

## 2nd Annual Conference SCCER Mobility

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### Panel Discussion: Mobility 2050 in Switzerland

#### Dr. Ralf Brand, TRANSFORuM Project Coordinator, Ruprecht Consult, Cologne

Dr. Ralf Brand is a Geographer with a PhD in Community and Regional Planning from the University of Texas at Austin. He was Senior Lecturer (equiv. to Associate Professor) at the University of Manchester's Architecture Research Centre where he developed and managed a portfolio of large research projects about the "synchronisation" of social and technical change in a variety of thematic areas. He wrote several publications about integrated approaches to urban mobility and edited a special issue of the Journal Built Environment about socio-technical mobility concepts. In 2013 Ralf joined Rupprecht Consult in Cologne, Germany, as Senior Mobility Expert. He coordinated the FP7 project TRANSFORuM ([www.transforum-project.eu](http://www.transforum-project.eu)) to support the implementation of the 2011 Transport White Paper in the areas urban mobility, long distance freight, high-speed rail and ITS through stakeholder-driven roadmaps.

#### The EU White Paper on Transport: The Vision and How to Get There

This talk will introduce the EU White Paper on Transport and the FP7 project TRANSFORuM, which developed "stakeholder-driven" roadmaps towards its implementation. Both the stakeholder consultation process as well as the results (i.e. the content of the roadmaps) will be presented.

In 2011 the European Commission released the so called "Transport White Paper" under the full title "Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system." This 30 page document spells out 10 goals about all aspects of transport that are to be reached by the year 2050. They include the vision to phase out conventionally fuelled cars in cities, to shift 50% of road freight over 300 to rail or waterborne transport, to triple the length of the existing high-speed rail network and others.

As desirable (some of) these goals might be, it was far from clear how this vision can be achieved. The EU's research Framework Programme 7 therefore included a call to establish a "Forum to help implement the future orientation of the overall transport system as defined by the White Paper". The winning proposal came from a consortium of renowned and independent research organisations and consultancies, which ran the TRANSFORuM project for two years (2013-2014).

It pursued the question "Who needs to do what by when?" in consultations with over 200 transport stakeholders through workshops, surveys, interviews, social media conversations etc. The results are four "stakeholder-driven" Roadmaps for four key goals of the Transport White Paper (urban transport; long distance freight; high-speed rail; multimodal transport information, management and payment systems). Each Roadmap specifies concrete measures, identifies related responsibilities and pinpoints crucial milestones.

In addition, TRANSFORuM also produced a seminal document with cross-cutting "Recommendations". They all fall into one of three categories: 1) Increase communication, coordination and regulation, 2) Improve service quality and the efficient use of existing infrastructure and 3) Build new physical infrastructures. The stakeholder-driven TRANSFORuM process clearly highlighted that investments in

heavy infrastructure alone will neither be cost-efficient, nor effective. Instead, actions in all three categories are important but they have to be well coordinated.

This talk will present the White Paper.

## Christoph Schreyer, Head of Mobility, Federal Office of Energy

Christoph Schreyer holds a Master's degree in Environmental Sciences of the ETH Zurich and a degree in Business Administration of the Baden-Wuerttemberg Cooperative State University (DHBW) in Stuttgart. Before joining the Swiss Federal Office of Energy as the Head of Mobility, he worked for four years as a scientific specialist for freight transport at the Swiss Federal Office of Transport (FOT) focusing on the Swiss transfer policy. He headed the data center of competence of the FOT, initiated and coordinated projects for the collection of data on transalpine freight transport (road and rail) and was involved in various international working groups. As chair of the working group EnvALP within the framework of the Zurich Process he was responsible for the assessment of the current state of knowledge on environmental pollution from freight traffic in the Alpine region as well as on the environmental impact assessment of various measures in the Alpine region. From 1997-2010 Christoph Schreyer worked as Senior Project Manager for the consultancy Infras AG in Zurich. His work focused on transport economics (e.g. estimation of the external costs of transport), evaluations in the transport sector and environmental impact Assessment (LCA) of transport systems. Other focal areas were transport forecasts as well as transport planning projects and the set-up of tariff systems in public transport.

### Importance of Regulatory Measures and Institutional Support to Innovative Solutions

The Swiss energy policy in the field of mobility focuses on the following main pillars:

1. Regulatory measures: CO<sub>2</sub> emission standards for passenger cars and light commercial vehicles, energy label for passenger cars and tires
2. Voluntary measures: promoting energy-efficient vehicle purchases, environmentally friendly driving behavior and energy efficient mobility behavior → Swiss Energy Program
3. Energy research in the field of mobility
4. Funding of pilot, demonstration and lighthouse projects

With regard to the Energy Strategy 2050, the federal government has investigated in the energy prospects of different scenarios on the future development of the energy consumed in transport. Important factors will be – in addition to the transport demand – in particular alternative powertrain technologies and alternative fuels.

The Swiss CO<sub>2</sub> emissions regulations set strong incentives for car importers to reduce the emissions of their fleets. Emission standards will be further tightened in coordination with the regulations in the EU.

