TRANSATLANTIC URBAN CLIMATE DIALOGUE – WORKSHOP # 3

Sustainable Mobility
Stuttgart, November 26th–November 28th 2012

Workshop Proceedings
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Transatlantic Urban Climate Dialogue

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Special thank goes to Peter Garforth for his engagement in making the workshop a success.

The Project

The third workshop of the **Transatlantic Urban Climate Dialogue (TUCD)** took place in Stuttgart, Germany, November 26–28, 2012. This workshop is the third of four problem-focused, goal-oriented and geographically-specific exchanges between local climate and energy policy-makers, technical experts and practitioners from German and North American metropolitan regions. The participants represented the urban regions of Northern Virginia, Guelph/Ontario, Stuttgart and the Ruhr Valley. The overall goal of this project, scheduled to take place between 2011 and 2013, is to strengthen the formal search, review and application of mutually beneficial local-level energy and climate change policies between Germany and North America.

This dialogue is grounded in several model institutional partnerships and precedents of successful exchanges on urban sustainability between German and North American regions. These partnerships are characterized by the inclusion of governmental, academic and commercial partners. For instance, since 2000, the Northern Virginia Regional Commission has worked with the Verband Region Stuttgart to exchange and apply urban climate and sustainability policies. Guelph, Ontario, has worked since 2006 with metropolitan regions in Baden-Württemberg to share best practices in applying comprehensive energy planning practices. The work of each of these partnerships has incorporated formal transfers and applications of urban sustainability innovations across the Atlantic.

www

→ Compare workshop proceedings Workshop #1, Gelsenkirchen, October 16th–19th, 2011 and Workshop #2, Arlington/ Alexandria, Northern Virginia, May 2nd – May 4th 2012 – www.fu-berlin.de/tucd

Germany's National Development Plan for Electric Mobility

In 2009, Germany launched the National Development Plan for Electric Mobility. The objectives of the Plan are to become a leader in the electric mobility and to launch at least one million electric vehicles on Germany's roads by 2020.

In order to achieve these objectives, it is vital to make some policy-making decisions that will support the market research and product development in the field of electric mobility. Therefore, the experts from industry, academia, politics, trade unions and civil society have closely worked together on this subject since May 2010. They have formulated some substantial recommendations for the implementation of the National Development Plan for Electric Mobility. One of the important instruments for implementation is the "Showcase Electromobility" in cities such as Bietigheim-Bissingen

"Schaufenster Elektromobilität"

The establishment of the regional "Showcases Electromobility" in Germany will provide the strength, knowledge and experience of the cross-system industries concentrated on electromobility.

„Showcase Electromobility" in Baden-Württemberg starts with the LivingLab BWe mobile. LivingLab BWe mobile (managed by e-mobil BW GmbH, the State Agency for Electric Mobility and Fuel Cell Technology), is an intermodal, internationally connected, sustainable mobility concept, targeting at consumers and producers The „Showcase" is supported by the German Government and by more than 100 partners that are involved in over 41 regional projects. These projects contain about 3,100 vehicles (4-wheelers) on the streets as well as 2-wheeled e-mobility (pedelecs and e-bikes).

The TUCD is structured to formalize and apply knowledge transfer among the participants. To this end, the TUCD emphasizes the merging of informed field visits and critical dialogue among the policymakers and the technical experts in order to advance applications of local energy and climate planning policies and practices. The purpose of the site visits is to create a more formal learning context prior to the workshop so that each of the participants is informed about the applications of large-scale sustainable energy projects in the area.

The site visits included:

1 Bietigheim-Bissingen →

2 Ludwigsburg →

3 Waiblingen →

4 Esslingen am Neckar →

Bietigheim-Bissingen

The medieval town of Bietigheim-Bissingen, is situated in the south of Stuttgart. With approximately 42,000 citizens, the town confronts multiple challenges vis-à-vis public transit and comprehensive energy planning. The mayor indicated that the overall public transportation systems need to be.

A key feature of this expansion will include the newly designed pedelec loan and parking lot. It is planned to implement up to 50 stations for pedelecs in the region of Stuttgart until 2015. The first stations will be in Bietigheim-Bissingen, Kirchheim and Schwieberdingen. The costs for complete maintenance and services for 10 pedelecs are about 12,000 Euros per month per station. Real-time information and traffic data from Stuttgart is coordinated in a central management system to promote options for commuters and to avoid congestion on the roads. Bietingheim-Bissingen is emerging as one of the "Showcases for Electromobility" ("Schaufenster Elektromobilität") in Germany.

Ludwigsburg

The city of Ludwigsburg and its approximately 80,000 inhabitants is in the process of implementing a comprehensive sustainability management system. Based on the Urban Development Strategy, various energy efficiency measures are tied together and aligned with the strategic goals for ecological, economic and social development. Therefore, the concept of an energy efficient city is understood as an integrated strategy to safeguard the City's future in the face of energy and climate challenges.

Promotion of E-Mobility in Ludwigsburg

In Ludwigsburg, residents, visitors, employees and businesses are able to get everywhere with electric vehicles, thanks to an innovative rental scheme. Under a publicly funded initiative, up to five electric cars and up to 30 electric bicycles (pedelecs) are ready for hire. Cargo bikes and electric scooters may be added. Rental stations are located throughout the city. The local utility, SWLB, power the vehicles with renewable electricity generated from biomass. Electric vehicles offer the greatest environmental benefits when they are powered by carbon-neutral or low-carbon electricity. The array of electric vehicles offers a noticeable presence in local traffic, presenting an alternative, emission-free form of transport. Ludwigsburg is proactively participating in efforts to promote electric drive and hydrogen technology, and roll out the infrastructure to support it.

