CiViTAS
Cleaner and better transport in cities

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Delivering clean urban transport in Aachen:
Planning and implementation strategies to boost electromobility

15.5.2014

Georg Werdermann

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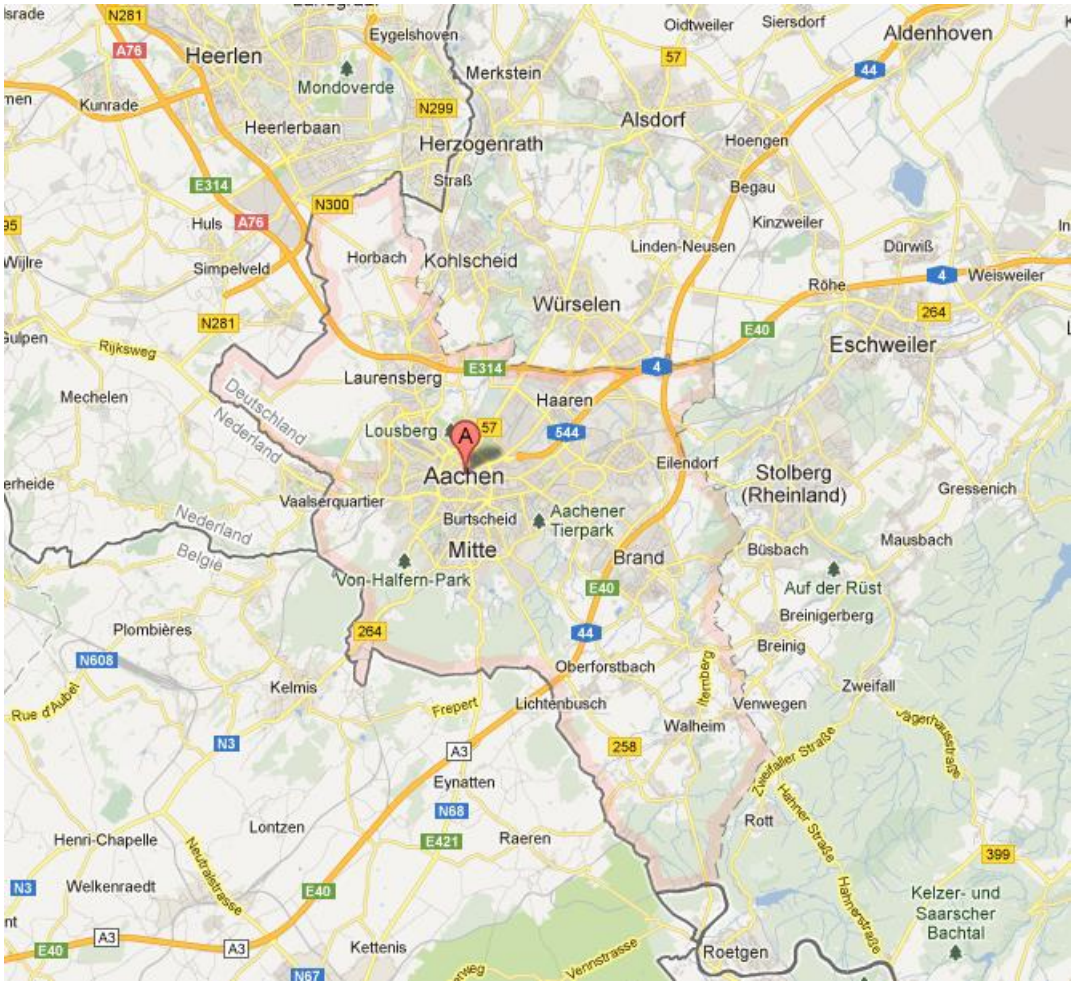
Where about is Aachen?



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Welcome!

„Figure of the day“

01.04.2014:
• 131.120 registered cars in the City of Aachen
• 174 e-cars
• 263 hybrid cars
0,33% share of e-vehicles **(national average in 2013 = 0,2%)**

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Point of departure

SUMP process

- In 2011 the city of Aachen started a **new SUMP process**. Long-term focus: 2050
- **Three working levels**: vision (long-term), strategy (mid-term) and measures (short-term)
- Following an intense dialogue with the Aachen citizens in January 2014 the **political Aachen mobility council has unanimously approved a strategic** vision for 2050 as a first result.
- The document „Vision urban mobility 2050“ **sets out the long-term mobility targets for the city** and outlines the desired future.
- Currently the city and stakeholders involved in the SUMP process **work towards the development of a SUMP implementation strategy**.
- The strategy will describe the **operational approach** to achieve set targets and outlines resources (focus set on 2030).

