



CORDIS Results Pack on private finance for energy efficiency

A thematic collection of innovative EU-funded research results

September 2020

New solutions for funding Europe's energy transition



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Editorial

New solutions for funding Europe's energy transition

Making European societies and economies more energy-efficient will play a key role in allowing the EU to meet its climate ambitions, create growth and improve well-being, particularly to meet the goal of making the EU carbon-neutral by 2050. Whilst energy efficiency has not always been considered as an attractive investment by the financial sector in the past, this CORDIS Results Pack features 10 EU-funded projects that have set a new dynamic for accelerating and upscaling private financing of energy efficiency investments across the EU, as well as making such investments much more attractive to investors.

Whilst the EU has increased the amount of public funds available for energy efficiency, there is a need to further unlock private financing. In order to meet the EU's 2030 climate and energy targets, such as cutting carbon emissions by 40% from 1990 levels and achieving an energy efficiency target of 32.5%, all as a part of the ambitious European Green Deal, an additional EUR 260 billion per year will be necessary over the period 2021-2030. Much of that finance will need to come from the private sector.

Overcoming the financial impediments for energy efficiency investment

The truth is, energy efficiency investments often come with high transaction costs because projects are small and not sufficiently aggregated to be interesting to investors. Another challenge is that energy efficiency investments such as deep retrofits of buildings tend to have relatively long paybacks, which is not very attractive. Investors are also not fully sure if the reality will match the level of expected savings after the energy retrofit. However, there is growing evidence that the risks associated with energy efficiency investments are lower than the level perceived by markets. So, the trick is to not only reassure investors that energy efficiency projects are overall a safe and sound business case but also help banks and other financial organisations to really understand and easily assess any and all risks and opportunities associated with a particular project.

To simplify transactions and increase the confidence of financial institutions, technical and legal standardisation is highly needed at all steps of the investment value chain. The lack of standardisation of projects also prevents securitisation of energy efficiency assets (loans or equity) so that financial institutions are not able to refinance their debt on the capital markets.

But there is hope on the horizon. Whereas energy efficiency investments are usually expected to be paid back exclusively through the reduction in the energy bill, there is growing evidence that non-energy benefits play a key role in the decision to invest in energy efficiency. This includes, for example, better comfort and health indoor parameters, increased building value, lower probability of mortgage default, and lower tenant turnover or vacancy rates, thus offering real potential financial and economic carrots to entice financial institutions to invest more in energy efficiency.

Moreover, there is a need to set up innovative financing schemes at regional or national level in order to create the conditions for adequate supply of private finance for energy efficiency investments. EU or nationally funded technical assistance programmes (EIB-ELENA, EASME PDA) support the set-up of such schemes. Innovative financing schemes for energy efficiency aim to progressively maximise the leverage ratio of public funds to private finance.

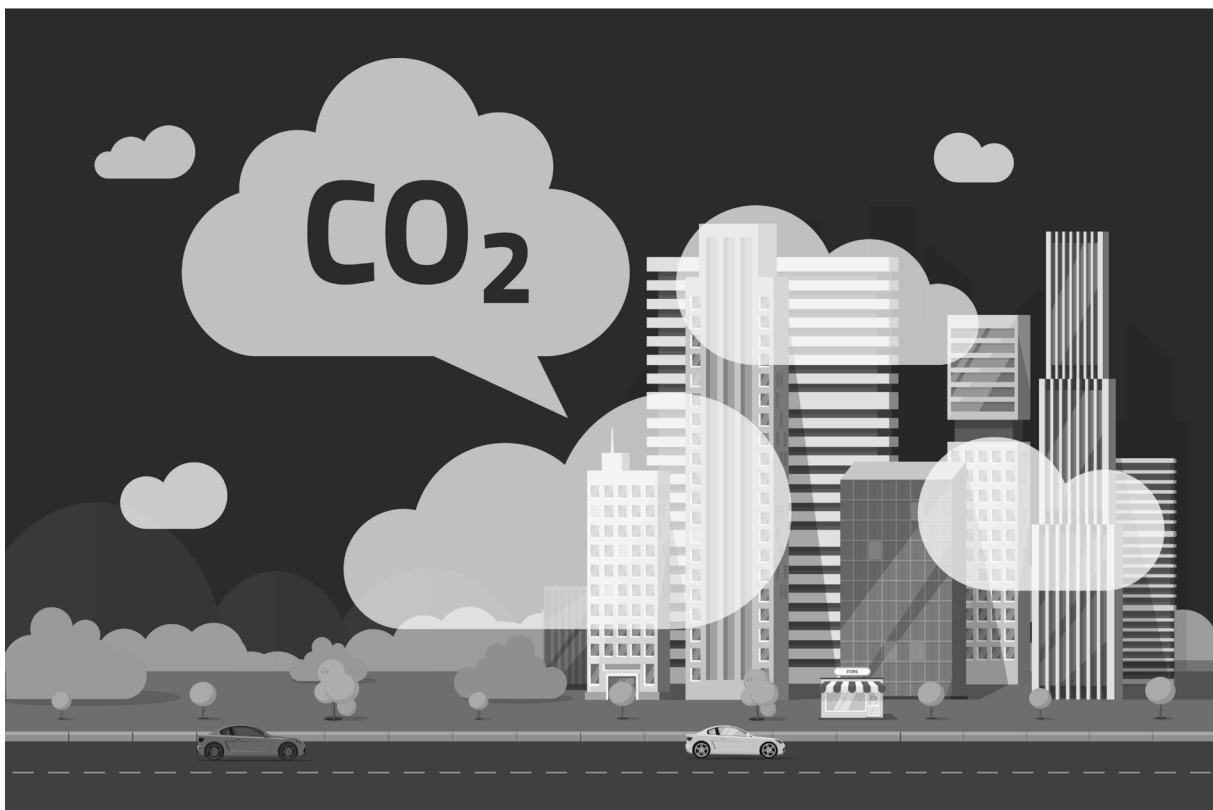
Finally, finance providers, consumers, and public and private bodies should talk to each other to find workable solutions to upscale energy efficiency finance. The EU facilitates such dialogue through Sustainable Energy Investment Forums and the Energy Efficiency Financial Institutions Group (EEFIG).