Energetikom – Centre for Energy Competence and Eco-Design

Energetikom e. V., the local and regional flagship project was established in 2009. The centre is a public-private think tank that promotes innovative projects on climate protection and energy efficiency, financially supported by the Ministry of the Environment, Climate Protection and the Energy Sector Baden-Württemberg. It aims for bringing together

Radstation Bietigheim-Bissingen

Case Study: Energy Efficient City of Ludwigsburg, Stuttgart 2011

www

→ Wirtschaftsförderung Region Stuttgart GmbH (WRS). "The Stuttgart Electric Mobility Pilot Region". www.region-stuttgart.de

LUDWIGSBURG elektrisiert!

"Ludwigsburg elektrisiert"

stakeholders from the fields of energy saving, efficiency technology, renewable energy sources and eco-design. The centre does this by building on activities of local Agenda 21 groups, of the municipal building and energy advisory services (Bauberatung Energie BBE) and of the local energy agency LEA e. V.

Energetikom's main fields of activity include:

Information and Consulting: Together with LEA (Ludwigsburg Energy Agency) and other local partners (engineers, building firms and banks) a "one-stop-agency" for private and commercial builders shall be established. Advice for each phase of an energy measure is provided under the one roof.

Education and Training: Due to skills shortages there is a great regional demand for qualified advanced training. Therefore, the "Akademie der Ingenieure" from Ostfildern (Esslingen) is incorporated into Energetikom, which is a private supplier of advanced training for engineers.

Cooperation and Networking: By bringing together local, regional and international actors on various levels, energy questions can be approached in an interdisciplinary way, innovative projects can be initiated and sustainable urban development can be promoted.

Research and Development: The existing research institutions in the region show great interest in cooperating in the fields of the energy technology, energy supply and environmental protection. The Energetikom serves as a platform for thematic working groups of the neighboring firms and universities.

www

→ www.energetikom.de

Waiblingen

Waiblingen and its 53,000 inhabitants were honored in 2006 with the European Energy Award. The city uses comprehensive approaches and emphasis on technical innovation includes biogas conversation from the waste water treatment plant which also promotes co-generation. The local plant supplies the public network and district heating to heat the city hall, public buildings and a hospital.

A photovoltaic facility has been installed on the roof of the city hall and provides 8 percent of the structure´s electricity. The City also makes available financial support for the residents of the City for photovoltaic facilities on their roofs and other energy saving building measures.

These incentives include thermal insulation of

- → Roof
- → Façade
- → Cellar
- → Windows
- → Exchange of heating pumps.

Financial support is given up to 2,500 Euro for one-family houses resp. 5,500 Euro for apartment houses. The grants are complementary to state subsidy programs.

Speech of the Mayor of Waiblingen for the TUCD Participants on November 27th, 2012 in Waiblingen

Transport Development Planning: Real-Time Information System on Connection Commuter Train / Bus

At the central bus station in the town center of Waiblingen the VVS (Transport and Traffic Association Stuttgart) and the City of Waiblingen have built two dynamic passenger information displays to communicate real-time departures and arrivals of buses .

Dynamic passenger information displays

For the further expansion of the real-time displays state subsidies are available for the VVS under the program “Sustainable Mobile Region Stuttgart” (Nachhaltig Mobile Region Stuttgart). These subsidies include 1,8 million Euro government grants from the German Department of Transportation.

Car sharing and Public Transit Innovations

The city bus line in Waiblingen offers an alternative to the motorized private transport, which helps to improve the modal split in favor of the public transport.

The customers of the VVS in Waiblingen are now able to use the new city bus lines between the railway station of Waiblingen and the old town center and the quarters close to the town center. The new city buses are smaller and more agile than ordinary buses and therefore are able to drive through the narrow roads of the city. Car sharing In Waiblingen is also one of the measures to reduce the use of the private transport.

Car sharing

Esslingen am Neckar

Sustainable Mobility and Climate Protection in Esslingen

Esslingen am Neckar and its 92,000 residents also actively participate in climate protection. Starting in 2011 a new run-of-the-river power plant produces 7.1 Gigawatt hours in electricity per year. Together with already existing hydro power plants a total of approx. 22 Gigawatt hours in electricity per year is produced in Esslingen. This covers the electricity demand of approx. 15,000 persons and saves as much CO_2 – or the equivalent of 2,100 flights between Stuttgart and Sydney, Australia.

Climate Action Plan City of Esslingen

Esslingen also has developed close synchronization between local and regional public transport systems, such as CO_2 -free trolley buses (CO_2 emissions free) that have been in operation since the 1990s.Esslingen also is a member of model region Stuttgart electric mobility project and uses e-cars to support the commute of employees of the city administration and within the network of public transport.

The fleet of the e-cars has intensified in recent years due to the high demand. Additional services such as car sharing also gain more and more importance. In general, the environmentally friendly modes of transport such as cycling and e-bikes are given a priority in Esslingen. Recently a Pedelecs station has been created directly by the central station.

Visit of Energiezentrum Esslingen

The Energiezentrum Esslingen was opened in 2008. The Energiezentrum provides a broad spectrum of information on the topics of climate protection and energy saving projects. Such data informs the citizens and helps them make important decisions e.g. about the energy efficient renovation of their homes or about the transition to sustainable e-mobility.

www

→ www.energiezentrum.esslingen.de

Tour of „inem“ – Institute for Sustainable Power Engineering and Mobility (Faculty Automotive Engineering, University of Applied Sciences, Esslingen)

The delegation also visited the Esslingen University of Applied Sciences, an engineering and research institute. The Institute for Sustainable Energy Technology and Mobility (INEM) is renowned for teaching, research and development of the interdisciplinary studies for sustainable technologies, sustainable energy supply/production and electromobility. INEM is also committed to the implementation of guidelines for sustainable public action.

