

## Model 24

# Padova's apartment building retrofit programme PadovaFit!

## Padova urban area – Italy

OWNERSHIP	PUBLIC
<b>Program authority</b>	Municipality of Padova
<b>Program Delivery unit</b>	PadovaFIT! Consortium
<b>Implementation Model</b>	Energy Performance Contracting (EPC)
<b>Operating Services</b>	Marketer Assessor Aggregator Facilitator Financial Advisor
<b>Projects Financed</b>	Energy Efficiency (building retrofits) Renewable Energy Resources
<b>Ambition/targets</b>	Investment of 14,8M € in energy efficiency measures
<b>Beneficiaries</b>	Residential apartment buildings and public housing and service facility buildings in the Padova urban area (city of Padova and the municipalities in the area adhering to the project)
<b>Funding Vehicle</b>	ESCOs Financial institutions Investment Fund Risk Guarantee Fund
<b>Financial Instruments</b>	EPC Financing

## Summary

PadovaFIT! is a programme initiated by the Municipality of Padova in 2012 aiming at implementing a large scale housing retrofit programme of energy efficiency and renewable energy sources (RES) measures addressing private households -in particular apartment buildings- and, to a smaller extent, public housing and service facility buildings in the Padova urban area (city of Padova and the municipalities in the area adhering to the project). The retrofit programme is based on the principle of Energy Performance Contracting (EPC).

The programme is designed to facilitate and finance energy efficiency retrofits for mainly private apartment buildings in order to improve their energy performance and achieve substantial energy savings. It specifically intends to support these energy efficiency retrofits based on standardised energy conservation measures per type of building, on ESCO financing and on the creation of the role of “apartment building facilitator”.

PadovaFIT's purpose was also to contribute to the implementation of the Municipality of Padova's Sustainable Energy Action Plan (SEAP) which was building on previously adopted local energy plans. The SEAP, adopted in 2011 by the Municipality (as a signatory of the Covenant of Mayors since 2009) and approved by the European Union in 2012, crystallised the municipality's commitment to meet the energy reduction targets set out by the Covenant.

Within the framework of its SEAP the municipality was actively pushing local policies to support the implementation of energy efficiency and RES measures to retrofit the public and private building stock. This was most desired as the building stock in the Padova urban area was to a large extent built with no attention to energy consumption, e.g. the low energy efficient apartment buildings were averaging building energy efficiency class G, and many households did not have the financial resources or borrowing capacity or lacked the knowledge to improve the living conditions of their dwellings.

PadovaFIT's approach, based on the municipality's previous experiences with public district heating of its own buildings, is to aggregate apartment buildings, representing rather small and differentiated investment projects, in order to increase the scale of the project, allowing for energy efficiency and transaction cost optimisation and making the project bankable.

To this end, the Municipality, as coordinator of the programme, has formed a consortium with experienced local private stakeholders, a cooperative bank, an Energy Services Company (ESCO), a higher education non-profit foundation and an engineering company, willing to collaborate and invest in the development of the PadovaFIT! scheme.

This consortium, which is actually the programme delivery unit (PDU), coordinates and facilitates the whole implementation process, it provides technical support to its beneficiaries and plays an active role in the promotion of the programme and in the training of the apartment building facilitators. It acts as marketer, aggregator, facilitator, assessor and financial advisor.

Based on a foreseen investment amount of around 15,8M €, the programme's ambition is to retrofit by the end of the programme in 2016 at least 200 buildings in the private housing sector and achieve average energy savings of 25%. The investment would target about 2250 apartments, decrease CO2 emissions by around 3,7K tonnes/year, save 15,7 GWh/year of primary energy and produce 2,3 GWh/year of renewable energy.

Based on its 15,8M € investment initiative the programme was able to secure 0,59M € funding from Intelligent Energy Europe (IEE) under the initiative "Mobilising Local Energy Investments – Project Development Assistance" (MLEI-PDA) or 75% of the expected programme delivery costs of about 0,8M € for the period June 2013 through May 2016. The investment initiative would be leveraging the grant way above 25.

In October 2015 5 apartment buildings, representing 97 apartments, had formally adhered to the PadovaFIT! programme. Another 44 apartment buildings, representing 900 apartments and 25 businesses, were in the pace of deliberating their adherence to the programme.

