

Working Group 10: "Future of Energy: same goal – different way" (Breakout Session of the Austrian Climate and Energy Fund)

The debate on how a sustainable future of energy can succeed is performed worldwide. Austria positions itself as a pioneer of an innovation-driven future of energy, but what other factors and aspects play a role and which way do other nations go in order to reach the same goal? The Austrian Climate and Energy Fund invited international experts to demonstrate different ways for a successful energy transition and discuss them with the participants. A very interesting point right at the beginning was made by **Theodor Zillner** from the Federal Ministry of Transport, Innovation and Technology, who pointed out that when we talk about energy transition we mostly talk about electricity, but not heating or transport or other aspects. For a sustainable future of energy we need a more holistic approach.

Gi-Eun Kim works as a Biotechnologist at the Seokyeong University in Seoul. In the past decades, South Korea's economy has made a considerable step ahead; therefore energy is becoming an important topic. In regards of RES South Korea is a beginner: The current target for the use of green energy until 2035 is only 8.8 %, for electricity production it is 11 %. To moderate the effects of climate change, smaller activities can be seen. From Prof. Kim's point of view the government needs to understand much more about the technological potential.

Lea Kleinenkuhnen, policy officer at the Climate Alliance in Brussels talked about the priorities of the EU. The 2008 climate and energy package created a framework under which European local authorities have been taking action to carry out energy transition on the ground and changing the current energy system. Modified state aid guidelines for renewable energy in 2014 can be interpreted as a signal that the EU favours large-scale producers at the expense of local and community-based initiatives. At the same time, the European Institutions increasingly recognises the role of local authorities as crucial actors in reaching the targets, and have put in place financing instruments to support this work.

"We need the industry, the government and we need to work together – research alone cannot solve the problem", says **Unni Steinsmo**, President of SINTEF, which is the largest independent research organisation in Scandinavia. Norway produces about 125 TWh electricity per year whereof 97 % is hydropower. There are incentives to build new RES through wind power – strict regulations are in place to ensure the sustainability of such developments. A major revamping programme has been started for improving and extending the Norwegian grid to increase security of supply, allow higher transmission rates, reduce losses and gain flexibility for introducing new RES in the system.

The EU adopted ambitious goals to move towards a low carbon economy. Germany plays a prominent role in this transformation process, as **Christian Redl** from AGORA Energiewende explains. The country plans to fundamentally transform its power sector from nuclear and coal to renewables. To achieve these goals, wind power and solar PV will be the key pillars of the German power system.

The faster-than-expected expansion has also brought new challenges. One learning process: Increasing power system flexibility is crucial! Also, the German energy transition has focused on the power section so far. In order to achieve the ambitious goals, the heating and transportation sectors require approaches as well.

Brigitte Bach from AIT, Austrian Institute of Technology, talked about the role of innovation in the transition of energy infrastructure in Austria. The Federal Government's strategy to achieve the EU goals is to further increase the use of RES and to ensure a high security of supply with a strong focus on cost effectiveness. All these measures have a direct impact on the energy infrastructure. They require innovative technologies. The role of institutions such as the AIT is to provide the scientific expertise. Another key aim is to support innovation driven success by involving Austrian companies in demonstration projects.

Theresia Vogel, Managing Director of the Climate and Energy Fund summarized the discussion and took a look at the picture that was drawn from the participants for a sustainable energy future for Austria by 2050: We talked a lot about technology, but we also have to talk about behaviour and we need to include the whole population – the discussion cannot be a luxury one. Our breakout session today made clear that right now we are on the move. The future of energy will be a mix of technologies. The main challenge will be to form this mix to an overall system. The energy research projects of the Climate and Energy Fund offer here concrete solutions.