



Cofinanziato dal programma "Energia intelligente-Europa" dell'Unione europea



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Piedmont Region

Sustainable Energy Development Sector

New Financing Models for the Energy Retrofitting of Buildings

15 dicembre 2016 10:30 - 12:30

The proposal

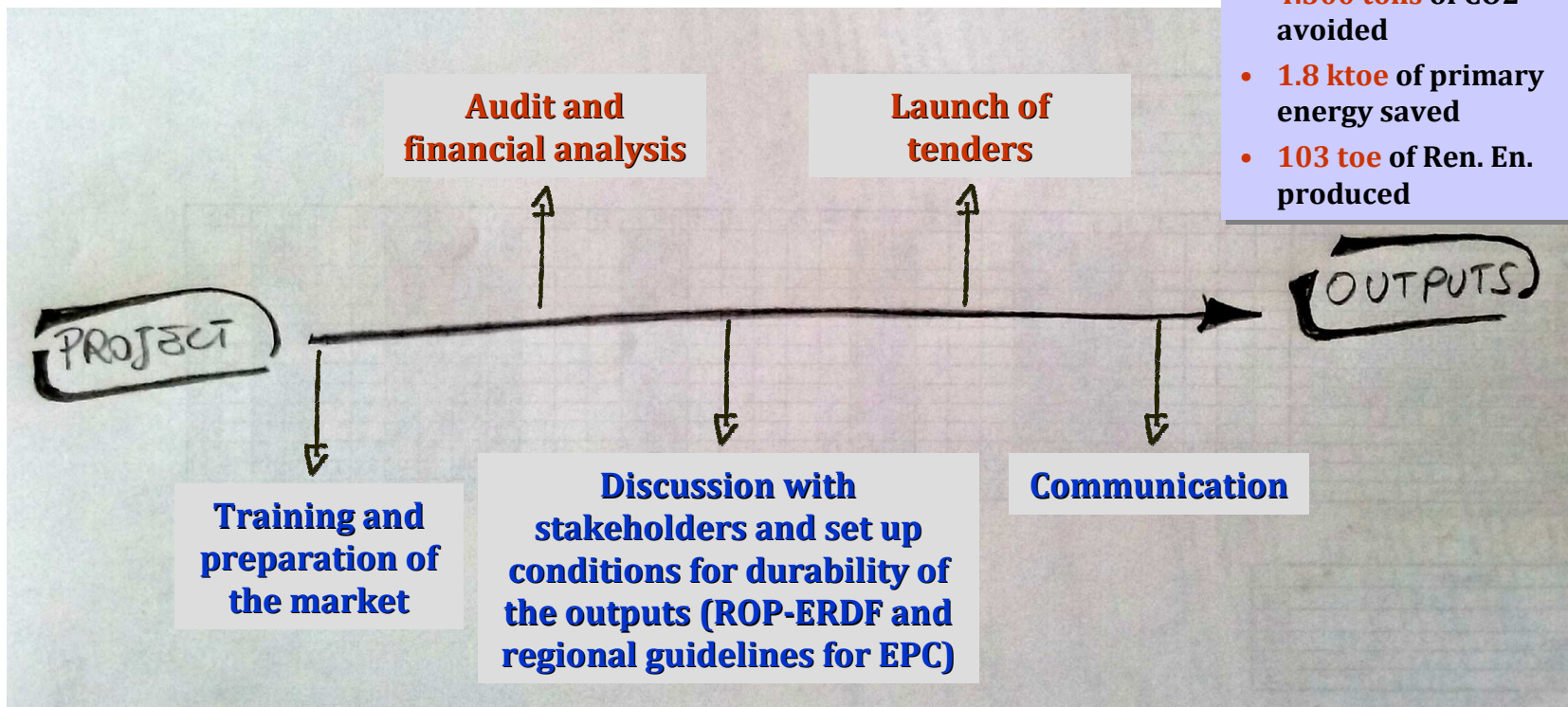
Promote energy efficiency during the refurbishment of public buildings and street lights with EPC and Third Party Investments

Background activities

- 2 preparation meetings with LA beneficiaries (11th and 26th of March 2013 – about 2 months in advance to the submission deadline)
- Desk feasibility studies carried out in order to estimate the potential savings on a selected list of buildings and street lights
- Regional guidelines for EPC to be tested and review
- Financial simulations about sustainability of the approach
- An active Covenant of Mayors network, used to meet and work together

The proposal: outputs and WPs

Tasks for the Investments



- **9.5 M€** of investments in energy efficiency
- Leverage factor: **19**
- **4.300 tons** of CO2 avoided
- **1.8 ktoe** of primary energy saved
- **103 toe** of Ren. En. produced

Tasks for the market

Key point for the proposal

▪ **A strong partnership inside the project:**

- 1 Regional Institution (main tasks: provide durability of the outputs) – Piedmont Region
- 1 Regional institution (main tasks: act as tender contracting authority and coordination of Municipalities) – the Metropolitan City of Torino
- 1 technical partner (main tasks: elaboration of energy audits and financial assessment) – Environment Park
- 1 large City (main tasks: test and replication in the future) – The City of Torino

A large partnership outside the project:

- A selected list of beneficiary Municipalities (outside of the partnership)

Public Buildings

- *One large investment for the City of Torino*
- *Bundling Investments for small and medium municipalities bundled*

.....*Main achievements*.....

