Autumn School Flow Battery

Barcelona – 12th-13th of November 2018

LEITAT managing technologies

IREC Institut de Recerca en Energia de Catalunya
Catalonia Institute for Energy Research

UAB Universitat Autònoma de Barcelona

UNIVERSITAT DE BARCELONA

JENA BATTERIES

EnergyKeeper

LEITAT

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731239. This publication reflects only the author's views and the European Union is not liable for any use that may be made of the information contained therein.

Introduction

Stages of a project

EUROPEAN CALL

Differences between H2020 and FP7

Stages of a project

BRAINSTORM

Differences between H2020 and FP7

Stages of a project

STATE OF THE ART








[Differences between H2020 and FP7]

Stages of a project

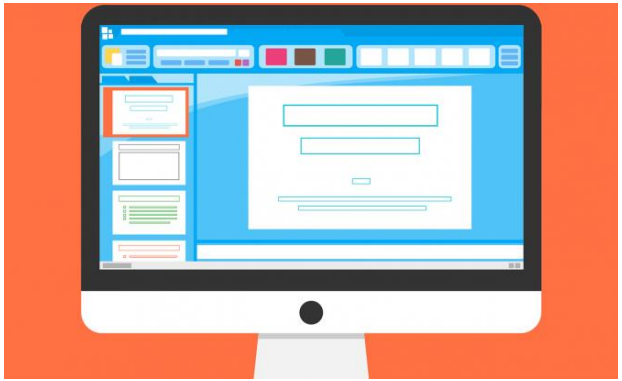
IDEA

Stages of a project

PAPERWORK

Power point, Gantt, …

- Attractive and “secure”
- Clear (role of each partner)



Stages of a project

CONSORTIUM

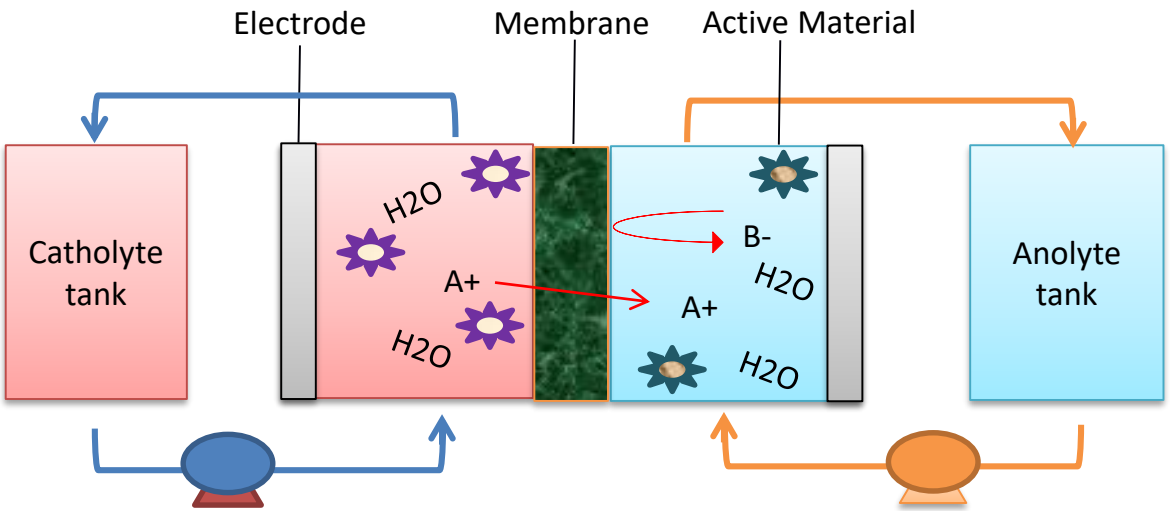
PROPOSAL

- Every proposed task
- Budget
- Person months
- Timming
- ….