Showcasing the 10 projects leading the way

This CORDIS Results Pack specifically introduces you to 10 EU-funded projects that have been working to develop tools and solutions that will help to accelerate the financing of energy efficiency investments, as well as offering concrete demonstrations that these solutions have been extensively tested, are ready and can be scaled up further.

Real estate decarbonisation – Assess, manage & avoid carbon risk through the Carbon Risk Real Estate Monitor

Aiming to keep global warming under 2 °C by 2050 is a worthy aim but knowing how to get there would be even better. The CRREM project provides country- and asset-type specific decarbonisation pathways to real estate owners and stakeholders to assess, manage and avoid carbon risk.



It's no secret that many strategic sectors are far from on track to meeting the global warming control targets set under the Paris Agreement. The European real estate sector is one of them. Refurbishment rates are far too low, and energy consumption way too high.

Stakeholders involved in CRREM (Carbon Risk Real Estate Monitor – Framework for science-based decarbonisation pathways, toolkit to identify stranded assets and push sustainable investments) believe this gap is due in part to the lack of specific targets for this market. As Sven Bienert, head of the IREIBS Competence Center for Sustainable Real Estate at the University of Regensburg, explains: "Real estate investors and other market actors never received guidance regarding the 'fair share' of CO₂ emissions of their properties. Besides, tools and software for strategic planning and the identification of climate risks were missing."

CRREM has been answering this need by defining decarbonisation pathways to a 1.5 °C or 2 °C scenario, specific to each country and sub-sector (offices, hotels, retail, etc.). Each trajectory starts from current carbon and energy intensities and provides a clear decarbonisation pathway until 2050.

"Besides the possibility for investors to set their own targets based on these pathways, we have developed a tool that can benchmark property-specific consumption data with these targets. Investors now have software that can effectively bring more transparency to the transition risk. They can also calculate what we call the stranding risk – the level of emissions beyond which the property exceeds its fair share of emissions based on the trajectories," says Bienert. What is perhaps most appealing to stakeholders is the fact that results are also presented in monetary terms.

Feeding this new CRREM software with reliable data was a challenging task in a sector where market data is difficult to access and the amount of required data was enormous. Property stock, current emission levels and future development of emission factors all had to be factored in. Yet, the team succeeded, and their software is now fully operational.



Investors now have software that can effectively bring more transparency to the transition risk.

A reference tool for future investments

Investors have been using CRREM extensively to manage their carbon risk, in what Bienert says is a "very strong uptake from industry." The team will therefore be focusing on dissemination and further community building until the scheduled end of the project in January 2021.

Follow-up funding has already been secured, and a new project is now in its final phase. "We have major investors such as GPIF in Japan and Ivanhoé Cambridge in Canada using our results. Our research even made some noise in the United States, where the American Real Estate Society (ARES) granted the accolade of 'Best European Research Paper' to CRREM's research paper," Bienert notes.

In the long run, the team is confident that their tool will trigger more proactive investments in energy efficiency. It should also be useful to differentiate between good and bad assets and properties when awarding green premiums or discounts.

Focusing on the Assets under Management, those owned and/or managed by the testers and users are valued at over EUR 300 billion, with over 5 million m² of lettable space analysed via the tool. There is no doubt that its impact over the coming years will be substantial.

PROJECT

CRREM – Carbon Risk Real Estate Monitor – Framework for science-based decarbonisation pathways, toolkit to identify stranded assets and push sustainable investments

COORDINATED BY

Institute for Real Estate Economics (IÖ) in Austria

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/785058

PROJECT WEBSITE

crrem.eu



A data portal for standardised energy efficiency mortgages

Energy efficiency projects are doomed to fail without financial support, and the latter cannot be obtained without reliable data for risk analysis. The EeDaPP project, which is part of the wider Energy Efficient Mortgages Initiative, provides a market-led protocol to record such data and make it available to stakeholders.



Green bonds have been on a roll lately. In 2018, issuance of these fixed income securities – which were created to finance climate and environmental projects – reached a value of EUR 40 billion in Europe. But it's not all roses: there is no uniform green bond standard within the EU, even though such a standard is crucial to increase the proportion of green lending and funding.

Thanks to work under the Energy Efficient Mortgages Initiative (EEMI), which comprises the EeMaPP and EeDaPP (Energy efficiency Data Protocol and Portal) projects, such a standard could soon become a reality. "We are working on an Energy Efficient Mortgage (EEM) Label to stimulate market development. It will provide access to relevant, transparent and standardised mortgage information for market participants via a consistent reporting template. Ultimately, the Label will enable the securitisation and issuance of green bonds and raise support for and confidence in EEMs," says project coordinator Luca Bertalot.



This is the first time a group of major banks and mortgage lenders, data providers, companies and organisations from the building and energy industries have proactively come together to discuss private financing of energy efficiency.

