



# How to launch ambitious energy retrofitting projects in your region?



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649730. The content of this report reflects solely the Author's view and the European Commission, EASME Agency, is not responsible for any use that may be made of the information it contains.



# 1. CITYnvest project description

In the current economic, environmental and energy landscape, in line with the European 2030 Climate and Energy Targets (27% decrease in energy consumption, 40% decrease in greenhouse gases emissions and 27% development of renewable energy), the energy retrofit of public buildings no longer represents a choice, but rather a necessity and an emergency. There is a massive potential for investments in energy retrofit all over Europe and every euro invested generates profitable **energy savings, reduction of CO2 emissions** and furthermore, **boosts the local economy** (mobilisation/creation of more than 2,000,000 jobs in Europe). In the **fight against climate change**, energy retrofit therefore offers a financial opportunity to meet ambitious European objectives (EU targets for 2050 require energy savings of up to 80% in the building sector) while providing **energy security**.

Nevertheless, public entities are often reluctant to implement energy efficiency renovation projects due to a lack of knowledge of all the potential innovative solutions and financial schemes. CITYnvest is an EU wide initiative focused on supporting and replicating **successful innovative financing models** for energy efficiency renovations in buildings, featuring models based on Energy Performance Contract (EPCs), third party financing, revolving funds, cooperative and others. Innovative models implemented all over Europe have been analysed and serve as a source of inspiration. (See [www.citynvest.eu/content/comparison-financing-models](http://www.citynvest.eu/content/comparison-financing-models) for a detailed comparison of the different schemes)

For the last three years, CITYnvest has been supporting European local authorities in implementing financial solutions for energy efficiency renovations of buildings. Field actions in **3 pilot regions, Liege (Belgium), Rhodope (Bulgaria), Murcia (Spain)** and a large scale capacity building programme in 10 countries (Italy, Romania, Latvia, Lithuania, France, Hungary, Belgium, Spain, Bulgaria, the Netherlands) offer a first-hand experience. Constraints and barriers such as governance/regulatory framework, political commitment, technical know-how or financial environment to energy efficiency investments at the local level have been identified, analysed and key recommendations are formulated. The investments done in the pilot regions are monitored and key success factors are determined.

Amongst the 3 pilot regions, Liege acts as a role model as its one-stop-shop dedicated to energy retrofit was already launched prior to CITYnvest, and has launched so far EPCs for nearly 60 million euros. Liege's key elements are modelled and replicated.

## CITYnvest objectives

- Building capacities and skills of local authorities.
- Triggering energy savings in three pilot regions in Belgium, Bulgaria and Spain.
- Preparing ground for investments in energy efficient deep renovations of public buildings.
- Shaping regulations and policies on local, national and European level.
- Creating sustainable jobs

## 2. CITYnvest Pilot Regions

CITYnvest project has supported the pilot regions of **Liege**, **Rhodope** and **Murcia** owing to their significant local potential for building retrofitting and their strong commitment to be frontrunner players in the energy transition in their territories.



## Pilot Region Liege

Prior to the launch of CITYnvest, the pilot region Liege had already committed to improve energy efficiency in public buildings through the creation of the RenoWatt one-stop-shop. An initiative driven by GRE Liege and still ongoing.

RenoWatt acts as public ESCO and supports public entities in Province of Liege to launch large energy retrofitting projects through Energy Performance Contracts (EPCs) guaranteeing long terms energy savings. RenoWatt dispenses technical, legal and financial expertise.

Liege provides a practical training and a real-time case-study of how to set up a large scale energy retrofit project. Drawing on its experience, from the scratch to the signature of EPCs, Liege's best practices are identified and generalized through CITYnvest. The compelling model established in Liege through RenoWatt is used as a key element in the development of the Rhodope and Murcia projects.

### RenoWatt results

- 12 local authorities involved and 1 hospital
- 5 EPCs
- 59 million euros investment
- 134 buildings impacted
- 34% reduction of energy consumption
- Mobilization of more than 300 directs job and 782 indirect jobs

Much attention has been paid to the socially responsible aspect of the tendering process such as promotion of local employment, training clause, fight against social dumping, restrictions on sub-contracting.

Thanks to the dynamic initiated by RenoWatt, the first EPCs dedicated to hospital sector was implemented in Belgium.

On the 31st of May 2017, The European commission and the Berliner Energy Agency awarded the price of the "**Best European Energy Service**" to RenoWatt.

The objective through CITYnvest project is to replicate the RenoWatt's approach to the entire Walloon Region via expertise sharing and technical solutions modelling.

## Pilot Region Rhodope

Association of Rhodope Municipalities (ARM) is an NGO created with the main aim to provide general support to its participating municipalities. Due to the lack of specific expertise in building retrofitting projects and in securing financing, ARM has decided to collaborate with the Sofia Energy Centre (SEC). Both have integrated the CITYnvest project in order to bring the knowledge about innovative financing schemes suitable for the local conditions and speed up the energy retrofitting by setting up a suitable structure. The goal is to tailor Liege approach to Rhodope Region and to ensure it fits with local constraints and reality.

