

## PRESENTATION

Chairing  
Cities  
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# Changing Climate - Changing Transport

TimeLoc

7 March 2013

Berlin

Germany

[Benjamin Görlach](#) [1]



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Transport has a key role for the transformation to a low-carbon economy. An integrated approach

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Even though the "Energiewende", the long-term energy transformation, may be the talk of the town, what happens in transport policy is at least as important for the success or failure of German climate policies. The situation is complex: on the one hand, there is a range of promising projects, initiatives and innovative solutions for sustainable transport. On the other hand, transport volumes are growing along with the economy, and individual mobility is on the rise. As part of the Brühl expert discussion, a panel of distinguished experts, moderated by Benjamin Görlach of the Ecologic Institute, discussed options for the transformation to a low-carbon transport sector.

Ms Adamsky-Metz opened the event on behalf of the host, the Federal Academy for Public Administration, and welcomed the participants. In his introductory remarks, Benjamin Görlach recalled the challenges that EU climate policy is facing: in 2008, the

European heads of state vowed to transform the EU into a low-carbon economy by mid-century, with emissions of 80-95% below their 1990 levels. This transformation will affect all sectors – energy and industry as well as private households and agriculture, and, of course, also transport. However, the past experience and current trends in the transport sector make for a gloomy outlook: while overall greenhouse gas emissions in Europe have fallen by 15% over the last two decades, transport emissions have increased by about 30% in the same time. In Germany, the situation is somewhat different: transport emissions have peaked around 2000, and declined since. Yet, whereas other sectors have achieved marked emission reductions, transport emissions are now approximately at their 1990 levels. Thus, the transport sector still faces a long and steep road on the way to a low-carbon economy.

### **The economic view: transport between environmental protection, economic growth and societal change**

Dr. Günter Gabisch, professor emeritus at the economics faculty of the University of Göttingen, provided a general economic view of the problem at hand. The transport sector itself accounts for a large share of economic activity. Even more importantly, it plays a vital role for a number of industries and services that depend on transport, particularly in an export-driven industrial economy like Germany's. A functioning transport sector is therefore key to economic welfare. And yet, the environmental effects of transport are a case of market failure: transport causes external costs to society in the form of air pollution, noise, or the costs of accidents. At the same time, the global climate – and its protection – are a perfect example of a public good. Therefore, government intervention to protect the environment is not only legitimate; it is actually necessary to secure economic welfare for society. An important question, though, is how the government intervention actually takes place. From an economic perspective, policy interventions should tackle the problem at the root and 'internalise' the external costs, in other words ensure that the polluter pays for the damage caused. This can be done through charges, taxes or tradeable permit schemes. In other instances, direct regulation through standards may offer an effective solution. Professor Gabisch was more sceptical of soft instruments like awareness-raising campaigns, which aim to change people's behaviour through motivation and information.

The general economic perspective was then complemented by a business focus, provided by Professor Alexander Eisenkopf of the Zeppelin University in Friedrichshafen, Member of the Scientific Advisory Council at the Federal Ministry of Transport, Construction and Urban Development. Professor Eisenkopf set out by sketching the economic dynamics of the transport sector: economic growth, an export-oriented economy, and the economic integration of

Europe are all strong drivers for a sustained and steady growth of transport volumes, a trend which is set to continue in the future. At the same time, the road transport business in Germany faces stiff competition from inside and outside the EU, which limits the scope for haulers to simply pass on the cost burden of regulation to their customers. Through the high share of fuel costs in total operating costs, haulers already have a strong incentive to save on fuel, and invest in efficient vehicles. Professor Eisenkopf further explained the different cost burden for different transport modes. While he acknowledged the discrepancies in terms of the external costs of different transport modes, he also pointed out that the fiscal burden on them differs substantially: for instances, charges on road transport contribute more than the actual cost of road infrastructure maintenance, whereas rail transport only pays a small share of the actual infrastructure cost. Other distortions arise from the diverging tax rates for transport fuels across Europe. In total, this makes for a fairly heterogeneous picture of the fiscal treatment of transport across Europe - which suggests that the costs of climate policy in this field are higher than they should be.