Large investment plan for heating boilers in the City of Torino - **Revamping**

WHAT: Change and management of heating systems in 118 public buildings

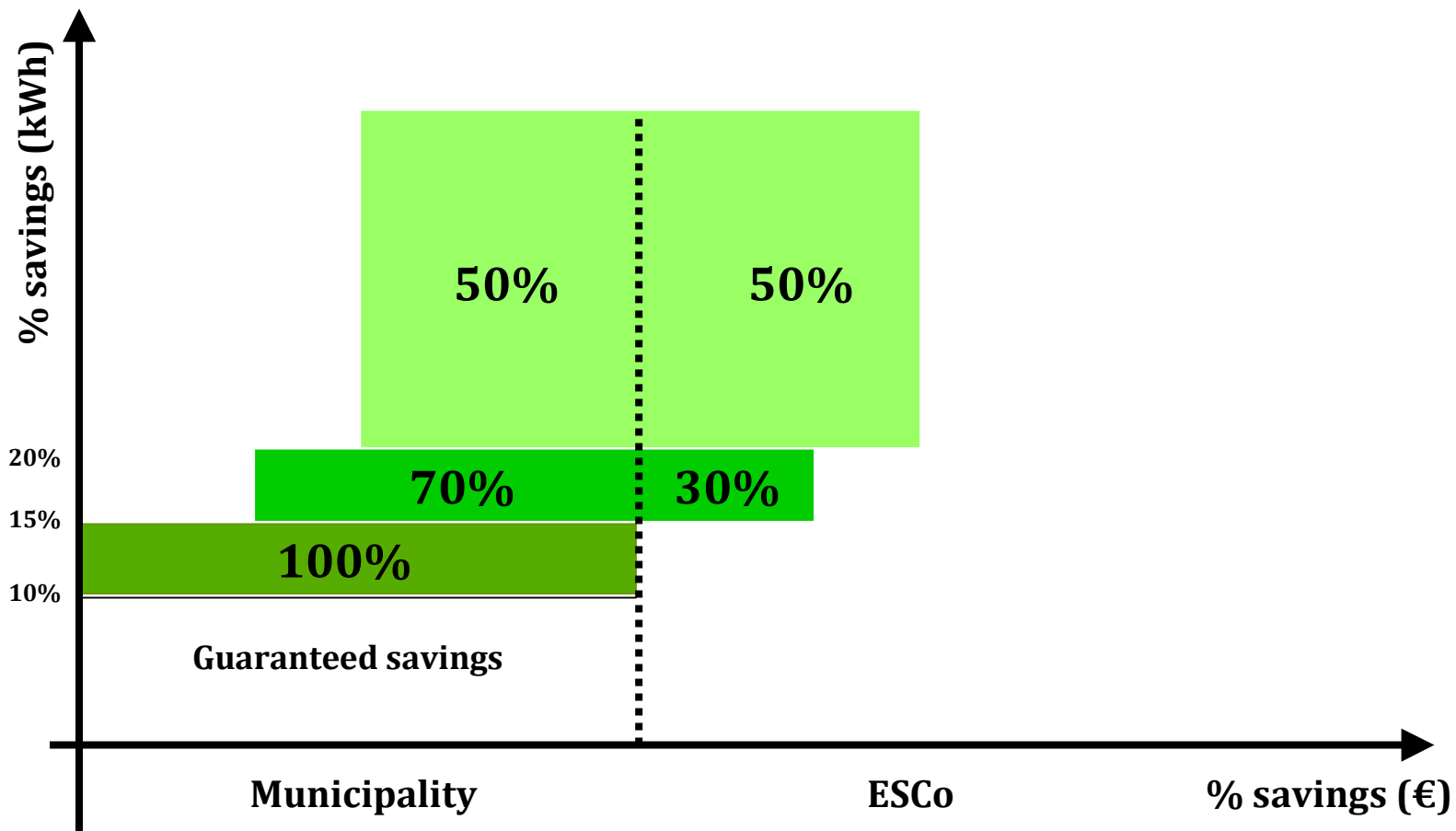
HOW: EPC with 5 years of duration

WHO: The City of Torino and the local Utility IREN

Guaranteed savings: 10% with shared savings in case of over-performance

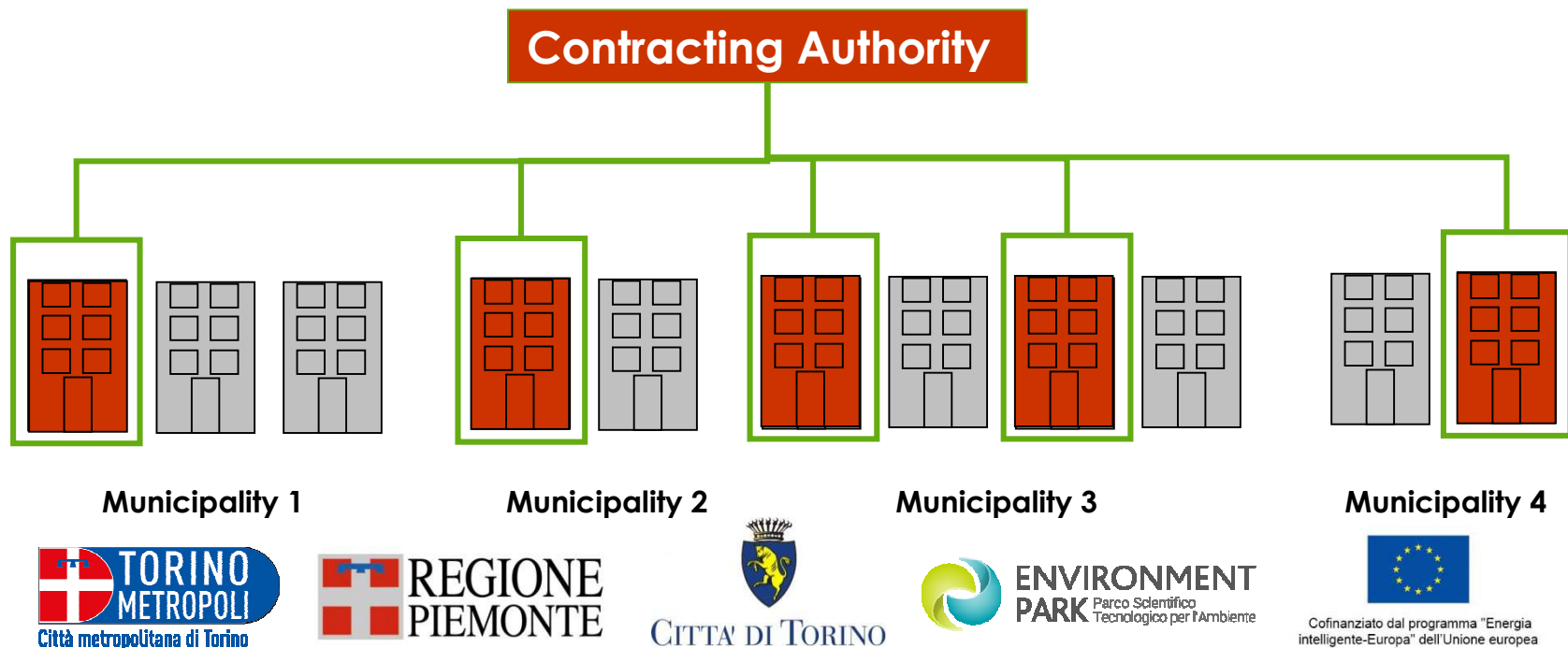
Investments: 11 M€

