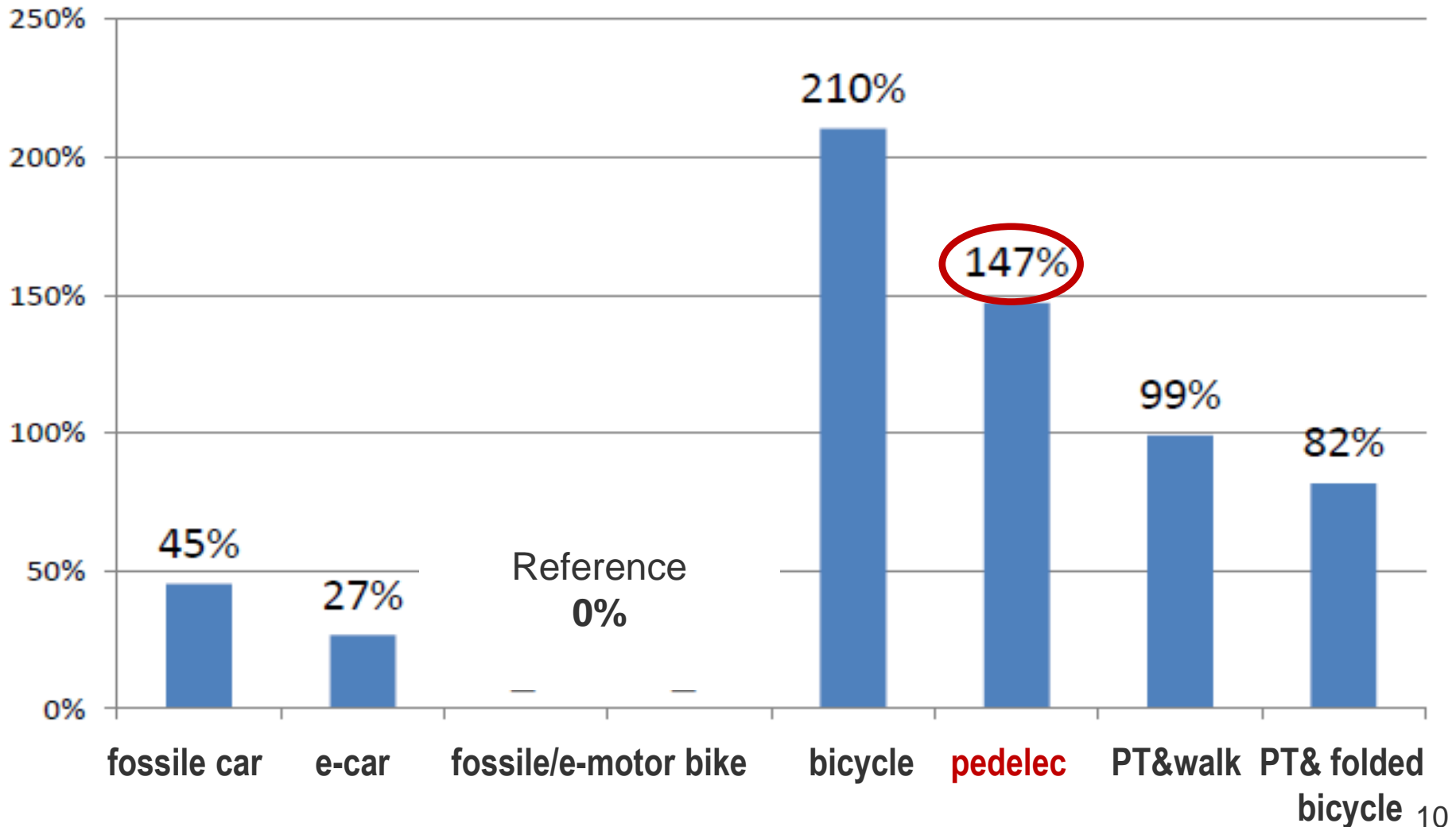


... measuring:
travel time, travel costs,
energy / CO2, exposure to
weather, *calories burned*,
stress, to match other public
interests.
>> Pedelec the overall winner.