Stages of a project

FIRST/SECOND DRAFT → GRANT AGREEMENT

State of the Art

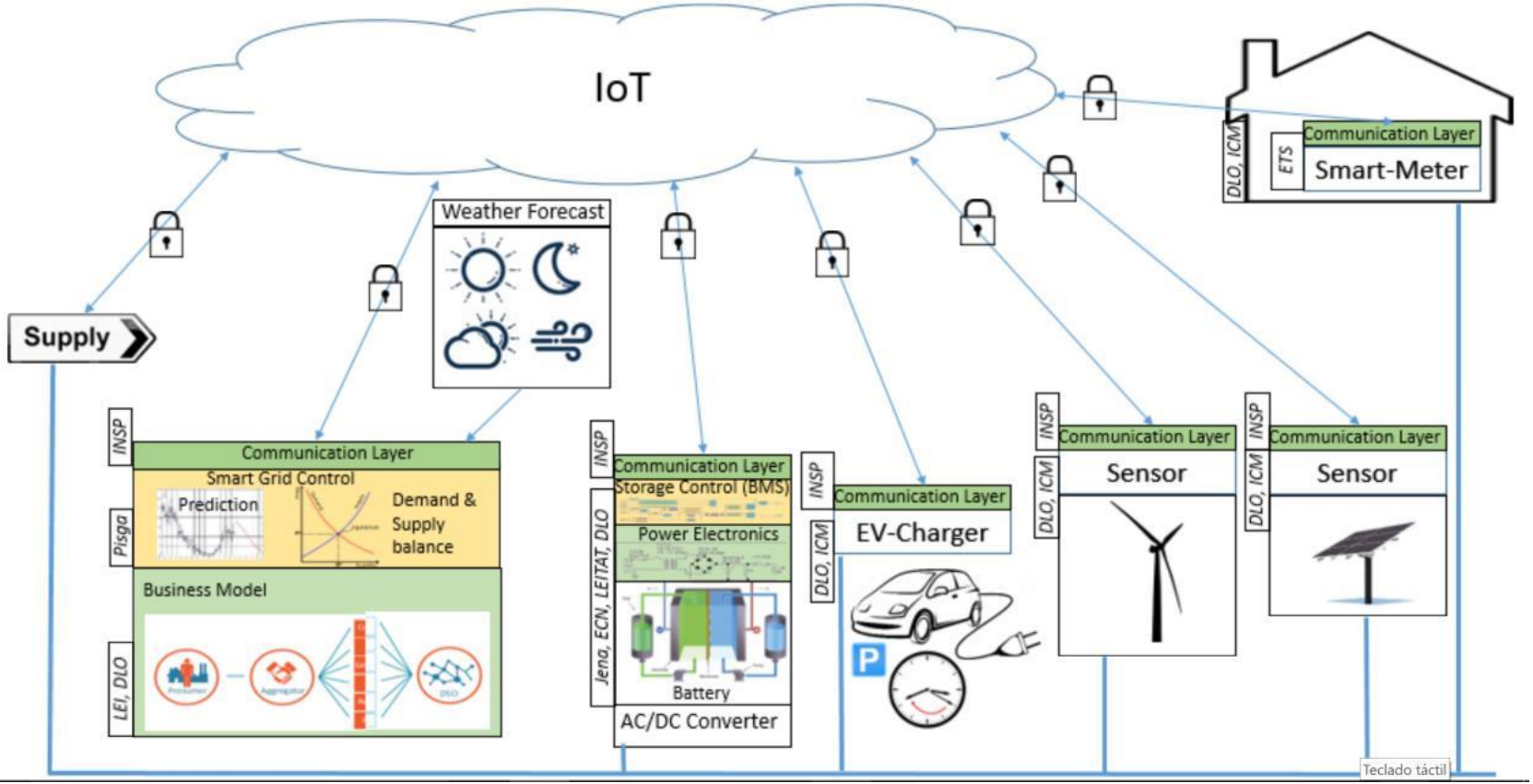


Advantages
Electrolytes auto-regenerated
Full depth charge/discharge
Long cycle life > 15 years estimation
Continuous energy supply

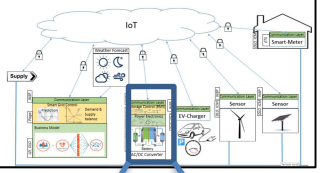
*Janoschka, T.; Martin, N.; Martin, U.; Friebe, C.; Morgenstern, S.; Hiller, H.; Hager, M. D.; Schubert, U. S. An aqueous, polymer-based redox-flow battery using non-corrosive, safe, and low-cost materials. Nature 2015, 527, 78–81.