## Dr. Nicole Mathys, Head of Policy Fundamentals, Federal Office for Spatial Development

Nicole A. Mathys did her undergraduate studies in economics at the University of Neuchâtel (Switzerland) with one year Erasmus Exchange at the University of East Anglia (Norwich UK). After a master she obtained her PhD in Economics entitled "Five Essays in Trade and the Environment and Economic Geography" in 2007 at the University of Lausanne (HEC). She has then been working on projects for the WTO and the EPF Lausanne. From 2008-2013 she worked at the Swiss Federal Office of Energy where she was responsible for the socio-economic research program and contributed to the preparation of the new energy strategy 2050. She also acted as deputy head of the section "market regulation". Currently she is head of the unit "Policy Fundamentals" at the Federal Office for Spatial Development. The unit provides data and modeling results for questions related to spatial development and transportation. At the same time she is lecturer and researcher at the University of Neuchâtel.

## Swiss Transport Perspectives 2040: Work in Progress

The Federal Office for Spatial Development (ARE) produces periodic forecasts for Swiss passenger and freight transport. The perspectives to 2040 will be published mid-2016. These perspectives are based on scenarios, and show possible future trends in passenger and freight transport. They are coordinated across all modes of transport.

## Dr. Markus Liechti, Deputy Head of Political Section, Federal Office of Transport

Markus Liechti obtained his Master degree in economics, public economics and network economics at University of Basel in 1994 and then continued to pursue his PhD in Economics in Basel until 1999. From 1995, Mr. Liechti had been working as a project manager for the company Rapp Trans in Basel until he moved to Brussels in 2000. There, he worked for 6 years as a policy advisor for T&E (European Federation for Transport and Environment) before relocating to Switzerland. This was when he started his work with the Swiss Federal Office of Transport (FOT) as a research assistant in Bern. Later, in 2009, he was promoted to the position of deputy head of the political section at the FOT and in 2011 to head of the political section. He is leading a team of 8 people, who support the director with political (e.g. preparation of proposals of the Swiss government to the parliament) and organizational advice.

## Vision and Strategy implementation of the Federal Office of Transports (FOT)

After an overview over the FOT's Visions for 2030, this talk will present the 5 strategic guidelines of the FOT's strategy: Public transport must be attractive to all of the user groups, it must support economic development with respect to regional development planning and other means of transport, be safe and maintain its environmentally favourable traits, be financed by long-term means while being efficient and, finally, respect the FOT as centre of competence for public transport in Switzerland. To give an outlook on future projects, there will then be a short introduction to "STEP". Before closing his presentation, Markus Liechti will give a short example of the implementation of the interplay between strategic guidelines, goals and measures on the over-arching subject of an attractive public transport.

## Daniel Kilcher, Head of Strategy and Research, Swiss Federal Roads Office

### Mobility in Switzerland 2050: Challenges for the Federal Roads Office

As any other organization, the Federal Roads Office FEDRO is not in a position to forecast the situation it will be confronted with in 2050 in detail. It is clear, however, that some of today's challenges will remain while new ones will arise. In 35 years, a large share of traffic will very likely still use roads and motorways will thus be required. FEDRO's goals of keeping them functional, making them safer and reducing their impact on the environment will therefore remain central. What will change, though, is the way the roads are used. Motor vehicles will become "smart", will communicate with their passengers, with each other and with the road infrastructure. Society and its needs will evolve and new demands will be formulated, presenting challenges but also notable opportunities. Anticipating these developments and needs to the extent possible is part of FEDRO's task in order to be able to provide a good service to its customers in future.

## **Moderation: Prof. Konstantinos Boulouchos, Head of SCCER Mobility**

Prof. Dr. Konstantinos Boulouchos, born 1955 in Greece, received his Diploma in Mechanical Engineering from the National Technical University of Athens in 1978 and his Ph.D. in Thermodynamics and Combustion Engines from the Swiss Federal Institute of Technology (ETH) in Zürich in 1984. Following post-doctoral work at ETH and research as Visiting Scientist at Princeton University (Mechanical and Aerospace Engineering Department, 1987 - 1988) he returned to ETH Zürich end of 1988 to establish the research group on un-steady combustion at the Institute of Energy Technology. In 1995 he was appointed head of the Combustion Research Section at the Paul Scherrer Institut (PSI) and has coordinated from then on till 2005 the Joint Combustion Research Program of ETH Zurich and PSI. In 2002 he was elected Full Professor and head of the Aerothermochemistry and Combustion Systems Laboratory at ETH Zurich. He has also served as Chairman of the Board of the Energy Science Center ETH Zürich from its foundation 2005 until 2011. In this capacity he was coordinating author of the "Energy Strategy for ETH Zürich" (2008) and "Energy Future for Switzerland" (2011).

Research in recent years includes also elaboration of optimal strategies for a sustainable future global and national energy system. Konstantinos Boulouchos has won among others the Distinguished Paper Award in Colloquium New Technology Concepts from the Combustion Institute Pittsburgh, the Arch T. Colwell-Medal of the Society of Automotive Engineers/USA and the "Innovationspreis der Deutschen Gaswirtschaft" (German Technical and Scientific Association for Gas and Water).

Konstantinos Boulouchos is a member of the Editorial Board of the Journal of Engine Research, of the Advisory Board of the Institute for Vehicle Technology of the German Aerospace Center (DLR) and the board of trustees of ProClim (the Swiss Forum for Climate and Global Change Issues). He also serves in the Advisory Council of Federal Councillor Doris Leuthard on Energy Issues, in the Permanent Energy Commission of the Swiss Academies of Arts and Sciences and in the Science Advisory Board of the Swiss Academy of Engineering Sciences.