The Institute is an important part of Esslingen and the Stuttgart Region commitment to sustainability.

www

→ www.hs-esslingen.de

inem – e-lab

Tour of “ECOINN am Campus” – Retrofit, Energy Supply, Certification as Climate Hotel

An “ECOINN am Campus” hotel in Esslingen has a unique, ecological profile. It offers electric energy produced with hydropower that is generated directly in the hotel. All the rooms in the hotel are equipped with furniture made of environmentally friendly and organic materials. The hotel ECOINN am Campus has the intention to disburden the environment and climate actively by using renewable energy. The use of 100% green electricity secures a livable future without CO_2 emission.

www

→ www.ecoinn.de

Factors positively affecting Sustainable Public Transport Development in Stuttgart Region:

- *Political will is very well developed in Germany, which helps to address multiple economic and ecological issues. Successful electro mobility development brings together an innovation and a strong political will.*

- *Stuttgart Region links city planning with local traffic patterns. Traffic patterns are affected by the local knowledge, e.g. planners use models in real-time and collect exact statistical data to calculate pollution level on the streets.*

- *State Government supports e-mobility by subsidizing loading stations for e-cars. Creating sustainable charging infrastructure is a very important component for e-mobility.*

- *The sector of Public Transport (PT) in Stuttgart Region is highly competitive and constantly develops new services.*

- *Stuttgart has established a contact forum "Mobility for People". The forum focuses on non-motorised transport. There are also some European projects on pedelecs, which offers a great podium for valuable knowledge exchange.*

Sustainable Transport in Germany and the USA[1]

[1]Presentation by Ralph Buehler, Virginia Tech University and Wolfgang Jung, Karlsruhe Institute of Technology

Transportation Parallels between Germany and the USA:

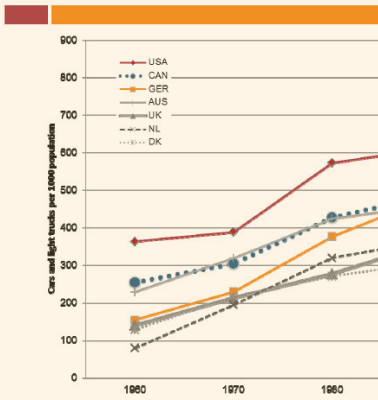
- Federal systems of government, local self-government
- Strong economies, high standards of living
- Highest levels of car ownership in the world
- Most adults have a driver's license
- Extensive road networks
- ~3 times more CO_2 emissions and energy per capita in USA (German vehicle fleet 40% more fuel efficient)
- 2.2 times more traffic fatalities per capita in USA 3x and 5x greater fatality rate per km cycled/walked
- U.S. households spend more for transport (17% vs. 14% or $2,500 per year)
- Higher annual per capita government expenditures for roads and public transport in the USA ($625 vs. $460)
- Much larger subsidy required for public transport in USA than in Germany (65% vs. 25% of operating cost)
- Obesity rate more than twice as high in USA

Key Mobility Indicators for the Stuttgart and Washington Regions, 2008/2009:

- More trips per person per day in DC (3.9 km/person vs. 3.5/km person)
- Longer daily travel distance per person in DC (44 vs. 40km)
- More minutes spent traveling per day in DC (80 vs. 75)
- Similar average trip distance: ~11km
- Average trip speeds similar (~28km/h)
- Distribution of trips similar, but more car use in DC (<2km 25%/29%; <5km 50%/47%)
- More cars/SUVs in DC (744 vs. 544 per 1,000)

Federal Transportation Policies in Germany:

- Taxes and regulation make car use more expensive
- More funding for walking, cycling, and public transport
- Land-use planning is stricter and requires cooperation among levels of government
- Strategic leadership through national transport and land-use plans at the federal level
- Specific policies developed and implemented at the local level



Source: Buehler, R., Pucher, J. 2011. "Sustainable Transport in Freiburg: L
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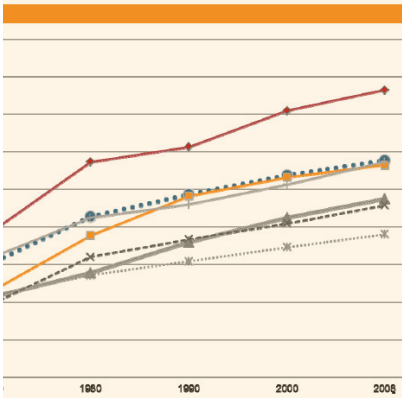


ble Transport in Freiburg: Lessons from Germany's Environmental Capital," Inter
of Sustainable Transportation, Vol. 5, pp. 43-70.

Trend in motorization per 1,000 Population

Regional Public Transport Authorities in Germany:

- Integrate public transport fares and timetables
- Seamless transfers across operators and public transport modes
- Steep discounts for monthly/annual tickets, students, and elderly
- Goal: improving service and connectivity
- State-wide public transport tickets (29—37 Euros for up to 5 people for entire day, local and regional trains)

Regional Planning Priorities in the Stuttgart Region:

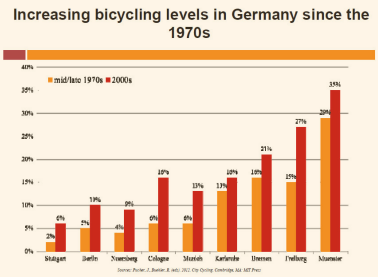
- Growth poles for settlements (Siedlungsbereiche)
- Bound to central places
- At/in axes of public transport
- Density: 60 EW/ha
- Growth/a: 0.3% of housing units (orientation parameter)
- Inhabitant based: Growth/a: 0.2% of housing units (orientation parameter)
- Regional centers for housing (Schwerpunkte des Wohnungsbaus)
- At/in axes of public transport
- Density: 90 EW/ha
- Regional centers for industry (Schwerpunkte für Industrie, Gewerbe und Dienstleistungen)
- At/in axes of transport
- No large scale retail