Travel modes burned calories during trip to work

Percentage more than least physical activity (motor bike – shortest walk to access)

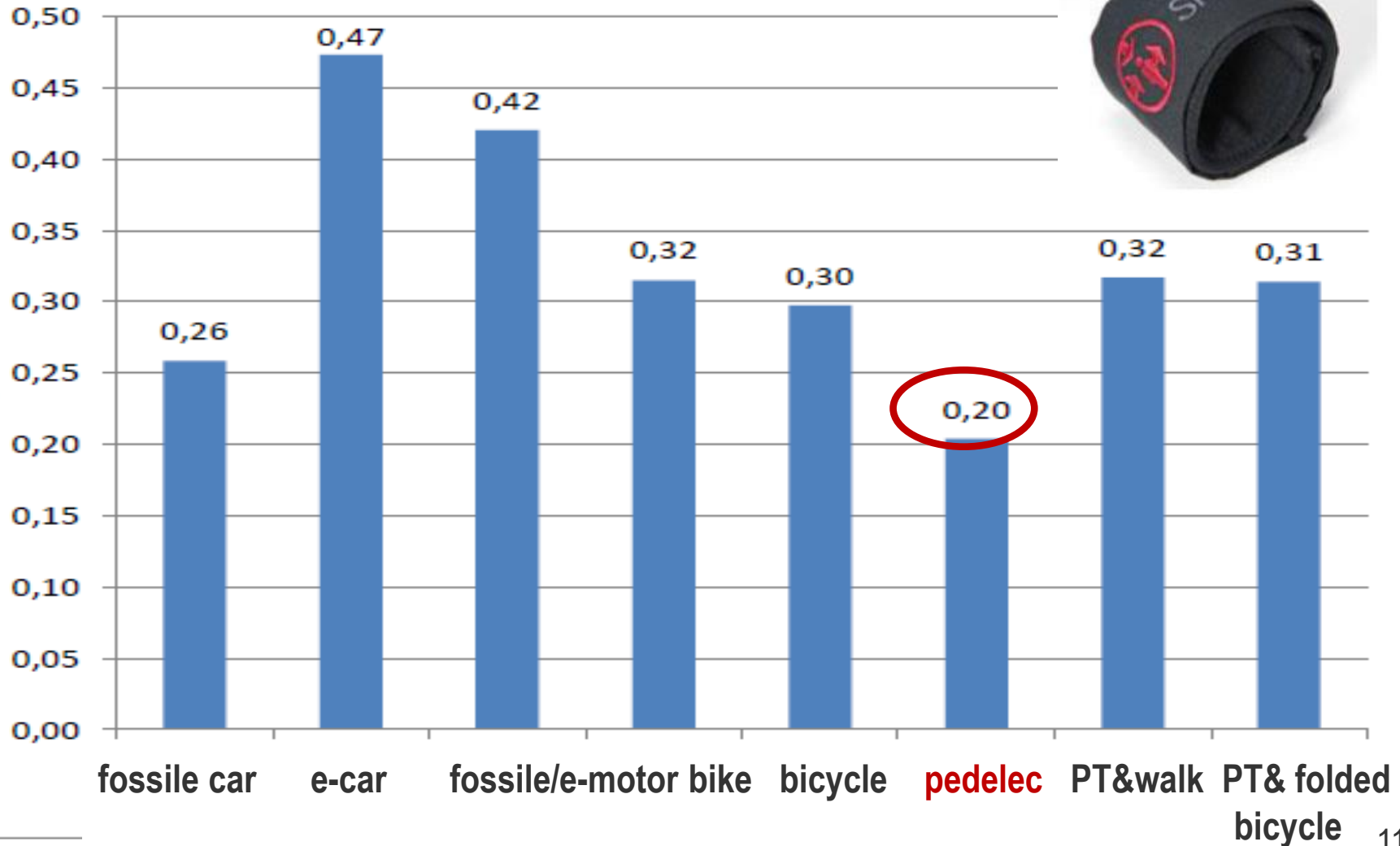
Source: „Schweriner Versuch“ by Wismar Univ. of Appl. Sciences & EcoLibro)