### **Technical and planning solutions for integrated transport policies**

While the first part of the event provided an economic angle on transport, the second half focused on technical and planning solutions for more climate-friendly transport. Professor Volker Schwieger from Stuttgart University presented several options how planning and information tools based on geodata can contribute to more efficient transport flows. This includes signs and signals that aim to influence driver's behaviour, navigation systems that recognise the topography and avoid steep inclines, or an foresighted driver assistance system, which anticipates traffic lights or speed limits and regulates the vehicle speed accordingly. From the presentation and discussion, it was clear that these different approaches can increase the overall efficiency and reduce fuel consumption - without major changes to the infrastructure or to vehicle technology. At the same time, since all these approaches aim to influence drivers' behaviour, their real-life impact hinges on the "human factor" - do drivers actually respond to such signals?

The fourth and final speaker, Professor Felix Huber of the University of Wuppertal, connected the dots and presented integrated transport planning as the framework in which technical, planning and social approaches are combined to form an integrated strategy. Integrated transport planning provides a combined vision of the infrastructure, the different transport modes (from walking and cycling to aviation) and their respective technological options, and the behaviour of users, in order to develop systemic, long-term solutions. One example of such an approach is through 'backcasting', which departs from a given target - e.g. reduce

transport emissions by 80% by mid-century - and asks, which levers need to be pulled, which choices to be made, to achieve this target. Using a real-life example from the state of Northrhine-Westphalia, it became clear that a strategy that relies entirely on technological solutions may be theoretically possible, but carries a significant risk of failure, because it requires radical efficiency improvements in a range of technologies. This suggests that changes in mobility patterns and individual behaviour have to be part of the policy mix for a long-term, sustainable and low-carbon transport policy. As the presentation made clear, this does not need to have any negative impact on the quality of living. It may even improve the quality of living, if such solutions can reduce traffic, while ensuring mobility and participation in society.

### **Climate-friendly transport - a job for business and industry, or a challenge for consumers?**

In the ensuing, lively discussion, various options were put forward how transport could become more climate-friendly - without compromising its social and economic functions. The discussion is complicated by the broad range of approaches and options to reduce transport emissions: these range from low-carbon fuels (biofuels, ethanol, hydrogen), new engine technologies (electric or hybrid vehicles, fuel cell) and new, lighter vehicle designs, to improved transport flows and a better integration of transport modes (modal split), and even measure to reduce transport needs, e.g. through teleworking or videoconferencing. Given this broad range of options, sustainable transport policy is an open-ended search process that combines elements of the different options, and acknowledges that some options may fail. Yet, transport is also an area where the current options very much depend on decisions made in the past, particularly where the transport infrastructure is concerned. Like most infrastructure, transport infrastructure is expensive and long-lived, which limits the scope for radical changes, and which suggests that some decisions need to be made early on in the process.

The discussion soon focused on two key actors in the process: the role of consumers, and the contribution of business and industry. Regarding consumer behaviour, the question was whether the state should merely define the legal and economic framework conditions, or whether government should actively influence consumer behaviour by providing information, awareness-raising campaigns and education. In the discussion, participants and panellists pointed out that government already influences the mobility patterns of its citizens in lots of ways - through urban and regional planning, by providing infrastructure, and through fiscal incentives like commuter tax rebates. Therefore, government policy is anyway based on a particular idea of mobility. The challenge is to check if this idea is still right and relevant, in the light of demographic

change, climate change, societal change and globalisation.

Regarding the role of business and industry, participants and panellists discussed whether German industry has in fact taken up the challenge that climate change represents, or whether it is still fighting a losing battle to deny the need for climate policy, and the impact it has on business models. Thus, it was pointed out that some German car manufacturers has achieved considerable improvements in fuel efficiency - admittedly after dragging their feet for a number of years - and is now well-positioned globally in this respect. At the same time, marketing efforts are still very much geared towards large and heavy luxury cars with strong engines; in this respect, a change of values or culture cannot be discerned.

The panellists concluded that the transport sector is still in the early phases of a transformation, which might yet turn out to be more fundamental than the much-discussed transformation in the energy sector. The conflict between economic dynamics, social needs and climate protection requirements is as least as problematic in transport as it is in energy. What sets the two apart is the key role for consumer behaviour, as consumers have a strong impact on the sector's emissions. This makes it all the more challenging to devise and implement a political strategy - as the issue affects every single person, and since everyone has to contribute to a solution.

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