Zoning Policy Differences between Germany and the US and Implications for Travel Behavior:

- Separation of land uses is stricter in the U.S.
- Zones cover larger land areas in the U.S.
- Strict separation of land uses, including exclusion of apartment buildings, doctor's offices, corner stores, and small businesses from single family residential zones, and larger areas of single use zoning result in longer trip distances in the United States
- Germany's practice of zoning for smaller land areas and the more flexible zoning code has helped to reduce trip distances and car dependence - even when planners did not explicitly coordinate transport and land use

Key Lessons from Case Studies:

- Public transport can successfully be leveraged to catalyze redevelopment, and redevelopment can in turn support public transport use.
- A coherent planning blueprint that is developed with broad stakeholder participation can engender stable, efficient, and dynamic redevelopment.
- Involvement of different planning levels and sectors guarantees coordination of transport, land-use and financing.
- Coordinated policies to promote transportation, housing, and business choices are important to ensuring the long-term success and viability of redevelopment projects



Increasing bicycling levels in Germany

Summary and Conclusion:

- → Ground passenger transport in Germany is less car dependent than in the U.S.
- → U.S. transport system less sustainable along environmental, social, and economic dimensions
- → The Washington, DC Metro and Stuttgart Regions mirror the national trends in travel behavior
- → Outlying suburbs in the DC Metro Region are much more car dependent than in the Stuttgart Region
- → Compared to Germany, federal, state, and local transport policies in the U.S. during the last 60 years have been more favorable for the automobile
- → In contrast to the U.S., in Germany different levels of government coordinate their land-use plans in an interactive process
- → In both countries federal policies build framework; but local governments determine sustainability of transport system
- → Similar remaining challenges in both countries

Key Challenges in Germany and the US:

- → In both countries, transportation should be more explicitly coordinated with land-use planning
- → Planning practice and regulations in both countries still foster automobile use
- → Federal and state funding can foster, counterbalance, or even block local policy choices
- → Effecting changes in individual behavior, land-use and transport systems is possible, but takes time
- → Planning approach that is “satisfied with partial success by individual projects, but based on an overall strategy”

The New Mobility Card[1]

[1]Presentation by Dirk Dietz, Verkehrs- und Tarifverbund Stuttgart

VVS (Verkehrs- und Tarifverbund Stuttgart/Transport and Tariff Association Stuttgart) is responsible for:

- → Creating an integrated network consisting of 40 independent operators
- → A uniform fare system for all operators in the region
- → Co-ordination of the timetable
- → Passenger information
- → Marketing
- → Traffic census and travel survey
- → Developing new services

Innovations in Sales; Mobile- and Online-Ticket

Advantages:

- Less stress for the passengers
- Cheaper way of sales

Mobile Ticket:

- For Single- and Day Ticket
- Payment via debit or credit card
- Handy Ticket Deutschland“ (interoperable in 20 German regions) or App
- VVS Mobil“ (integrated timetable information)
- About 200,000 Mobile Tickets sold (since start in April 2012)
- Online Ticket to print
- For Day- and Studi Ticket

Public transport is more than trams, trains and buses:

Bicycle:

- Rent a bike
- Bike and Ride
- Take along the bicycle in train, tram or bus

Public Car:

- Car sharing
- car2gether
- Rent a car
- Taxi/cab

Multimodal Mobility Card in the VVS-Area

Added value for passengers

- PT is the basis; additional services create an added value (simplified access, discount etc.)

Services fitting to PT

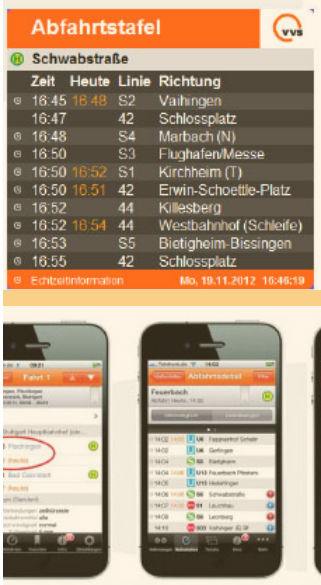
- Priority for sustainable mobility

Open system

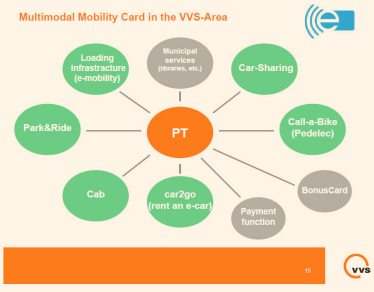
- Open to new partners

First step from 2013

- VVS-ID-Card will get an ID-Chip
- No eTicket-function for PT (will be added later)
- ID-Chip is needed for the access to additional mobility services (rent a car, rent a bike, etc.)
- Advantage for the clients: One card for all; exclusive bonuses for VVS-Clients (Abandonment of application fee, free minutes, discounts.)