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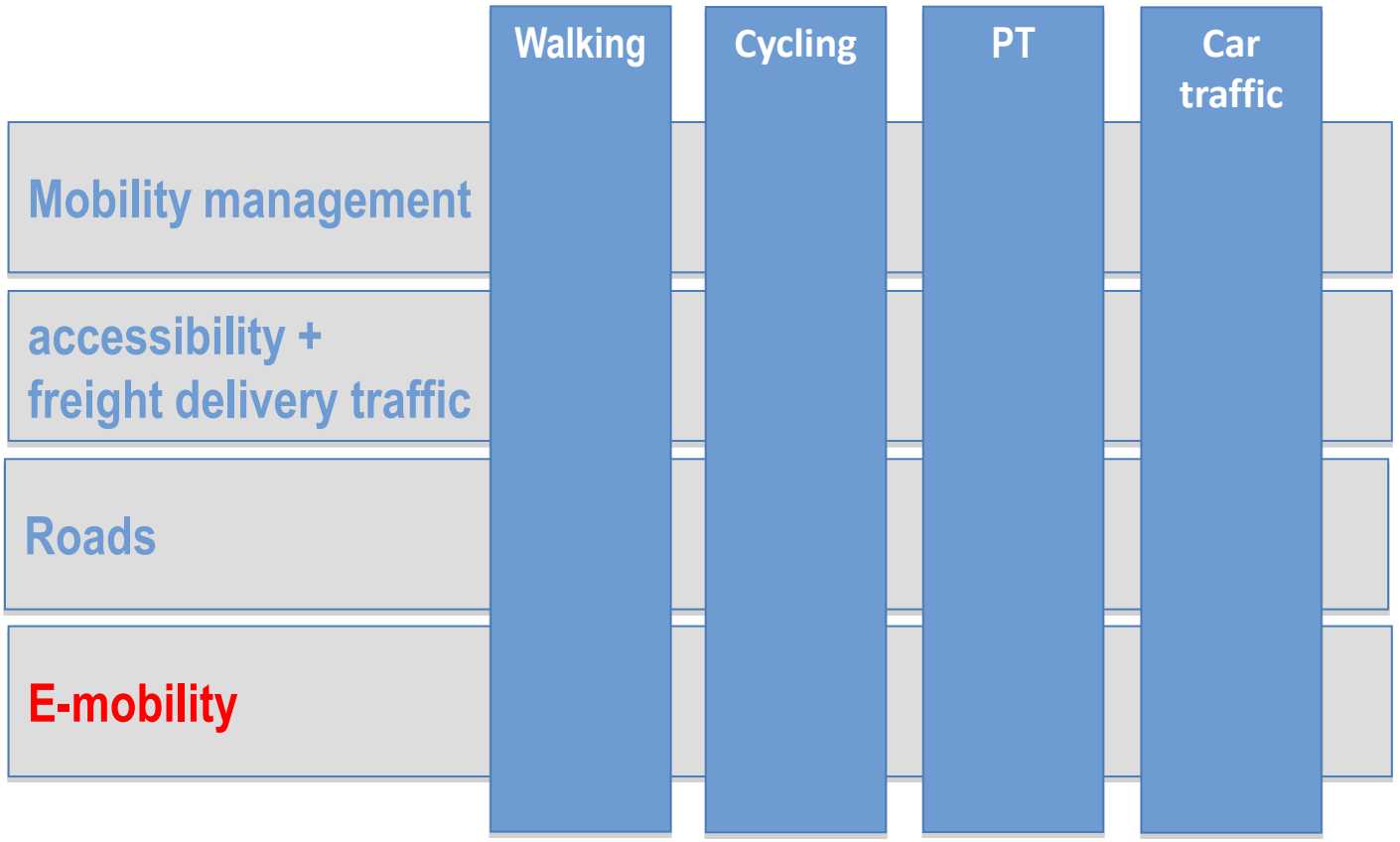
With a clear view towards the future - making both big and small steps

	tactical	strategic	visionary
			✓
Analysis	Programm 2019	Strategy 2030	Vision 2050
Past		Future	

SUMP in Aachen: 8 Thematic commissions



Source: Stadt Aachen 2012

Mobility Vision for 2050

Thematic commission on electric mobility

„Aachen is a **European competence centre** for electromobility. All transport means in Aachen should operate **without fossil fuels**. The electric energy needed for mobility will be **produced locally** - as much as possible – entirely based on renewables.

The city will make all efforts **to reach the 2050 targets** of the European Commission's White Paper **earlier**."

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Vision mobility 2050

Thematic commission on electro mobility

Aachen: model region (role model) for electro mobility

Aachen is among the leading cities in Germany with the **lowest energy consumption** per head for mobility. The early and forward looking shift towards alternative power streams and fuels has led to the situation that mobility is still **affordable** for everybody – despite rising crude oil prices.

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Vision mobility 2050

Thematic commission on electro mobility

E-vehicles will be developed in Aachen

Based on electric mobility Aachen takes a leading role in the development of **alternative power streams**. It is sought to achieve the EU targets for 2050 for **emission-free car traffic** in city areas earlier.

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Vision mobility 2050

Thematic commission on electric mobility

Integrated electric mobility

Based on pedelecs and e-bikes as well as the subsequent changes in the public transport system, Aachen has achieved to be among the first cities in Germany that operate **a full electric transport network** ("**electric mobility alliance**" integrating cycling/ pedelec-sharing, car-sharing and public transport).

