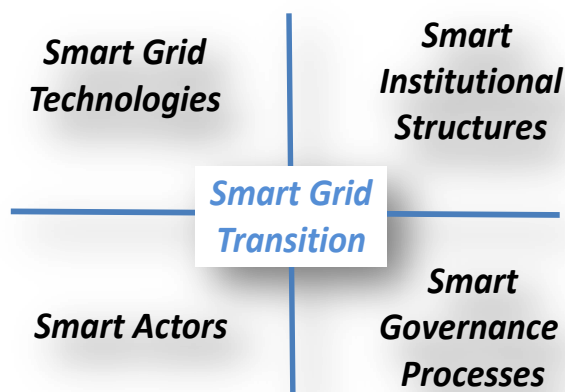**ISGAN**
INTERNATIONAL SMART GRID
ACTION NETWORK

ISGAN TCP Annex7
Smart Grid Transitions – On Institutional Change

Objectives

Smart grids will not be able to further the low-carbon transition when technologies are not sufficiently embedded in an adequate socio-technical system. Issues to be tackled include adequate regulatory and institutional regime changes, market mechanisms, understanding of social practice of energy use, as well as research, technology and innovation policy.

Annex 7 investigates institutional structures, governance processes and socio-technical issues associated with smart grid deployment. It also aims at sparking off an international, coordinated trans-disciplinary research activity in the social sciences supporting and complementing technology-oriented smart grid activities. Through this Annex, we collect information and knowledge from innovation studies, political sciences, institutional economics, sociology and energy law, and make it palpable for policymakers and other stakeholders through policy briefs.

Smart Grid Technologies

Smart Institutional Structures

Smart Grid Transition

Smart Actors

Smart Governance Processes

Ongoing Activities:

Regulatory Innovation Zones – New forms of Experimenting

Smart grid deployment requires experimenting within adeqaut soico-technical systems. How this socio-technical sandboxes, or regulatory innovation zones (RIZ) will beome reality? Some first attempt have been made, e.g. regulatory sandboxes in UK or the demonstration law for the German SINTEG innovation program, and Annex 7 will evaluate ongoing projects and programs in cooperation with trans-national research activites.

Such regulatory innovation zones can be framed as an orchestrated set/mix of omplementary policy actions combining R&I instruments and instruments of energy policy, regional policy etc. on the one side and concrete economic activities including (public and private) investment and innovation (infrastructures, products and services) on the other side.

RIZ would provide an arena for innovation based on intentional interventions in regulatory frameworks (e.g. energy law, tariffs, building regulations, zoning rules etc.) and/or other framework conditions (e.g. creating an atmosphere of active participation).

CLEAN ENERGY MINISTERIAL

iea Energy Technology Network

Blockchain Ledgers and Smart Contracts – A socio-technical challenge

The hype surrounding blockchain applications reached the energy sector, as stakeholders have recognized the potential of smartcontracts and blockchain-based solutions. Start-ups and research projects are gaining increasing attention and initial applications come from concept development into the proof-of-concept phase. As a result, a substantial institutional change is to be expected in order to adapt the rules of the game, i.e. the legal and sectoral structures to the new requirements.

Annex 7 will observe and analyse the socio-technical and institutional challenges implied, as the legal regulations are already changing. E.g., in Europe self consumption and production facilities have been permitted, which creates an innovation zone that also provides regulatory freedom for blockchain based solutions. As blockchain ledgers and smart contracts are disruptive for the role of technologies and organizations play this will also affect the roles and functions of those trusted regulatory bodies, which are taking care that rules are kept.

Smart Grid Discourse Fields – Twitter # Analysis

Word cloud displaying 50 most frequent hashtag terms in March / April 2017

Research on Smart Grid Transition in Denmark

On the 23th August 2017, the Technical University of Denmark, DTU, hosted a one-day seminar that presented and discussed central aspects of the transition to a smart electricity grid and flexible energy system.

The seminar highlighted innovative research and demonstration projects that will contribute to the transition to a smart grid in Denmark, Europe, and elsewhere. The seminar focused on the key role of consumer engagement in this transition, as well as on solutions that operate at aggregated or higher levels in the energy system.

In connection with the seminar, a publication titled "Smart Grid Transitions: System solutions and consumer behaviour" was developed to communicate some of the important research being undertaken on the subject in a more easy to read format. The publication features mainly Danish research, but also includes some international contributions.

The publication is available in a pdf version here:http://orbit.dtu.dk/files/135021800/706247_DTU_ISGAN_pamphlet_A5_web.pdf

For more information contact Rikke Brinkø Berg, +45 46775182, rikbk@dtu.dk.