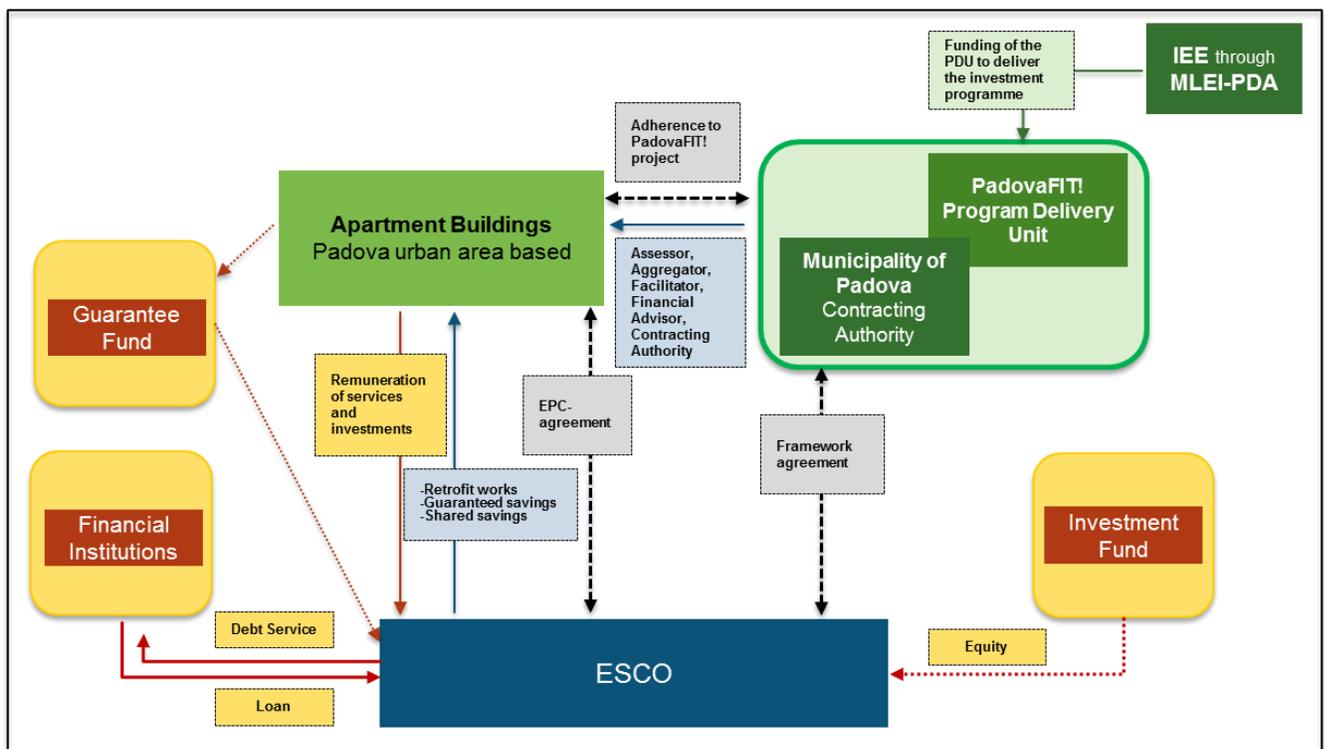
## How does it work?

PadovaFIT! retrofitting programme is based on the principle of aggregation of selected apartment buildings and targets the following types of investments: structural refurbishment or renovation of the building envelope, replacement, improvement or insulation of heating equipment, electrical equipment and distribution systems and installation of renewable energy sources.

