



# Energy Efficiency Finance Market Place Bruxelles, 18 January, 2017

## PadovaFIT!

A Financing Investment Tool for the retrofitting of housing and  
service facility buildings in the PADOVA area

Daniela Luise- Municipality of Padova, Italy  
Marco Devetta – SOGESCA



COMUNE di PADOVA



## INITIAL FACTS

- Launch investments in the **private housing building sector**
  - Ca. 16 mil€ / 150 buildings foreseen
- **Bundling of** small & differentiated measures to make them bankable
- **City Council** to act as a **facilitator** and **institutional guarantor**
- A **Delivery Partner** (Energy Service Company) to do the job
- **Repayment model** based mostly on Energy Performance Contracting



# INITIAL FACTS

- WHEN? June 2013 onwards
- WHERE? City of Padova (North-Eastern Italy – ca. 30 km from Venice)
  - 220.000 in. (ca. 400.000 within its metropolitan area)



**University founded in 1222**

**Renaissance city walls**

- WHO? Local Government, Bank, ESCO, Energy Expert, Training Foundation
- FOR WHOM? private, residential condominiums



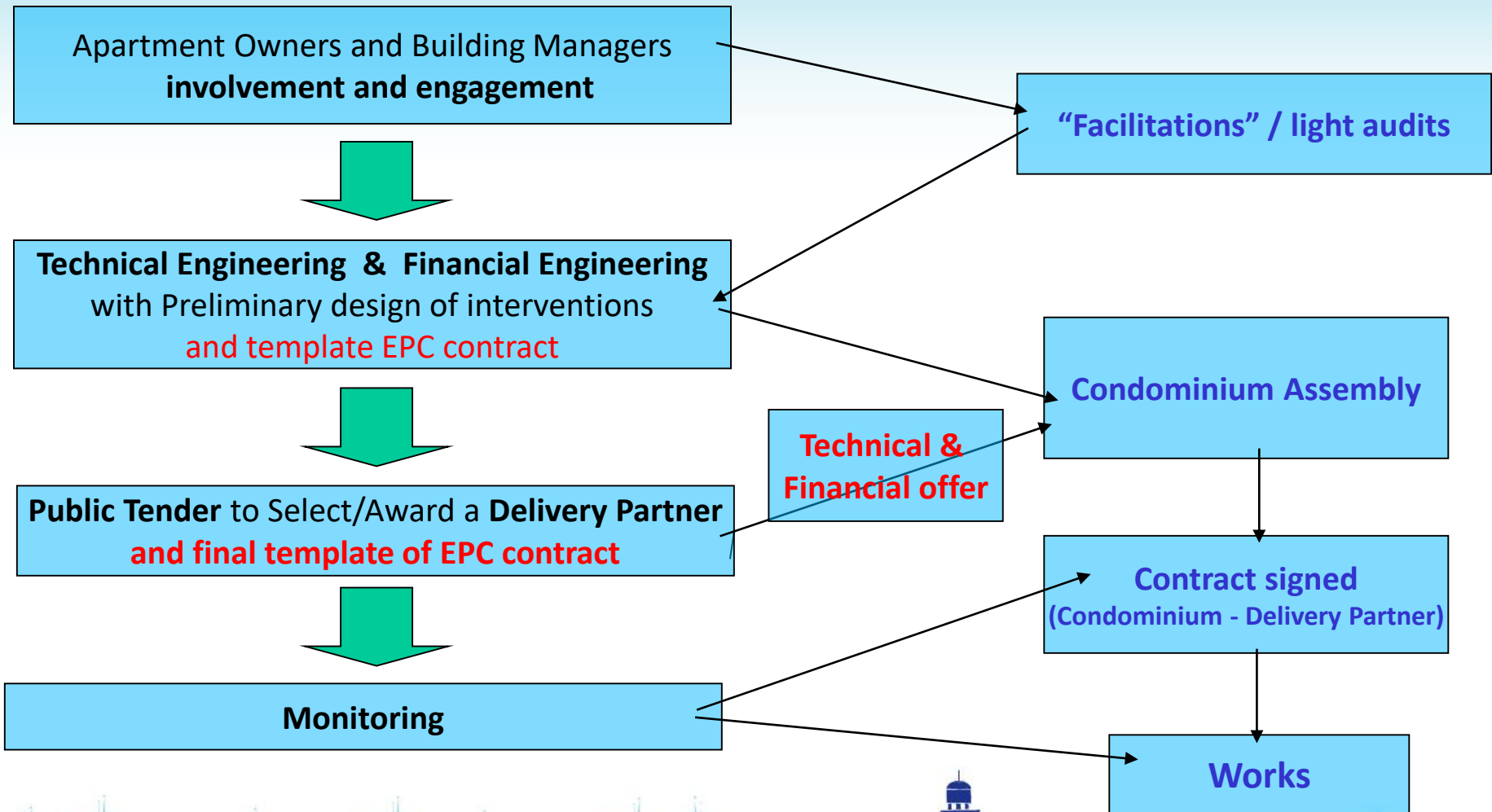
# INITIAL FACTS

- Lots of Class G condominiums
- Average 180 kWh/m<sup>2</sup>/year
- Housing needs during economic boom of 1960s-1970s

- Energy poverty
- Ageing population
- Lack of competencies in energy and Energy Performance Contracts
- General hostility to debts

