

Paris Session 2022



Implementation and Application of the Demand Response Mechanism and the Concept of Active Energy Complexes for the Development and Improvement of the Efficiency of UPS of Russia

Study Committee C1 “Power System Development And Economics”

PS 2 Energy sector integration and tackling the complexity of multi-faceted network projects

Question 2.3.2 New system services: Which kind of new system services, delivered by storages, grid boosters or DSM are needed in electricity systems supplied mainly with high PV and wind generation?

Maxim Kuleshov and Stanislav Utts, Russia

System services in UPS of Russia

Generating units

Rated primary frequency control

Secondary frequency and active power flows control

Reactive power control

Energy storages

Rated primary frequency control

Secondary frequency and active power flows control

Consumption control behind the meter

Consumers

Consumption control by load decrease (Demand response)

Energy storages participate in frequency control services by common rules as generating units, that's why there is no example of energy storage frequency control services because of high price. There are some examples of energy storage participation in consumption control.

New (potential) system services

Consumption control by load increase

Using energy storages for voltage control

If RES generation share will be so high in UPS of Russia as influence will be crucial, more strict requirements for power output change (speed) of energy storages depending on frequency deviation will be considered