Bertalot is the Secretary General of the European Mortgage Federation – European Covered Bond Council (EMF-ECBC), which has a long track record in bond labelling. In 2012 the organisation created the Covered Bond Label – a quality Label responding to market-wide requests for improved standards

and increased transparency in the covered bond market. EeDaPP draws on the success of this label for the specific context of energy efficiency.

Bridging the renovation gap

"This is the first time a group of major banks and mortgage lenders, data providers, companies and organisations from the building and energy industries have proactively come together to discuss private financing of energy efficiency," Bertalot notes.

The idea is to bridge the renovation gap with a private financing initiative acting complementarily to public funds, tax incentives and utility rebates. EEMI thereby supports the EU in meeting its energy savings targets while at the same time bringing the Capital Markets Union on board with the energy efficiency agenda.

"A key innovation in EeDaPP is the design and delivery of a market-led protocol. This protocol enables the large-scale recording of data related to EEM assets (loan-by-loan) via a standardised reporting template. The data is eventually accessed through a centralised portal which continuously tracks the performance of EEM assets. This will facilitate the tagging of such assets for the purposes of energy-efficient bond issuance," Bertalot explains.

The idea of the future portal is that it will have two main components: the staging area, in which the data is stored and made available for analysis, and the business intelligence tool in which the data is aggregated and prepared for the various analysis objectives of user groups.

Thanks to the technical and financial datasets gathered under the project, stakeholders will be able to link the energy-efficient features of a building with its value and loan performance. This creates a better understanding of the impact of energy efficiency on borrowers' probability of default (PD) and on loss given default (LGD). This will identify and demonstrate that EEM assets can be identified for preferential capital treatment based on large-scale standardised data and correlation analysis.

Another major project achievement is the establishment of a definition of EEM. Under this definition, EEMs are intended to finance the purchase/construction and/or renovation of both residential and commercial buildings. They focus on those buildings where energy performance meets or exceeds relevant market best practice standards in line with current EU legislative requirements and/or efforts to improve energy performance by at least 30%.

The EEMI currently has 107 pilot scheme participants, 59 pilot banks and 48 other supporting organisations. A follow-up project for EeMaPP and EeDaPP will be kicked off in September 2020.

It will build upon preceding efforts to develop EEMs in Europe and beyond.

PROJECT

EeDaPP – Energy efficiency Data Protocol and Portal

COORDINATED BY

Covered Bond & Mortgage Council in Belgium

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/784979

PROJECT WEBSITE

eedapp.energyefficientmortgages.eu



Country-specific financing mechanisms for viable energy efficiency investments

The diversity of obstacles preventing energy efficiency investments across Europe calls for country-specific solutions. The E-FIX project has been devising such solutions and testing them in six countries in central and eastern Europe and the Caucasus region.



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Most energy efficiency projects in Europe have to face obstacles, yet the nature of these obstacles tends to vary from one country to another. While some don't have the legal and regulatory frameworks in place to provide effective energy financing

mechanisms, others face a lack of awareness amongst potential end users. Some desperately lack experts in energy efficiency financing, while others benefit from low fossil fuel prices making clean energy simply unattractive.



The project E-FIX (Developing and transferring an innovative Energy Financing miX in order to activate private sector finance for increased investments in sustainable energy projects) was conceived to ensure these differences are accounted for. In Armenia, Austria, Croatia, Czechia, Georgia and Poland, the consortium guided stakeholders in finding suitable, innovative financing mechanisms. “We identified the most relevant mechanisms – leasing, energy performance contracting or crowdfunding – and conducted pilot projects in each country,” says Andreas Karner, team leader energy & environment at ConPlusUltra and coordinator of E-FIX.

In each country, the project consortium pursued three objectives. First, they aimed to have a continued project pipeline beyond 2020. Then, they planned to establish Energy Finance Competence Centres. These centres will have the know-how on energy efficiency financing and will ensure the continuity of the project once it ends. Finally, the team has been working on national action plans to raise the profile of energy efficiency and the different financing mechanisms available.

Taking the case of Georgia, the consortium is currently testing energy efficiency leasing. “Our local partner has developed a comprehensive energy equipment leasing mechanism. It’s an all-in-one package making energy efficiency and renewable equipment accessible to the private sector. Leasing platforms in Georgia are becoming more professional and are starting to provide a larger variety of funding possibilities,” Karner explains.

With its strong market potential, leasing was selected for testing and implementation despite the fact that it had never been considered before for energy projects in Georgia. The team identified several types of relevant pilot projects. These cover construction machinery and equipment, agriculture machinery, road construction machinery, mobile production lines, transportation machinery and renewable energy technologies. In total, the country has so far identified around 30 possible pilot projects, with a total investment value of approximately EUR 5 million.

Going beyond the project's lifetime

In all countries, the project team invited stakeholders to reflect together on the situation of the local energy efficiency market at national level. Together they identified challenges, gaps, obstacles and opportunities, and produced country-specific reports.

“All in all, I would say that the most important outcomes are the development of training material as well as the training of Ambassadors who will ensure that know-how is strengthened at country level. Our training modules cover didactics, crowdfunding,

The most important outcomes are the development of training material as well as the training of Ambassadors who will ensure that know-how is strengthened at country level. Our training modules cover didactics, crowdfunding, leasing, energy performance contracting and project finance.

leasing, energy performance contracting and project finance. A total of 95 Ambassadors have already signed up to our Ambassador Platform,” Karner adds. “Additionally, we now have a pipeline of projects in the six partner countries for the different instruments. These range from a refurbishment project at Vienna International School financed through crowdfunding, to the replacement of heating devices in the Pokrzywnica municipality through energy performance contracting in Poland.”

