



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

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Environment Park s.p.a
Green Building Sector

Regional conference on financing energy efficiency in Spain and Portugal

Madrid 15 June 2017

The proposal

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



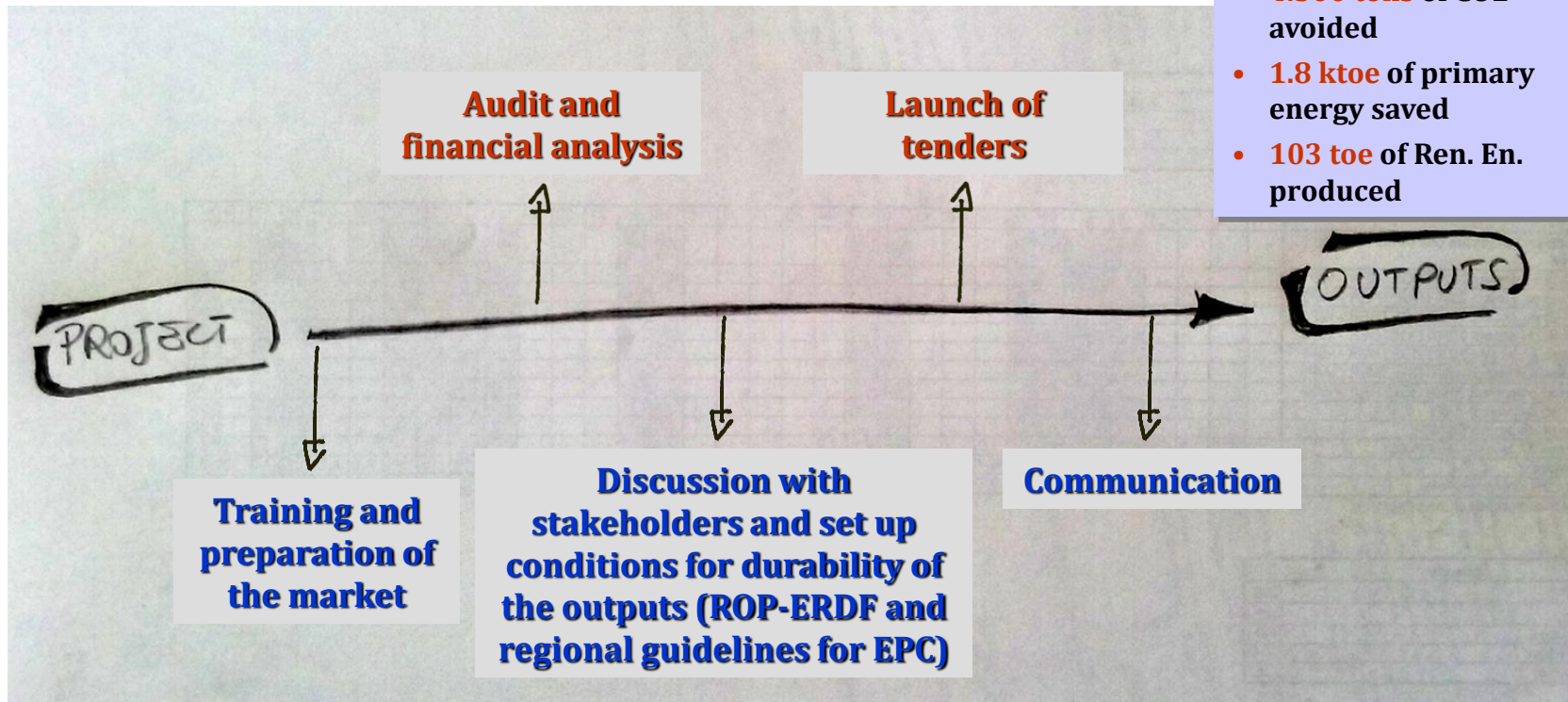
CITTA' DI TORINO



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

The project: outputs and WPs

Tasks for the Investments



Tasks for the market

Role of the partner 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

Public Buildings

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

1.....Main achievements....