Strategy 2030

- How far will we go?
- Which way will we take?
- How to we measure success?

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Elements of the mobility strategy 2030

1. **Common general objectives** for all 8 thematic commissions
2. Definition of **specific aims for each of the 8 thematic groups**
   - Qualitative + quantitative
   - Monitoring
3. Subsequent **definition of working areas**
   = individual themes for each of the 8 thematic commissions
4. **Measures**: “How do we achieve the set goals?”

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General objectives (common for all 8 thematic commissions)

As per 02.12.2013

1. **Ensuring accessibility** (short distances, efficiency in building and operation)
2. **Improving mobility safety**
3. **Improving quality of life** (living quality, noise, air and city climate)
4. **Ensuring affordability of mobility** (for citizens, visitors, and public budgets)
5. **Achieving a new joint mobility culture**

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Fife specific aims and working areas of the thematic commission on electric mobility

… in line with the mobility vision 2050

5 specific aims	working areas
1. The **energy demand** for public transport, car and pedelec traffic **will be covered in the region through renewable** resources	**Energy production** for electric mobility
2. **Public transport and individual transport operate fully electric**. Many pedelecs have replaced conventionally-fuelled cars on short distances.	**Shifting towards electric power-streams** for all transport modes
3. Electric mobility is **easy and simple to use, and thus attractive.**	**Charging and payment** infrastructure
4. Aachen is a competence centre for electric mobility: electric mobility plays a central role in the **city profile ("smart specialisation**"), in research and production	Strengthening the **regional image** as a competence centre for electric mobility
5. The **city administration** promotes electric mobility and serves as **a role model** for other large public and private organisations in the region	Best-practice in the **city administration**

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Indicators

(as an example for the specific aim 5)

5. The city administration promotes electric mobility and serves as a role model for other large public and private organisations in the region

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Indicators

(as an example for aim 5, non-exhaustive)

Number of e-cars for newly purchased cars (total number, ratio)		
Actual in 2019	Actual value in 2030	Actual value in 2050
Frequency of pedelec use for business travel		
Actual in 2019	Actual value in 2030	Actual value in 2050
Charging opportunities and infrastructure available for staff at municipal parking facilities		
Actual in 2019	Actual value in 2030	Actual value in 2050
Number of secure parking places and charging infrastructure for private pedelecs		
Actual in 2019	Actual value in 2030	Actual value in 2050

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Measures for specific aim 5

draft (non-exhaustive)

- Close **coordination between town planning and electromobility**
- **User need analysis** and analysis of the municipal car use with focus on e-cars
- Coordination of municipal procurement based on above analysis and development of **a municipal car pool**
- Analysis of the **role and potential of electric public transport** for the shift of the entire transport system towards electric mobility
- Coordination of the **space and use conditions** for the pedelec renting scheme - Supporting the **scheme financially and administratively**
- Implementation of **fast cycle lanes**
- In all major developments (housing, parking, shopping, etc.) the basic technical facilities for a later implementation of charging infrastructure will be considered during planning and building phase as part of the **building permission process**
- All major **shopping and housing developments** (details still to be defined) **must be equipped with charging infrastructure**
- Putting in place **a coordinator for all electric mobility matters**
- …

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Next steps towards the development of the strategy 2030

- Ongoing work of the thematic commission and the entire city administration
- Different forms of citizen participation
- Coordination among the thematic groups through the SUMP steering group
- Mobility fora
- Cross-coordination with the urban development concept for the city centre
- Participation of pupils and students; work in and with schools
- Development of drafts and recommendations; close communication with politicians
- Budget planning (in autumn 2014 for 2015 and 2016)
- **Submission and political approval of the strategy is envisaged for November 2015 (through the mobility committee)**

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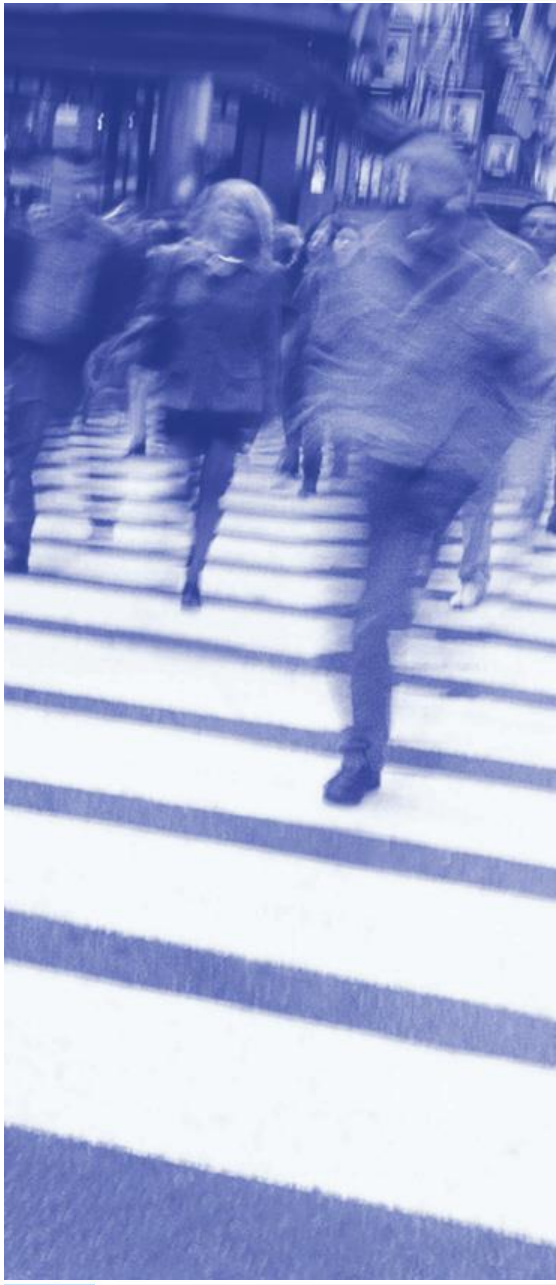
Integrating e-mobility with mobility planning