Travel modes by stress during trip to work

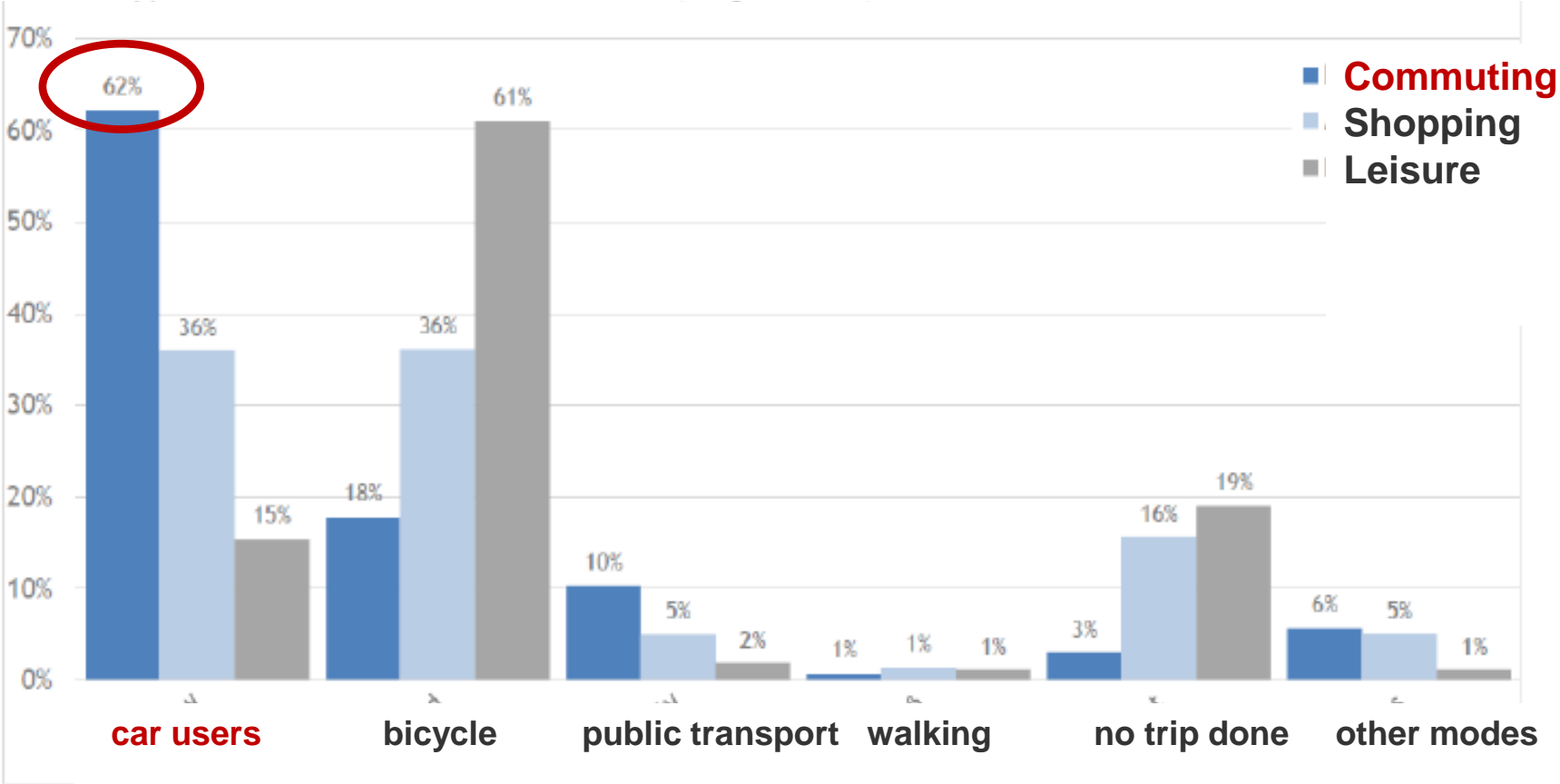
Median of stress responses of travel mode measured per minute

Source: „Schweriner Versuch“





Former travel mode of today's pedelec users in Germany



Source: ITD / IFEU 2016

Company based travel plans!



Berlin's commuter project: 330 employees testing pedelecs during 2 months



Photo Quanz, team red



Crucial: safe parking at both origin and destination (workplace, bike&ride); safe parking good practice from Vienna (AT) and Montpellier (FR)

New station bicycle parkings

Dortmund, Utrecht, Norderstedt, Rotterdam



Smart Pedelec Sharing in Kopenhagen/Rotterdam and more Pedelec Sharings in Europe, e.g. in Zürich, Aachen...

