

FinSESCo

Fintech Platform Solution for Sustainable Energy System Intracting and Contracting, Boosting Energy Saving and Renewable Energy

“ By adding end to end digitalisation FinSESCo supports efficient intracting and brings smaller projects to the energy contracting market allowing low risk private investments. ”

Dear readers!

We are happy to present to you the fifth newsletter with news from the project. In this newsletter we focus on three topics:

- Findings from Debriefing the pilots
- Uptake strategy
- Development of the Indian project part

The project nears its end for the European parts, having concluded the debriefing of the pilots and having drafted the exploitation report, but for India after the late funding decision there are nearly two years to go. This allows to mobilise much CO2 savings when developing the idea further for India. The asynchronicity between the continents has its benefits since the inclusion of the new cooling case from the start would have delayed the implementation of the portal.

If you want to express your thoughts you might visit the social media channels listed at the next pages, or write to office@energycontracting.info Enjoy reading!

Gerfried Cebrat, effiziente.st (efficiency1.st), project lead

ERA-Net Smart Energy Systems

This project has been funded by partners of the ERA-Net Smart Energy Systems (www.eranet-smartenergysystems.eu) and Mission Innovation (mission-innovation.net) through the Joint Call 2020. As such, this project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 883973.



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Crowd Investing Platform for Decarbonising the Building Stock

Project Duration

01.05.2022 - 31.12.2024

Project Budget

Total Budget: € 1,032,760.-

Project Coordinator

effiziente.st (Austria)

Project Partners

- Europa University Viadrina (Germany)
- senercon GmbH (Germany)
- BEIA International Consultants (Romania)
- Institute for Energy Studies Anna University (India)
- Velore Institute of Technology (India)

Project Website

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ERA-Net Smart Energy Systems Joint Call 2020 (MICall20)

This project has been awarded funding within the ERA-Net SES Joint Call 2020 for transnational research, development and demonstration projects. 22 Mio EUR of funding have been granted to 21 projects active in 17 regions and countries.

Findings from the debriefing

Introduction

The pilot operation aims at testing the approach with concrete buildings and their owners. This way valuable results could be retrieved by processing real building data and involving real persons responsible for the buildings. The working hypothesis assumed that XML from the energy performance certification contains data for the building data necessary to run the following steps. So, the pilot could also answer what data has to be amended.

WP3 has developed pilot solutions for

1. automated EPCo/ESPCo project compiling with data from other sources.
2. Playful bidding process with Knapsack algorithm
3. Investor dashboard with risk portfolio management, diversification possibilities
4. Quality assessment in the fulfilment phase of the crowd investing/energy contracting

Additionally, an intracting focused user interface was added, where the sole investor is the project owner or a holding of which the project owner is part of.

The questionnaires filled in by pilot owners included questions for all five points. The approach was demonstrated in the tool, and this also shown via video. Likert scales (Yamashita & Millar, 2022) were chosen.


Point 4 was also included in the intracting interface. For the points 2+3 in an early phase a focus group gave feedback which was used to update the user interface. Point 1 was explained to pilot owners.

To better understand the roadmap necessary to reach our aims, the survey included questions depicting the actual situation, and for an appraisal after giving an outlook into the potential future solutions via the pilot implementation.

General Findings

The subsidy level and amount of own capital influences heavily the demand for alternative financing, so it is not surprising that we can differentiate for the pilots

The use of different XML schemes was fruitful. While Austrian and German schemes differ in the structure and have minor deviations in the included data, the Spanish scheme and the requirements gave more insight. This approach could be translated and used for Romania, where no XML scheme could be identified. It is of utmost importance to train issuers of Energy Performance Certification to differentiate between adiabatic and non-adiabatic hulls and adapt the schemes so the heat loss to non-heated rooms may be calculated correctly. The schemes for attribution of CityGML elements have not proven to be sufficient. Unfortunately, the developer of the SketchUp plug-in has given up, so there will be no further development. This



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speaks for a top-down approach where ministries for buildings shall take over and procure such a tool.

The findings differ largely for the respondents, a dependency on the financial options is visible. Alternative financing thus a rather unknown field. Energy contracting might be taught in school to cope with that. The process to create trust will take a longer period and favourable economic condition. Instead of subsidizing renovation cost heavily, they may be also booked on the debt account of a building. Otherwise, creating additional income by adding floor space is a business model for owners of larger buildings. In Germany and Austria subsidies and fine tuning via controlling shall create impact, in other countries having higher property ownership, the building debt approach may be employed.

The tool seems to be accepted with single family homeowners interested in efficiency and climate protection, owners of larger building have the possibility to employ energy consultant and to finance out of own funds.


Reuse of data is appreciated as concept, but details shall be conveyed about the use case more clearly.

Global Findings

It is important to allow owners to increase the floor area. With larger investments the effect of pre-existing data might not be financially significant, because support is affordable, but it may speed up the energy consulting process.

The differences between the requirements for energy performance certificates in Europe cannot be explained. The data models should be assessed with the applications like renovation plan set up and energy controlling.

Energy saving contracting cannot compete with equity-based crowd funding, since repayment takes too long. However, it might be accepted with high subsidies where the return on investment is lower. Compared to assuming increasing fossil energy prices this is the more secure scenario. In countries with larger building ownership and less renting however there shall be a way to trigger renovation for less wealthy. Here charities and specialised low-cost repair teams can be deployed or costs written in the dept sheet of the cadastre.



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The knowledge about Crowd Funding is limited and should be improved. For the target groups interested in renovating or providing money for renovation. The provision of alternative financing for appliances already is visible, so the measures may concentrate on renovation.