Shared saving in case of overperformance

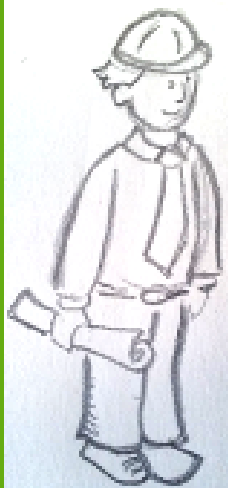


The model: technical/administrative issues

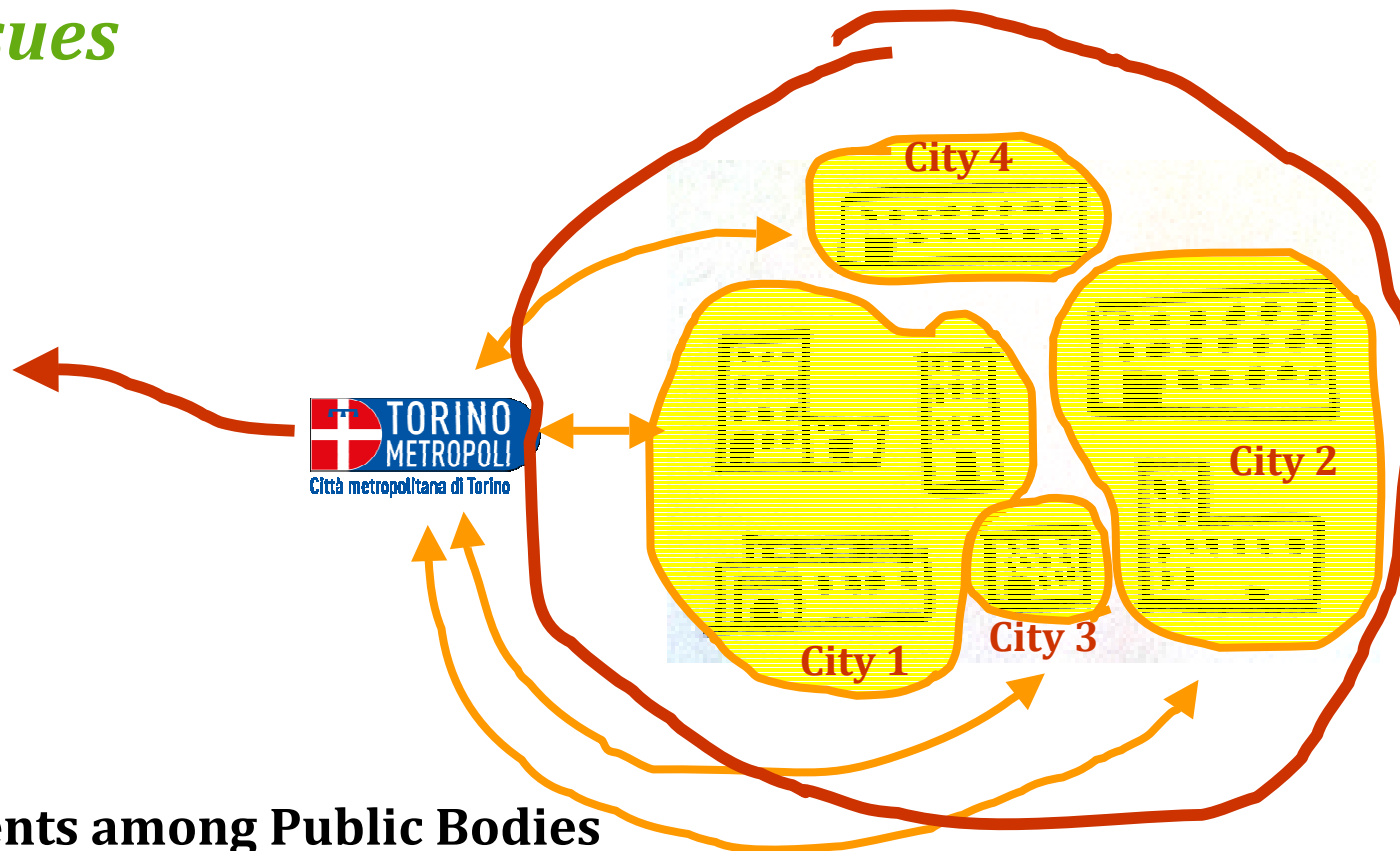
- Few buildings belonging to a range of Municipalities
- Selection of buildings on the basis of their attractiveness for ESCOs
- A binding agreement was signed by beneficiaries Cities and Contracting Body
- We are bundling investments for about 2.5 M€



