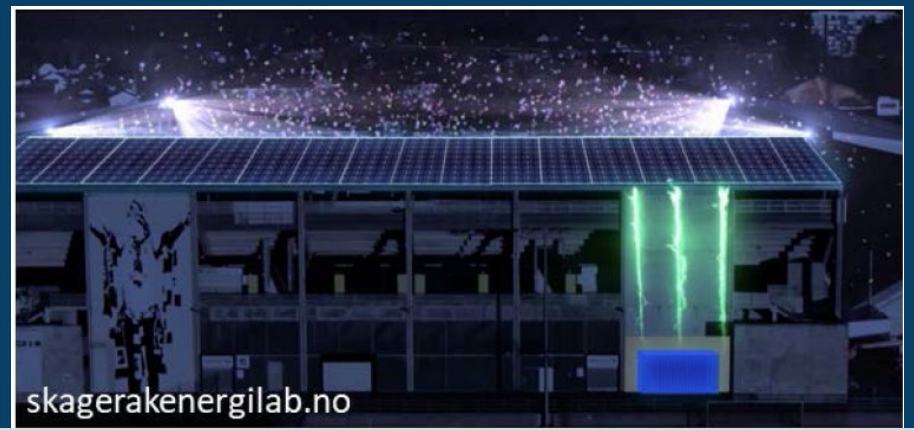
CINELDI result: Fast Frequency Response (WP Pilot)

Challenge and objective:

- A battery energy storage system (BESS) was tested to identify its capability to perform fast frequency response (FFR) service.
- The main challenge was to fulfill technical requirements related to frequency response, and develop procedures related to plan, manage, activate, and deliver FFR service.
- The battery energy storage system has a capacity of 1 MW and is installed at Skagerak Arena football stadium in Skien, Norway.



Work performed:

- Testing if the BESS could deliver according to the requirements: the battery energy storage system (800kW) should be activated within 1.0 seconds, and at 49.6 Hz, and for a duration of 30 seconds.
- The vendor of the BESS (Hitachi Energy) had to implement new functionalities to satisfy technical requirements for FFR provision
- Site-Acceptance-Test (SAT) was performed

Significant results:

- BESS can contribute with FFR service in combination with primary tasks for a battery. The primary task for Skagerak Energilab is to be back-up (as a microgrid) for the football station in case of a grid power outage.

Impact for distribution system innovation:

- The new functionalities were further developed into a commercial solution, available for other owners of batteries from Hitachi Energy.

Reference in CINELDI:

- Pilot "Fast frequency response" report