- After apartment or building owners or building administrators have expressed their interest to the PadovaFIT! programme they are contacted by a representative of the PadovaFIT! Consortium (i.e. the apartment building facilitator) in order to collect preliminary information and to assess if the apartment building has the necessary characteristics for joining the project.
- For apartment buildings matching the criteria a free of charge high level or “light” energy audit will be performed, and if assessed positively for retrofitting it will be followed by a second in-depth energy audit.
- A full retrofit project, including the results of the energy audit, the design of possible energy efficiency measures and their related energy savings, indication of investment amounts, contract periods and pay back is being provided to the candidate beneficiaries (owners and administrators) with the possibility of detailed explanation by the expert of the PDU and the representative of the municipality during a general meeting of the apartment owners. The meeting deliberates the retrofit project proposal and can give its approval to the formal, though not binding, adherence to the project PadovaFIT!.
- Formal adherence, even if not binding, mandates the PDU to include the adhered project into the procurement process of a Delivery Partner, which could be one ESCO or a group of companies including an ESCO. Before starting the procurement process the PDU aggregates the final retrofit projects of the apartment buildings having formally adhered to the project PadovaFIT!.
- Standard public procurement rules apply in the designation of an ESCO and to this end the UDP, through the Municipality of Padova, initiates a tender process for the execution of the aggregated projects works .
- The ESCO that has been awarded the contract in the framework of the tendering process (based on most technically and economically advantageous offer) will need to present and explain in detail its offer to the different meetings of the apartment owners adhered to the project. It is only after formal approval of the ESCO’s bid by these meetings that the Energy Performance Contract between the ESCO and the beneficiary can be drafted and eventually signed. An agreement between the ESCO and the Municipality of Padova is also concluded.
- The selected ESCO installs the guaranteed energy efficiency measures (foreseen in the course of 2016), delivers the service and carries out measurement and verification during the agreed contract period (typically 10 years).

- PadovaFIT! has chosen for a project financing structure based on third party financing and more specifically financing by the ESCO. The idea is that the majority of the guaranteed energy savings is being used to the reimbursement of the investment to the ESCO and that a small portion of the energy savings, about 5%, is being kept by the beneficiaries as immediate savings on their energy bills (shared savings). Each apartment owner needs to deposit a guarantee of 150€ to the benefit of the ESCO.
- The ESCO can finance the investments based on its own funds (contractually this has to be at least 20%) or, at its discretion from a financial institution or from a funding structure, an investment fund or participation fund. PadovaFIT! , through Banca Popolare Etica, is currently investigating the establishment of an Investment Fund (or Participation Fund) and a Guarantee Fund.
- PDU is provided to the beneficiaries at no cost as a result of its 0,59M € funding by MLEI-PDA

Fig 1. Operational and financial model



## The program delivery unit

A consortium, consisting of the Municipality of Padova and four experienced local private stakeholders is the programme delivery vehicle of the PadovaFIT! energy retrofitting programme.

The consortium operates as programme marketer or promotor, assessor, aggregator, facilitator and financial advisor and through the Municipality of Padova as Contracting Authority.

The consortium consists of the following members:

- Municipality of Padova: Programme coordinator. Acts as facilitator and “institutional guarantor” for the aggregation of smaller investment projects.
- Banca Popolare Etica : Is a cooperative bank inspired on the principles of ethical finance. Within the consortium it is responsible for financial engineering and the financing scheme. It has also responsible for investigating the creation of a private Investment Fund and a Guarantee Fund to partially fund the PadovaFIT! investment programme.
- ITS RED Foundation: a higher education non-profit foundation focused on energy efficiency. The foundation facilitates the adhesion of the apartment owners to the initiative (facilitator of the decisional process).
- INNESCO S.p.a.: Is a socially and ecologically responsible ESCO. It is responsible for the projects feasibility studies and for the selection of the Delivery Partner/ESCO.
- SOGESCA s.r.l.: Engineering and consulting company. Is responsible for the preliminary technical planning and design of selected buildings and for the GIS (Geographic Information System) database for monitoring.

The PDU manages the implementation process of the programme, from promotion of the programme and analysis and assessment of the projects, over assistance to the general meetings of the apartment owners, to public tendering. It provides legal, technical and administrative support throughout the entire implementation process, including drafting and providing of required documentation related to the tender process, technical support for the implementation of the projects, coordination of the tender process, and assistance and mediation during the contract phase between the ESCO and the beneficiaries. It acts thus as programme marketer, assessor, aggregator, facilitator and financial advisor.

The PDU (through ITS RED Foundation) plays a key role in the training of the apartment building facilitator. It has set-up an 80 hours vocational training course, specifically for building managers and administrators, small owners associations, builders associations, owners or tenants unions, etc., aiming at developing diverse competencies in the area of energy efficiency (building law and regulation, energy efficiency measures, energy audit methodology, financial and technical planning) to become facilitator of energy efficiency retrofit processes of private buildings in Padova. From the 24 participants 18 have followed successfully the course.

To assure the working of the PDU a budget of nearly 0,8M€, for the period June 2013 through May 2016, has been made available. Of this funding amount some 75% or 0,59M € has been provided by the IEE under its initiative MLEI-PDA.