The model: technical/administrative issues

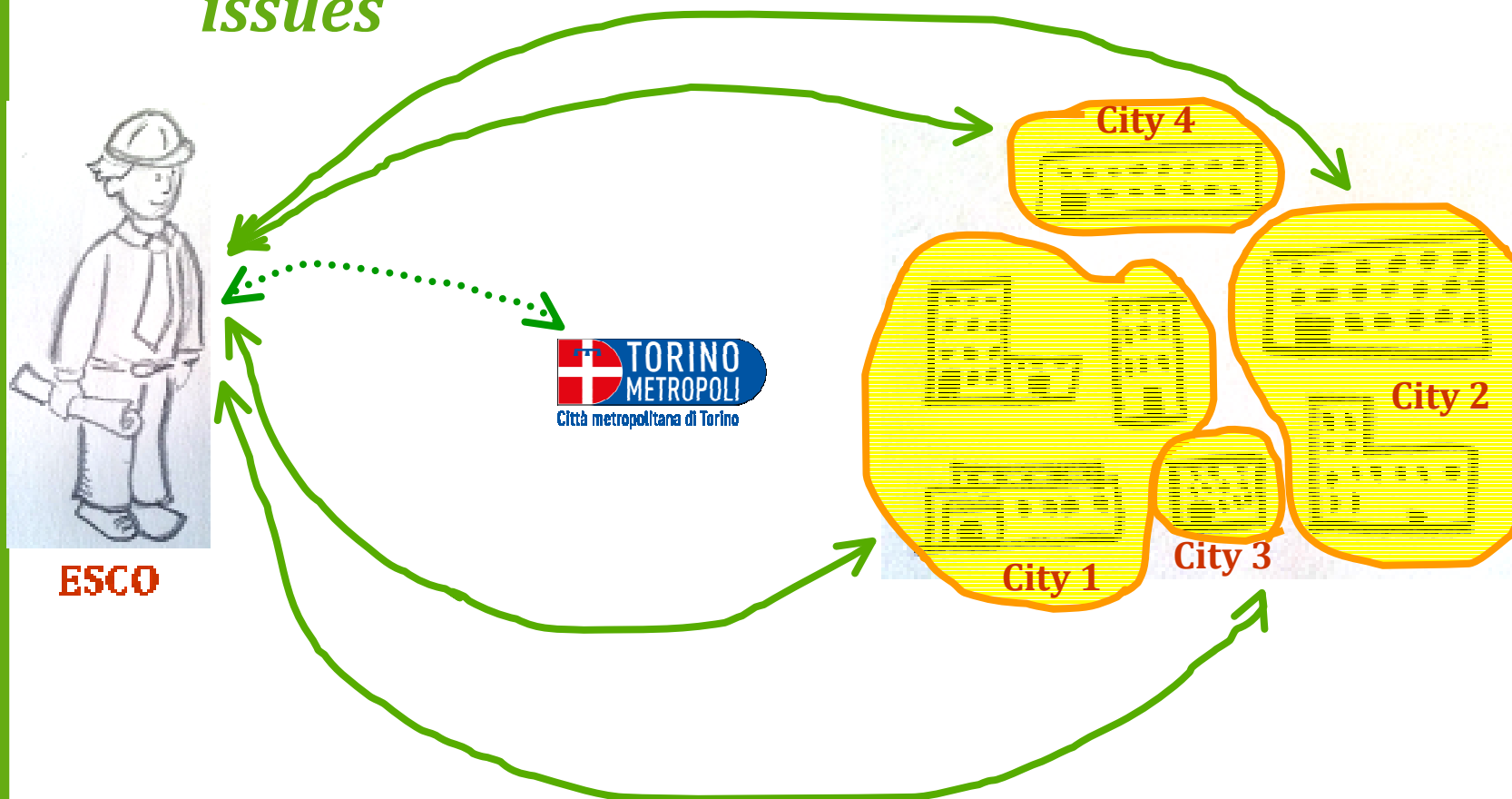


ESCO



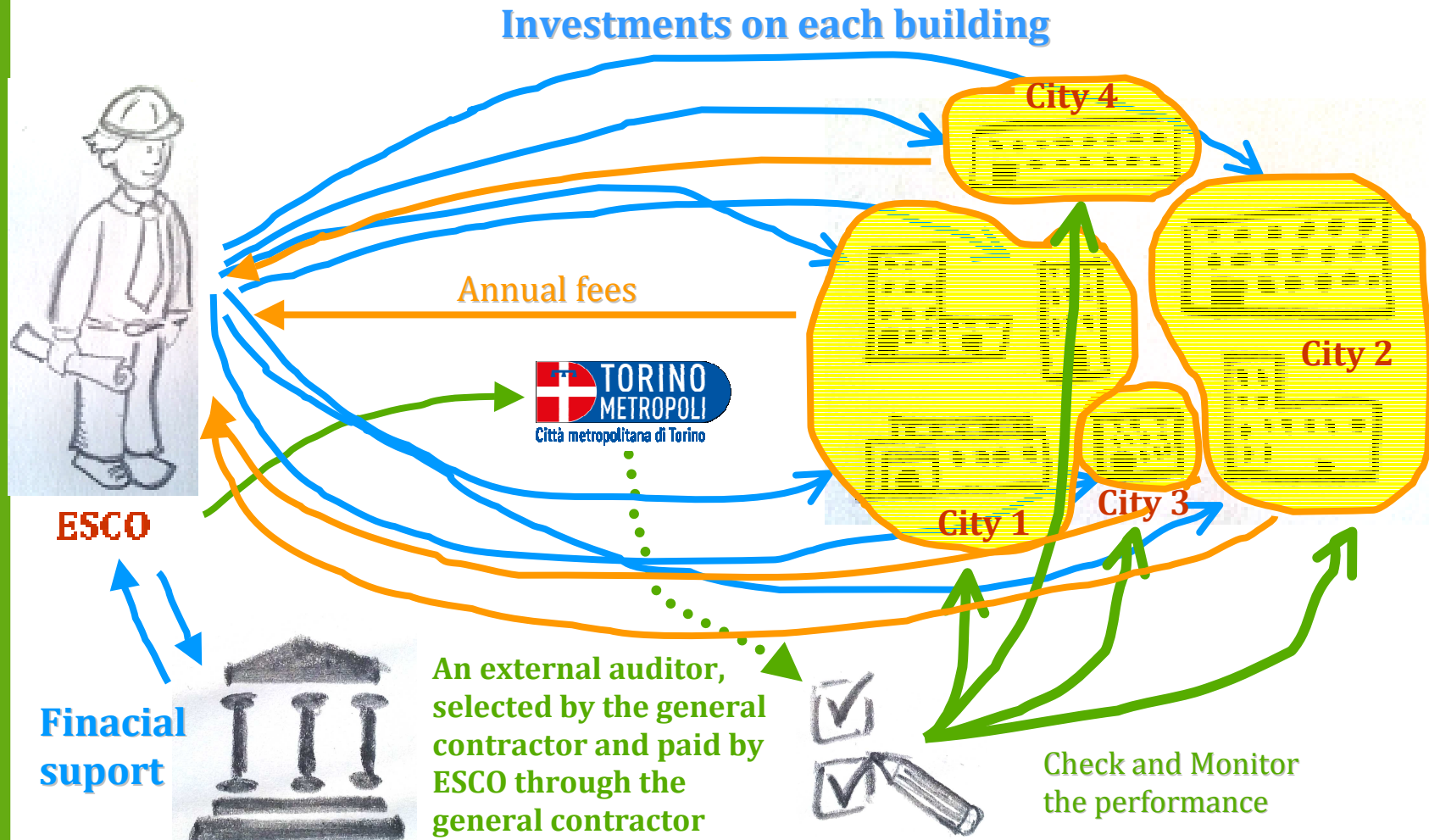
4 Agreements among Public Bodies
1 Procurement process

The model: technical/administrative issues



1 Framework contract
4 Energy Performance Contracts

The model: financial issues



.....*Main achievements*.....

Deep renovation of public buildings

WHAT: energy renovation of 18 public buildings with fuel supply and energy management

HOW: EPC with 13 years of duration (1 year for investments + 12 years for management)

WHO: 5 Municipalities, the Metropolitan City of Torino and Bosch Energy and Solutions Italy

Guaranteed savings: 61% with shared savings in case of over-performance (70-30)