…first concrete results



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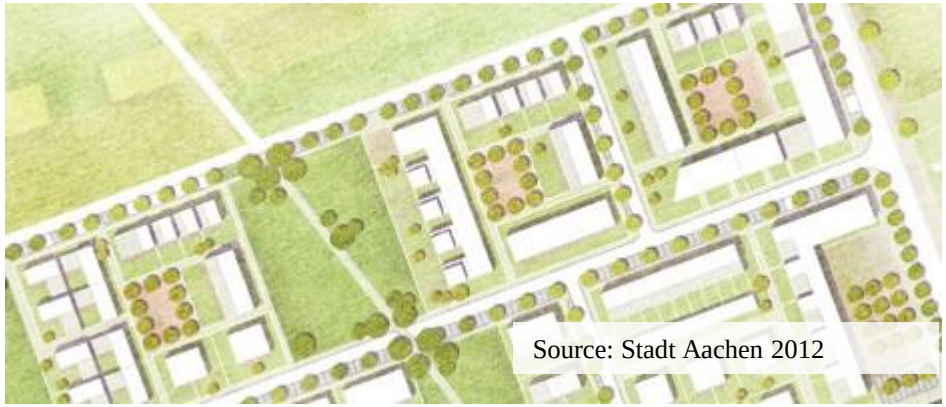
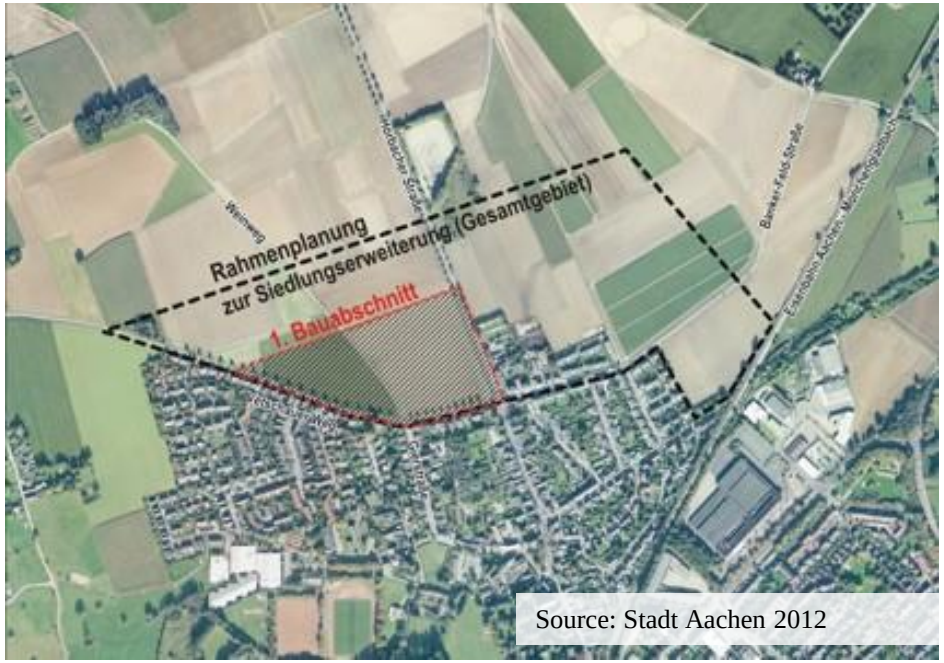
New housing area „Richtericher Dell“

- 900 appartments/ houses für 2.500 bis 3.000 people at a space of 37 ha
- E-mobility is a key element in the planning approach
- However: in the B-Plan (legally binding land-use plan) the consideration of charging infrastructure and dedicated parking lots is not possible by law.

