

EPC4SES Newsletter

November 2022

Dear reader,

The ERANet-RegSys project EPC4SES - EPC based Digital Building Twins for Smart Energy Systems launches its fourth newsletter. The project started in February 2019 and after a period of expansion, it will eventually hold its final conference in December 2022.

In this newsletter we would like to inform you about:

-  1. The project
-  2. Research actions in pilots
-  3. Final virtual conference

The European research project EPC4SES spans over three countries (Germany, Austria and Spain) and is addressing an innovative concept to improve the information level for the urgently needed **Smart Energy Systems (SES)**. The project has developed models to collect this from a simplified digital twin which is based on the Energy certificate (EPC), which every building in Europe has.

The partners Effiziente.ST Energie und Umwelt (project lead), SEnerCon, Cleopa GmbH, Western Norway Research Institute, Salzburg University of Applied Sciences and Wellness Techgroup are combining their expertises under the coordinator Dr. Gerfried Cebrat from Austria.

Research actions in the pilots

Berlin pilot

Hypothesis that were considered for this pilot were focused on enabling energy savings by utilising data from the energy performance certification in model predictive control.

The research indeed showed very good results based on the **Model Predictive Control (MPC)**. For example, in the **Berlin pilot** the simulation was performed in a multi apartment housing. When modulating the set temperature for room heating, we may assume approx. 15 energy savings over one year in a building oriented towards the south, if the factors for the empirical model predictive control are optimized for each month. It was validated that the MPC could compensate for an approx. 5% smaller tank and solar aperture. If using a simple heat loss model for the Model Predictive Control, the existing XML schema for data upload to the DIBt is sufficient, if inclination of windows or shading is neglected.

Salzburg pilot

In the case of one of the **Austrian pilots**, SUoAS modelled the main building of the University of Applied Sciences using layered calculation of the building elements and investigated a power to heat solution including photovoltaics (PV) and a heat pump. In the end it could be validated that this setting is able to reduce the carbon footprint.

Final conference

The EPC4SES had an initial duration of 31 months from December 2019 until 2022 but it was extended until the end of 2022. Since we are close to this end, we are organizing a final project conference that will be held on the **15th of December**. Of course we will count on the participation of our partners who will make brief presentations about the project activities and results.

The conference will be fully virtual - so do not miss to join us!



FINAL CONFERENCE

15 DEC 2022



EPC based Digital Building Twins for Smart Energy Systems

- Project hypothesis / background XML + MPC
- Modelling buildings with XML data
- Pilot scenarios
- Findings evaluation
- Potential next steps (EPBD >
- Use cases, scientific exploitation



 Wellness TechGroup

 SEnerCon
Klimaneutrales Unternehmen

 ENOVA

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