The team are currently finalising their country-level action plans and a European roadmap on energy efficiency financing. In the long run, Karner hopes that the use of innovative financing for energy efficiency projects will grow in popularity.

“Our project enables new policy, prepares the ground for investments, builds capacities and skills, and triggers energy savings and renewable energy production. We anticipate at least EUR 19 million of investments, for energy savings totalling 16 GWh/year and renewable energy production reaching around 6.3 GWh/year,” he concludes.

PROJECT

E-FIX – Developing and transferring an innovative Energy Financing miX in order to activate private sector finance for increased investments in sustainable energy projects

COORDINATED BY

ConPlusUltra in Austria

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/785081

PROJECT WEBSITE

energyfinancing.eu



Reduced risk for SMEs contemplating energy efficiency

The ESI Europe project brings about a turnkey solution for SMEs wary of the risk of investing in energy efficiency. Its approach has been presented to relevant SMEs in Italy, Portugal and Spain. It is already supported by major insurance companies and financial institutions.



SMEs may be a motor of innovation, but energy efficiency remains somewhat of a black hole for them. Once the decision to invest is made, there is no turning back – and very little certainty as to what awaits at the end of the process. Will the huge spending eventually pay off? Can the promises of energy service companies (ESCOs) related to savings really be trusted?

So far, the easiest and safest choice in the face of these questions has mostly been status quo. As Daniel Magallon, managing director at the Basel Agency for Sustainable Energy (BASE) explains: "SMEs normally prioritise investments closer to their core business. By doing so, they better control the risks and returns, and avoid squandering already limited resources."

As coordinator of the ESI Europe (Driving Investment in Energy Efficiency through Energy Savings Insurance in Europe) project, Magallon believes in energy savings insurance (ESI) as a

solution to providing SMEs with more guarantees of returns on energy efficiency investments. "ESI reduces risk and ensures energy savings. The model has four main components: A customer-provider contract template; an ESI offered

by local insurance companies; a technical opinion on the project carried out by an independent technical validator (SGS); and access to different sources of competitive financing from local financial institutions," he adds.

Besides this unique combination of mechanisms, ESI's main innovation lies in its so-called Management Information System (MIS). This web-based platform reports on and monitors the performance of each project. It also uses blockchain technology to guarantee the immutability and security of operations.

The MIS essentially provides a platform to facilitate the exchange of information between stakeholders. "The solution provider elaborates and uploads performance reports to the platform, after which the customer approves or rejects the reports. The validation entity manages and verifies the reports when needed, and the insurance and financial institutions have visibility of the performance of the projects they support," Magallon notes.

Attracting SMEs

The purpose of ESI Europe was to bring this combination of ESI solutions to Europe, with a focus on Italy, Portugal and

Spain. Various collaboration agreements have already been reached with the different actors playing an important role in the ESI model.

"We have engaged a total of six reputed insurance companies in the three countries we are operating in. This is an important outcome, since the ESI model is essentially meant to bring end user confidence in energy efficiency. We also enlisted five financial institutions and have been working closely with all these actors on relevant aspects of the ESI model," Magallon says.

Efforts to engage SMEs had started to gain traction before the COVID-19 outbreak and Magallon is confident that the consortium can rebuild momentum later in 2020 and hopes that many of the investments aborted because of the coronavirus will be resumed soon. The team have notably found opportunities in the solar rooftop sector in Spain. "We believe that the ESI Europe model can work even under these difficult circumstances. It reduces the levels of uncertainty in investment," he notes.

The service will be commercialised under the name 'GoSafe with ESI'. If successful, it has the potential to considerably shake up market behaviour by breaking down most of the barriers between SMEs and investment in energy efficiency.



ESI reduces risk and ensures energy savings.

PROJECT

ESI Europe – Driving Investment in Energy Efficiency through Energy Savings Insurance in Europe

COORDINATED BY

Basel Agency for Sustainable Energy in Switzerland

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/785061

PROJECT WEBSITE

esi-europe.org
gosafe-esi.com



A home-based financing model to boost investments in sustainable renovation

An innovative financing model for energy efficiency projects is being tested in different cities across Europe. Its success could be hugely beneficial to achieving Europe's climate goals.



As we suddenly had to live within four walls to slow down the progression of COVID-19, most of us started looking at our homes differently. We resumed long overdue renovation works, while those of us living in cities started dreaming of a nice balcony or terrace. David Cannarozzi, CEO and founder of GNE Finance, believes this 'New Normal' also calls for another drastic change. Now is the time to invest in healthy, connected and sustainable homes.

Introducing PACE

With the project EuroPACE (Developing, piloting and standardising on-tax financing for residential energy efficiency retrofits in European cities), Cannarozzi and a consortium of seven companies, energy agencies, cities and non-profits have been looking to the United States for inspiration. The property assessed clean energy (PACE) financing model has been doing wonders there since 2007. In nearly 40 states, upgrades that increase energy efficiency, harness renewable energy, conserve water or protect against natural disasters can benefit from affordable loans through PACE. The model has already resulted in USD 7 billion (EUR 6.1 billion) worth of energy efficiency and renewable energy improvements to homes and commercial buildings.

"The real innovation lies in local and state governments acknowledging the fact that energy retrofits are a public good. This justifies the use of a tax system to support the collection of loan repayments," Cannarozzi explains. "Besides, PACE programmes pioneered a new way to engage energy services contractors in the sales process. This resulted in a dramatic stimulation of demand for home renovation."

Building a European PACE

As its name entails, the purpose of EuroPACE is to support the EU's clean energy transition by bringing PACE's best practices to Europe and enhancing it. For 2.5 years, the consortium has been assessing market readiness, deploying a pilot in Spain, and supporting leading cities willing to set up EuroPACE platforms. Timing is of the essence: the European Commission has estimated that achieving the current 2030 climate and energy targets will require EUR 260 billion of additional annual investment.