Innovative passenger information



Multimodal mobility card

Second step: „Schaufenster“ application (Realization from 2014/2015)

- eTicket-function for PT (German Standard: „VDV-KA“ — Paper ticket will be replaced by chip - Blocking in case of lost, cancelation etc — Order via internet)
- Mobility card could be extended to an overall service card (baths, library, bonus function, payment function etc.)
- Market research, evaluation
- Data privacy

Conventional and Electrical Bicycles in Post-Carbon Urban Traffic Strategies[1]

[1]Presentation by Walter Vogt, Institute for Road and Transportation Science, Universität Stuttgart

Some Aspects:

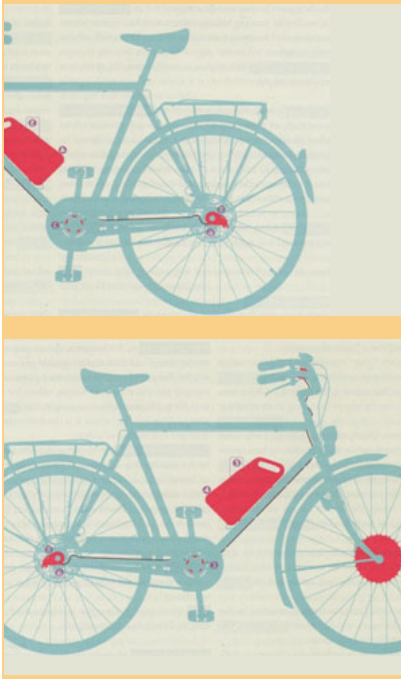
- Challenge of climate change needs collective actions to reduce CO_2 emissions wherever possible
- Carbon foot print of everyday transport in Germany
- Substitution of short car trips by bicycle
- Additional Savings by increasing use of pedelecs possible
- Increase of Bicycle Use in Germany in Last Decades
- Reasons for increase are manifold
- Strategies to encourage bicycle use and to contribute to a climate friendly mobility
- Stuttgart – towards a bicycle friendly city?!

Carbon footprint of everyday transport in Germany & Substitution of short car trips:

- In orientation towards „best practice“ of cities in the Netherlands and Denmark, raises of the share of cycling and pedestrian traffic for all everyday journeys in Germany from the current 33% to 43% appear to be possible!
- For that, 36% of short car journeys (< 5 km) have to be shifted!
- This would result (in 2020) in CO_2 savings of 4,2 million tones CO_2.

Additional Savings by Increasing Use of Pedelecs Possible:

- A Pedal Electric Bicycle (Pedelec) is a bike with an electric motor, which supplies power assist only when you pedal
- A sensor measures whether you are pedaling and passes this information to a controller. This sensor is required by law for pedelec and ensures that the motor only provides assistance when the rider is pedaling.
- The motor cuts out automatically at 25 km/h, because this is the highest speed possible while still being regarded legally as a bicycle. (20.11.2012: European Parliament voted on the new type approval legislation on two- and three-wheel vehicles and quadricycles. Only pedelecs with a maximum (electrically supported) speed of 25km/h and 250 Watts power will remain exempt from motor-bike regulation.)
- Pedelecs can be used like normal bikes without helmet, driving license or insurance wherever cycling is permitted.



Pedelec

Reasons of Growth Are Manifold:

- Development of land use and settlement structure: promotion of travel destinations close to home
- Availability and quality of cycling infrastructure
- Local attitude towards cycling, e.g. acceptance of cycling by the general public (Bicycle climate, bicycle culture)
- Recent innovations in bike technology (pedelecs)

Strategies to Encourage Bicycle Use and to Contribute to a Climate Friendly Mobility

Three essential aspects:

- Development of dense urban neighborhood and avoidance of long distances
- Measures of mobility management to influence mobility patterns
- Consistent cycling policy including infrastructural and non-infrastructural measures as well as complementary push and pull measures (car traffic)

Local Cycling Policies:

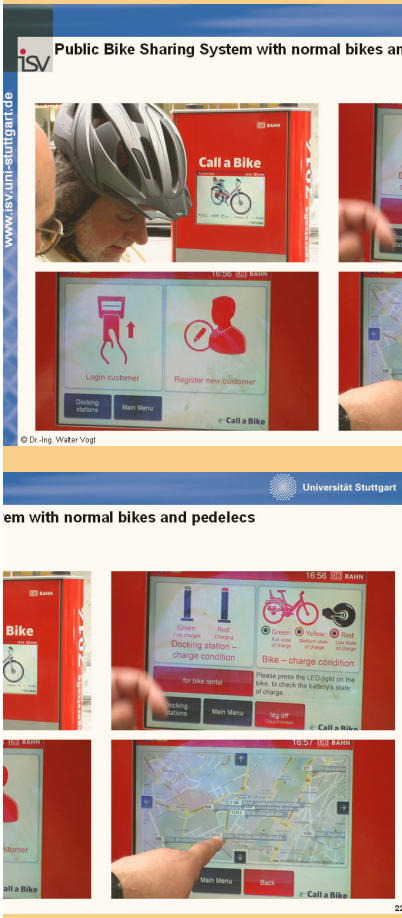
Policy Document „Cycling in Stuttgart“ of the Stuttgart City Council (2003/04)

Objectives

- Implementation of the National Cycling Concept in the city of Stuttgart
- Handling „bicycle“ as „natural“ element of an integrated transport policy and as an equivalent means of transport
- Taking into account cycling in all concepts of transport, urban development, spatial planning etc. appropriately
- Achievement of a cycling mode share of 12 % of all everyday trips in the mid-term and 20% in the long run

Measures (10 point plan)

- Creation of a comfortable cycle network including bicycle parking
- Improvement of signposting for cyclists
- Safety improvement, esp. in terms of pupils (traffic education)
- Promotion of Bike and Ride
- Improvement of information and communication about cycling (e.g. bicycle events, campaigns)
- Enhancement of the municipal cycling budget



Public bike sharing system

Stadtbahn Stuttgart: The LRT System Operated by Stuttgarter Straßenbahnen AG (SSB)[1]

[1]Presentation by Wolfgang Arnold, Stuttgarter Straßenbahnen AG

The project to convert the tram to a light rail system had 3 phases:

Phase 1:

- Building of the U-Straßenbahn. The concept of "light rail" had not yet been invented at that time.
- Providing space on the roads, getting trams independent from cars and therefore faster. So from 1973 to 1977 5 miles of tunnels were built in the centre of Stuttgart for the tram network

Phase 2:

- 1976 — Changeover to light rail technology, a huge challenge for the engineers, as the tracks had to be changed over from meter to normal gauge.
- Tracks were converted line by line. Therefore the old trams continued to travel for over 20 years on the same tracks as the new light rail trains.
- Most important of all, by fitting tracks with three rails there was no interruption in service for the passengers.
- In 1985 the first light rail trains became operational.
- In 2007 the conversion was completed.

