

SMART GRIDS TASK FORCE (SGTF)  
EXPERT GROUP 3 – REGULATORY ISSUES  
WORKSHOP ENERGY SOTRAGE

Hosted by EDSO for Smart Grids

Brussels, 1 July 2016

**AIM**

The aim of this workshop was to share experiences on storage systems development and operations, and to discuss the challenges faced by householders, National Regulatory Authorities, grid operators, technology suppliers, energy services industries and aggregators, distributed power generators and suppliers.

The discussions were structured in three sessions: overview of energy storage challenges and opportunities, pilot experiences and trends for innovation, and policy and regulation.

The main conclusions from the event, based on the rapporteurs' account, are summarised below.

**CONCLUSIONS**

*Background*

Renewable energy sources (RES) are changing the power system faster than expected: the installed capacity of wind turbines and photovoltaic systems is increasing faster than system operators can upgrade their grids, and the variability of RES is also a source of new operational challenges.

Today, system operators (TSOs and DSOs) have different options to cope with more variable generation: network reinforcement, curtailment or use energy storage. Energy storage has the advantage of being a multi-purpose tool that can be used for:

- Reducing grid cost;
- Increasing security of supply;
- Supporting transmission and distribution grid operations;
- Avoiding the waste of electricity generated by RES.

The term “energy storage” actually encompasses a wide array of technologies, with different levels of maturity: chemical batteries, power-to-gas, compressed air, mechanical storage, hydro storage, etc. This diversity of technologies will have a critical impact on electricity network management as ancillary services will probably be provided on all voltage levels, and will increasingly come from the distribution grid.

Several speakers stressed that if electricity storage is attracting most attention, gas storage should not be forgotten, as it could also be an important tool for the energy transition (i.e. by using power-to-gas to store excess energy produced by RES). Heat storage also represents gigawatts of available flexibility in countries where electric heating is the norm.

### *Challenges*

All participants acknowledged that technology is progressing and that prices are falling, but regulation seems to remain an obstacle for the development of energy storage. All stakeholders requested a common definition of “energy storage” to be drafted, and clear roles and responsibilities to be defined.

The EC and regulators recognised that several regulatory issues were hampering the development of energy storage, most notably:

- Unclear rule for ownership;
- Unclear rules for access to grid;
- Energy storage not considered in grid planning due to the lack of incentives for TSOs and DSOs to do so;
- Uncertainty regarding grid fees and levies;
- Lack of markets for the set of services provided to the grid.

Regarding ownership, all participants agreed that energy storage should primarily be a market activity, but network operators should not be forbidden to own and operate storage facilities under exceptional conditions that remain to be precisely defined by NRAs.

However, on other issues, the participants could not reach a consensus: how should energy storage be taxed? Should energy storage benefit from support schemes? Does power to gas require a specific framework? Is a specific asset class needed for energy storage?

Some participants argued that RES and energy storage are complementary, and storage should thus benefit from the same support that RES enjoyed in the past. Others considered that RES support has disrupted power markets, consequently, energy storage deployment should not follow the same path.

All of these questions will require further discussions at European level.

NOTE: The information and opinions contained in these conclusions do not necessarily reflect the position of the European Commission. The European Commission is not responsible for the use made of the information contained therein.