  Instead: consideration of these issues in the rules and constitutions that are directly linked with the B-Plan (e.g. constitution for parking or urban development contracts (Städtebauliche Verträge)



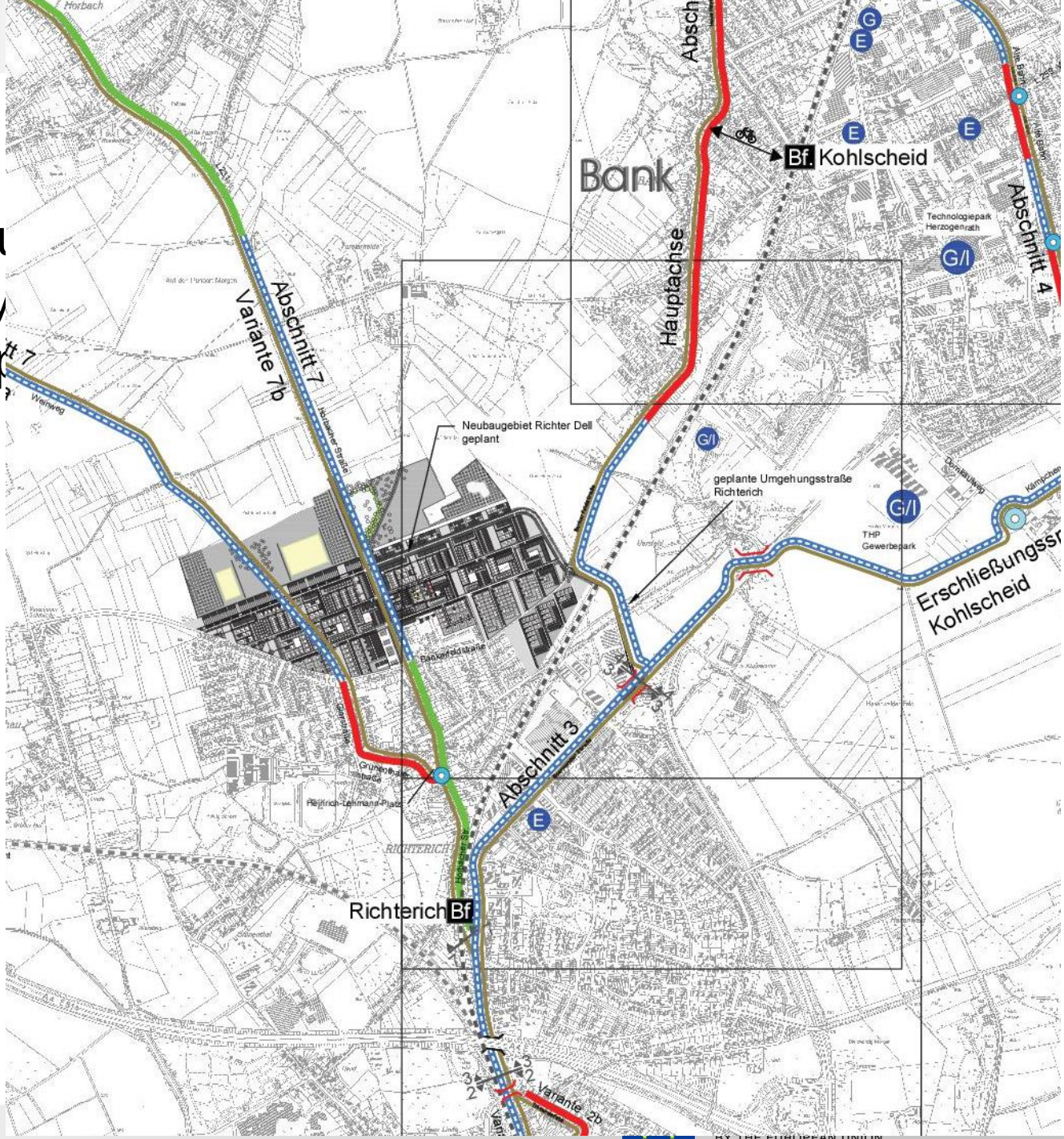
Source: Stadt Aachen 2012



Source: Stadt Aachen 2012

Fast cycle tracks

Aachen successfu
funding for fast cy
the promotion of



Source: Stadt Aachen 2012

Electric public transport

Source: ASEAG 2013

Aachen (ASEAG) is currently testing two Hybrid busses. One of which will be converted into a full-electric bus paving the way towards an electric PT system in Aachen

Coversion of the bus

... It will be the first articulated full electric bus in Germany

(without overhead wires)

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Other ASEAG e-car activities

Electric cars for carsharing

By the end of 2014 5 Cambio stations will be equipped with in total 9 electric cars. Selection of stations takes place in close cooperation with residents and a municipal housing company.