Phase 3:

- As the light rail concept was so successful and used enthusiastically by the passengers, expansion started on the network in 1998 alongside the conversion.
- More and more lines and extensions have been added and the expansion continues.

The Route Network:

- 17 light rail lines on a wide network with a line length of about 128 km
- Operation from 4:30am to about 1:30am, daily every 10 minutes
- They visit 200 stops
- 410,000 passengers daily

Modern and Convenient Vehicles:

- High floor carriages with the help of raised platforms enable disabled passengers the easiest possible access.
- Comfortable upholstered seats, bright pleasant material and large windows
- Air-condition
- High standard of cleanliness. Soiled and damaged vehicles are taken out of service, damage from graffiti and vandalism is removed within one day
- Vehicles are equipped with a modern passenger information system
- Installation of TFT-screens with real time information about connections

Infrastructure and Operations:

- Stops have high standards to create a subjective feeling of safety for passengers
- Stops are integrated into the overall urban design

LRT in Stuttgart

Question: What are the main obstacles for developing Pedelecs?

+ PROs

Pedelecs are very helpful for the hilly landscape in Stuttgart.

Pedelecs are important considering the demographic change: on the one hand Pedelecs are comfortable and easy to use for elderly people, on the other hand Pedelecs attract young people. There is a visible shift from conventional transport and bikes to Pedelecs in Baden- Württemberg. It is proven that the young generation drives less, than the generation before. New technologies serve well to the future generation.

- CONTRAs

Germany in general has a very friendly bike policy, however despite the same options of funds, different local areas show different results in terms of sustainable bike use. There is a good subsidising system for e-cars, however pedelecs are not really supported by subsidies. Therefore pedelecs are expensive (a pedelec produced in Germany costs approx. € 1800) and remain unattractive for the low-income households.

There are also some safety questions regarding pedelecs because not all people use helmets in spite of pedelecs' speed over 25 km/h.

= CONCLUSION

Bikes rent is cost-free for people in Stuttgart, but not for the city. The cycling infrastructure requires more promotion. Cycling promotion campaigns need to be established.

The financial benefits from pedelecs are mostly used for the development of the new bike-routes in the region. Local initiatives, local networks, people from the neighborhood are the best consultants for developing new routes.

There is a growing general concern about the demographic change in our society (population gets older) and about how such change influences Public Transport and Individual Needs.

Planning for Sustainable Transport: Financing Aspect[1]

[1]Presentation by Andrea Broaddus, University of California at Berkeley

A three-pronged set of challenges and opportunities are currently underway:

- Financial crisis – traditional tax sources, like fuel tax, are weakening and cannot support previous spending levels
- Information and communication technologies - allow for new sources linked to travel behavior
- Institutional and policy changes – transport investments increasingly linked to land use plans

Trends in the U.S.:

- Politicians reluctant to raise fuel taxes
- Increased reliance on debt and private sector financing
- Expansion of non-transportation sources like sales taxes and administrative fees
- Wider use of user fees like tolls and value pricing
- Spending cutbacks — new project prioritizations
- Highways are still biggest investment, but some shifting toward rail and sustainable modes
- Urban areas still penalized by federal and state funding formulas, but some new local sour

Fuel tax comparison

US:

- Federal fuel tax last increased in 1993, not indexed to inflation
- Federal gas tax = $.18 per gallon/$.05 per liter
- Plus state taxes = $.50 per gallon/$.13 per liter

Germany:

- Federal gas tax has been raised eight times since 1991
- Federal gas tax =Euro 1.78 per gallon/Euro 47 per liter
- Total with 19% VAT = Euro 2.08 per gallon/Euro 55 per liter
- $2.60 per gallon $.70 per liter

Trends in public transit, 1992—2007:

- In **US**, transit supply increased faster than demand
- Service kms increased
- Transit trips increased overall, but decreased per capita
- Farebox recovery increased
- In **Germany**, transit demand increased faster than supply
- Service decreased and fares increased
- Ridership increased (overall and per vehicle km)
- Farebox recovery increased
- Costs decreased and productivity increased

Bicycles and pedestrians

- Special federal programs and funds
- Mainly local sources: sales taxes, property taxes
- Regional level planning and coordination
- Increasing investments

Virginia

- $5.2 billion annual investment in transportation, overseen by politically appointed board
- Lowest fuel tax in national capital region: $.175 per gallon ($.235 in MD and DC)
- About 25% of budget financed with debt
- 70% spent on highways, 3rd largest highway system in the US
- 10% spent on rail and transit
- 7% for local government assistance – bicycle, pedestrian facilities

National Capital Region

- Strictly a planning entity – no direct revenue mechanisms or spending
- Investments are selected by a 32 member board, representatives of participating governments
- $230 billion over 30 years, ~$7.5 billion per year
- 70% for transit, 30% for highways
- Small grant programs for bicycle and pedestrian facilities

