SCCER – FURIES
Shaping the Future Swiss Electrical Infrastructure

NEWSLETTER

SCCER-FURIES
7th Annual Conference

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The Head of SCCER-FURIES shares his experience

After 7 years leading the SCCER-FURIES, we reached Prof. Paolone to share his experience.

Prof. Dr. Paolone, which are the key achievement of the SCCER-FURIES?

The SCCER-FURIES changed the power system research in Switzerland for the years to come. While there were several elements that have contributed to the successful implementation of Centre's activities, the highly engagement of the industry played a catalytic role. This engagement, in terms of number of both companies and collaboration, started from Phase I but significantly increased during the Phase II while innovative solutions started being fully developed. This was the appropriate time since this engagement enable the demonstration of the most promising solutions in the real grid and harsher of knowledge and technology from the lab to the market.

Which are the key challenges of leading large-scale consortiums?

The leading of such Consortium was not without challenges. Indeed, partners were coming from a variety of disciplines, linguistic areas and degree of openness in collaboration. This could have created misunderstandings and sometimes frictions. Even more, at the Phase II, partners had to collaborate closely in the frame of concrete projects, notably the large-scale demo activities. While on that point of time, SCCER-FURIES partners had already developed a level of trust among them new stakeholders had to be involved too. This required alignment of research activities and interests and consideration of sometimes of hidden agendas. Experience acquired from large-scale international projects was always useful for handling such situations. However, at the national level, interactions needed to be even more close and when infrastructure deployment was required, having everyone on board was a necessity.

Given of the challenges of the large scale demo activities and multi-partners networks, do you still believe that those are important for implementation of the energy strategy?

Such large-scale demo activities are at the same time an essential outcome of the SCCER programme and required for the achievement of the Swiss Energy Strategy 2050. Along with other research and demonstration activities of the Center they have contributed to make the power system sector in Switzerland way more competent and organized than what it was back in 2014. Furthermore, now we do have a network of laboratory with strong links and interconnections that involves also industry. The added value of such a network has attracted international visibility and enable Swiss research community to compete

successfully for international projects, present its work in special session in international events and publish in high-impact journals.

Do you have any recommendation for the future?

At the bottom line, Innosuisse SCCER-FURIES has achieved a lasting impact on the power system domain in Switzerland by (a) developing and validating a set of technologies (see Achievement at the WPs) with measurable impact on the planning and control of distributed energy resources in the future Swiss power and energy grid; (b) developing in-country capabilities of over 250 experts; and (c) establishing a network of laboratories that will keep collaborating even beyond 2020. The experience acquired over all these years, could be distilled in 3 recommendations:

Recommendation 1: Regulator: Enable the development of market mechanisms that leverages distribution grid local dispatch.

Recommendation 2: DSOs: Leverage distributed sensing technologies for power grids situation awareness to develop control schemes of controllable units (e.g., batteries, DSM) to overcome the network reinforcement and integrate control process of dispatchable local energy resources into power distribution grid planning.

Recommendation 3: Swissgrid: The Swiss transmission power system should be strengthened against the credible hazards involving the simultaneous loss of few transmission elements, which has the potential to cause critical disruptions of the electricity supply to the customers. Placement of dispatchable power plants and grid-level battery energy storages at locations of decommissioned/soon-to-be- decommissioned nuclear power plants could be one option for ensuring seamless energy transition too.

NEWS

Event: Annual Conference"Large-scale demonstrators for the implementation of the Swiss Energy Strategy 2050"

SCCER – FURIES
SCCER-FURIES 7th
ANNUAL CONFERENCE
28th October 2020
Presentation available on:

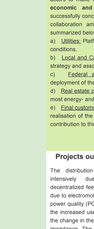
The 7th edition of the **SCCER-FURIESannual conference** was held online on October 28, due to the current Covid-19 pandemic.
This virtual edition served as a special occasion to celebrate major achievements and learn more about the key outcomes of the **Center.**

video presentation

In a well-attended event, with over 100 participants, smart-grid experts from academia, industry and public sector in Switzerland presented their activities in the frame of **SCCER-FURIES** focusing on the **SCCER-FURIES** REIeL demo and **SCCER-FURIES** Arbon demo projects as well as digitalization and customer related activities.

Link to panel presentations

Project kick-off: ERA-NET Optimal integration of EV fast charging stations into MV power distribution grids



EV fast charging station installed at the EPFL for the project

On Dec 1st, 2020, the ERA-NET project "Optimal integration of EV fast charging stations into MV power distribution grids", supported by SFOE P D &L program, started its activities. This project is the 1st **follow-up of the REeL large scale demo project** and particularly at the demo site Agile (VD). The aim of this project is to investigate and enhance the grid operation of a renewable-supplied power distribution grid in the presence of MW-class battery storage and EV charging stations for multiple objectives by using their controllable power electronics converters. For this purpose, it brings together **various stakeholders of the electric mobility** notably from the academia (EPFL-DESL), start-up (GridSteer and Zaphiro Technologies), the local DSO (Romande Energie), a EV charging services provider (GoFast) and the local authority (Community of Agile). The project will last 2.5 years.