Large investment 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

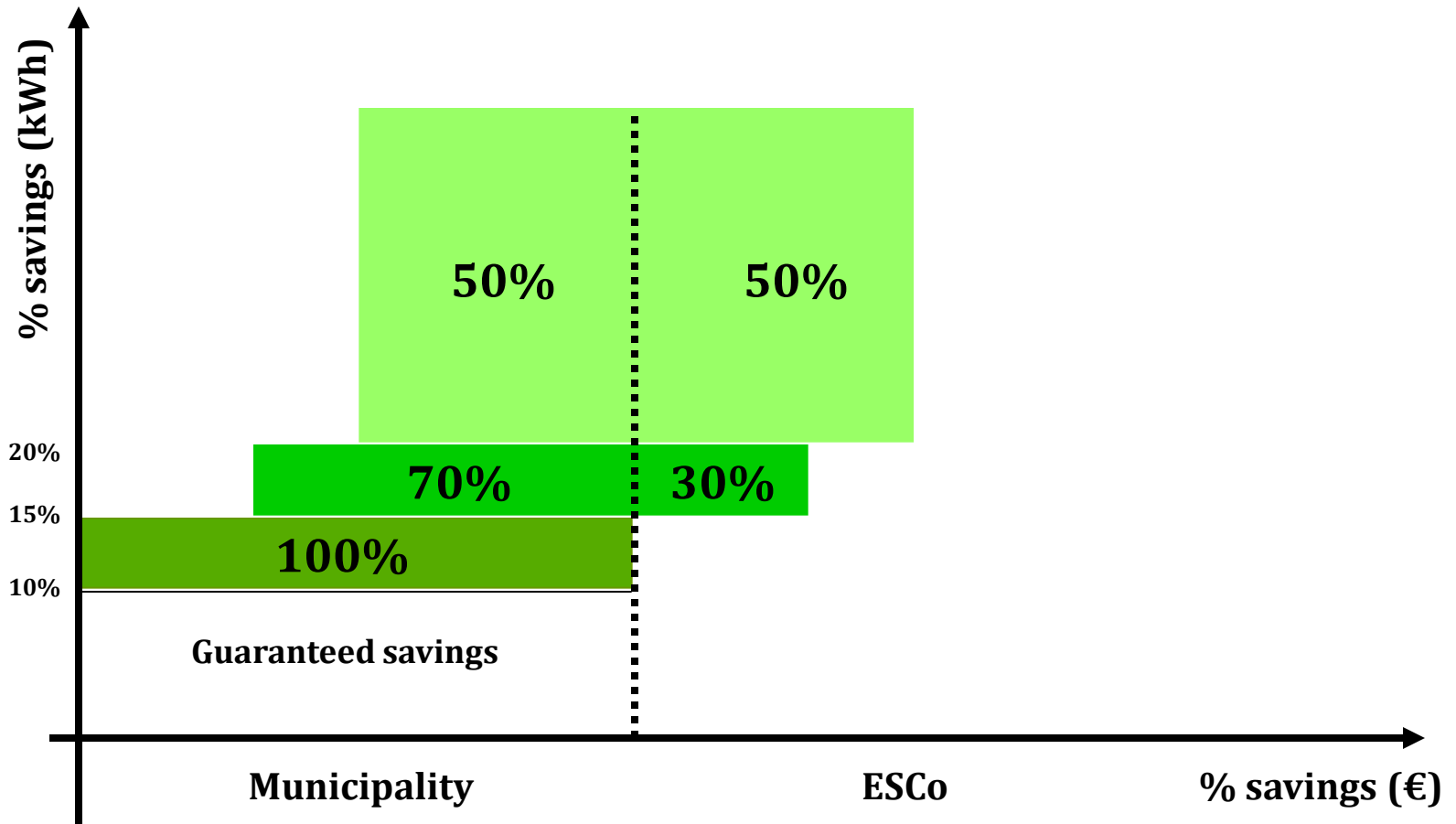
WHO: The City of Torino and the local Utility IREN