<b>Legal structure</b>	None
<b>Shareholder description</b>	N/A
<b>Equity</b>	N/A
<b>Shareholders</b>	N/A
<b>Program dedicated staff</b>	Not available
<b>Program operational costs</b>	Moderate

## Organization and partnerships

**Municipality of Padova:** programme owner and political initiator and project coordinator, drives the programme delivery unit and supports part of the operating costs of the delivery unit.

**Apartment Buildings:** Are the beneficiaries of the programme if adhered to the PadovaFIT! initiative.

**PadovaFIT! Consortium:** is the project delivery vehicle of the PadovaFIT! energy efficiency programme. It is a consortium of the Municipality of Padova with the following experienced local private stakeholders: Banca Popolare Etica, INNESCO S.p.a., ITS RED Foundation and Sogesca s.r.l.. It provides staff, procedures, tools and services for the program. It offers program delivery unit services such as marketing and engagement, project assessment, aggregation services, project facilitation and financial advice.

**Mobilising Local Energy Investments – Project Development Assistance (MLEI-PDA):** Funded under the Intelligent Energy Europe II programme. Addresses local and regional authorities or their groupings to develop projects or packages of sustainable energy projects which are of relevance for the local/regional territorial development and considered to be of ‘bankable’ scale by financing institutions and/or suitable for grant funding by EU financing schemes such as the cohesion or structural funds.

**ITS RED Foundation:** Member of the Padovafit! Consortium. Facilitates the adhesion of the apartment/housing/real estate owners to the initiative (facilitator of decisional process)

**INNESCO S.p.a.:** Member of the Padovafit! Consortium. Feasibility studies and responsibility for selection of Delivery Partner/ESCO. Has performed the preliminary technical and financial engineering.

**Sogesca s.r.l.:** Member of the Padovafit! Consortium. Responsible for preliminary technical planning and design of selected buildings and GIS database for monitoring.

**Banca Popolare Etica S.c.p.a.:** Member of the Padovafit! Consortium. Is a cooperative bank inspired on the principles of ethical finance. Responsible for financial engineering and the financing scheme. It has also responsibility for investigating the creation of a private Investment Fund and a Guarantee Fund to partially fund the PadovaFIT! Investment programme.

**Apartment Building Facilitators:** Building and energy efficiency technical experts appointed by the Municipality of Padova to perform energy audits, convene meetings of the condominium/building owners and participate to the meetings to explain the project and collect the adherences. Have followed successfully the 80 hours training course “Facilitator of Energy Efficiency Retrofit Processes of private buildings/constructions in Padova” (2012).

**Investment Fund (*Fondo di Partecipazione*) and Guarantee Fund:** To fund and guarantee the bankability of the projects/works. Creation of funds under investigation.

**ESCO/Service Delivery Partner:** Energy Services Company selected through public tendering. Performs the work planned under the program and guarantee agreed savings to the beneficiaries.

## Beneficiaries

<b>Beneficiaries</b>	Residential apartment buildings and public housing and service facility buildings in the Padova urban area (city of Padova and the municipalities in the area adhering to the project)
<b>Type of projects</b>	Energy Efficiency (building retrofits)
<b>Operational support</b>	Project facilitation through the Programme Delivery Unit
<b>Financial support</b>	Project facilitation costs and energy audits free of charge

## Funding mechanism

<b>Program delivery unit funding</b>	The dedicated Project Implementation Unit has been funded by MLEI (0,59M €) and by the Consortium members (0,2M €)
<b>Projects Funding</b>	Projects are being funded by the ESCOs
<b>Funding Vehicle</b>	ESCOs Financial institutions Investment Fund Risk Guarantee Fund
<b>Fund size</b>	Not applicable
<b>Fund type</b>	Not applicable
<b>Fund sources</b>	Not applicable
<b>Financial Instruments</b>	EPC Financing

## Achievements

PadovaFIT's programme implementation planning is as follows:

- 2013-2015: collecting of adhesions to the project through meetings with stakeholder organisations (building administrators, constructors/building contractors,...), project

dissemination and promotional activities, public events, conferences and roadshows and dedicated website

- 2015: tendering and awarding of works to one or more ESCO and drafting of necessary agreements and documents
- 2015-2016: signature of agreements between ESCO and beneficiaries and execution of work

Currently 5 apartment buildings, representing 97 apartments, have formally adhered to the PadovaFIT! programme. Another 44 apartment buildings, representing 900 apartments and 25 businesses, have had an energy audit and are deliberating their adherence to the programme.