Rhodoshop, the new one-stop-shop dedicated to energy retrofitting, acts as a central procurement agency focusing on public buildings and street lighting systems.

6 out of the 22 municipalities from the ARM (Smolyan, Devin, Chepelare, Banite, Nedelino and Zlatograd) are actively involved in their energy retrofitting plan thanks to the CITYnvest dynamic.

## Pilot Region Murcia

Murcia region is exploring synergies for energy rehabilitation of the public owned buildings of the regional government.

The Government of the Region of Murcia has mandated the Directorate General for Energy, Industry and Mining (DGEAIM) of the Regional Ministry of Economic Development, Tourism and Employment to develop and implement an Energy Efficiency Plan for the renovation of the building stock owned by the regional authorities. Directorate General of Heritage (DGP) and the Institute of Promotion of the Region of Murcia (INFO) are actively involved in this process, with INFO providing technical support to both entities.

The purpose of this Efficiency Plan for the energy rehabilitation of public administration buildings in the Region of Murcia, complying with European directives and with the ambition of raising awareness among different society groups about the importance of energy saving and energy efficiency projects.

In Murcia CITYnvest target is to provide expertise and knowledge to speed up the plan implementation by assisting in the setting up of a suitable organisation to act as a Program Delivery Unit (PDU) facilitating the execution of the projects. The PDU is hosted by DGEAIM.

### 3. CITYnvest achievements

#### Pilot Region Liege

- Set up of the one-stop-shop RenoWatt<sup>+</sup> open to all public authorities across Wallonie (already 35 public entities involved)
- Pre agreement from the EIB for an ELENA subsidy to cover the new large-scale project RenoWatt<sup>+</sup>
- Future Launch of the one-stop-shop RenoWatt<sup>+</sup> with a planned investment volume of 100 million EURO for 500 public buildings
- Drawing on the CHRH experience to launch new EPCs specifically dedicated to hospital sector (Hospitals in Wallonia engaged in the retrofit dynamic since October 2017)
- Wide dissemination of Renowatt model in Flanders region, Brussels region and new sectors (hospitals and SME's)

#### Pilot Region Rhodope

- Granting of PDA assistance H2020
- Federating 6 municipalities in an ambitious retrofit project
- Launch in September 2017 of Rhodoshop, a one-stop-shop for energy efficiency investments involving 6 municipalities in Rhodope region, first of its kind in South-East Europe.
- Development of 2 projects pipelines, aiming 8,8GWh/year of energy savings:
  - 42 public buildings identified for refurbishment in the region  
Investment needs: 11,5 MEUR
  - Street lighting improvements identified in 46 settlements in the region  
Investment needs: 1,7 MEUR

- Promotion and increasing the number of EPCs in the region, thereby putting the energy efficiency market on a solid and sustainable basis for the future.