Investments: 3 M€



**Framework Contract signed
on the 22° of November!!**

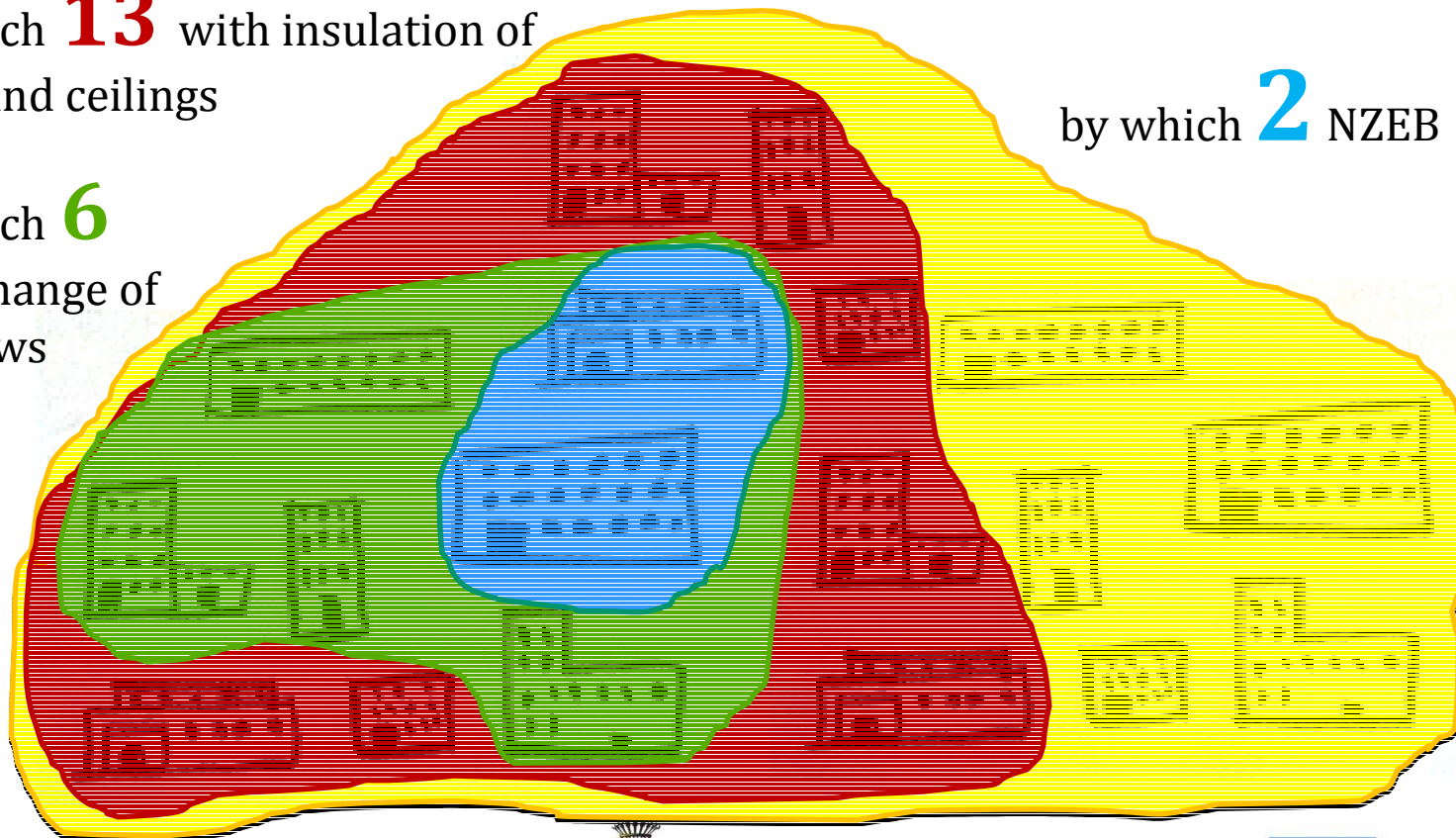
Planned investments for deep renovation

18 buildings with replaced space heating and energy management systems

by which **13** with insulation of walls and ceilings

by which **6** with change of windows

by which **2** NZEB



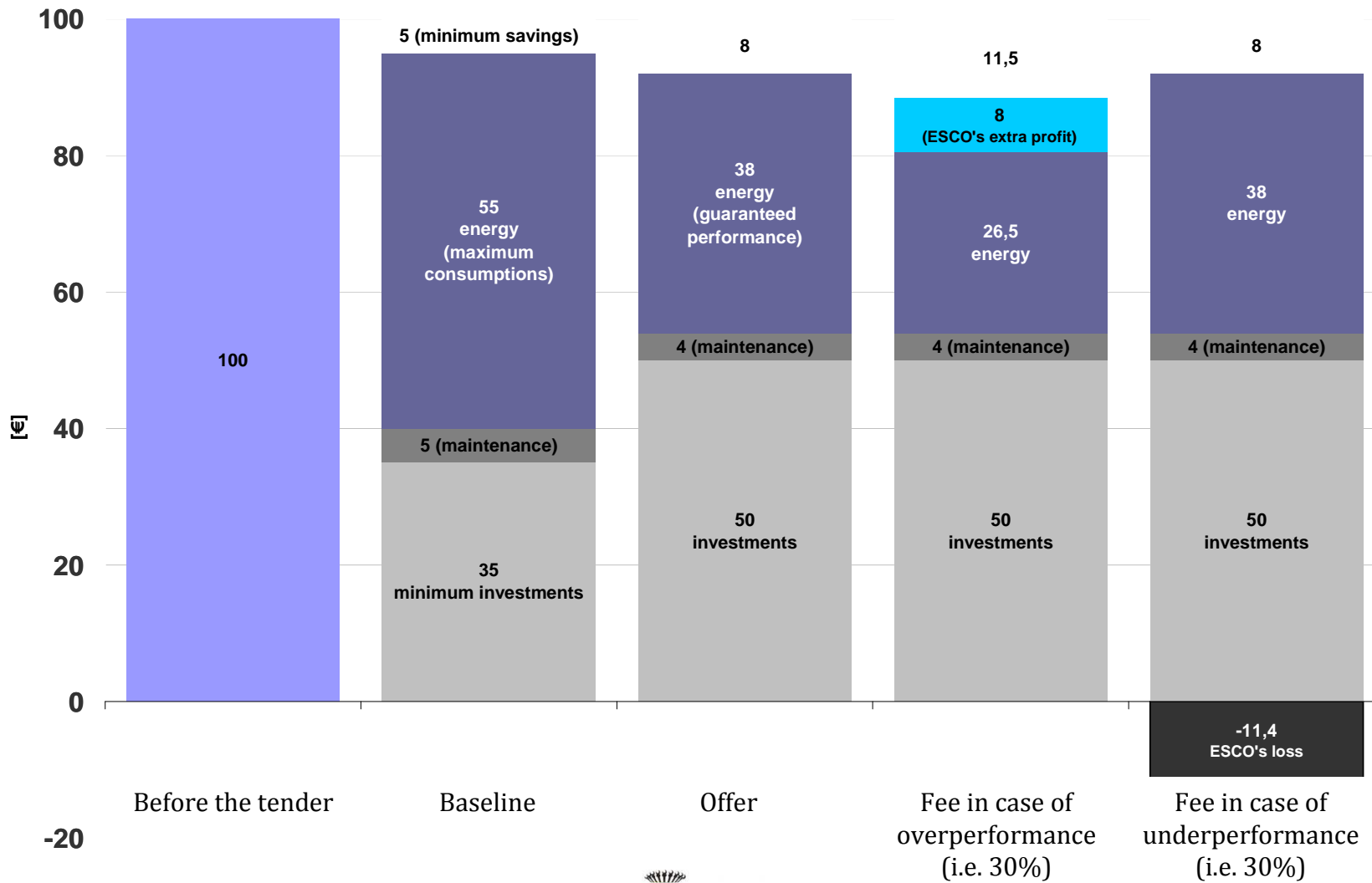
One lesson learnt!