Two out of three e-mobility stations at residential sites

Since the end of 2013 a private pedelec delivery service is in operation

https://www.facebook.com/#!/clac.citylogistic

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Velocity – 1000 pedelecs at 100 stationens in Aachen (first 4 stations expected for late 2014)

Integration with the tarif system of the mobility alliance (all public transport + carsharing) is planned

STAWAG takes action

STAWAG is the public utility company in Aachen and an important driver for individual electric mobility:

33 e-cars were purchased so far (more to follow):
3 i-MiEV
12 C-Zero
2 Mercedes A-Klasse (Pool STAWAG)
10 smart elctric
1 Renault Twizy
10 Elektro-Roller
5 Pedelecs
1 Opel Ampera
2 Renault Kangoo

all pictures: foveart

STAWAG takes action

Fast charging and different vehicles

Electric cars in the fleet of the municipality

Availability of co-financing of various national and EU programs was essential for purchasing these cars (CIVITAS DYN@MO)

Electric cars in the fleet of the municipality

2x

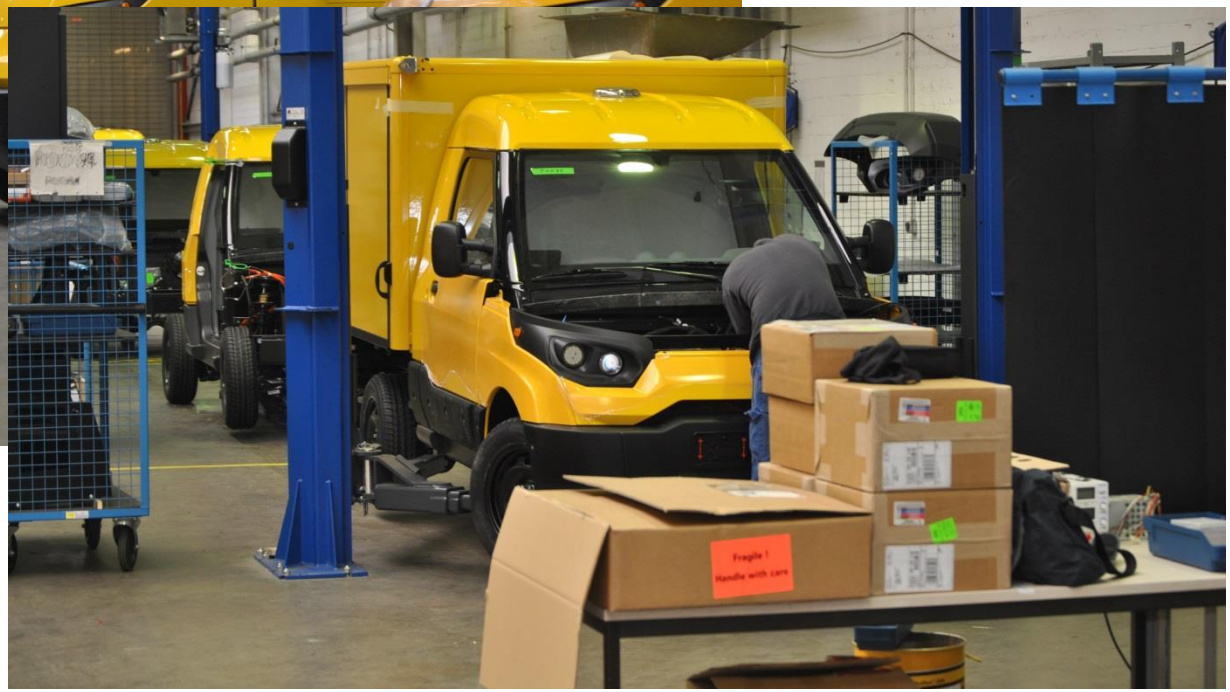
Co-financing of various national and EU programs was essential for purchasing these cars (emove)

2x

Electric cars in the fleet of the municipality

Co-financing of various national and EU programs was essential for purchasing these cars