Emulating the American model wasn't a walk in the park. The idea of changing tax legislation was met with scepticism in Europe, but the consortium eventually found a legal solution to implement it by allowing municipalities to participate in repayment and collection. "EuroPACE provides a 'safe conduit' so that municipalities can have an active role in remitting loan repayments from homeowners to private investors. It decreases the risk of payment default, thus attracting cheaper private funding," Cannarozzi notes.

EuroPACE brings its own share of innovations to the European home renovation market. These include: a way to mobilise both private capital and public funds; a simplified and digitalised home renovation process with a one-stop shop (OSS) providing all technical advice, support, training, verification and financing services; and a twofold public policy innovation. "First, we enable public administrations to participate in the debt collection process in case of non-performing loans and defaults to provide security to investors. Then we ensure that the financing is attached to the property, thus converting it into an asset financing," says Cannarozzi.

The HolaDomus programme

All innovations created by EuroPACE are extensively tested in Olot, Spain. The consortium launched the HolaDomus programme there earlier this year. COVID-19 seriously impacted the programme but it didn't prevent it from mobilising nearly EUR 1 million in projects and training/validating 47 contractors. A total of 150 homeowners have already expressed interest.

Following a preliminary legal and fiscal analysis conducted across the EU, Belgium, the Netherlands, Portugal and Spain were identified as the countries where the implementation of EuroPACE is most likely to succeed. GNE Finance has

already recruited Lisbon and Porto to explore the adaptation of EuroPACE via local workshops. Additionally, Valencia (Spain) and Mouscron (Belgium) are planning workshop sessions in autumn 2020.

"Our success depends on cities and regions and their willingness to lead the clean energy transition by developing local eco-sustainable renovation programmes. But EuroPACE

is a flexible model that can truly be adapted to local contexts," Cannarozzi concludes.



The real innovation lies in local and state governments acknowledging the fact that energy retrofits are a public good.

PROJECT

EuroPACE – Developing, piloting and standardising on-tax financing for residential energy efficiency retrofits in European cities

COORDINATED BY

Center for Social and Economic Research (CASE) in Poland

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/785057

PROJECT WEBSITE

europace2020.eu



More predictable outcomes for energy efficiency projects

ICP Europe brings about a much-needed standardisation of processes realising energy efficiency projects. Developers using its certification have been reporting savings much closer to their initial predictions, reducing investment costs in the process.

Any individual or company willing to invest in energy efficiency projects has heard about what stakeholders call the 'performance risk'. There is even a saying about it in the United States: 'Meter and pay or deem and pray'. As Jorge

Rodrigues de Almeida, founder and managing director of RdA Climate Solutions (website in Spanish), puts it: "That really means we are hoping for a result but lack the standards to actually measure it."





EU countries all have different standards for developing an energy efficiency project. We had to identify all legal requirements, frameworks and standards and map them into our own process.

Almeida knows this problem all too well. He has been advising governments and major industries on sustainable energy projects for years. He also helped shape the Investor Confidence Project (ICP). Its goal? Standardising the way energy efficiency projects are developed, documented and measured.

ICP Europe took shape under two distinct projects: ICPEU and I3CP (Industrial and Infrastructure Investor Confidence Project). While the former focused on buildings, the latter put the spotlight on industry and infrastructure projects. Both still suffered from discrepancies between foreseen energy efficiency improvements and actual performance.

"We've been developing standardised protocols and associated tools such as project development specifications, an index of national resources and templates for energy efficiency projects in buildings, industry and infrastructure. For the latter, we specifically focused on street lighting and industry projects," says Almeida.

When the project was kicked off in May 2017, the idea that the standardisation of development and documentation could reduce performance and transaction costs seemed rather abstract. Yet, by the end of the ICPEU project, global insurance and reinsurance provider Munich Re had accepted it and started offering lower insurance rates for ICP-certified projects.

the reuse of waste heat from two fast cooling plants to support the heating demand of three ventilation systems – should enable annual energy savings of 635 MWh in natural gas and 135 MWh in electricity. The investment will pay off after 6.3 years.

Achieving such standardisation was the biggest challenge faced by the consortium, as Almeida points out. "EU countries all have different standards for developing an energy efficiency project. We had to identify all legal requirements, frameworks and standards and map them into our own process. Strangely enough, no one had ever done this before."

Another obstacle was the project developers themselves. "They believe that their way of developing a project is unique and sets them apart from the competition. The hard truth is, it often isn't," says Almeida. What the team found was rather an undocumented and often uncontrolled process that involves multiple spreadsheets, models and separate calculations – a recipe for error and performance gap.

"It's the exact same problem faced by the first wind farm projects," adds Almeida. "Every developer had its own way of evaluating projects until industry and financiers got together to work out a standard methodology. We haven't got that far yet with ICP, but it's a great step forward."

Project developers who first saw ICP as added complexity now seem to agree, whilst the financial sector immediately accepted it as the right approach. Although both ICPEU and I3CP are now completed, the project team is working closely with them to incorporate ICP into their various processes.

From common standards to successful projects

Since then, projects with ICP's Investor Ready Energy Efficiency™ certification have been piling up. In Liverpool, a GBP 13 million (EUR 14.5 million) project successfully improved the energy efficiency and decreased the CO₂ emissions of the three local National Health Service (NHS) hospitals. Retrofits include new gas-fired CHP energy centres, new variable speed drives for motors, plant optimisation, and an extensive lighting retrofit programme. "This project delivered guaranteed savings of 14 500 000 kWh per year, resulting in annual savings of GBP 1.85 million. This is an average energy saving of 50 % and an average carbon saving of 33 %," Almeida notes.