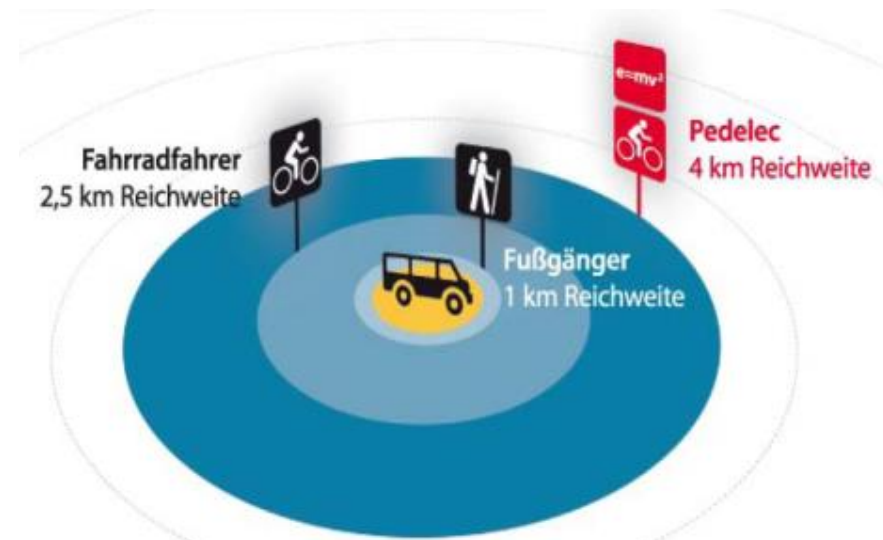


Zürich: 1st free floating e-bike sharing "Smide"

MaaS - Mobility as a Service

Public transport plus pedelec for several first/last miles

- **Flexible access by cycling**, time to read while travelling in public transport
- **Physical activity** during way to work; but by pedelec not arriving sweaty at work
- **Saving energy** while substitute of car use
- **Quicker direct express bus services**, also in difficult settlement types to cover



Wider catchment area of a bus stop, same access time:
Walking 1 km =
Bicycle 2,5 km =
Pedelec 4 km



MaaS - Mobility as a Service

Public transport & pedelecs, interlinked by Mobility Hubs („Mobilstationen“)?

Hubs / bicycle parking & rental to become part of PT funding?

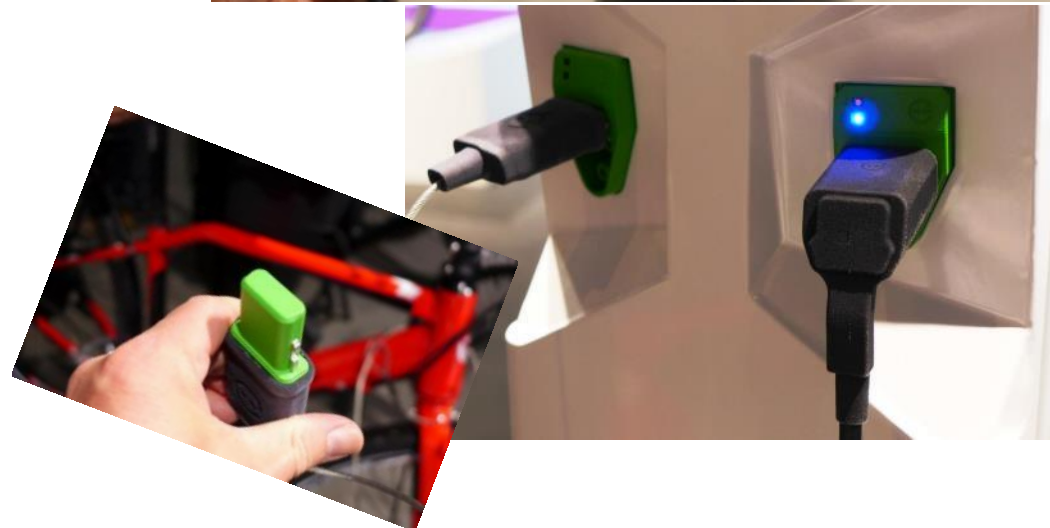


Scenario / model for Münsterland region (ST-mobil)



Image: ZNM; Photo: RVM)

New international standards (to lock, charge, rent)