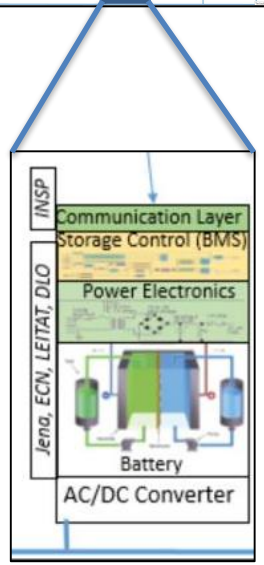
Keep the energy at the right place!

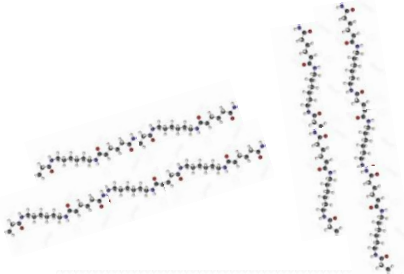
EnergyKeeper



EnergyKeeper's consortium





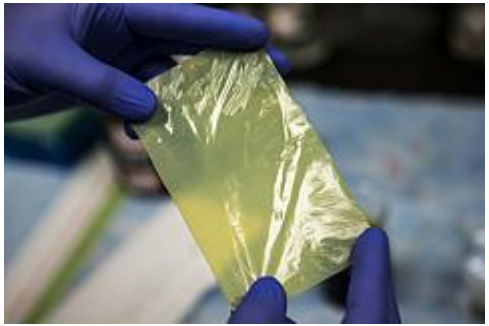


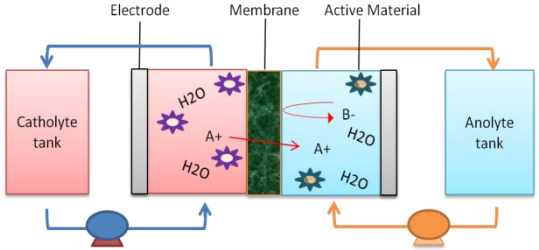
LEITAT Technological Center

Development of new redox pairs to incorporate into a new polymer to be used as electrolyte. Electrochemical characterization of cell components

ECN Your energy. Our passion.

Technology development of the battery, specifically the membrane, and the integration of the battery into the circuit system





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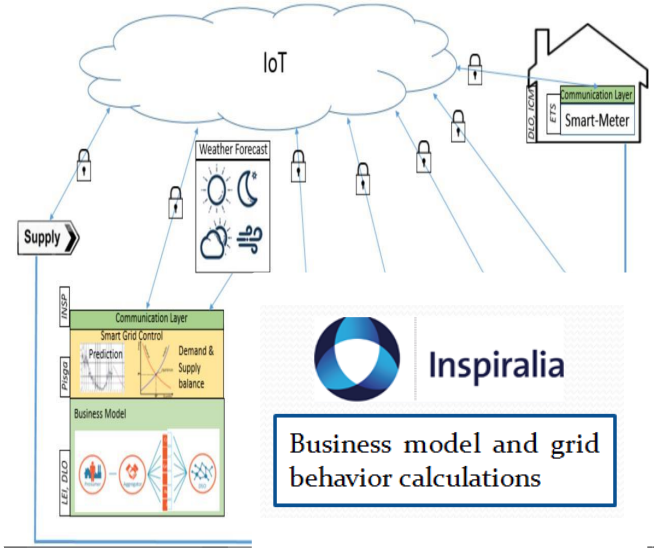
Development of a large-scale, organic redox-flow-battery for the integration in the smart grind.