Emerging finance mechanisms in use

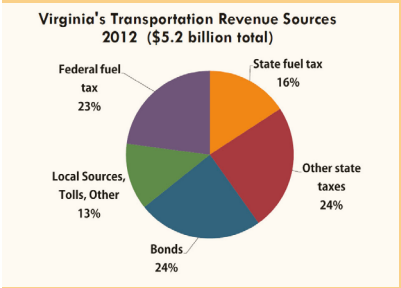
- Value capture/joint development at stations – i.e. Dulles Silver Line
- Public-private partnerships and innovative financing – i.e. InterCounty Connector
- Local option sales tax – i.e. Northern Virginia Transportation District 2% sales tax on fuel
- Impact fees – i.e. Arlington County per square foot tax on commercial development
- Tolls differentiated according to vehicle occupancy and time of day – i.e. I95 and I495 HOT lanes

Emerging finance mechanisms with potential

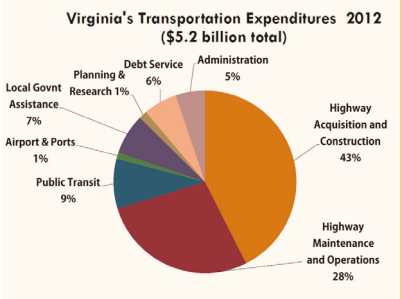
- Virginia Infrastructure bank
- Land value capture tax
- Congestion pricing – expanded use of tolls on all major roads accessing DC
- VMT (per-mile) fee for road use, which could be differentiated according to vehicle weight

Innovative pricing models

- GPS-based road user fee – German truck toll/LKW Maut
- Per-hour parking user fee – San Francisco
- Per-km road user fee – Oregon pilot



Virginia's transportation revenue sources 2012



Virginia's transportation expenditures 2012

Financing Sustainable Transportation: Selected Case Studies from the Stuttgart and Northern Virginia Regions[1]

[1]Presentation by Dominic Marcellino, Ecologic Institute

Car2Go

- Privately funded, flexible car sharing program
- Operating in both Stuttgart and Washington, DC
- In DC, car2go paid over $750,000 in 2012 to allow its cars to park anywhere
- In Stuttgart, parking in the city center for the eSmart fortwo is free, as it is a zero-emission vehicle

S-Bahn extensions in Stuttgart

- There have been a few extensions of the Stuttgart S-Bahn (light rail) over the past decade
- These extensions are being funded with public money: Deutsche Bahn, Baden-Württemberg, Verband Region Stuttgart, and localities are providing the funding

Capital Bikeshare

- A public-private partnership providing a large-scale bike sharing program to: Washington, DC; Arlington and Alexandria, VA; and Montgomery County, MD
- Initial capital costs have been financed mainly from federal grants; local public funding also helped launch the system
- Business partners have also contributed financially to the construction of some bike stations
- The bikes and stations are owned by the localities, but the system is operated by a private contractor
- In 2012, nearly 97% of the operating costs of the existing system were covered by membership fees and one-time rentals

The Silver Line

- Publicly-funded expansion of Washington, DC's Metrorail to the Dulles Airport
- A 23 mile extension of the Metrorail system with 11 new stations
- Funded with a combination of state (Virginia) and federal funding, as well as contributions from the two counties (Fairfax and Loudoun) where the extension is happening: current estimated costs of approximately $6 billion
- Approximately half of the estimated costs will be recovered through an increased toll to the Dulles Toll Road, which runs parallel to the future Silver Line

San Francisco Municipal Transportation Agency

- Created in 1999, the SFMTA was designed to rationalize the transportation options of the city, placing all systems – bus, rail, taxi, traffic planning in one agency
- The charter gives the SFMTA a transit and non-automobile orientation, where general measures and funding are to be used to increase the non-automobile share
- Street parking and parking garage fees as well as the funds from parking tickets accrue to this account
- SF Park – real-time, dynamic pricing street parking pilot project

Stuttgart Call a Bike

- Call A Bike – Stuttgart is project of DB Rent
- It is a public-private partnership
- Call A Bike in Stuttgart offers both traditional and electric bikes
- There are over 400 bicycles on offer in Stuttgart

Questions:

1. *How to make transition of knowledge on e-mobility work?*
2. *How do communities benefit from the transition of knowledge?*
3. *How to make the little transitions effective in order to reach a big change?*
4. *How does land-use fit in the context of the e-mobility?*

- → *In the late seventies Germany dealt with the similar problems in terms of public transportation as North America faces today. North America can currently take over the best practices, especially on the municipal level. Such mutual knowledge transition is the main reason for the transatlantic exchange.*
- → *Public discussion about the pros and cons of the e-mobility projects is essential for the success of every single project. It is important to show people that their needs are being taken seriously.*
- → *One of the most important criterions of transition to e-mobility is the analysis of costs and benefits. At the beginning of the decision-making process, the elaborated new system needs to be compared with already existing systems. There must be clear benefit in order to get federal and state funds. Cost split between the operating company, state and federal state can be required.*
- → *Vehicle technology is very common in Germany - therefore there are components for complex development. Stuttgart can provide efficient expertise in terms of technology transfer. New electro mobility is high tech based and can be distributed.*
- → *Cooperation between the PT Authorities in Stuttgart is essential. Once an operator became a part of the Verband Region Stuttgart (VVS), it means they want to cooperate. Operators are also being rewarded for their cooperation.*

Conclusions:

- → *There is a strong need to create equity between economic development and development of the e-transportation.*
- → *Land-use design will keep heavily affecting transportation design.*
- → *There is a need to focus on more empirical evidence on a local economic level because that influences policy makers.*

The next workshop of the Transatlantic Urban Climate Dialogue takes place on May 15th to 17th, 2013 in Guelph, Canada.