Outlook: Battery exchange service system

Instead of users to buy and own the expensive batteries

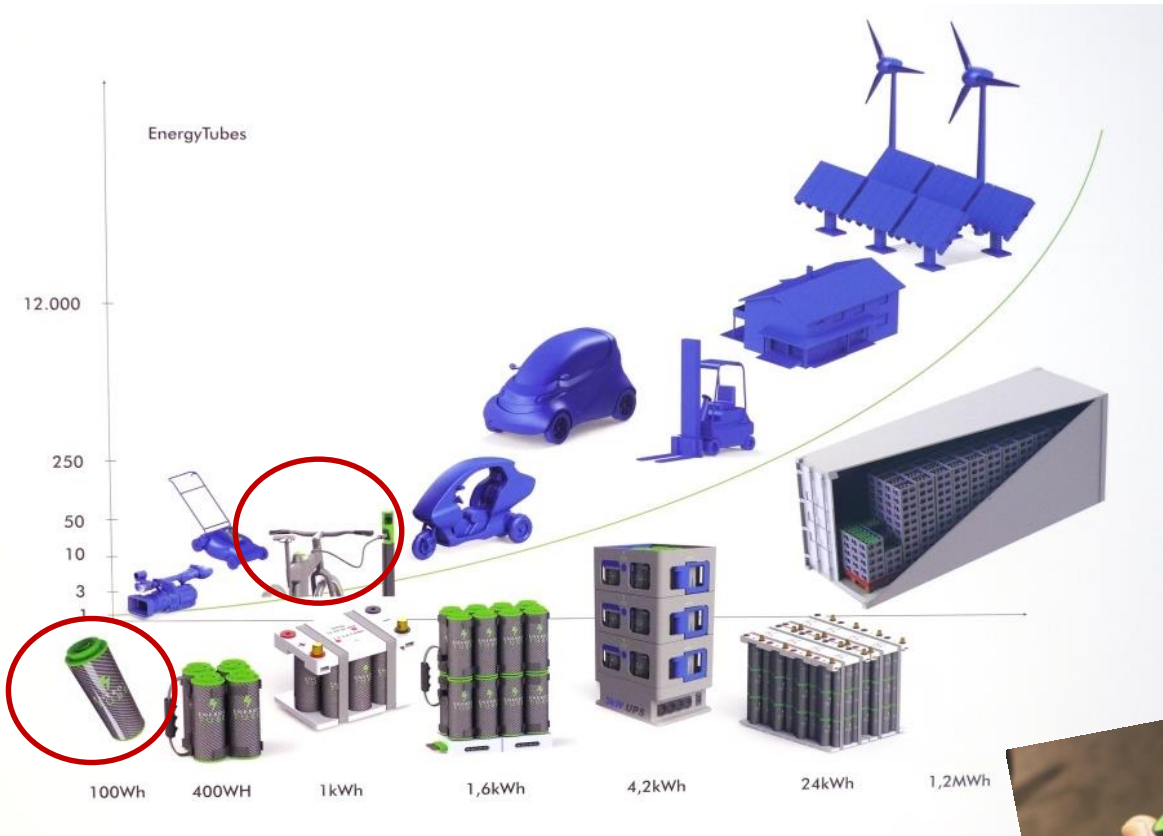
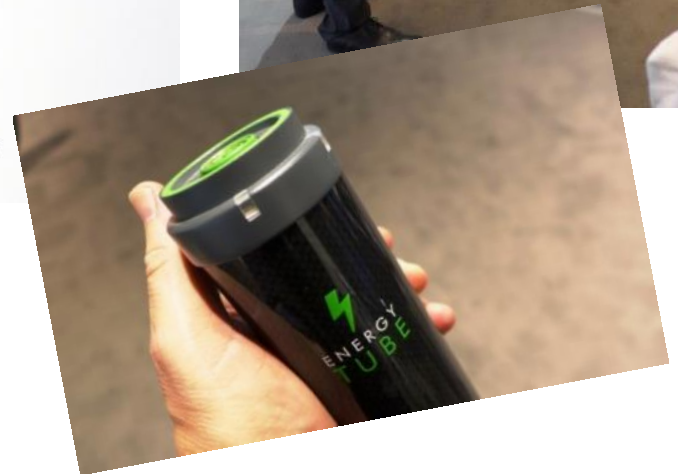
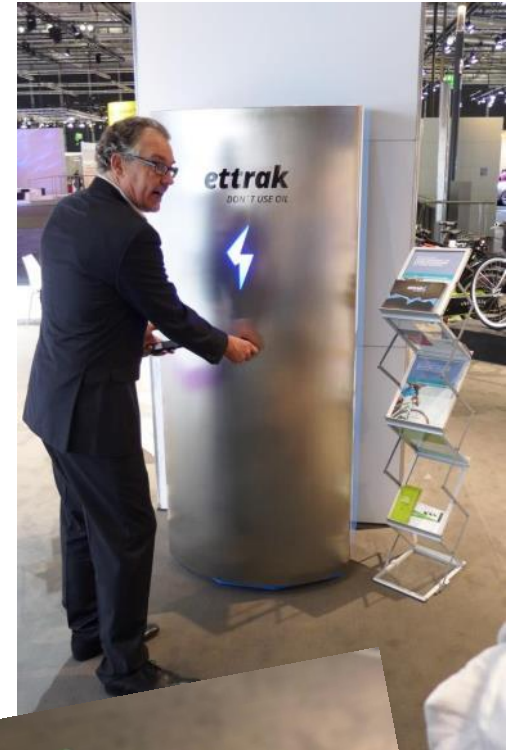


Image: Energy Tube



Thank you
for listening.

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All photos by presenter if not indicated



VELO-CITY 2017

THE FREEDOM OF CYCLING

ARNHEM-NIJMEGEN, JUNE 13-16