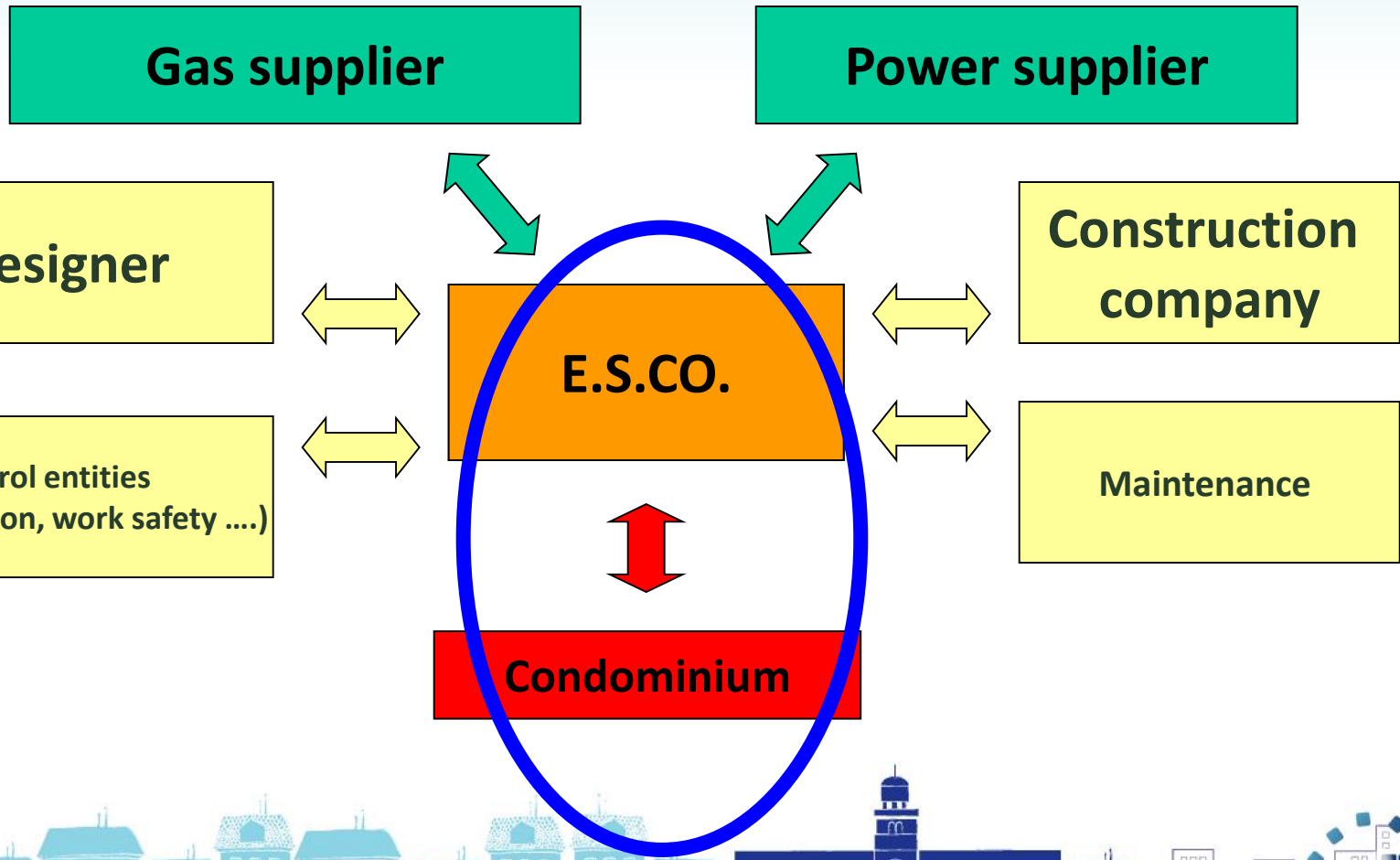


# PROJECT STRUCTURE



# THE DELIVERY PARTNER

## Energy Service Company + Engineering Company



# Stakeholders Involvement & Engagement

- **Different target groups** to address:

- Single Building Managers and citizens
- Building managers associations
- Small owners associations
- House Owners/Tenants Unions
- Builders associations



- Target groups **potential resistance** (change in status quo, lack of knowledge, ...)
- Training of **Facilitators**: a TECHNICAL and PSYCHOLOGICAL work
- Light energy Audits and Condominium **Assemblies** ....



# Stakeholders Involvement & Engagement - the “Facilitators”

- **24 facilitators** trained – public call for participation (19 “passed”)
- **80 hours** training curriculum (created jointly with building managers)
- **Topics:** Legislation, Technical issues, Financial issues, Energy Audit, Facilitation methods and conflicts mediation, Practical simulation, Final test + interview
- Contact **building managers** to:
  - **Explain** the project and technicalities
  - Lead a light energy **AUDIT**