Contact the ERA-NET project manager

Project outcomes: The Role of the various Stakeholders on the Energy Transition

Transformer in the RE Demo zone (triangles) with TR371E within the references case area (magenta) (by EPFL-IPESE and EPFL-PVLab)

For the successful implementation of the energy transition, each stakeholders should get actively involve. What's the role of the research community in supporting each of those actors to make the right decision? This was the focus of the Joint Activity on **Socio-economic and technical planning of multi-energy systems (JA-RED)** which successfully concludes its activities at the end of this year. The key outcomes of this fruitful collaboration among **SCCER-FURIES** (leader), **FEEB&D** and **CREST** partners are summarized below:

a) Utilities: Platform for the definition of their business models based on local framework conditions.

b) Local and Cantonal authorities: Evidence-based tool for the definition of their energy strategy and associated incentives.

c) Federal authorities: Identification of the regulatory barriers that prevent the deployment of the most promising solutions.

d) Real estate promoters: Evidence-based tool for the definition of the deployment of the most energy- and cost- efficient energy solutions in their buildings.

e) Final customers: Raise of awareness on the role that final customers can have on the realisation of the Energy strategy 2050 and provide alternative solutions for their effective contribution to this energy transition.

Contact the JA-RED project manager

Projects outcomes: The latest achievements of the OptiQ project

The distribution grids are used more intensively due to the increasing decentralized feed-in and storage, but also due to electromobility and heat pumps. The present cycle (PQ) is strongly influenced by the increased use of power electronics and the change in the frequency-dependent grid impedance. The grid impedance can have an unfavorable effect on the power line communication (PLC). In this project, which was supported by the SFOE and Innosuisse (SCCER FURIES), Prof. Höckel's team from BFH analysed the correlations by measurements in different distribution grids and in the laboratory as well as by simulations. Recommendations for the grid planning and grid operation as well as tools for the target grid planning were developed.

Laboratory test for OptiQ Project

Final report (DE)

Contact Project team

Report: SCCER Mobility Synthesis Book

The **SCCER Mobility** has released the **Synthesis book** of the Center. This report provides an overview of the center, its history, milestones and the main research outputs. If you are interested in knowing more about the work undertaken by our colleagues at the SCCER Mobility pleas do not hesitate to go through this nice work.

SCCER Mobility Synthesis Book

EVENTS

UNIL-EPFL Seminar Series "CLIMACT Ideas & Actions"
January 2021, @virtual

ERA-Net SES Virtual working group meetings
January & February 2021 ; @virtual

5th annual IEEE Texas Power and Energy Conference (TEPEC)
February 2-5 2021 , @virtual

30th IAHR 2020 - Hydraulic Machinery and Systems virtual conference
March 21-26 2021 @ virtual (organized by EPFL)

2020 IEEE - International Forum on SmartGrids for Smart CitiesDays.
March 2021 - exact dates to be confirmed; @ Aachen(DE)

Camille Bauer & BFH Power Grids Lab Seminar "Praxisseminar Fachspezialist nach NIV /EN50160 und EMV, EMF).
March 2 2021 @ virtual

Meet Your Calendar

For more and up to date information, please follow us on our LinkedIn page.

OPPORTUNITIES

FUNDING

(Innosuisse) Flagship projects.
Deadline: Call to be launched on Jan 14th, 2021

SNSF - Eccelenza (research project as an assistant professor)
Deadline: Feb 1st, 2021

SNFS - Postdoc Mobility.
Deadline: Feb 1st, 2021

ERA - Net SES - Joint Call 2020 (MoCa020) on Digital Transformation for green energy transition
Deadline (expression of interest): Feb 17th, 2021

SWEET Call 1 "Living and Working"
Deadline: Spring 2021

SWEET Call 2 «Impact of different influencing factors on critical energy infrastructures and the resilience of the current and future Swiss energy systems (Summer 2021)
Deadline: Summer 2021

CAREER

Engineer & Entrepreneur
@ EssentialTech Center EPFL

Control Engineer for Power Converters
@Hitachi ABB Turgi, Aargau

Electrical Engineer System Drives
@ ABB Turgi, Aargau

Electrical Engineer
@Logitech, Lausanne

Electrical Engineer Industrial and Automation Engineer
@Vifor-Farma, Fribourg

R&D Power Electronics Engineer Industrial and Automation Engineer
@Daphne Technology, Saint-Sulpice

STAY IN TOUCH

SCCER-FURIES LinkedIn

Don't forget to follow us on our SCCER-FURIES LinkedIn account.

You will find there news and info about new projects and partners, job & funding opportunities,as well as events worth attending.

Follow us

Knowledge Hub

Would you like to have more information about the SCCER-FURIES?

You will find more about FURIES' Partners, Projects and Projects' Outcomes on our Knowledge Hub

Read more

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