Energy conservation measures (ECMs) implemented at GOURMET's production site in Vienna are another example of a fruitful project enabled by ICP. These measures – which include

PROJECT

I3CP – Industrial and Infrastructure Investor Confidence Project

COORDINATED BY

EnergyPro Limited in the United Kingdom

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/754056

PROJECT WEBSITE

europe.eeperformance.org



Quality assurance for successful energy efficiency services

Building trust in energy efficiency services is key to increasing investment in sustainable buildings. The QualitEE project has been developing quality assessment criteria and assurance schemes in order to make this happen.



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Ever heard of energy efficiency services providers? Some companies looking into new technologies and measures to make more efficient use of the energy they consume definitely

have. But the fact is, most of them have a hard time trusting these providers, and this may partially be due to a lack of information.

QualitEE (Quality certification frameworks for Energy Efficiency services to scale up responsible investment in the building sector) aims to set the record straight by providing reliable tools for quality assessment and procurement. These comprise guidelines for quality assessment, financial assessment, and a procurement handbook. "Our toolkit builds trust between consumers, suppliers and financiers. It offers information related to best practices as well as a framework to establish consensus on the definition of good quality services," says Klemens Leutgöb, coordinator of the project and CEO of Austrian consultancy e7 energy innovation and engineering.

The toolkit can be used for self-assessment, from project development to procurement and delivery. It has been developed in close cooperation with stakeholders and tested through 28 pilot projects in 11 European countries. So far, these pilots have led to 33 GWh of energy savings and over 9 200 tonnes of CO₂ savings each year.

In each of these 11 countries, the team initiated the development of national quality assurance schemes. "We used our toolkit's quality assessment criteria to form the backbone of these schemes. In most cases, they are at the early stages of implementation, but the scene is set to see them come to fruition," adds Rodrigo Morell, project lead for quality assurance schemes and managing director at Spanish consultancy CREARA.

In the end, the project team had to find different institutionalisation approaches to quality assessment depending on the country at hand. While some countries like Spain were already saturated with certification schemes – calling for enhancements of existing schemes rather than new ones – others had none or required new schemes complementary to existing ones (e.g. the United Kingdom).

Thanks to surveys in 15 European countries, the project could also build an extensive database of energy efficiency services markets – covering both energy performance contracting (EPC) and energy supply contracting (ESC) – that can be explored on its official website. The team compared results collected in 2017 and 2019 with earlier surveys from 2013 and 2015. It notably found that EPC markets are growing, that the EPC concept was generally perceived as too complex, and that pressure to cut energy costs drives the entire market.

Stakeholders are generally very satisfied with the work done under QualitEE. Ultimately, the team hopes that the project will stimulate growth by driving improvements in trust, information and standardisation.



We have defined quality assessment criteria that can be applied in the assessment of an energy efficiency service of any size or scope or based on any approach.

Tailored approaches

One of the first things the team identified through their research is the diversity in scope of energy efficiency services projects. QualitEE pilot projects tend to reflect this reality, with investments ranging from EUR 20 000 spent on lighting replacements to EUR 8.5 million invested in deep building retrofits.

Likewise, there are various local nuances in markets across Member States. This called for a flexible approach, as Leutgöb explains. "We have defined quality assessment criteria that can be applied in the assessment of an energy efficiency service of any size or scope or based on any approach. They reveal whether the critical components for success have been addressed in the development of the service rather than forcing a particular approach or standard contract. Besides, we have defined a master set of quality assessment criteria at the European level. It sets a common framework for national adaptations that accommodate local market nuances."

PROJECT

QualitEE – Quality certification frameworks for Energy Efficiency services to scale up responsible investment in the building sector

COORDINATED BY

e7 energy innovation and engineering in Austria

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/754017

PROJECT WEBSITE

qualitee.eu



SMARTER makes a case for greener buildings

So far, both banks and owners have been reluctant to invest much money in energy-efficient buildings. But change is underway. The SMARTER project provides evidence of the benefits of 'going green', while linking committed builders with their future customers.

Making green homes is not so much a technical challenge as it is a financial burden for owners across Europe. But what if we all got it wrong? What if choosing the lowest bidder was just a short-term bias, and the right way to look at work

investments was to consider the monthly cost of ownership? One thing is certain: without getting financial institutions on board, energy-efficient buildings will never reach their full potential.



"It's time to borrow responsibly and build wisely," says Steven Borncamp, project director at the Romania Green Building Council and coordinator of the SMARTER project (SMARTER Finance for Families – Improving Citizens' Health, Comfort and Financial Well-Being by Supporting Banks, Residential Investors and Solution Providers with Green Homes and Green Mortgage programs). "As they start appreciating the financial risk reduction of loaning money for green homes, banks can lower the cost of their mortgage. Besides, buying green homes is often thought to have financial benefits in the long term. But the truth is, it provides immediate benefits from the first month of ownership."

SMARTER wants us to favour greener homes when making investment decisions. To reach this goal, it helps families re-evaluate the way they view the cost of buying a home; switching from looking at the sales price alone to the 'total monthly costs of ownership' of the home which includes the immediate and long-term financial benefits of energy-efficient measures. It also helps investors and developers understand energy performance criteria and demonstrate this performance to homebuyers.

"We help banks define whether a project is truly green. We provide them with research justifying the reduction in mortgage interest as well as data from existing homes for them to verify our predictions," Borncamp explains.