  - Set condominium assembly
- Attend the **assembly** to detail the project and technicalities, potential measures and collect expressions of interest and non-binding subscriptions
- Usually **backed up** by an Municipal Officer

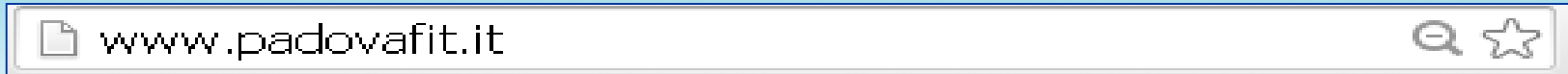




# Stakeholders Involvement & Engagement - the Activities



# Stakeholders Involvement & Engagement - Communication



Padova FIT logo, Comune di Padova Settore Ambiente e Territorio logo, and European Union flag logo are displayed in the header. The navigation menu includes: IL PROGETTO, IL CONSORZIO, COME ADERIRE, I FACILITATORI, L'ESECUZIONE DEI LAVORI, GLOSSARIO, EVENTI, CONTATTI.

**QUANTO CONSUMA IL TUO CONDOMINIO? SCOPRILO CON PADOVAFIT!**

**SCOPRI**

SEI IL PROPRIETARIO DI UN APPARTAMENTO? **SCOPRI COME ADERIRE**

SEI L'AMMINISTRATORE DI UN CONDOMINIO? **SCOPRI COME ADERIRE**

Coordinatore di progetto: COMUNE di PADOVA SETTORE AMBIENTE

Partner di progetto: Banca Etica, INNESCO, red, SOGESA



# Stakeholders Involvement & Engagement - Communication

Accessi a **Business Manager** per gestire questa Pagina.