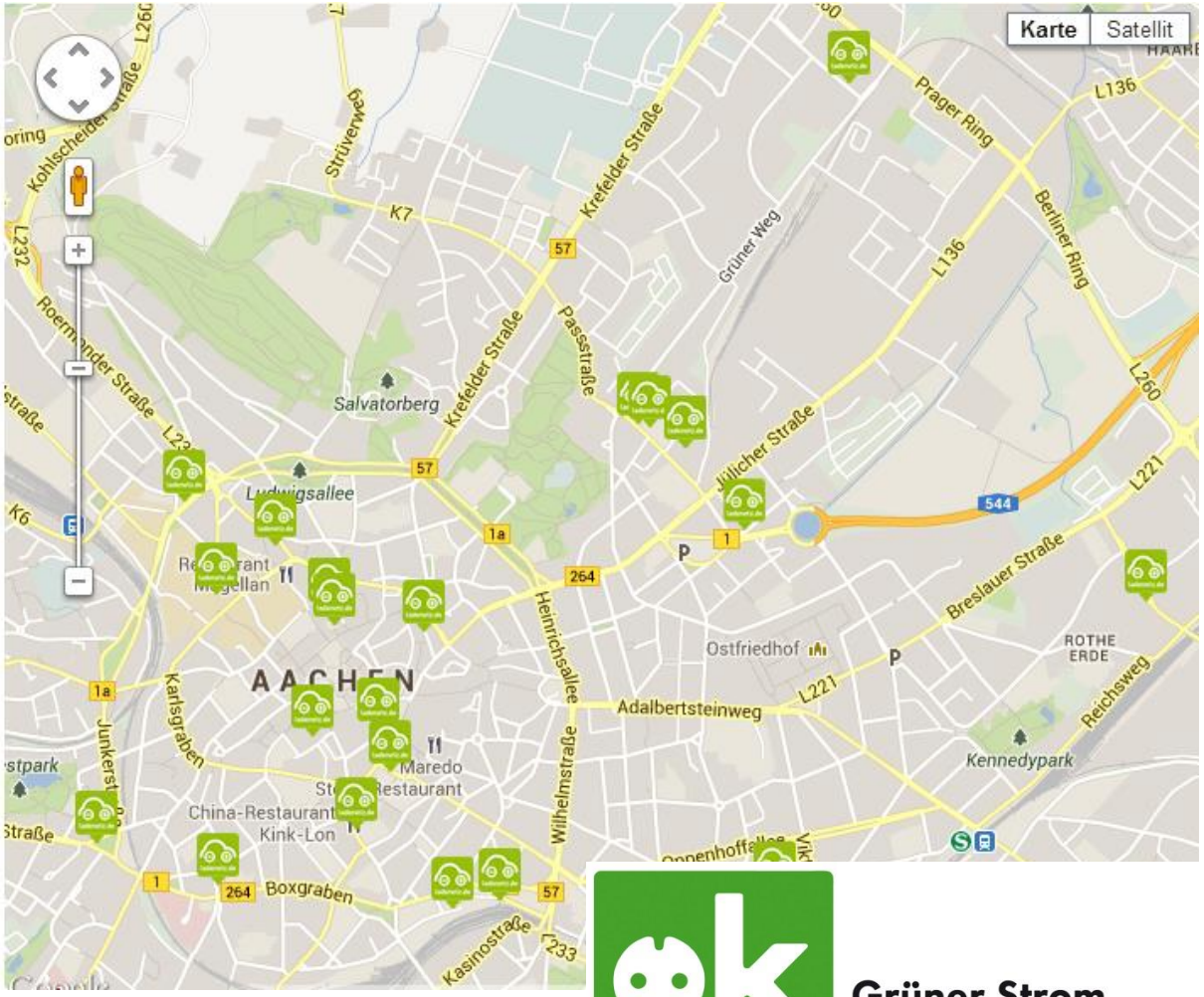
Car and pedelec production in Aachen: Streetscooter as a „new kid on the block“



Large-scale industrial production starts in June 2014!

Dense charging infrastructure for individual transport

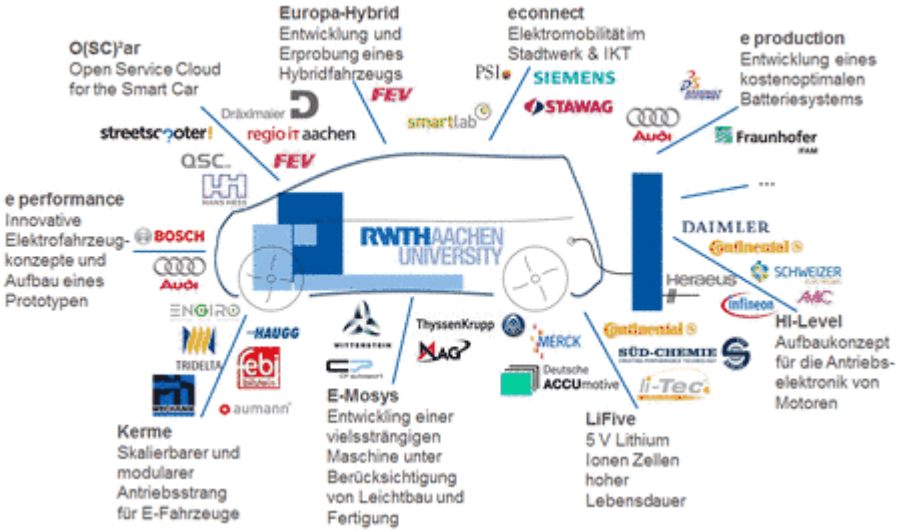
- More than 20 charging stations provide more than 50 public charging points
- One fast charging station at the STAWAG premises
- 100 % green electricity