#### Pilot Region Murcia

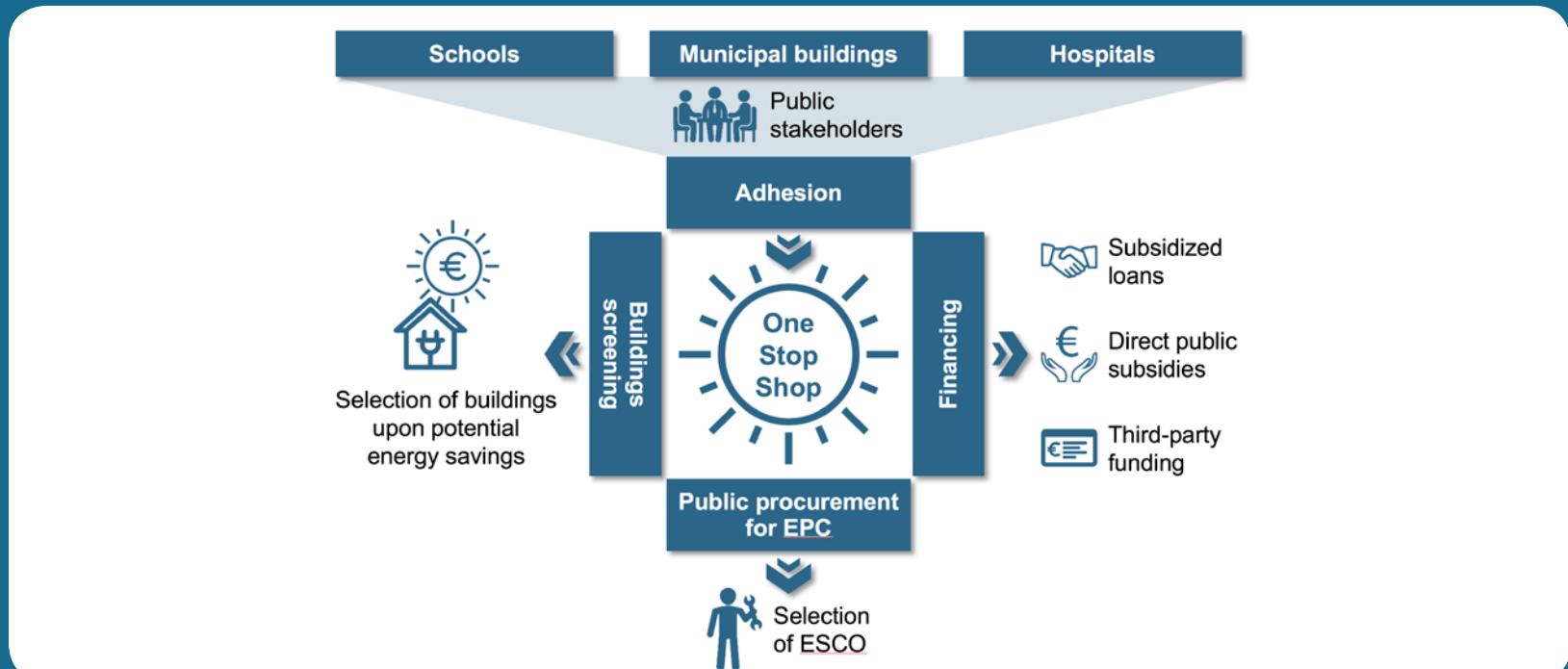
- Implementation of an enhanced collaboration system DGEAIM-DGP-INFO: Information on buildings shared in a cloud computing system, with the objective of making a substantial and permanent improvement of the energy inventory of the regional park of public buildings.
- Development of a business plan for the energy efficiency renovation of some 400 public buildings
- 1,8D million investments triggered for the implementation of the energy efficiency plan for the renovation of the Murcia buildings stock
- Launch of public tendering for certification and energy evaluation of 30 Institutes of Secondary Education schools
- Publication of procurement notices of a second energy evaluation contract for 116 secondary education buildings
- Publication of a third energy assessment contract of 450-500 primary schools
- Promotion of energy efficiency and upgrading of professional skills

## 4. Launching ambitious retrofitting projects

### Added value of a one-stop-shop

- Neutral and non-profit organization
- Unique and permanent contact with public authorities
- Expertise in energy issues
- Deep knowledge of public sector specific constraints
- Public-public cooperation: no need for public procurements

- Global solution
  - **Technical:** Assist the public entities to **select buildings** and energy **efficiency actions**
  - **Financial:** Gives to the public entities a clear view on the **balance** of energy works **costs** and **energy** savings, identifies **financing opportunities**
  - **Legal:** Launch and strict follow up of all the **legal procedures** (tendering, collaboration convention,...)



## RenoWatt's specific approach through 3 main axes

During the pilot phase, RenoWat has successfully developed a specific methodology for the implementation of energy retrofit projects for public buildings. This approach seeks the most pertinent solution through 3 main axes:

### 1. Tendering agency

- Adhesion to the tendering agency of all the public entities involved in the project
  - Solidarity amongst the stakeholders
  - Liability and commitment to the project
- Launch and follow up of the public procurement procedures in the name of the public authority
  - Administrative, legal and technical specifications
  - Negotiations with the ESCOs
  - Selection of the ESCO

### 2. EPCs

- A guarantee on forecasted energy savings (If the savings are not met, the ESCO pays 100% of the difference)
- Global solution
  - Conception
  - Energy retrofit works (HVAC, insulation, replacement of windows...)
  - Performance Maintenance
  - Financing option
- 10 to 15 years contracts
- Possibility to set the investments out of the SEC 2010 debt boundary
  - Expensive for public authorities
  - EPCs are too long in case of deep retrofit
- Win-Win solution for the public authorities and the ESCO (both parties have a profit in case of extra energy savings)



### 3. Pooling

- Gathering buildings belonging to different public authorities depending on the nature of the building and the potential energy savings
  - Allows small entities with smaller buildings to integrate an EPCs
  - Offers to the ESCO an attractive size of EPCs

