**Working Group 9: "Free play of innovative forces or systematic restructuring?" (Breakout Session of the Austrian Climate and Energy Fund at The European Forum Alpbach)**

The Climate and Energy Fund supports R&D organizations and companies financially and with its know-how in order to push new technologies and innovative strategies for implementing sustainable energy systems with innovation Made in Austria. One key aim of the energy research programme 2019 is the push of ICT technologies empowering the energy system in many ways. This responds to Austria’s participation in the Mission Innovation initiative.

The scope of our Session was to address the conflict between possible chances of digitalisation in critical infrastructure – such as the power supply systems – and the risks that such a transformation is bearing. Will digital innovations play a crucial role within the restructuring of our energy systems? Are the threats of hacking or fraud either technically or financially too huge to tackle? To answer these and more questions, the Climate and Energy Fund invited six national and international experts to share their knowledge and ideas, all relating perfectly to this year’s main theme “Liberty & Security”.

**Marc Elsberg,** Bestselling author of “Blackout”, started the session by hitting directly into the centre of the debate. He made the audience think about how much our daily survival depends on a stable and secure energy supply. To illustrate this, he pointed out different examples from all parts of our daily lives – from food and water supply or health services to money supply. He exemplified the importance of those systems to our lifestyle, but also our modern society’s vulnerability.

**Bernd Klöckl**, Head of Grid Planning, TenneT TSO GmbH, focused strongly on security principles which are already implemented in power supply systems. He stated that the Blackout scenario Elsberg designed in his book was physically possible, still, there are operating principles in European grids to ensure a maximum of stability and resilience, be it from internal system faults, be it from external disturbances by natural disasters or man-made threats, that would prevent such a catastrophe. Research, development and innovation activities for the future system operation nevertheless require attention to maintain this high level of security.

**Martin Schaffer,** Global Head of Secure Products & Systems SGS Digital Trust Services GmbH**,** agreed with Klöckl on the need of a high level in cyber security. IoT solutions are flooding markets with very few restrictions when it comes to IT security. Also, Schaffer pointed out, that almost no regulation or legislation is in place to address this issue appropriately. The challenge is complex, as security cannot be dealt with at one single stage: systems need to be designed securely and remain resistant against attacks throughout their life-cycles.

**Marta Molinas**, Professor at the Department of Engineering Cybernetics, Norwegian University of Science and Technology, Trondheim gave an impressive and very interesting insight into ongoing research within the field of AI (artificial intelligence). She stated that moving things with the pure “power of mind” or more scientifically “human brain capability combined with ICT functionalities” is no science fiction fantasy, but an interesting new world whose boundaries are not yet defined.

**David Carvalho,** Founder & CEO of NAORIS, came up with the shocking fact that the amount of attacks of malicious actors in cyberspace continues to increase quadratically faster than defense techniques. Thus, he covered in his talk the overwhelming risks and the mitigation strategies of future and current malicious real-world attacks that are currently undetectable and persistent. Absolute highlight was a live-hacking demo in which he guided the audience through a hacking process on a real critical infrastructure to highlight how highly vulnerable they can be.

**Bernd Datler**, Director ASFINAG Maut Service GmbH, representing another critical infrastructure torn between benefits and threats of digitalisation: Austrian highways. Also, in this field highly reliable, Information security management ist now the basis for all the activities of the ASFINAG.

**Theresia Vogel**, host and CEO of the Climate and Energy Fund, summarized the discussion at the end and pointed out that the findings which concluded the session will now be picked up by the strategy makers of the Climate and Energy Fund in order to improve future funding options regarding digitalisation of the energy sector in Austria.