9 MONTHS!!



Fee (an example)



Main evaluation criteria

60 for technical criteria and 40 for economic criteria

$$P_{A1X} = \frac{R_X}{R_M} \times 22$$

Energy savings

$$P_{A2X} = \frac{VU_X}{VU_M} \times 20$$

$$VU_X = \sum VU_{POSTi} \times \frac{Q_{maxi}}{Q_{offi}}$$

Duration of investments

$$P_{B1X} = \frac{C_{TOTX}}{C_{TOTM}} \times 20$$

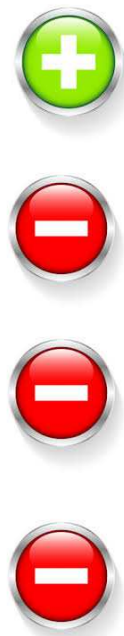
Amount of investments

$$P_{B2X} = \frac{r_{blofftotX}}{r_{blofftotM}} \times 20$$

Economic savings

Project indicators

KPI	Planned	Achieved*
Investments	9.5 M€	14 M€
CO2 emissions avoided	4.300 tons	1.780 tons
Primary energy saved	1.800 toe	745 toe
Renewable energy produced	103 toe	33 toe



**still to be validated by EASME*

Project indicators.... What if?

KPI	Planned	Achieved*
Investments	9.5 M€	14 M€ 14 M€ 14 M€
CO2 emissions avoided	4.300 tons	1.780 tons 2.946 tons 4.109 tons
Primary energy saved	1.800 toe	745 toe 1.240 toe 1.735 toe
Renewable energy produced	103 toe	33 toe 33 toe 33 toe



**still to be validated by EASME*

Revamping was calculated for real expected savings (20% or 30%)

....upcoming call for tender....

Public Light

WHAT: energy renovation of 3000 street light points

HOW: EPC with 13 years of duration (1 year for investments + 12 years for management)

WHO: 5 Municipalities, the Metropolitan City of Torino and ESCO to be selected

Minimum Guaranteed savings: 35% with shared savings in case of over-performance (70-30)

Minimum Investments: 1.4 M€

The website

TORINO METROPOLI
Città metropolitana di Torino

LA CITTÀ METROPOLITANA ▾ INFO E SERVIZI ▾ NOTIZIE ED EVENTI ▾ CANALI TEMATICI ▾

AUTORIZZAZIONE
OSSERVATORIO ENERGIA >
PROGETTI SULL'ENERGIA SOSTENIBILE >
DISTRIBUZIONE DEL GAS NATURALE >
INQUINAMENTO LUMINOSO >
EVENTI >

HOME AMBIENTE >
AGENDA21 >
AUTORIZZAZIONE INTEGRATA AMBIENTALE (AIA) >
AUTORIZZAZIONE UNICA AMBIENTALE (AUA) >
CAMPI ELETTROMAGNETICI >
DIFESA DEL SUOLO E ATTIVITÀ ESTRATTIVA >
EDUCAZIONE E COMUNICAZIONE >
EMISSIONI IN ATMOSFERA >
FAUNA, FLORA, PARCHI E AREE PROTETTE >
INFORMAZIONI AMBIENTALI >
MOBILITÀ SOSTENIBILE >
MODULISTICA ON LINE >
OLI MINERALI >

Intelligent Energy for Europe / Mobilizing L measures to improve **energy efficiency** of b for a minimum amount of approximately € 9. **and private investors.**

The *Metropolitan City of Turin* is the project **Park.**

The main actions are:

