

Invited Speakers



Mehmet Toy, Ph.D

Assoc. Verizon Fellow, Distinguished MEF Fellow, IEEE Life Sr. Member
Verizon · Stevens Institute of Technology
New Jersey, United States

Title: Future Networks, Services, and Management

Abstract: This talk will begin presenting current and future Internet philosophies, devices, traffic, application and services. After that, future network and services architecture along with their management architecture will be presented. Finally, the talk will discuss automation and APIs.

Short Bio: Mehmet Toy received his Ph.D degree in Electrical and Computer Engineering from Stevens Institute of Technology, Hoboken, NJ; and B.S and M.S in Electronics and Communications Engineering from Istanbul Technical University, Istanbul, Turkey. He is currently an Associate Fellow in Verizon Communications Inc., Basking Ridge, NJ and involved in the architecture, implementation, testing, APIs, orchestration, analytics; and standards of virtual networks and services, Intent-based Networking, 5G/Network Slicing, and Multi-Access Edge Computing. Dr. Toy is a Life Sr. Member of IEEE and a Distinguished Fellow of MEF leading projects involved in definition of Edge Computing Services, Service Elasticity APIs, and Service Topology.

Prior to joining Verizon, he held individual contributor and management positions at various levels in start-ups and well-known companies as well as tenure-track Associate and Adjunct Professor at universities in USA and Turkey. He has served in IEEE-USA, IEEE ComSoc, IEEE 1588 Conformity Alliance, 3GPP2, ITU-T, IETF, ETSI, LF-Anuket, ONAP, LF-Akraino, MEF, IEEE Communications Magazine, and IEEE Network Magazine at various capacities for more than three decades, including chairing ITU-T FGNET2030 Architecture Group, chairing IEEE ComSoc Cable Networks and Services Committee, and serving in the Open Cloud Connect (OCC) Forum Board.

Dr. Toy delivered multiple key-note speeches in conferences; and has authored seven books, an IEEE video tutorial, four IETF RFCs, nineteen IETF drafts, an ETSI NFV standard,

three MEF standards (one in progress), one IEEE standard, and numerous articles and standards contributions. He holds seventeen patents issued or pending. For his contributions, he has received multiple outstanding contributor, top contributor, innovator, and leadership awards from Bell Labs, Comcast, Verizon, IEEE-USA, Open Cloud Connect Forum (OCC), and MEF.



Reinhard Haas, PhD

Professor

Energy Economics Group, Institute of Energy Systems and Electric Drives

Vienna University of Technology, Austria

Email: haas@eeg.tuwien.ac.at

Title: Heading Towards Sustainable Electricity Systems

Abstract: In the history of electricity systems in several countries different boundary conditions existed and exist with respect to price formation in the market. After the periods of state regulation and the first phase of liberalisation of the wholesale markets currently the electricity system faces the third huge challenge: the change towards a bidirectional system, which should be more democratic and sustainable. This process is currently under way in some countries as Germany, Austria, UK and California. And in these countries also a change in the principle how prices come about is already under way. A major reason for this development is that in recent years the electricity generation from variable renewable energy sources (RES) especially from wind and photovoltaic (PV) power plants increased considerably while on the other hand generation from nuclear and coal has already been reduced, respectively, in the case of coal a phase-out is discussed or has already been agreed on.

The final conclusion of this analysis is, that it will be necessary to accept a paradigm shift in our understanding of the whole electricity system where no longer the generators are the centre but the balancing groups respectively the supply companies. And finally we state that the evolution of such a creative system of integration of RES in Western Europe may also serve as a role model for electricity supply systems largely based on RES in other countries world-wide.

Short Bio: Reinhard Haas is a university professor of Energy Economics at Vienna University of Technology in Austria. He teaches Energy Economics, Regulation and Competition in Energy markets, and Energy Modelling.

His current research focus is on (i) evaluation and modelling of dissemination strategies for renewables; (ii) modelling paths towards sustainable energy systems; (iii) liberalisation vs regulation of energy markets; (iv) energy policy strategies. He works in these fields since more than 30 years and has published more than 100 papers in reviewed international journals. Moreover, he has coordinated and coordinates projects for Austrian institutions as well as the European Commission and the International Energy Agency.



Amela Ajanovic, PhD

Assistant Professor

Energy Economics Group, Institute of Energy Systems and Electric Drives

Vienna University of Technology, Austria

E-mail: ajanovic@eeg.tuwien.ac.at

Title: Alternative energy systems in transport

Abstract: Fuels based on renewable energy are considered as an important mean to cope with environmental problems in transport. The core objective of this paper is to investigate the perspectives for fuels from biomass, renewable electricity and green hydrogen from economic and ecological points-of-view in a dynamic framework till 2050 for average European conditions.

The fuels investigated are:

- biofuels 1st generation (BF-1) as biodiesel from rapsmethylester (RME); bioethanol from wheat or corn; – biogas from organic waste, maize silage or grass;
- Biofuels 2nd generation as – biodiesel 2nd generation, Fischer-Tropsch (FT) diesel; – bioethanol 2nd generation from different types of lignocellulosic resources; – Synthetic natural gas (SNG);
- hydrogen from biomass as well as

- electricity from biomass;

The major results and conclusions are:

(vii) All analyzed fuels have lower CO₂-emissions than gasoline. An additional problem for mobility with hydrogen and electricity are very high costs of the corresponding vehicles. By 2050 these costs could be reduced due to technological learning effects and efficient policy measures (e.g. CO₂-based tax). • Since 2nd generation biofuels could enter the market between 2020 and 2030, 1st generation biofuels will remain in the market at least until 2030. However, if a CO₂ based tax is introduced it is very likely that 1st generation biofuels could become irrelevant in the long term;

- With respect to hydrogen and electricity from RES: In 2010 and 2050 electricity is slightly favorable from ecological point-of-view given the same RES. Most favorable are wind and hydro followed by PV and biomass;

- Despite very good CO₂ balances of hydrogen from renewable energy sources, use of hydrogen in a passenger cars will not become competitive before 2050 due to high capital costs;

The final conclusion is that fuels based on renewable energy play a significant role only if the proper mix of CO₂-taxes, intensified R&D, and corresponding riding down the Learning Curve are timely implemented.

Short Bio: Amela Ajanovic is assistant professor at Energy Economics Group, Institute of Energy Systems and Electric Drives, at the Technical University of Vienna in Austria. She teaches Energy Economics, Energy Economics in transport, Energy Modeling in Transport and Energy Economics and Climate change.

Her current research focus is on (i) alternative fuels and alternative automotive technologies; (ii) evaluation and modelling of dissemination strategies for renewables in transport; (iii) transition towards a sustainable transport system; (iv) transport energy policy strategies; (v) battery electric and fuel cell vehicles, and (iv) long-term energy scenarios.

She works in these fields since more than ten years and has published more than 30 papers in reviewed international journals. She is responsible for research, project acquisition and scientific coordination in the area of energy economics with a focus on sustainable transport. Moreover, she has coordinated and coordinates projects for Austrian institutions as well as the European Commission and the International Energy Agency.