Expected savings: 30%

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

Investments:	11	M€
	1.7	M€ (grant of the City of Torino - 15%)
	2	M€ (National incentives - 18%)
	7.3	M€ (fees during 5 years - 67%)

Shared saving in case of overperformance

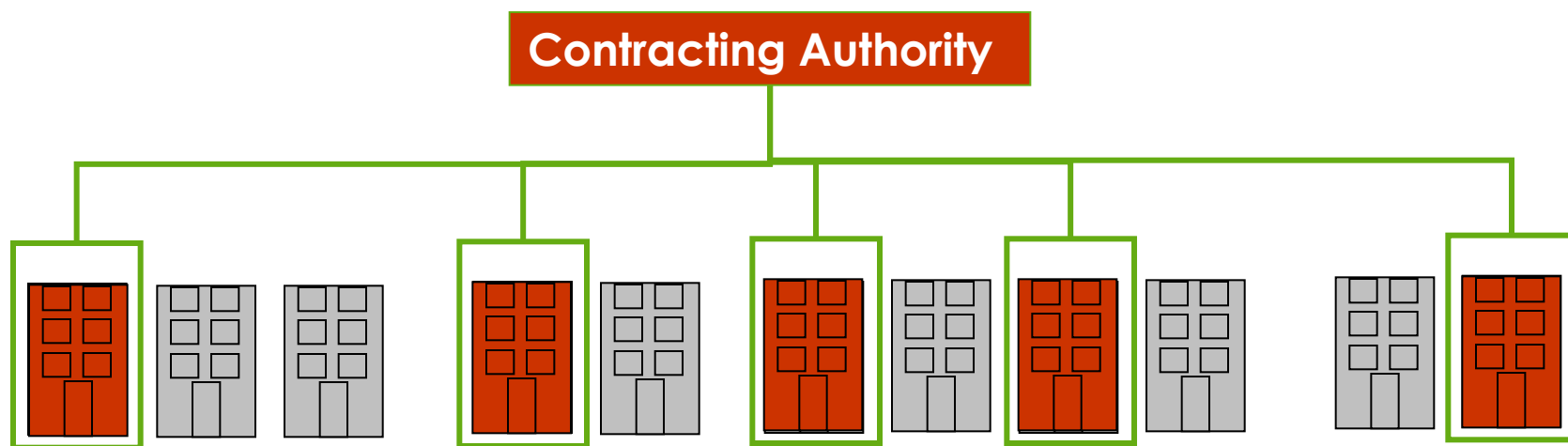


Public Buildings

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

2. The model of the bundling contract: 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



