



**Swiss Chapter of IEEE PES**  
*Global Facts, Trends  
 and Visions  
 in Power Industry*

**Workshop May 9, 2019  
 iHomeLab, HSLU**

**What does the Energy Strategy 2050 mean for towns  
 and cities in Switzerland?**

The IEEE Switzerland Power and Energy Society will run a one-day workshop on the impact of the Energy Strategy 2050 in the urban environment.

On 21 May 2017 the Swiss electorate accepted the revised Federal Energy Act. The act will reduce energy consumption, increase energy efficiency and promote the use of renewable energy.

In 2018, the IEEE Power and Energy Society addressed the challenges in implementing the Energy Strategy 2050 on a regional and national level. We now turn our focus to local implementation in towns and cities. Topics will include smart cities, smart buildings, and self-consumption communities (Eigenverbrauchsgemeinschaften). We will also look at storage technologies and opportunities for new business models.

The event will take place at Lucerne University's iHomeLab, an innovative think tank and research centre for building intelligence. Lunch and an apero will be provided and there will be networking opportunities throughout the day.

The event will also include a tour of the iHomeLab.

10:00 – 10:10	<b>Welcome</b> <i>by the Chair of the Swiss Chapter of IEEE PES</i>	<b>Ben Bowler</b> <i>EMAX/IEEE</i>
10:10 – 11:00	<b>Neu geDACHt – roof happiness</b>	<b>Sven Koehler</b> <i>Anerdgy</i>
Dense urban development often goes hand in hand with fewer green spaces and recreational areas. Flat roofs and roof landscapes have the potential for climatic and social improvements in urban areas and thus a higher quality of life. "Roof happiness" is an appeal for more commitment on building roofs.		
<i>Sven Koehler is the founder and CEO from ANERDGY AG – a innovative building technology company. He holds an engineering degree in systems and supply technology from FH Erfurt as well as business administration from HSG. Before becoming entrepreneur, he set up factories and business units for Alstom Power and worked for Airbus in on the A380.</i>		
11:00 – 11:50	<b>Integrating Urban Building Energy Systems for Low Carbon Cities</b>	<b>Jimeno A. Fonseca</b> <i>Singapore-ETH Centre</i>

Currently 75% of primary energy is consumed in urban areas globally, and due to worldwide urbanisation and increasing wealth, this is expected to rise. Planners and public authorities are facing challenges to achieve low carbon future cities through the design and integration of urban energy systems into urban planning processes. More specifically, the difficulty is in understanding how urban energy systems are linked to key urban design parameters such as: building density, morphology, building uses, and the potential interplay of all of these elements with open space and infrastructure elements such as public transportation.

In our research at the Singapore-ETH Future Cities Lab we work on new analytical approaches to support decision making towards future low carbon cities. This is centred around the 'City Energy Analyst', an integrated modelling, simulation and optimisation platform, targeted to jointly study the effects, trade-offs and synergies of urban design options and energy infrastructure decisions.

*Dr. Jimeno A. Fonseca is Senior researcher and Project coordinator at the Singapore-ETH Centre in Singapore. His expertise lies in the modelling and simulation of thermal systems in buildings and districts. In the past, he has developed decision support systems (i.e., City Energy Analyst) and executive courses in the area of urban energy systems analysis. The geographic contexts of his expertise are Latin-America, Europe and Singapore.*

11:50 – 13:00	<b>Lunch Break</b>	<b>All</b>
During the lunch break there will be a tour of Lucerne University's innovative iHomeLab, an innovative showcase of innovation and research into energy and data topics that will enable the delivery of the Energy Strategy 2050. The tour will touch on the latest research into IoT, domestic energy optimisation, data management, and smart network management.		

13:00 – 13:50	<b>Buildings become power plants - a business case for investors and the environment</b>	<b>Tobias Stahel</b> <i>Smart Energy</i>
The intelligent use of the solar potential of buildings and areas has revolutionized electricity procurement. Tobias Stahel will discuss integral energy solutions that combine renewable energy production with heat supply and smart electromobility concepts.		

13:50: – 14:40	<b>NILM4Bal Project (Innosuisse)</b>	<b>Andrew Paice,</b> Head of iHomeLab, Lucerne University of Applied Sciences and Arts
In the "NILM4Bal" project, Lucerne University of Applied Sciences and Arts is researching how smart meter data can be used to automatically identify large electricity consumers and quantify their load-shifting potential. The displaceable consumers already present in households and businesses should thus be made usable for the load shift. As a result, utilities are able to optimize their load management and save costs without the need for additional distribution network investment. Andrew Paice will describe the project.		
Andrew Paice is the head of IHomeLab at the Lucerne University of Applied Sciences and Arts.		

14:40 – 15:30	<b>The benefits of an integrated energy system for multifamily residences</b>	<b>Daniel Sauter-Kohler</b> <i>EKZ</i>
To realize the energy transition, it is important to start in small units like single and multifamily houses. The technical planning and realization of photovoltaics, battery and energy		

management systems with charging stations and heat pumps is proven for single family houses and already established. The technical complexity is rising for multifamily houses. EKZ shows how such an integrated energy system is evaluated, planned and realized based on one reference object in the Canton of Zurich for increasing the self-consumption.

*Daniela Sauter-Kohler is employed since 2012 at EKZ. After working in the renewable energy and grid services departments, she became Head of Projects Smart Solutions in 2016. In this position, she is responsible for the market introduction of new products. Before joining EKZ, she spent 8 years with photovoltaic cell- and module manufacturers being responsible for the product management and marketing. At the FH Mannheim, she studied industrial engineering with a focus on renewable energies and did her master at the University of Loughborough. In 2014 she completed the CAS course "Intelligent Energy Networks" at Fraunhofer ISE.*

15:30 – 16:00	<b>Closing Remarks / Discussion</b>	<b>All</b>
16:00 – 17:30	<b>Networking Aperero</b>	<b>All</b>

#How to participate:

More information and registration: <http://bit.ly/IEEE-PES-2019-1>

Fees (including break and aperero): CHF 65.- for IEEE members, CHF 90.- for non-members, CHF 40.- for IEEE student members, CHF 60.- for student non-members