PadovaFIT! Is still working on the financing possibilities of the Delivery Partner as the project is too small to readily attract the interest of private investors (private equity or venture capital), and because of the high costs to create a capital fund and the high transaction costs due to involvement of finance consulting. PadovaFIT! Is also exploring possibilities of issuance of bonds or mini bonds.

## Contact details

**Comune di Padova**

**Settore Ambiente e Territorio - Comune di Padova**

**Ufficio Agenda 21**

via di Salici 35

35124 Padova - Italy

[padovafit@comune.padova.it](mailto:padovafit@comune.padova.it)

[www.padovafit.it](http://www.padovafit.it)

# Factsheet

## General Info

Country	Italy
Model Name	PadovaFIT!
Date of creation	2011

## Model Description

Ownership	Public/Private
Program authority	Municipality of Padova
Program delivery unit	PadovaFIT! Consortium
Operating services	Marketer Assessor Aggregator Facilitator Financial Advisor
Implementation model	Energy Performance Contracting (EPC)
Types of projects financed	Energy Efficiency (Buildings retrofit) Renewable Energy Sources
Beneficiaries	Residential apartment buildings and public housing and service facility buildings in the Padova urban area (city of Padova and the municipalities in the area adhering to the project)
Geographical coverage	Local 0,4 M inhabitants

## Financial Model Description

Project funding	Private
Project funding vehicle	ESCOs
Financial instruments	EPC Financing
Repayment model	Guaranteed savings agreement Shared savings

## Project risk Profile

Performance risk	ESCOs
Recourse	Unknown
Financial risk	ESCO

## Model Requirements

Staff Requirements	Moderate
Equity Requirements	n/a
Funding Requirements	Moderate Less than 5M €

## Model Key indicators

Investment volume since creation	None
Size of project (or project	Not available

portfolio)	
Level of average energy savings	25%

### Development maturity

Development/implementation stage	Start-up
Operational development maturity	Growth
Financial development maturity	Start-up

### Model Qualification

Level of establishment	Well established
Growth potential	Large
Scalability of the model	Moderate
Replicability of the model	High
Impact on public balance sheet	Low

## Sources

<http://www.padovafit.it/>

<http://www.padovanet.it/>

<http://www.conurbant.eu/en/partners/tutors.php/1088>

Bianchi Marco, L'efficienza energetica e le politiche di sviluppo degli investimenti nelle aree urbane, Banca Popolare Etica, 20 March 2014

De Filippi Federico, A Financing Investment Tool for the retrofitting of private housing in the PADOVA area, 28 May 2015

Luise Daniela, A Financing Investment Tool for the retrofitting of housing and service facility buildings in the PADOVA area, April 14

Luise Daniela, L'esperienza del Comune di Padova: il Piano d'Azione per l'Energia sostenibile e il progetto PadovaFIT!, 14 March 2015

Luise Daniela, PadovaFIT! La riqualificazione dei condomini privati ad uso residenziale: il Progetto MLEI Padova FIT, 17 November 2014

Luise Daniela, Zuin Michele, Pallaro Adriano, Visentin Antonio, PadovaFIT! A Financing Investment Tool for the retrofitting of housing and service facility buildings in the PADOVA area, 28 April 2015

Luise Daniela, Zuin Michele, PROGETTO MLEI - PDA PadovaFIT!, 21 May 2013

Luise Daniela, Zuin Michele, PROGETTO MLEI - PDA PadovaFIT!: A Financing Investment Tool for the retrofitting of housing and service facility buildings in the PADOVA area, 2 May 2013

Zuin Michele, A multi-level governance approach for achieving energy sustainability at local scale, 25 October 2013

Zuin Michele, Betting on the Future: Green industrial areas, 26 June 2013

Piano di Azione per l'Energia Sostenibile del Comune di Padova, Comune di Padova Settore Ambiente, February 2011 (Municipality of Padova's SEAP)

Summary of the MLEI-PDA projects funded under Intelligent Energy Europe. Calls for proposals 2011 and 2012, Intelligent Energy Europe, updated November 2013