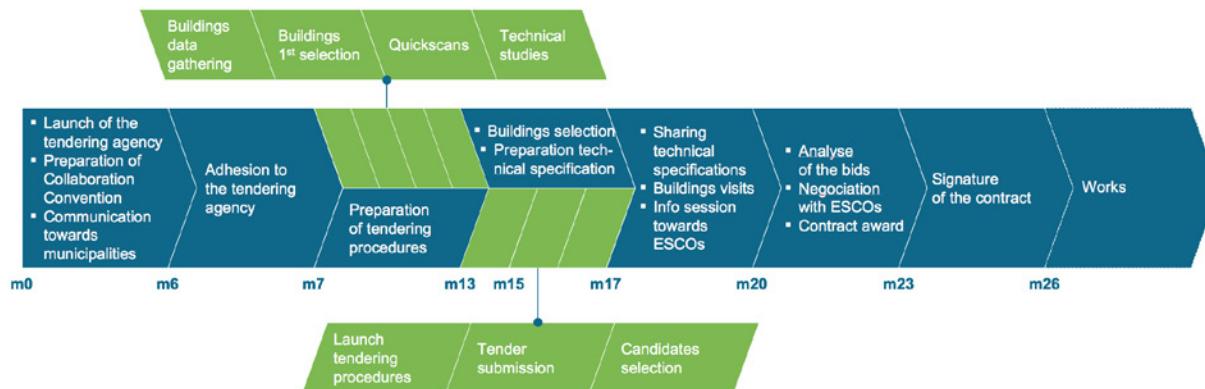
- Diversifies the risk for the ESCO
- Allows more attractive funding conditions
- Reduces public entities costs
- Creates joint liability between the different stakeholders
- Motivates synchronisation in decision

EPCs are not the one and only solution for energy retrofitting. A reliable analysis of the type of retrofit needed is preponderant in order to identify the most suitable solution (insulation/maintenance).

A tailored solution must be offered to all kind of situations and needs. According to the size and type of buildings, market's degree of maturity, required technology or innovative level, EPCs might be not the good solution.

For instance, Liege University and Liege University Hospital wanted to launch an ambitious retrofit works programme of 30 millions euros, using the most innovative solutions in insulation, therefore EPCs were not indicated in this case.

## Timeline to implement energy retrofit projects



# Recommendations

- **Secure political commitment**

Ensure highest level political commitment of the public authority.

- **Create a public body to federate the different public authorities in one ambitious project**

A neutral and public entity acting as a facilitator is crucial to launch ambitious projects. Furthermore the public/public collaboration does not require any procurement procedure.

- **Apply for Technical Assistance subsidies for an efficient take off of the project**

Launching such projects are expensive. Technical Assistance subsidies (such as EEEF -European Energy Efficiency Fund, or ELENA- European Local Energy Assistance, and PDA (H2020)) provide grants for pre-studies to launch energy efficiency projects. Technical Assistance also helps to keep the tempo of the project.

- **Set up a committed multidisciplinary team**

Gathering people with the required skills and expertise (technical, financial, legal, data processing, modelling IT solutions,...)

EPCs are complex, being accompanied by a specialist or an EPCs facilitator is important, since this type of contracts is quite new and complex.

- **Take into consideration the time dedicated to the project**

Do not underestimate the time and the availability required from the technical agent or energy manager of the public entity. Their deep knowledge of the building park (energy data, buildings conditions and materials, ....) is crucial for the implementation of a high quality EPCs.

- **Establish a solid energy data baseline**

High quality data are needed to set up an efficient EPCs. In case of

unavailability of quality data, reference database will be generated during the heating period.

- **Use the IPMVP protocol**

The guaranteed performance of the EPCs is monitored and assessed by an International Protocol of Measurement and Verification (IPMVP).

- **Plan the decision process of the public authorities**

Schedule extra time in all the tendering process. The validation process in public entities takes time and needs to go through different decision-making authorities.

Before any decision, assure a perfect understanding of the whole process for the public entity (by any means: meetings, calls, memos).

- **Determine a rigorous legal framework**

Clearly determine the legal dispositions and functional specifications in order to avoid any surprise during the tender process or during the execution (i.e. not achieving the guaranteed energy performance).

- **Communication, communication and communication, at all level of the public entity involved**

EPCs are new and not yet widely practiced. Public authorities must be reassured of the pertinence of EPCs and its conclusive outcome. EPCs are complex, time is precious, keep informed and reassure the public authorities during the whole process.

But keep in mind the difficulty of execution phase of an EPCs and check the type of retrofit really needed : EPCs are not the only solution!

**Want to join the energy retrofit dynamic?**

Here are your next moves!



## Contacts and infos

For any further information, do not hesitate to contact the CITYnvest team [www.citynvest.eu/contact](http://www.citynvest.eu/contact)

Visit CITYnvest website [www.citynvest.eu](http://www.citynvest.eu)

Info, toolkit and helpful guidance materials available on our internet “Learning Space”

- Liege Pilot region [info.renowatt@greliege.be](mailto:info.renowatt@greliege.be)
  - Rhodope Pilot Region [ivankap@sec.bg](mailto:ivankap@sec.bg)
- Murcia Pilot Region [mui@carm.es](mailto:mui@carm.es) or [Servicioeuropeos@info.carm](mailto:Servicioeuropeos@info.carm)