



ULISS.EMR

INNOVATIVE ENERGY STORAGE TECHNOLOGY FOR SEAMLESS TIDAL TURBINE OUTPUT

Energy transition implies a major reshaping of electricity networks to form the smart grids of the future.

The impact of the intermittent supply provided by the bulk of renewable energies must be anticipated and corrected for them to be integrated into networks on a massive scale without causing disruption.

Limiting high-frequency fluctuations of renewable outputs and of industrial consumption is therefore an ongoing crucial issue, particularly for integrating renewables into small-scale and isolated networks.

These issues have an impact on tidal turbine output in the EMR sector. In the case of exploitation of tidal currents, daily variations based on tide patterns can be drawn up for twelve-hour periods and can be accurately predicted. Significant intermittency occurring at ten-second intervals is associated with the disruption caused by swell to tidal patterns at exposed sites. This disruption is also much less predictable.

One economic challenge is therefore to optimise transmission chain dimensioning by putting in place command and control strategies aimed at limiting the power transferred during extreme peaks in output.

The uLISS.EMR project is seeking to develop a solution to seamless tidal turbine output using technology that is ground-breaking in terms of energy storage and command strategies.

uLISS.EMR involves creating a prototype that can be adapted to a 1-MW tidal turbine installed in an island zone. The prototype will feature a comprehensive electric architecture comprising storage solutions based on supercapacitors, onboard electronics and electronic drive circuit.

The uLISS.EMR project is also recognised by the Pôle Image & Réseaux cluster.

Partners

Companies

ENTECH SE, Quimper [\[Project Developer\]](#)
Sabella, Quimper

Research center

Ecole navale (IRENAV, EA 3634), Brest

Funders

Région Bretagne
FEDER

Labelisation

02/06/2017

Overall budget

815 k€