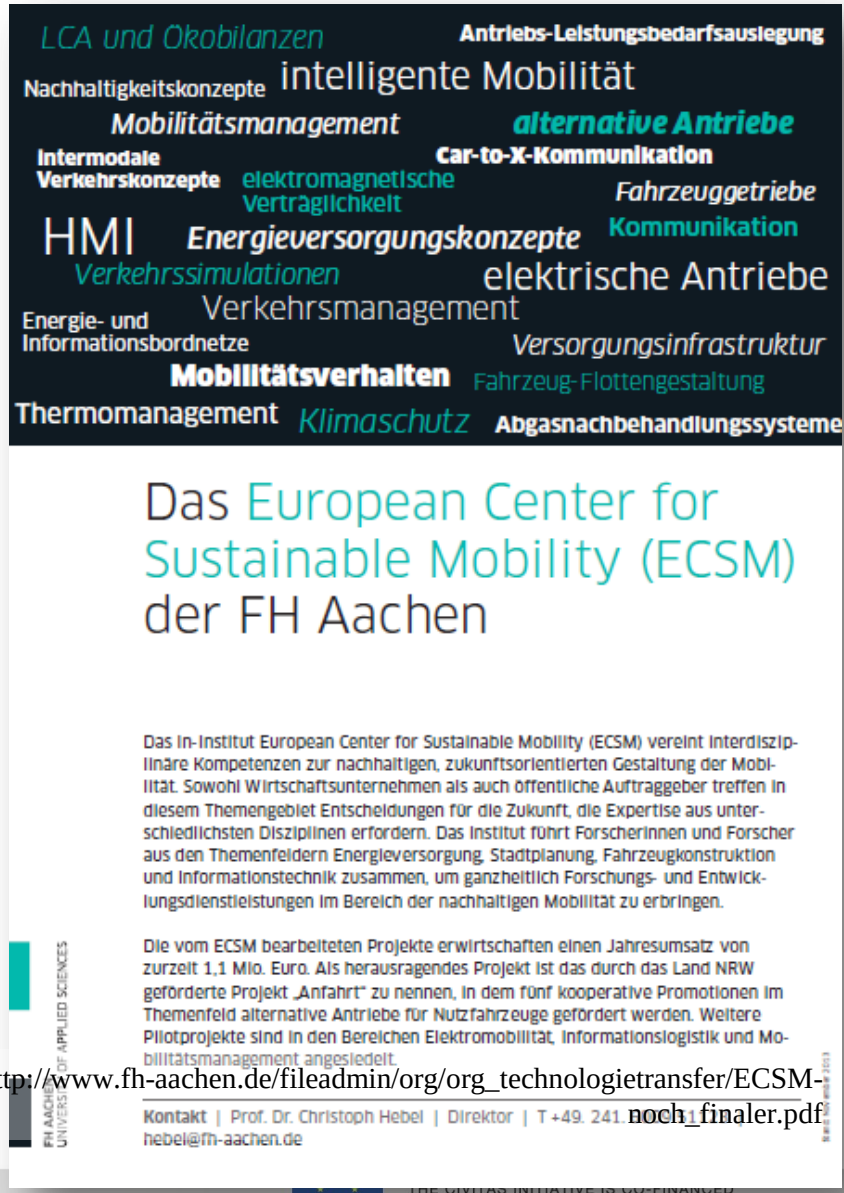
ok POWER

Grüner Strom zertifiziert durch EnergieVision e.V.

Research and cooperation with industry at RWTH Aachen University and FH



http://www.gse.rwth-aachen.de/



http://www.fh-aachen.de/fileadmin/org/org_technologietransfer/ECSM-noch_finaler.pdf

The thematic area of electromobility is dealt with at some 30 research institutes of the RWTH. A dedicated umbrella organisation coordinates and syncronises all these activities at the RWTH.

Close cooperation of all local stakeholders

- ASEAG (local transport operator)
- STAWAG (municipal facilities company)
- City Region Aachen
- City of Aachen
- Gewoge (municipal housing company)
- AVV (regional transport authority)
- Cambio (carsharing)
- Velocity
- Private services (e.g. pedelec delivery service)
- …

ELEKTROMOBILITÄT
REGION AACHEN

:: Aachener Straßenbahn und Energieversorgungs-AG
:: Aachener Verkehrsverbund
:: competence center automotive region aachen/euregio maas rhein
:: Digatron
:: EcoLibro
:: Europäisches Netzwerk für bezahlbare und nachhaltige Elektromobilität e.V.
:: Forschungsgesellschaft für Energietechnik und Verbrennungsmotoren
:: Fachhochschule Aachen
:: Forschungsgesellschaft Kraftfahrwesen mbH Aachen
:: Geschäftsstelle Elektromobilität
:: Industrie- und Handelskammer Aachen
:: Institut für Kraftfahrzeuge
:: smartlab Innovationsgesellschaft
:: Stadt Aachen
:: Stadtwerke Aachen AG
:: TEMA Technologie Marketing AG
:: veloCITY
:: Verein der Elektromobilfreunde in der Region Aachen

Unsere Botschaft heißt: „Elektromobile Zukunft – sei uns willkommen"

Die Partner der *Elektromobilität Region Aachen* unterstützen die Entwicklung der Elektromobilität in der Region, indem sie eine integrierte Planung und ein abgestimmtes, miteinander verzahntes und aufeinander aufbauendes Umsetzungskonzept entwickeln.

Partner in der Elektromobilität Region Aachen

Informieren Sie sich hier über die Partner der Elektromobilität Region Aachen und überzeugen Sie sich selbst von unseren Zielen und Bestrebungen.

www.emobil-aachen.de

All information on activities related to electric mobility is collected and made publicly available (competence center) on:

Electric mobility to do's…

- Getting Velocity going
- Setting up a municipal car-pool under consideration of electric cars (driving profile vs. range limitations)
- Extension of the company car scheme towards company e-bikes for the city administration
- Full electric public transport: what solutions are available? Feasibility study…
- Joint strategy for further extension of charging infrastructure
- Electromobility dissemination and PR
- …

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Thank you very much!

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