Two platforms, one purpose

The project built two main platforms: the Green Homes Investment Platform, and the Green Homes Solution Providers ecosystem. On the former, stakeholders can follow developments in residential green finance. "The platform includes timely research on how 'green' affects financial risk and performance, key developments of interest to the banking and investment communities, and even information on ongoing residential projects," Borncamp notes. "We are currently completing a 'soft launch' to gather feedback from partners and the community."

Green Homes Solution Providers, on the other hand, is an ecosystem of companies providing services, materials, technologies and other products necessary to bring a green residential project to life. It's great for homeowners, but also for the companies themselves who can instantly increase the number of project opportunities ahead.

SMARTER considers all stakeholders with comprehensive documentation or 'toolkits' for each group. "We analysed the large and growing body of research materials on green finance and green home performance. We considered the link between greener homes and reduced mortgage default risk, as well as many other related topics. Finally, we ascertained how we can best partner with local and national governments to apply the same green finance principles to low-income housing," Borncamp adds.



Buying green homes is often thought to have financial benefits in the long term. But the truth is, it provides immediate benefits from the first month of ownership.

Over 10 000 housing units have already been certified or will soon be, representing over EUR 1.5 billion of project value across the 12 participating countries. According to Borncamp, this demonstrates a wide market acceptance and shows this is not a niche market as it is often misconstrued to be.

By the time the project comes to an end, the project team will focus its efforts on involving new countries, notably by recruiting other organisations. Borncamp hopes the banking sector will increasingly reward sustainable projects as a result of SMARTER, while citizens will better understand the added value in terms of quality, comfort, wellness and financial security.

PROJECT

SMARTER – SMARTER Finance for Families – Improving Citizens' Health, Comfort and Financial Well-Being by Supporting Banks, Residential Investors and Solution Providers with Green Homes and Green Mortgage programs

COORDINATED BY

Green Building Council in Romania

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/847141

PROJECT WEBSITE

c2e2.unepdtu.org/smarter



Innovative financial instrument can accelerate the deep renovation of Latvia's Soviet-era buildings

By creating an entirely new financial instrument that enables long-term financing with affordable conditions and terms, the SUNShINE project has overcome the main barriers to energy-efficient renovations. Ongoing renovation projects aim at a reduction in energy consumption of up to 60%.



The Soviet era didn't exactly shine through its residential architecture. From the 1950s to the late 1980s, low-cost residential buildings commonly known as Khrushchyovka sprouted up across Eastern Europe. And time didn't do them any favour. In Latvia for instance, most buildings keep deteriorating at a worrying pace in spite of subsidies. "Without a significant acceleration in the pace of renovations, most of the multifamily buildings will become uninhabitable," says Marika Rosa from Riga Technical University.

When these buildings were constructed, energy efficiency wasn't a concern either. But things have changed. They usually consume 50 to 60% more energy than necessary, whilst the EU aims to reduce buildings' energy consumption by at least 32.5% before 2030. So why not tackle both issues simultaneously?

"Renovating an existing building costs less than a quarter of the cost of building a new one. It can bring high energy efficiency standards for at least the next 30 years, and residents can remain in their home during the works," Rosa explains. This is precisely what the project SUNSHINE (Save your bUildiNg by SavINg Energy – towards 202020m2 of deeply renovated multifamily residential buildings), which brings together Latvian stakeholders, proposes.

A new financial instrument

By creating an entirely new financial instrument that enables long-term financing with affordable conditions and terms, the project overcomes the main barriers to energy-efficient renovations. These include the fact that such renovations would normally cost more than what owners are willing to pay, that energy cost savings do not fully cover the investment, and that renovating is not necessarily a priority for families.



Without a significant acceleration in the pace of renovations, most of the multifamily buildings will become uninhabitable.

SUNSHINE provides a standardised, long-term energy performance contract for deep renovation. Energy service companies (ESCOs) are directly in talks with apartment owners and understand exactly what they are paying for. "Transparency of the fee structure in the standardised energy performance contracting (EPC) was a key issue we worked out. The contract also provides clear guarantees related to energy efficiency, indoor climate and performance, along with new maintenance practices. Instead of acting upon complaints, ESCOs now proceed to a previously scheduled maintenance," Rosa adds. In addition, the project tackled a significant barrier preventing ESCOs from engaging in energy retrofitting projects: improve ESCOs' balance sheet capacity to take on more projects. SUNSHINE set up the Latvian Baltic Energy Efficiency Facility (LABEEF) with the aim of forfeiting receivables from EPCs and therefore reducing the debts on ESCOs' balance sheets.

The project successfully enabled 31 projects across Latvia, totalling EUR 25.5 million of investments, to be scheduled for implementation. Nine of them are already at an advanced stage of development and the remaining ones should be completed within the next 2 years. LABEEF has for instance forfeited a portfolio of six buildings from project partner RenEsco. As Rosa points out, each EPC is equivalent to a 20-year project. "Every year the project must deliver a measurement and verification (M&V) report," she notes.

A website has also been developed to help ESCOs and owners of multifamily buildings to develop their project in compliance with a standardised process. This reduces transaction costs, boosts market development, and provides tools and guidelines to ESCOs interested in the deep renovation of residential buildings.

Beyond these achievements, SUNSHINE has delivered high standards of renovation quality, jobs and stable work opportunities for the construction sector, and a solution attracting private finance. It will help preserve existing housing over the next 30 years as well as support the EU's Green Deal objectives, in particular its renovation wave. "The road ahead is long and difficult," says Rosa. "But even if it is, our team certainly made a point and demonstrated the scalability of our solution."