- ✓ **energy audits** of buildings in order to ide
- ✓ involvement of **small and medium-sized** contracts;
- ✓ research and promotion of **new forms of** finding new opportunities for financial su
- ✓ **coordination** of Municipalities and group terms and conditions;
- ✓ launch of **one or more tenders** for the in

Short presentation of the project (pdf 1,2 MB)

Investments mobilized by the project

Energy audits

Project documentation

Events and Newsletters

Short presentation of the project (pdf 1,2 M)

Investments mobilize

Energy audits

Project documentati

Events and Newslette

The website

Comune di Orbassano



Risparmio energetico offerto	58,2 %
Risparmio economico complessivo	16,25 %
Valore degli investimenti proposti	835.727
Sostituzione infissi	60 mq
Isolamento pareti	6.013 mq di cappotto + 267 mc di insufflaggio
Isolamento coperture	non previsto
Rifacimento centrale termica	1.060 kW
Solare termico	20 mq
Fotovoltaico	non previsto
Telegestione e termoregolazione	previsto



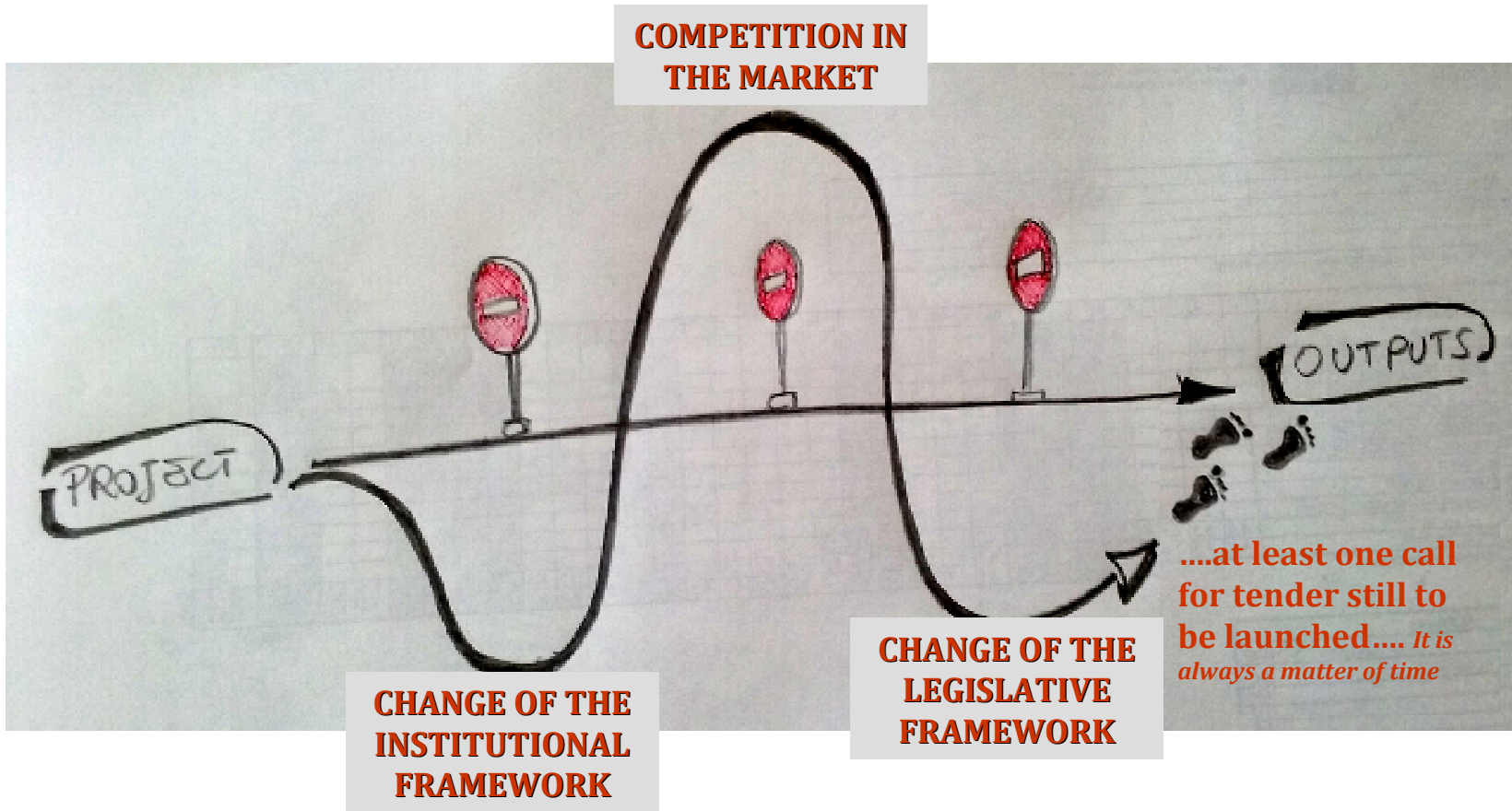
Denominazione	Scuola Elementare Fermi
Anno di costruzione	1980
Superficie utile riscaldata	5.604 mq
Volume lordo riscaldato	21.452 mc
Tipologia di interventi proposti	insufflaggio, rifacimento centrale termica, telegestione e termoregolazione

LA CITTÀ METROPOLITANA ▾
INFO E SERVIZI ▾
NOTIZIE ED EVENTI ▾
CANALI TEMATICI ▾

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📍 Piossasco 🏠
📍 Volvera 🏠

.....still some steps to go....



2020Together project:

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