Forward thinking Conclusion:

The main finding is certainly that Energy Saving Contracting is known to a lesser extent for buildings. This was already seen before analysing literature since mainly energy contracting was found and energy saving contracting for retrofitting LED. Fixed and high interest rates for equity-based crowd funding are reducing attractiveness of energy saving contracting. Crowd funding with guaranteed interest rates might be the more attractive variant. Experience with crowd funding is generating some appreciation for it.


The calculation tool for optimising the measure set is appreciated, but it would certainly profit from modules which were validated with a broad range of buildings and measures. The quality of the input data for this tool is critical, while it is easy to adapt the energy prices and the interest rate, the cost for the implementation of the measures shall be calculated in a stepwise approach:

- First determine the cost drivers for the measures and calculate the cost for them
- Estimate cost for scaffolding, organising the renovation site operation based on the measures
- Add cost for measuring and control.

For some new developments like gradual exchange of heat release units to match the lower temperatures supplied by heat pumps there is potential for optimisation and cost curves have to be developed in the base of more cases.

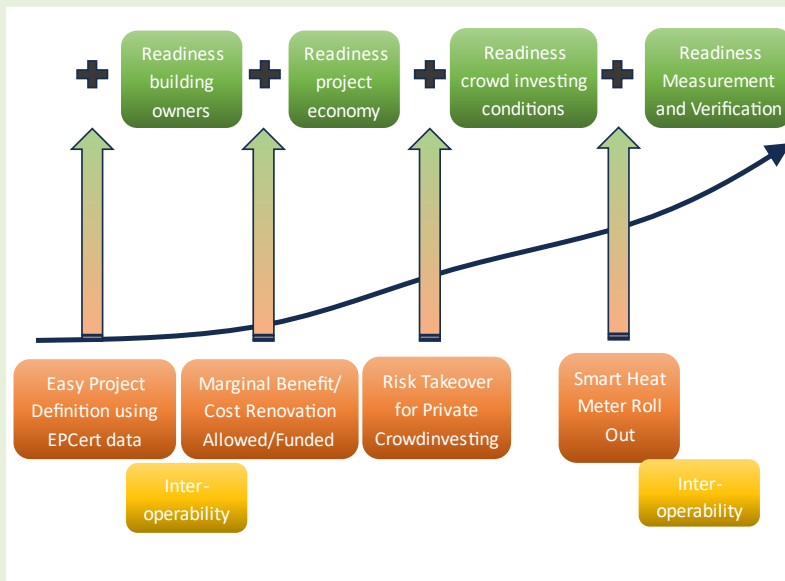
For the development of the energy contracting/energy saving contracting platform the following recommendations apply:

1. **Openness to Communication:** Establish open communication channels between the ESCO on the one hand and building owners to be able to clarify implementation and efficiency deficits and tenants to avoid misuse and circumventing control of new HVAC devices increasing energy demand.
2. **High Quality Building Analysis** either in the energy performance certification, or the energy consulting to quantify potential savings and renewable energy opportunities correctly.
3. **Transparent Reporting:** Regularly report on energy consumption and savings achievements towards investors in the shared savings model.
4. **Risk Management:** Clearly define risk allocation and develop contingency plans for unexpected events. Possibly cluster projects to reduce the risk.
5. **Allow for new business models:** Provide the portal components with enough flexibility, so new business models may use them.



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European Indian Workshop

The Indian partners from the Velore Institute of Technology in Tamil Nadu visited the lead partner effiziente.st Energie und Umweltconsulting in Graz. The two days meeting successfully deepened the collaboration after the late granting of the contract for India. Abstract targets were highlighted to allow to add new ideas fitting the demand:

- Economic optimum with market-based approach
- Reducing transaction cost via digitalisation
- Mobilisation of hidden needs

The Indian team gave insight into the energy domain in India and the FinSESCO approach could be adapted to those needs.

At the end of the meeting, there was a video call including all Indian partners updating them with the joint working program for 2024.



The project in a nutshell

Main Objectives

The aim of the project is to research technology and enabling factors for a platform supporting energy performance contracting. Individuals and investing entities may put their bids, financing implementation of small renewable installations and energy efficiency measures for individual single family building owners, apartment owners up to owners of several buildings. The applications utilising the platform components shall create trust by using secure transmission of meter data, automated publishing results for yields/ savings and payments.

Implementation

The FinSESCo platform supports, via end-to-end digitisation, the process of project definition, investor search, contracting and energy flow metering, quality control and payments. Using already existing data on buildings and energy saving measures, the definition of ESPCo/ESPCo projects can be done with less effort. The gamified investment process with a competitive component and the embedded networked meter-based repayment process with secured transmission is complemented by machine learning-based error detection, which aims to detect deviating yields for renewable energy in Energy Contracting projects, and lower savings in Energy saving contracting projects to be able to plan counteraction in due time.

The FinSESCo platform includes components for portals that focus on private projects but can also be used by companies and across sites to build an intracting solution. The project explores the best use cases and test the acceptance and attractiveness among stakeholders, reaching TRL7 with the pilot implementation. The competences of the partners from 4 EU countries + India include the development of energy services, smart metering, machine learning, the implementation of energy contracting as a legal construct and social research.

Main Results

The outcome of the project is a specification validated through stakeholder acceptance, testing and technological assessments of the test implementations. Deliverables 2.1 Research analysis, 2.2 requirements manual prepare the pilots and a tool for interested parties to design a portal and test its suitability. Deliverable 4.1 Evaluation plan, 4.2 Evaluation summary, and 4.3 Exploitation plan follow. The dissemination comprises web site, newsletters, Social Media appearance, scientific articles, and conference posters.

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