EnergyKeeper's consortium



Inspiralia

Business model and grid behavior calculations

Coordinator.
Mathematical model of network and simulation

ICM INDUSTRIAL

Coordination of the integration of all devices, hardware and software into a smart grid, especially at the ACRRES test site

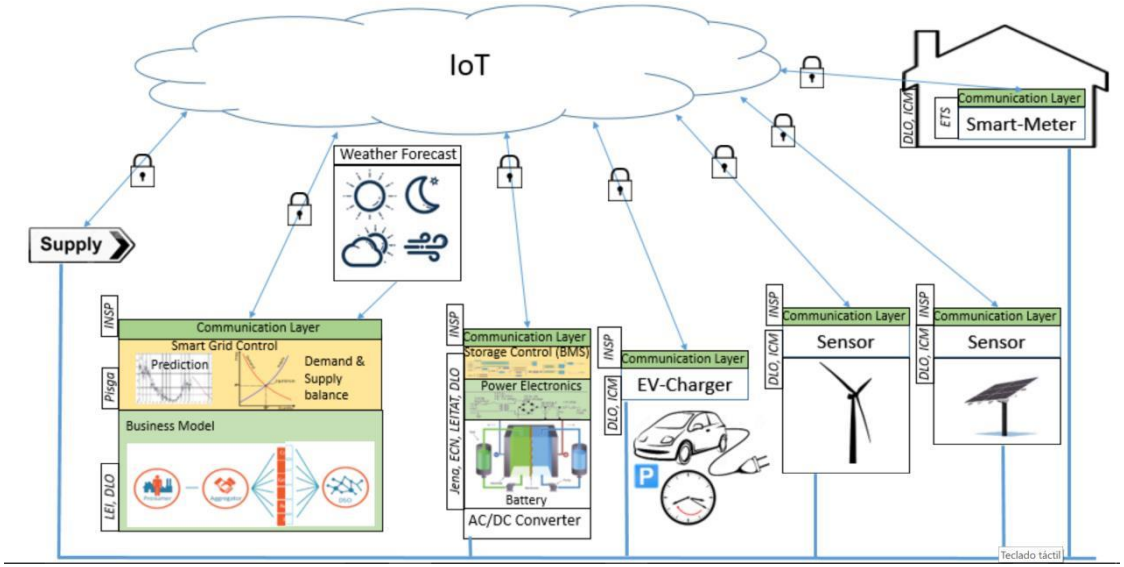
PISGA IT Solutions

System specification, modelling and system design, protocols, real time data acquisition and exchange, cyber security protection and business intelligence development

EnergyTeam

Integration of smart grid, test and enhance the actual NG (Next Generation) hardware portfolio and contribute to real time data exchange. Evaluation of business models

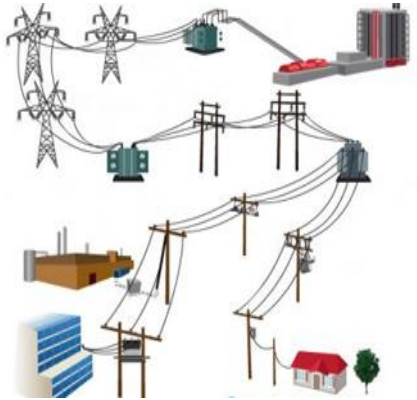
EnergyKeeper's consortium



WAGENINGEN UNIVERSITY & RESEARCH

Test facilities for integration of the solar panels, wind turbines, end-users and a charging station. Validation of the business model

EnergyKeeper's consortium



Litgrid

Advice on storage-to-grid integration requirements and business models

EnergyKeeper's consortium

Coordinator.
Mathematical model of network and simulation

Development of new redox pairs to incorporate into a new polymer to be used as electrolyte. Electrochemical characterization of cell components

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Keep the energy at the right place!

H2020-LCE-2016-SGS
Grant agreement n° 731239.
EU contribution: 3,995,255 €
Duration : 01/2017 – 12/2019
Coordinator: Lithuanian Energy institute
www.energykeeper.eu

The overall aim of the EnergyKeeper project is to **design, develop and test** a novel, scalable, sustainable and cost competitive **flow battery based on organic redox active materials**. A **100kW** redox flow battery with a capacity of **350 kWh** will be constructed and equipped with an interoperable **Battery Management System** enabling plug and play integration into a **Smart Grid**.

Conclusions

Conclusions

PANIC!!!

Conclusions

- New water based electrolyte
- New real-time control system
- Self-sustainable University
- A new way of working

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