**PadovaFit**  
@padovafit

**Home**  
Informazioni  
Foto  
Recensioni  
Persone a cui piace  
Eventi  
Note  
Post  
Servizi  
Gestisci tab  
[Crea una Pagina](#)

Modifica informazioni de... + Crea e... Ti piace Altro Contattaci Invia messaggio

**In evidenza per te**

Organizza la tua visita a PadovaFit

Salva Padova

Organizzazione governativa a Padova  
5.0 ★★★★★ · Aperto ora

Cerca post in questa Pagina

Invita i tuoi amici a mettere "Mi piace" a questa Pagina

Progetto comunitario per la riqualificazione energetica dei palazzi di Padova e cintura urbana

"Mi piace": 191  
Piace a Chiara Danese e altri 4 amici

3 persone sono state qui

Informazioni Vedi tutti

Ferdinando Campig... 8 m  
Patti Bellucco 47 m  
Marta Cecchinato 16 h  
Andrea Vedovato 2 m  
Cristina Rinaldi 3 h  
Chiara Danese 16 m  
Vojsava Zagali 3 h  
Fabrizio Zupo 15 h  
Anna Pegoraro 7 h  
Alessandra Castelli 47 m  
Michela Salice 5 m  
Matt Quiki 13 h  
Antonella de France... 2 h  
Carlo G. Giacchin  
Federica Castellini 5 h  
Mesnino Novantatre  
Margherita Nikolaevna 2 h  
Orazio Spiga 5 h



# Stakeholders Involvement & Engagement - State of Play

## • FORMAL SUBSCRIPTIONS:

- subscriptions formalised → 356 dwellings
- ca. 2,5 mil € of potential investments;

## • POTENTIAL FOR FUTHER SUBSCRIPTIONS:

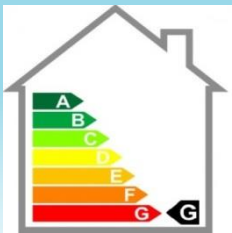
- Engagment of ca. 1.200 dwellings
- 19 Mil€ of potential measures



- Delivery Partner: condominiums for a potential 4mil€

## • SPEEDING UP AFTER selection of DELIVERY PARTNER





# Technical Engineering – Light Energy Audit

## CONDOMINIUM n.1 - STARTING POINT



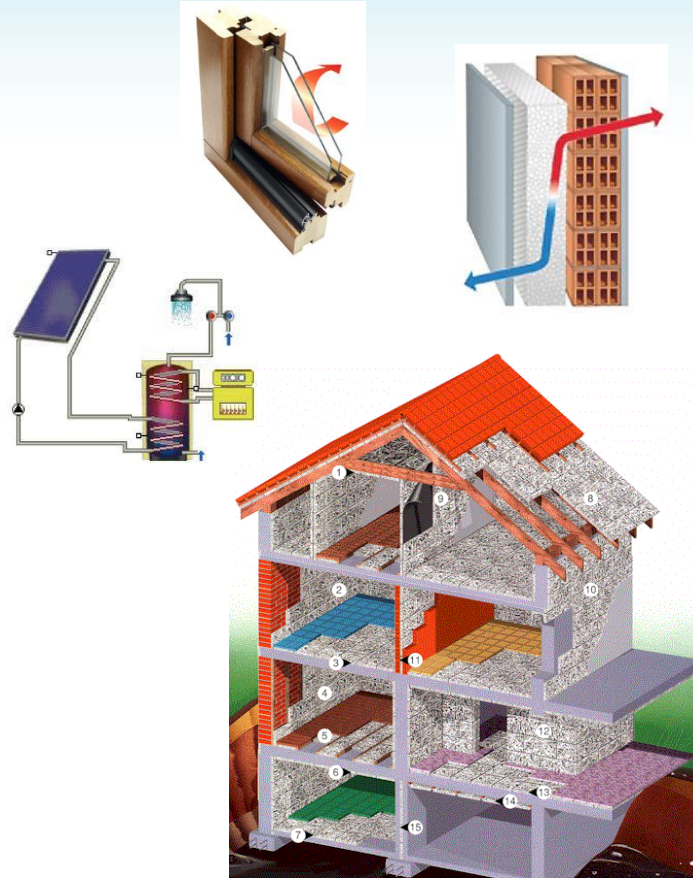
CONDOMINIUM n.1	Padova
Built in	1966
Dwellings	10
Floors heated	3
Square Meters heated	1.750 mq
Window frames	Wood, single glazed
Heating system	<ul style="list-style-type: none"> <li>• type: <b>centralised</b></li> <li>• Installed: <b>1994</b></li> <li>• fuel: <b>gas</b></li> <li>• Plant Power: <b>165 kW</b></li> </ul>

