



Integration of Finance in Energy Efficiency [†]

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Abstract: Innovative solutions to de-risk investments in energy efficiency projects, which the EU's goal of being carbon neutral by 2050.

Keywords: energy efficiency; investments; renovation; financial sector



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1. Introduction

Energy efficiency is an integral part of global energy policy since it is not only widely recognized as an effective means of reducing greenhouse gas emissions, but also ensures the long-term security of the energy supply. Towards this direction, investing energy efficiency directly affects reducing energy consumption, while also improving industrial competitiveness and driving economic growth. However, financial institutions and private investors do not consider energy efficiency as an attractive sector to invest in, limiting the possibility of using external private finance on top of equity of project owners or public funding. The lack of best practices and statistical data on the actual energy and cost savings achieved by implemented energy efficiency projects and payment default rates causes financial institutions to attribute high-risk premiums to energy efficiency investments.

The building sector is considered of significant importance at the European Union level, as it is responsible for 40% of the energy consumption and 36% of greenhouse gas emissions. These trends are expected to grow given the fact that energy demand from buildings and their construction rates continue following the current trajectory, creating enormous untapped efficiency potential. In this respect, nowadays, boosting the implementation of energy efficiency measures in buildings is of paramount importance, more than ever. Mainstreaming energy efficiency financing is considered the only way to achieve the EU's ambitious, compulsory for the environment goal of carbon neutrality by 2050.

While energy efficiency investments are usually expected to be paid back exclusively through energy bill reduction, there is increasing evidence that non-energy benefits play a key role in the decision to invest in energy efficiency. These benefits are known as the multiple benefits of energy efficiency and should also be considered in the investment decision process. Among others, the multi-benefits include an increase in the building value, lower tenant turnover or vacancy rates, better product quality, a reduction in CO₂ emissions, etc.

Investments into building projects can be made more attractive by ensuring that investors get the results that they are looking for, as the calculated performance of buildings

often mismatches with the real performance. Better integration of suitable quality management services into building projects is essential here, as they help assess and mitigate the technical risks which, in turn, de-risks the financial investments going into buildings.

A number of H2020 funded projects (EEnvest, Triple-A, Quest, LAUNCH, and CitizEE) are developing innovative solutions to tackle the above challenges, and they have formed a cluster, joining forces on a common workshop at Sustainable Places 2021 [1] to expose their approach and discuss potential synergies. The summary of the work presented can be found in the following sections.

2. Risk Reduction for Building Energy Efficiency Investments, the EEnvest Project

EEnvest [2] is focused on mainstreaming energy efficiency financing in the building renovation sector. The project is composed by a Consortium of nine partners who collaborate with four advisory board members.

EEnvest project's main outcome is a digital platform, where investors and building-developers can share information on energy efficiency project easily and transparently.

The process is that preliminary details of energy efficiency projects, specifically for commercial office buildings energy renovation projects, are shared onto the platform by building developers. Based on that, an algorithm will afterwards assess the technical and financial risks related to the specific project, and lastly a report is made available to the investors.

The investors will be able to benefit from the choices of technical nature (e.g., probability distribution of energy performance gap and expected damage) already represented into financial indicators. The report authenticity is guaranteed by blockchain and any further update or modification to information will make the previously generated report invalid. By this innovation, the burden of understanding technical aspects is no more shifted to the investors, which can complete their portfolio based on financial risk profiles. Further support may be delivered by partners as consultancy services.

The platform will also deliver information on multiple benefits and contribution to SDG goals relevant to the investors, such as CO₂ emission reduction goals.

Other project results, such as an energy efficiency project self-assessment tool for building developers, will help to increase investor's confidence.

The platform targets a specific range of investment: from EUR 200,000 to EUR 2,000,000. The methodology is being tested on two demo case sites, located in Italy and Spain.

Investors can get direct value from the platforms (from renovations, ESG value). ESCOs could be interested in this. The project is also looking into crowdfunding possibilities in the future, by linking with partners already existing services.

3. Enhancing at an Early Stage the Investment Value Chain of Energy Efficiency Projects, the Triple-A project

The Triple-A project [3] has received funding from the EU's Horizon 2020 program and aims to mainstream energy efficiency (EE) investments by setting the ground for building investors and financiers confidence; providing standardized Triple-A tools, database, and benchmarks to assess EE investments; and ensuring the provision of recommendations based on lessons learnt from the in-country demonstrations. The Triple-A scheme comprises three critical steps: (1) assess: based on member states' (MS) risk profiles and mitigation policies, including a web-based database, enabling national and sectoral comparability, market maturity identification, and good exchange of practices and experiences; (2) agree: based on standardized Triple-A tools, efficient benchmarks, and guidelines, translated in consortium partners' languages, accelerating and scaling up investments; and (3) assign: based on in-country demonstrations, replicability, and overall exploitation, including recommendations on realistic and feasible investments in the national and sectoral context, as well as on short- and medium-term financing. The Triple-A case study countries promote diversity across a number of factors, including Bulgaria, Czech Republic, Germany, Greece, Italy, Lithuania, Spain, and the Netherlands. A consultation process has been realized so as to engage national stakeholders, including stakeholders identification,

questionnaires, bilateral meetings, capacity building webinars, and upcoming regional training workshops, whereby each case study is expected to be held in autumn. Three Triple-A standardized tools have been developed: the “assess” tool performs risk assessment and EU taxonomy compliance of the EE project ideas; the “agree” tool benchmarks and classifies these projects; and the “assign” tool matches the benchmarked projects with financing institutions (e.g., funds, investors, banks) that are in search to invest in green EE projects and create a green portfolio. The Triple-A web-based database incorporates data and functionalities that enable the effective and interactive communication of the Triple-A methodology’s results on the fundamental aspects of energy efficiency financing to the key involved actors.