Municipality 1



Municipality 2



Municipality 3

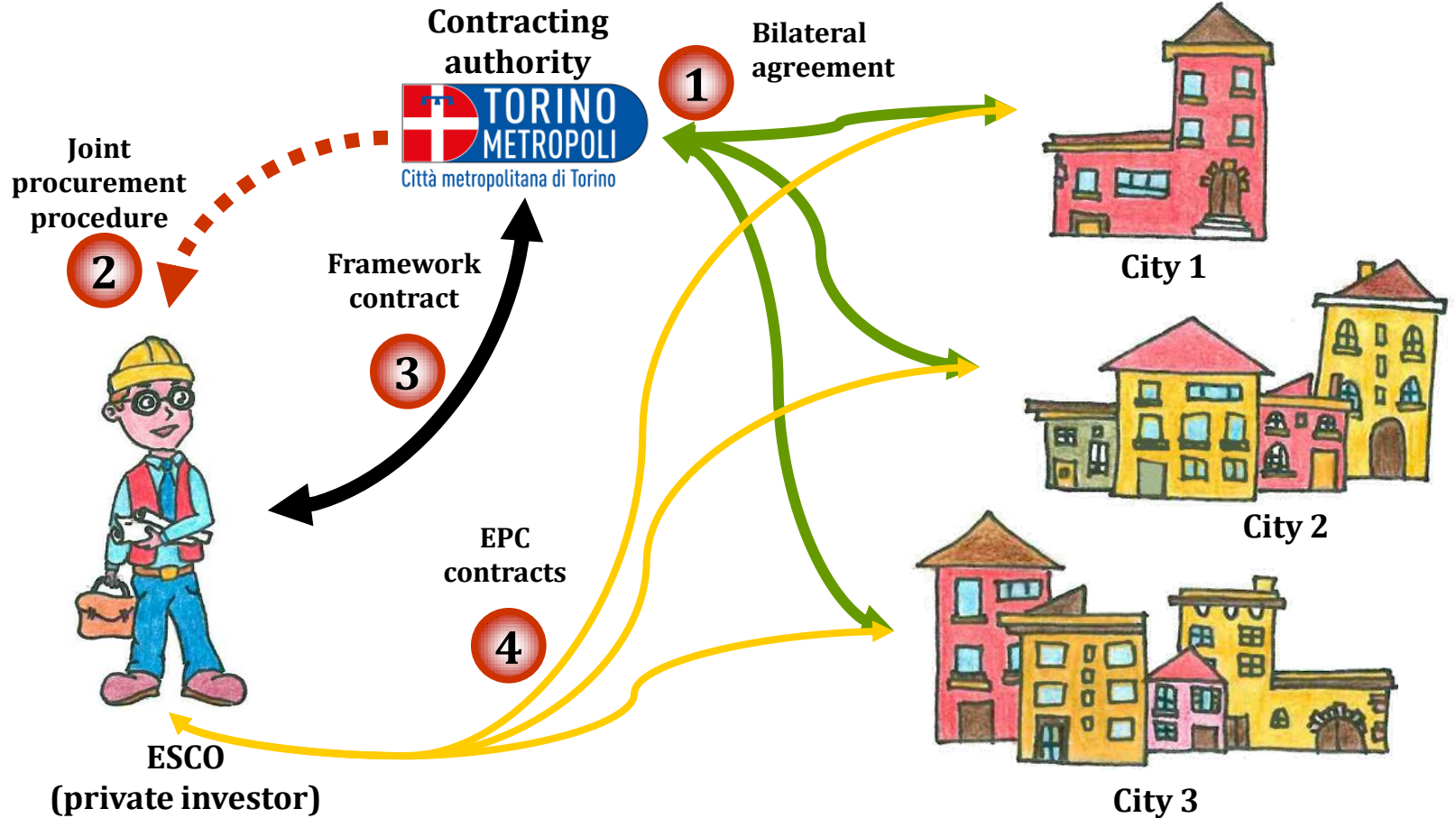


Municipality 4

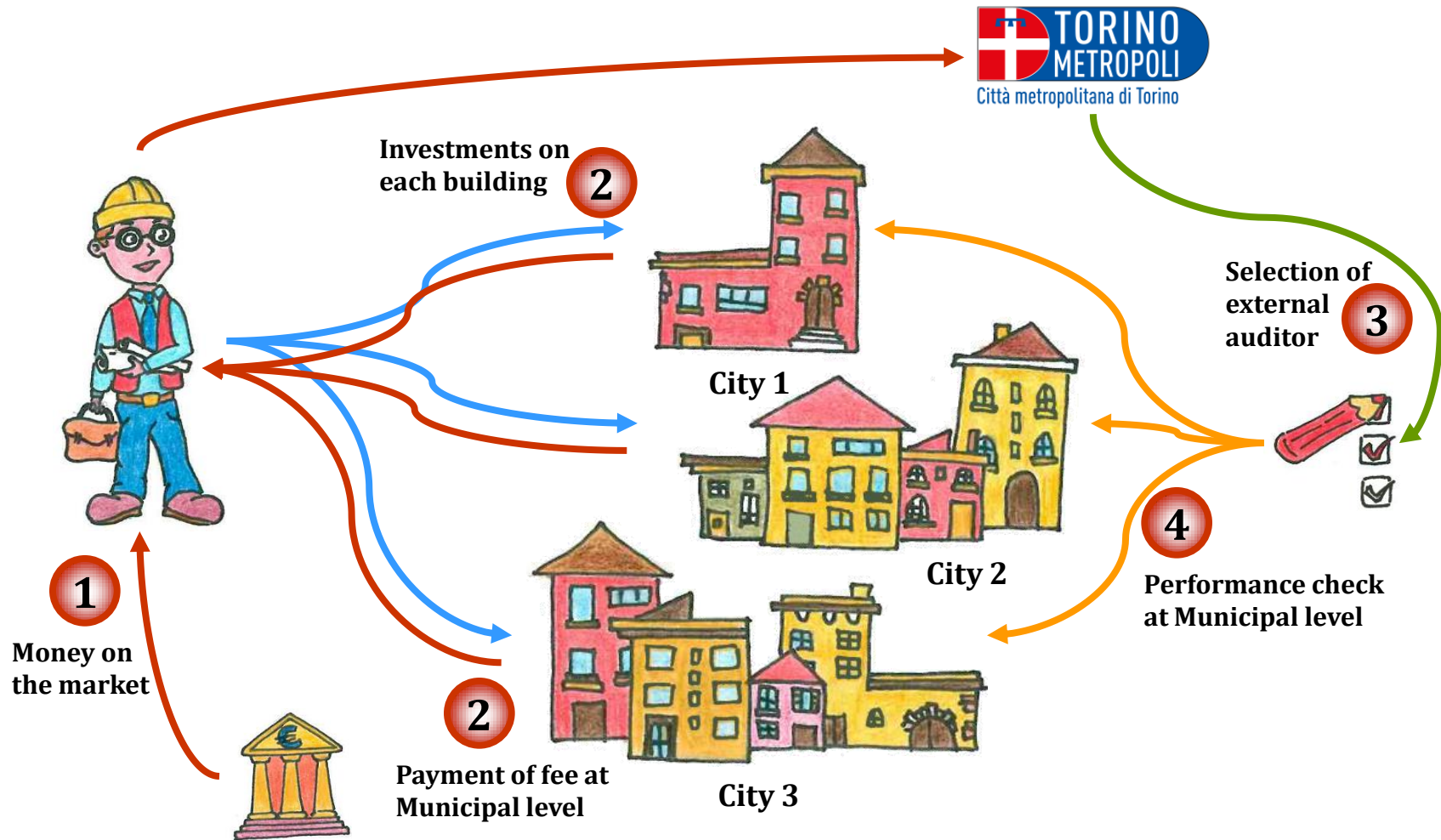


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The model: administrative scheme