Consumption	Average cons. [kWh, smc]	Average cost [€/year]
Electricity	6.000 kWh	€ 2.000
Gas	22.600 smc	€ 22.000



# Technical Engineering– Light Energy Audit

## Potential measures



# Technical Engineering – Light Energy Audit



## EXAMPLE OF IMPROVEMENT MEASURES

Description	Cost [€]	Energy savings [%]	Money savings [€]	Pay Back <u>(without tax incentives)</u> [years]
<b>Heating system refurbishment:</b>				
- central heating boiler	€ 50.000	23%	€ 5.060	9,88
- individual heat counters				
<b>External Thermal Insulation</b>	€ 58.000	20%	€ 4.400	13,18
<b>Attic insulation</b>	€ 9.000	14%	€ 3.080	2,92
<b>Double glazed windows</b>	€ 47.000	18%	€ 3.960	11,87
<b>Solar thermal plant+ Heat cost allocators (50% need coverage)</b>	€ 18.000	50%	€ 2.750	6,55
<b>Photovoltaic plant (5 kW)</b>	€ 12.000	80%	€ 1.600	7,50



# Technical Engineering – What type of contract?

## CONDOMINIUM VS ESCo

EPC (Energy Performance Contracting) based on certified performance:

ESCo (Energy Service Company) investment paid back according to energy savings achieved

EPC contract highlights:

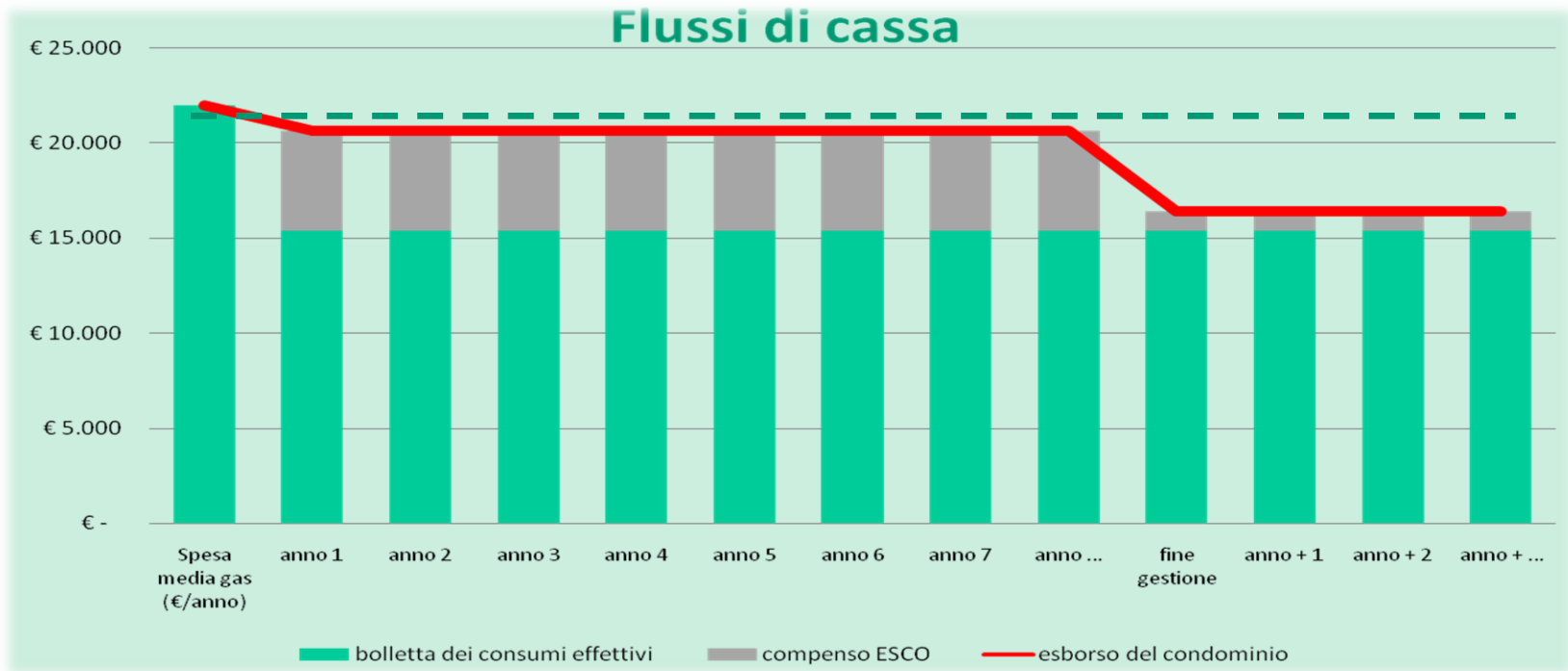
- Energy Audit and project design of works
- Works planning and timing
- ESCo Investment
- Condominium-Esco Contract Template validated by Municipality
- Duration of the contract
- Energy saving % (guaranteed) to be achieved
- Definition of baseline of energy consumption
- Quality assurance and performance monitoring methodology
- Management and maintenance of system(s) installed
- Energy service provider (heating, cooling, lighting)





