



Your partner for innovative grid technologies & services

**Hydro Power Storage & Balancing services**

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# SuperGrid Institute: your partner for innovation

Developing key technologies for future electricity grids



## SuperGrid Institute:

- European leader in HVDC & MVDC technologies & services
- Private research & innovation company
- Pooling the expertise of industrialists and academics
- Equipped with state-of-the-art test platforms

**90+**  
patent  
applications

**60+**  
PhD students

**315+**  
international  
publications

**26**  
nationalities

**€78**  
M€ of  
investment

**140**  
collaborators



Supergrid  
Architecture  
& Systems



High Voltage  
Substation  
Equipment



Power  
Electronics  
& Converters



High Voltage  
Cable  
Systems



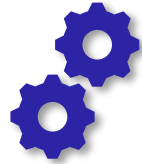
Power  
Storage  
& Balancing

# Un nouveau laboratoire à Grenoble

Dédié au stockage hydraulique et à la flexibilité



**14**  
collaborateurs



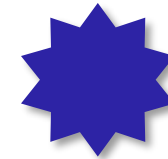
**2**  
plateformes  
hydrauliques



**10 000+**  
MW  
testés et validés



**3**  
thèses  
soutenues



**6**  
demandes  
de brevet



**3**  
projets  
européens en cours



## Our value propositions



Innovation &  
Technology transfer



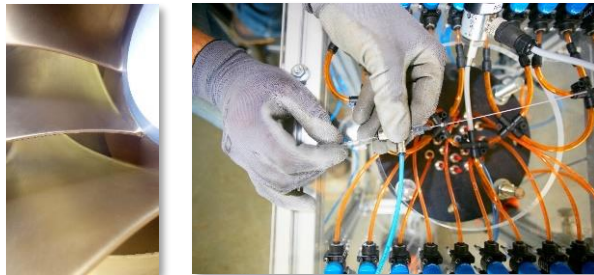
Product Development  
Support services



Expertise &  
Consulting services

# Power Storage & Balancing

## Hydraulic turbine technologies



### Test platform for Hydraulic Francis & Pump-Turbine

SuperGrid Institute has a world-class test Platform meeting the **IEC 60193** standards

- excellent accuracy >0.25 %)
- Short notice availability, better than traditional test platforms

30 + year of experience

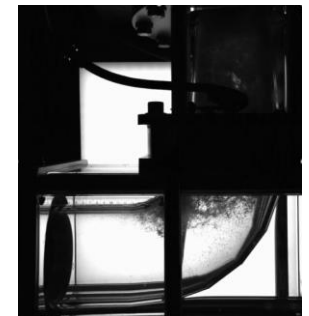
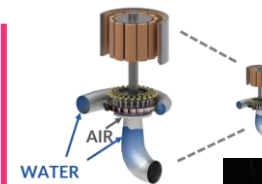
Reference : Performance of acceptance tests for KOKHAV HAYARDEN pump storage project in Israel (2 x 172MW)

### Special hydraulic testing

Design of dedicated scale models

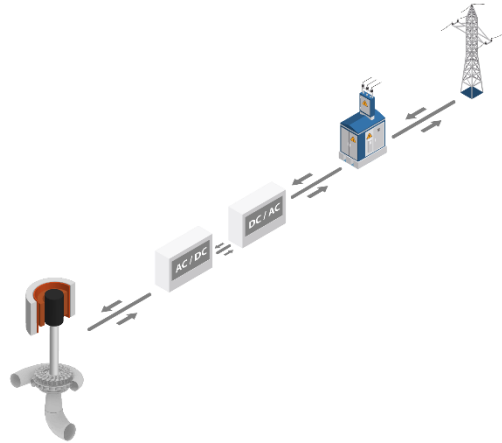
Experimental results on transient hydraulic phenomena

Fast rewatering, column separation during load rejection (vacuum), other



# Power Storage & Balancing

## Flexibility & Ancillary services

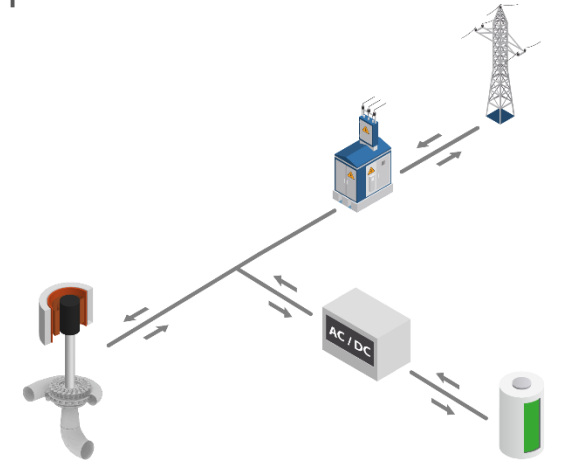


### Variable speed units

Control of Variable speed pump-storage units to improve the Fast Frequency Response of the plant

### Hybridization of conventional plants with Storage System

Development of a Supervisor improving the Frequency Response of a conventional power plant (*see following slide*)



Virtual overview  
of our platforms

### A unique Test rig dedicated to Ancillary Services

The real time test rig includes a grid simulator, a synchronous motor/generator and a pump-turbine, enabling test of control algorithms in real field environment conditions

## Your contacts:

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