Theme | Integrated Community Energy Systems – Sustainable City Building, Competitiveness and Economic Development

Facts about Guelph:

- In the case of the city of Guelph, the environmental plan turned out to be an economic development plan because of the policy context in North America.
- A new board in Guelph consists out of nine political members and just one of them has a strong focus on climate change. Topics such as energy productivity, transportation issues along with an economic development are very tangible for the region.

Questions:

- What can be done in order to establish a sustainable community and to connect it to the economic development?
- How to create a sustainable green economy?
- What are direct and indirect impacts of the integrated energy system on the energy cost saving?
- What parallels in terms of green job creation can be noticed and compared in all 3 countries?
- What regions do in order to support small and medium businesses?

Discussion:

- All three regions have similar issues existing on municipal level, such as emission reduction from transportation, climate change, green jobs creation. Therefore the knowledge exchange could be very powerful and useful.
- Economic development in Guelph is seen as a viable advantage in combating climate change because adaptation to climate change should be affordable.
- Energy Debates are very important at the moment both in Germany and in North America. Therefore security of energy supply and creation of the green jobs play a focal role in the TUCD Workshop in Guelph.

→ German Experience shows that as soon as “brown” jobs are lost and there is a problem with the unemployment rate, it’s too late to start creating green jobs. It must happen earlier: green jobs creation in Germany took place in a very short period of time. Education and training have had an enormous impact in the course of this transition. However, job creation is not the only factor that needs to be discussed in Guelph. Another issue is how to talk about less traditional impact: such as real estate. Whether there is increase of value because of green energy access.

Conclusions:

→ Until now information exchange during TUCD worked well. However, it is time to exchange practical experiences and to increase cooperation on the practical level, e.g. partnership between the universities, private sector and industry.

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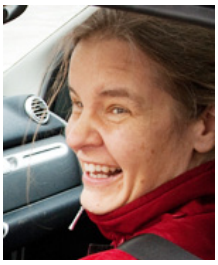

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Transatlantic Urban Climate Dialogue

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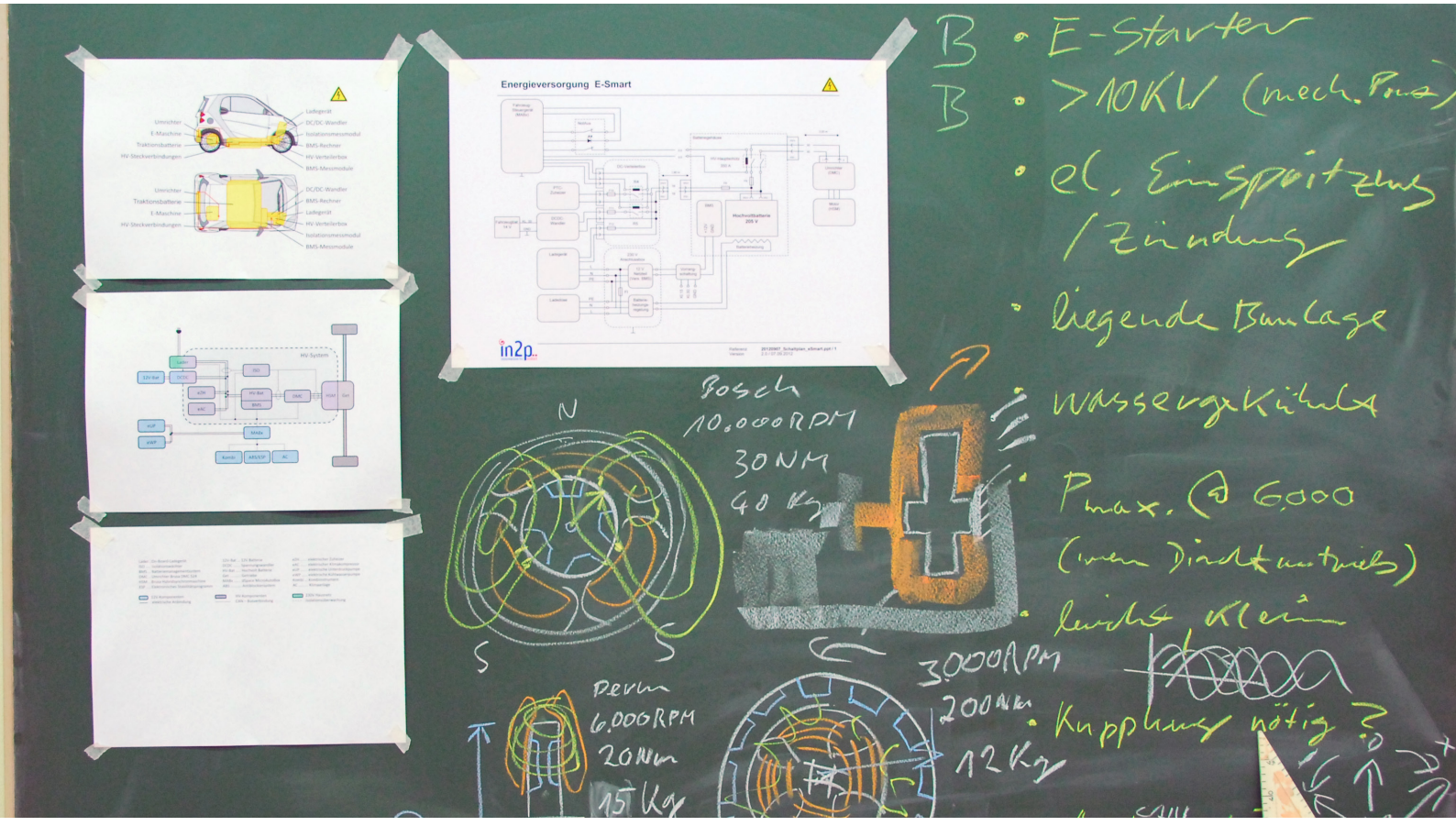

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