# Technical Engineering–Why EPC contracts are convenient

- ESCo entirely funds and implement the works + manages all systems installed
- Condominiums start saving a little bit on energy bill right after works end
- When contracts end (normally 9 years) full savings % guaranteed



# Financial Engineering

Studied the financial engineering for the bankability of the measures with structured and/or usual tools - Engaged qualified operators

Initial discussion with **EEEF** – European Energy Efficiency Fund (**measures of public interest** - even though a private ESCo is the actual beneficiary)

- **SCALE:** PadovaFIT alone does not justify the creation of a specific fund
- **MARKET READINESS:** Italian market of existing investment funds on energy not used to bundling of very small measures (only large RES plants)
- **TIMING** and **COSTS:** starting point created for follow up....
- Probably, this action needs a **MIX of tools** (fund for ESCO, regular credit for citizens, insurance scheme to cover risks from insolvency)



# Procurement and Works

- Writing and issuing such a Tender – **no previous experience in ITALY**
- Designing **2 different contracts**:
  - Municipality of Padova - Delivery Partner
  - Delivery Partner - Condominium (template)
- **Monitoring actions** towards the Delivery Partner offers
- **Counselling activities** towards owners and building managers



# Procurement and Works – Contracts activated

## • Delivery Partner selection call (Public Tender)

- Tender framework
- Technical criteria



## • Municipality - Delivery Partner

- Contract between Padova Municipality and ESCO/Construction Partner

## • Delivery Partner - Condominium

- EPC contract template



CONTRATTO DI RENDIMENTO ENERGETICO CON GARANZIA DI RISULTATO E FINANZIAMENTO TRAMITE TERZI

REG.12/083/SI2.645707  
MLEI PadovaFIT!  
Città di Padova (PD)



# Procurement and Works

## Documents to be annexed to the Tender

- Required Refurbishment Plans for **three differentiated standard buildings** (for assessment)
- Technical and financial qualification, 3 years of experience in the field
- 2 years of balance sheet

## Rewarding Elements (among other)

- Guaranteed efficiency > 15% (delivery partner – offered 30%)
- % of savings for the client > 5% (delivery partner - offered 6%)
- Involvement of local workers/firms
- Bringing “own” condominiums (delivery partner – offered 20 buildings)
- Contract duration max 10 years (delivery partner – offered 9 years)





- **Public Tender: October 2015 – March 2016**
- Delivery Partner operations started **June 2016**
- CRISTOFORETTI: among major Italian certified ESCos – 100+ employees
- 1.000+ customers: Public Administrations, Private Buildings, Enterprises
- Yearly turnover of 40+ mil €
- Yearly investments on energy efficiency: 4+ mil €