PROJECT

SUNSHINE – Save your bUildiNg by SavINg Energy – towards 2020m2 of deeply renovated multifamily residential buildings

COORDINATED BY

Riga Technical University in Latvia

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/649689

PROJECT WEBSITE

sharex.lv



Innovative financing solution for mid-scale energy efficiency / renewable energy investments in industry

SMEs cut off from access to investors now have a chance to bring their energy efficiency and renewable energy projects to fruition, thanks to a new solution developed under the TrustEE project. The platform provides access to technologies, technical assessment and financing. It considerably reduces risk for all stakeholders involved.



If you're an SME owner and want to invest in low-carbon or energy-efficient production processes, chances are you've struggled to get support from investors. The truth is, you're not alone. Even though the technology is there to save up to 10 % in energy and provide 50 % of the remaining needs from renewables (depending on the technology), third-party investments are far from easy to obtain.

There are numerous reasons for this lack of enthusiasm. Banks and investors lack the technical know-how, the transaction costs are high, and the projects often lack necessary credit and performance guarantees. To make things worse, there are neither standardised procedures, nor industrial standards available.

"Renewable energy (RE) and energy efficiency (EE) are not realised despite a well-done design. The risk is generally assessed as too high due to a lack of technical expertise in RE/EE," says Christoph Brunner, CEO of AEE INTEC and coordinator of the TrustEE (Innovative market based Trust for Energy Efficiency investments in industry) project.

From assessment to investment

TrustEE gets around these problems with a new, tailor-made solution to support investors. Instead of leaving them with information they don't understand, TrustEE handles the whole process. It screens industrial efficiency and renewable projects, optimises them through a technical assessment, and offers flexible refinancing. Its platform is specifically built for what Brunner calls 'mid-range' projects. These cover projects with almost no access to external financing, low EE/RE capacity and a lack of specific know-how, but committed to industrial decarbonisation.

"Should the project assessment be positive, TrustEE will add it to its portfolio. The platform already includes thermal EE, solar process heat, biomass and biogas. Heat pump projects are ready to be implemented, and PV, optimised control systems and other technologies will follow shortly," adds Brunner.

It is the first time in this sector that a single tool handles project development, assessment and financing. The process results in significantly decreased risk for all involved stakeholders: the industrial end user gets access to low-risk EE/RE solutions with low impact on their balance sheet; technology suppliers

can push their solutions and get their capital ready for new projects; and investors trusting the 'TrustEE stamp' can finally integrate bankable EE/RE projects into their portfolio.



Overall, TrustEE is a two-way approach, standardised project assessment as a basis for innovative financing. The EE/RE technologies implemented will be steadily extended in the coming months outside the project.

The three groups of stakeholders were involved across all project phases to ensure the platform's commercial success. "Their feedback led to the constant improvement of the TrustEE concept and handling of submitted projects. Additionally, they were involved in continuous testing and further development of the TrustEE platform," explains Brunner. "The

final solutions and project results address their needs and we are convinced that our approach will contribute significantly to industrial decarbonisation."

The consortium is now busy commercialising their solutions. The TrustEE securitisation vehicle (which purchases the receivables and converts them to green bonds and tranches offered to investors on capital markets) is ready to be implemented, whilst the assessment solution has been transferred to a commercial platform with an investment volume of more than EUR 10 million. "Overall, TrustEE is a two-way approach, standardised project assessment as a basis for innovative financing. The EE/RE technologies implemented will be steadily extended in the coming months outside the project," Brunner concludes.

Specifically, commercial plans will first focus on Austria, Germany and Sweden, before being extended to other European and third countries.

PROJECT

TrustEE – Innovative market based Trust for Energy Efficiency investments in industry

COORDINATED BY

AEE INTEC in Austria

FUNDED UNDER

H2020-ENERGY

CORDIS FACTSHEET

cordis.europa.eu/project/id/696140

PROJECT WEBSITE

trust-ee.eu



Since its launch in 2016, the Sustainable Energy Investment Forums (SEI Forums) initiative has aimed to work with national stakeholders to boost large-scale investment and financing for sustainable energy. While relying on local experts and public authorities in EU Member States, the initiative is coordinated by the European Commission (DG Energy and EASME).

SEI Forums is organising a series of events across the EU to showcase best practices in developing investment projects and programmes in sustainable energy, and engage in dialogue with the financial sector, public authorities and all stakeholders involved in delivering investments in sustainable energy.

The SEI Forums' events have a focus on energy efficiency investment in public and residential buildings, as well as, occasionally, in SME and industry segments. The approaches discussed include the de-risking of such investment, and facilitating it through financing schemes, dedicated funding programmes, and holistic approaches such as those offered under the one-stop shop formula. This way, the events support the implementation of several EU-driven policy and legal endeavours, including National Energy and Climate Plans, Long-term Renovation Strategies, Recovery and Resilience Plans, and the implementation of new EU funding programmes and financing initiatives.

The current SEI Forums contract will run until 2023.

For more information, please see:

- Sustainable Energy Investment Forums initiative: bit.ly/3c3axFh
- National Energy and Climate Plans: bit.ly/35Fcg2B
- Long-term Renovation Strategies: bit.ly/3keokvr
- National Recovery and Resilience Plans: bit.ly/2RINufv
- Energy Efficiency Financial Institutions Group: eefig.com

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RESULTS PACK ON ENERGY EFFICIENCY AND BEHAVIOURAL CHANGE

In this Results Pack we showcase seven innovative EU-funded projects that demonstrated efficient, cost-effective and socially acceptable technology solutions that motivate consumers to engage in basic energy-saving behaviours.



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