4. Quality Management Investments for Energy Efficiency, the QUEST Project

Europe will invest billions into the sustainability of buildings and we need to make sure that these investments pay off. The Renovation Wave will push technology innovation and new business models; without quality management, these efforts will fail.

The main goal of QUEST [4] is to promote investments in Sustainability and Energy Efficiency by identifying and empirically risk-grading factors that influence performance. QUEST will develop a toolkit to evaluate these investments. It may be easily applied to all types of sustainability and energy efficiency investments and covers project design-construction-operation risks. Financial institutions applying the QUEST toolkit will be able to reduce risk while significantly increasing investment. QUEST will identify and statistically classify project risk factors (ex. energy consumption) as well as quality management service features (ex. Energy measurement) to reduce the gap between predicted and real performance in operation by exploiting existing databases (e.g., by de-risking the energy efficiency platform). QUEST will then create and promote a data-driven decision-making process, certifiable to ISO EN 17065 standards. This will help financial institutions improve risk premium calculations reliability. The core element will be a “quality management impact” factor that represents the added value of quality management. QUEST facilitates risk-securitization of investments by reducing loan costs by identifying the risk profile of investments and also reducing transaction costs, reducing insurance costs via improved risk identification, and transparently securing funding scheme requirements for energy efficiency. QUEST’s proposal aims to reach 880 financial institutions and other stakeholders.

5. Sustainable Energy Assets as Tradable Securities, the LAUNCH Project

LAUNCH [5] is an EU H2020-funded project that aims to accelerate deal closure and pipeline growth for sustainable energy assets through standardized material. This includes a standardized service agreement, a standardized risk assessment protocol for investors, standardized financial spreadsheets, and PowerPoint templates to facilitate the access to growth capital and market-tested value propositions for project developers’ end-clients.

Under the LAUNCH project, all the market tools developed were tested by the pilots and the different stakeholders. All the material provided working sessions which were set up with the different pilots to ensure the uptake of the materials.

As a next step, the partners—Joule Assets Europe (Italy), the research institution TNO (Netherlands), EnerSave Capital (Luxembourg), and New Energy Group (Ireland)—successfully secured a new EU H2020-funded project: PROPEL (energy efficiency finance), which started in June of 2021.

The PROPEL project will build on the consortium’s significant ownership of, and access to, the full range of necessary standardized financing collateral, and deploy this collateral in the market. The PROPEL project will develop an integrated ecosystem of financing collateral and relevant actors, which together will drive the market for sustainable energy assets forward.

PROPEL will, at the same time, firmly establish an industry association, the Sustainable Energy Finance Association (SEFA), which will act as the knowledge and resource center for the mainstreaming of finance into sustainable energy assets.

SEFA's mission is to act as the holistic center of competence of the sustainable energy market in Europe, by connecting and enabling key actors to accelerate deal closure and boost market growth. SEFA provides all the critical collateral required to help its members implement clear and effective pathways to a successful clean energy transition.

6. Scaling-Up Energy Efficiency Investments through Citizens-Backed Financing Schemes, the CitizEE Project

CitizEE [6] is a European-funded project bringing together eight partners from all over Europe with the aim to support European public authorities to scale up investments for energy efficiency in the building sector through attracting citizen private investments.

There is currently a particular deficit in finding suitable financing programs for the implementation of energy efficiency measures. Innovative financing solutions are needed to enable energy-efficient retrofits on a large scale and to strengthen collaboration between all stakeholders (project promoters, public/private financial institutions, end-users, etc.), and especially with citizens.

CitizEE's ambition is to put in place a sound enabling legal, financial, and operational environment aimed at: (i) making a more efficient use of public funds; (ii) mitigating performance and credit risks; (iii) closing financing gaps; (iv) enlarging citizen access financing; (v) reducing transaction costs; (vi) enhancing capacity of local crowdfunding operators and cooperatives; and (vii) stimulating the required investment towards higher renovation rates and, thus, a more efficient building stock.

Four demonstrators (in Portugal, Belgium, Lithuania, and Croatia) were selected to establish the CitizEE platforms as well as to demonstrate the replication possibilities of the project financing schemes at a regional or a country level, while a dedicated toolkit will be developed by the project aimed at providing citizens, investors, and public authorities alike with a better understanding of the adoption of citizen financing for energy efficiency renovations

7. Conclusions

All projects contributing to this workshop are exploring innovative approaches to de-risking energy efficiency investments. This includes, for example:

- Labelling schemes, project rating methodologies and risk assessment tools, standardized legal and financial structures of assets (loans, guarantees, energy performance contracts, etc.);
- Methodologies and tools that make energy efficiency investments more transparent, predictable, and attractive for investors/financiers;
- Stakeholder consultation methods engaging key actors which enable the development, implementation, testing, and exploitation of the innovative schemes for energy efficiency financing;
- Gathering, processing, and disclosing large-scale data on the actual financial performance of energy efficiency investments in order to create a track record for energy efficiency in various sectors;
- Further integration of non-energy benefits in project valuation, in particular in the building sector, leading to the evolution of existing financial products or the creation of new targeted products;
- Targeting institutional investors (e.g., public pension schemes) in order to increase the share of their funds invested in energy efficiency, or to develop specific funds or investment products;
- Supporting the integration of energy efficiency in portfolio management strategies for institutional investors and/or fund managers, including the re-definition of fiduciary duties;
- De-risk investments into sustainable buildings projects through the integration of quality management services and innovative tools that help investors assess the added

value of certification schemes on building projects and the impact they can have on their investments.

Supplementary Materials: Recording of the workshop is available online at <https://www.sustainableplaces.eu/finance-for-energy-efficiency/>.

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