# Added value for citizens

- **Free energy audit** lead by energy experts
- **Increased knowledge** on Energy issues and Energy Performance Contracting
- **Delivery Partner takes care of all** organisational, technical and financial aspects  
plus management and maintenance of the new plants
- **Heating costs** are blocked/reduced against future increase in fuel costs
- Reduced use of fossil fuels at local level: **reduced CO<sub>2</sub> emissions**
- Improved **comfort**
- Increased **value** of property



# Added Value for Condominiums

## BARRIERS:

- **lack of knowledge** on energy efficiency
- **innovative contract solutions** face opposition by less informed people
- lack of medium-term **planning**: priority given to **maintenance** and urgent interventions
- **delayed/missing payments** limit willingness to invest

## SOLUTIONS:

- take time to **inform, inform, inform**
- make technical/financial offers very **clear and transparent**
- **give «official» support** to the Delivery Partner
- sign **«easy» contracts as soon as possible**





# Added Value for Building Managers

## BARRIERS:

- not always have the technical and legal **knowledge**
- management of innovative procurement can be complicated and **time consuming**
- innovative investment actions need **extra effort** at the beginning and in the monitoring phase – yet no extra remuneration

## SOLUTIONS:

Provide **transparent and independent info** on:

- Turn-key **costs** of the works
- **Performances** expected based on real data and conditions
- Life cycle costs and life expectancy
- Quality of the service **guaranteed** by the Delivery Partner



# Padova FIT! – Lessons learnt

## Which buildings are the most interesting?

- Built in the **20. century** with no recent energy investments
- At least **6 dwellings** (or heated surface  $> 500 \text{ m}^2$ )
- **Centralised** heating plant (10+ years old)
- **Delayed/missing payments** on utilities/condominium bills  $< 10\%$ .
- **Individual heaters**: no EPC but regular contract + dedicated credit line



# Padova FIT! – Lessons learnt

## POLITICAL STABILITY HELPS....!

- **Willingness to change/invest** is influenced by the political framework
- **Incentive schemes and Tax deductions** influence the business plans

**In 4 years of project implementation, since 2013:**

4 different Prime Ministers and Governments  
4 different Mayors

Expecting the **new Mayor** in June, 2017!



# Padova FIT! – Feedback from the Delivery Partner

- **Public Tender and EPC contract template:**
  - Need for **consistency** between Technical Regulations and Civil Code to avoid misunderstandings and the need for amendments
  - In this view, during the development phase of the tender, it would be useful to **involve** ESCOs/Stakeholder associations/Building managers
- **Too much time** between first contacts with condominiums by PadovaFIT! and the awarding of the Delivery partner:
  - some condominiums selected **other contractors**
- Cooperating with a **Public Authority** makes it easier to approach the condominiums and take part in condominium assemblies



# Padova FIT! – Feedback from the Delivery Partner

- Trained people to **communicate** with potential beneficiaries and stakeholders is essential
- **EPC contract template** (as per Tender) should be **flexible** enough:
  - Example: if the condominium has already undergone refurbishment but some works are still missing – delivery partner should be able to target less than 30% of energy reduction
- Close attention should be paid to **National Policies (incentives)** and their constant **evolution**:
  - Example: (Italy) EPCs have been less attractive because tax deductions (applicable to individuals) could not be applied when ESCo was making the investments. Not all countries have a Green Deal like in the UK!



# Padova FIT! ...If we could start over.....

- **Tender documents** and contract templates to be developed ASAP
- Select Delivery Partner very soon – **sign “easy” contracts early**
- **Geographical scale** should be large enough to guarantee demand
- **Building Managers** engaged as facilitators
- Training of **Facilitators** just in time (facilitation actions not too early)
- **Financial institutions** to be engaged from the very beginning
- Engagement of **potential Delivery Partners** in the preparation phase



# CONTACTS



**COMUNE di PADOVA**

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

***Ufficio Agenda 21***

**via di Salici n. 35**

**35124 Padova**

**ph. +39 049 8205021**

**padovafit@comune.padova.it**

**www.padovafit.it**



Co-funded by the Intelligent Energy  
Europe Programme of the European Union