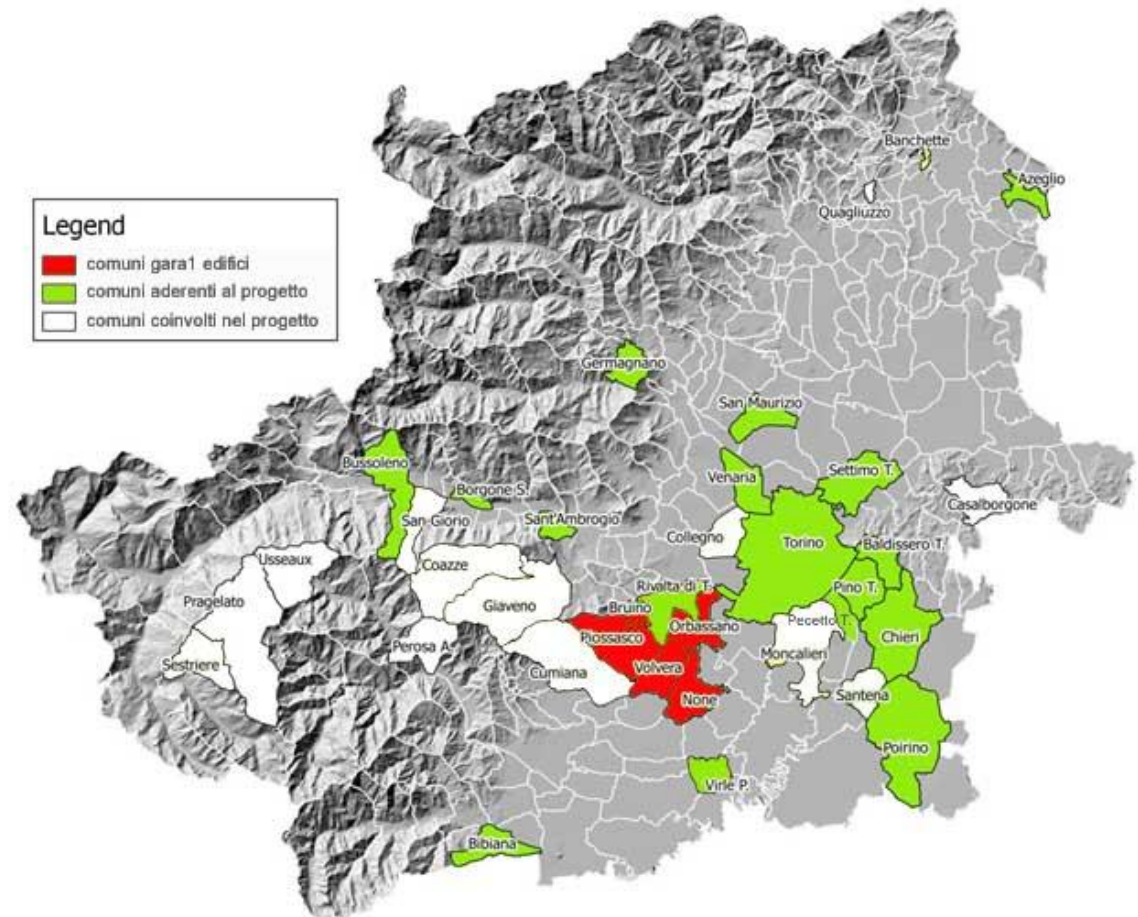


The model: financial scheme



The municipalities involved

- Bruino
- None
- Piossasco
- Orbassano
- Volvera

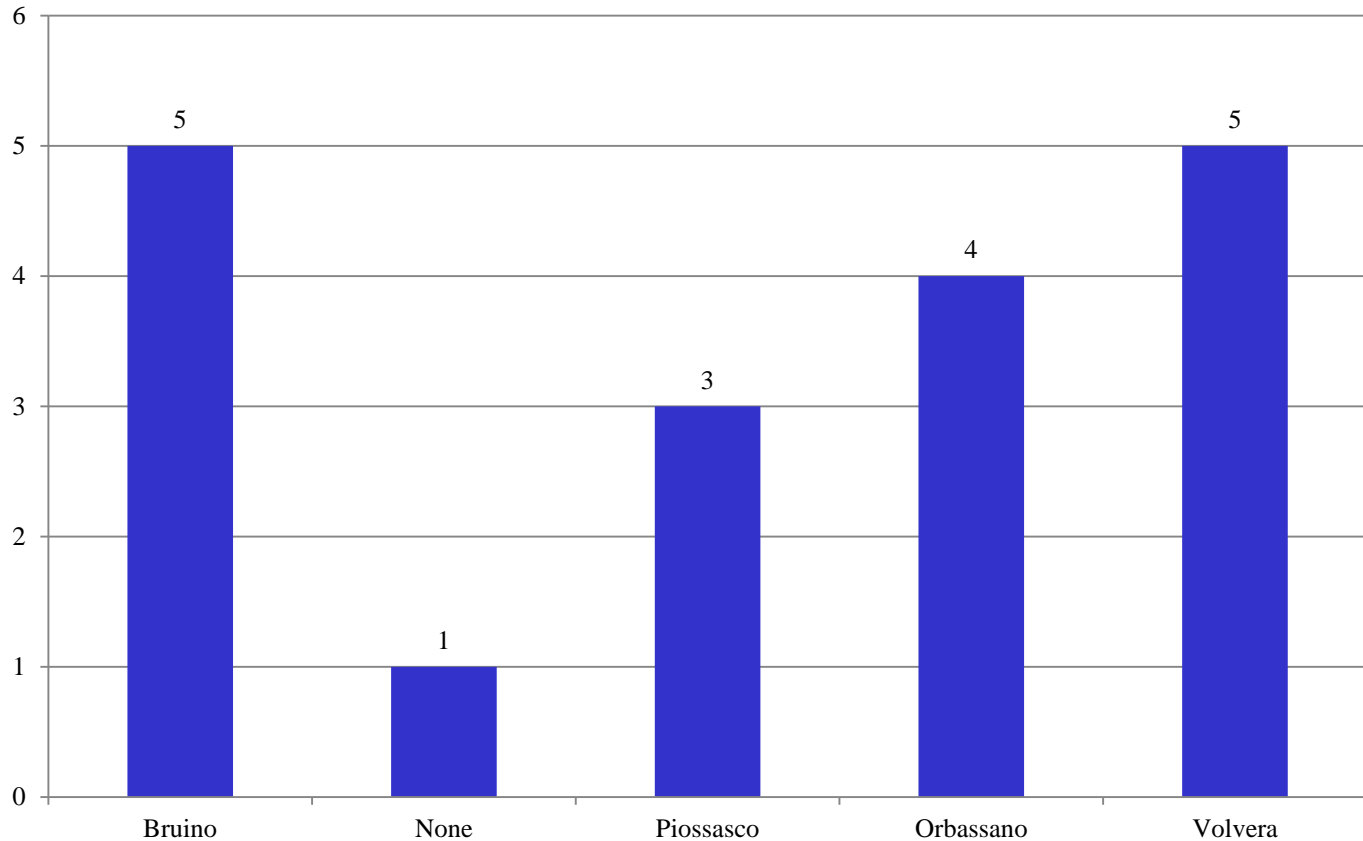


Buildings



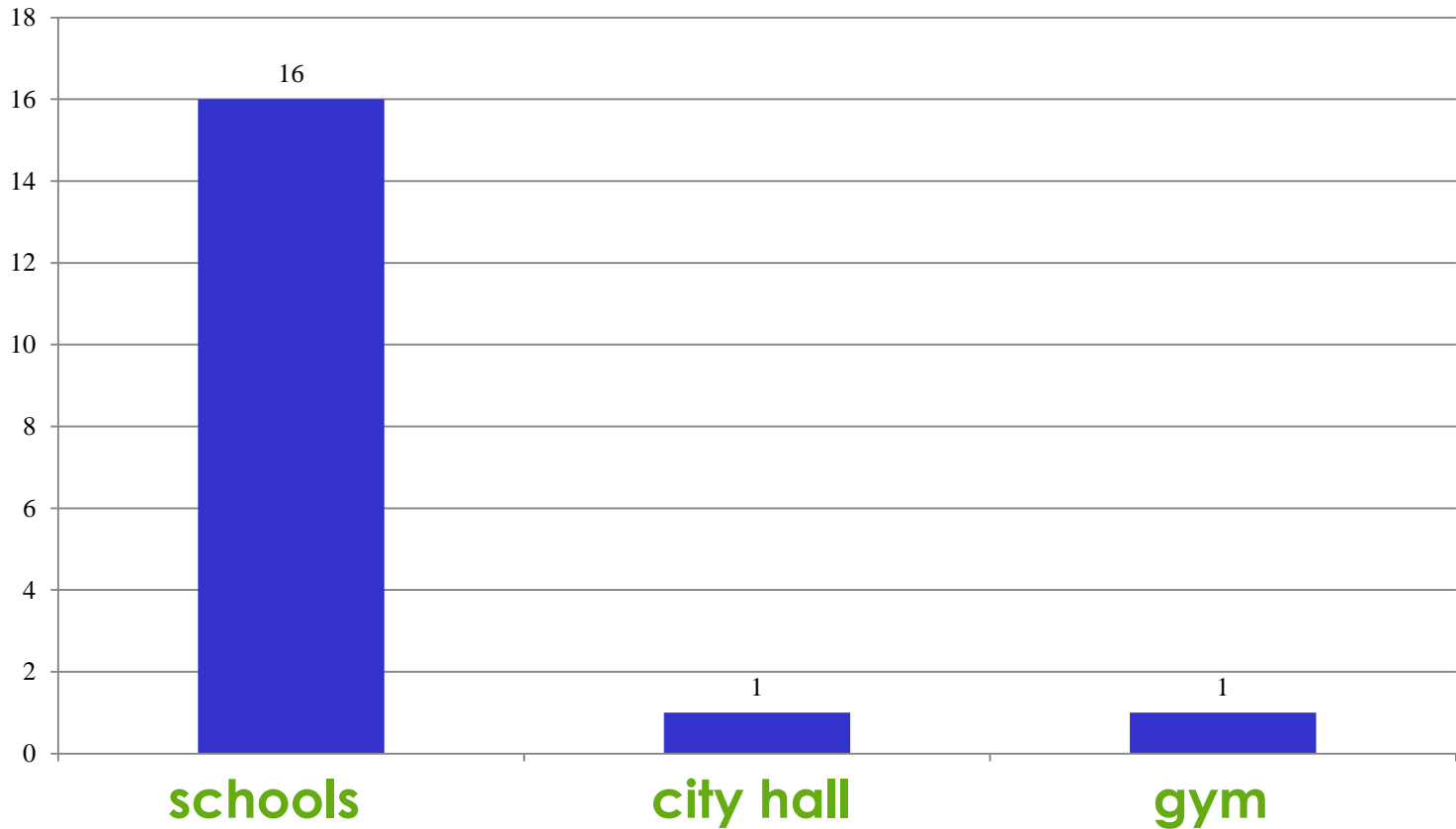
Buildings

Number of buildings



buildings

The use of buildings is



baseline

The following baselines have been defined

- Energy consumption
- Energy Cost
- O&M Cost

For the baseline definition, the following activities were performed:

- Analysis of energy bills
- Analysis of energy supply contracts
- Analysis of O&M contract

baseline

Municipalities	E_s	TG^s	baseline CS	baseline MS	baseline tot a
Minicipalities	Metan [Sm^3]	Metan price [$€/Sm^3$]	baseline energy consumption	baseline O&M	Total base line
bruino	104.070	0,7086	€ 73.744	€ 4.000	€ 77.744
none	13.238	0,6907	€ 9.144	€ 1.000	€ 10.144
orbassano	213.020	0,6862	€ 146.181	€ 4.077	€ 150.258
piossasco	70.681	0,7171	€ 50.684	€ 10.400	€ 61.084
volvera	120.434	1,0551	€ 127.064	€ 9.743	€ 136.807
TOTALE	521.443	-	€ 406.817	€ 29.220	€ 436.037

call for tenders - objectives

The objectives of the call for tenders were defined for each municipality

- Contract duration
- Investment value
- Energy saving post interventions
- Economic saving for municipality
- Fee value

For the baseline definition, the following activities were performed::

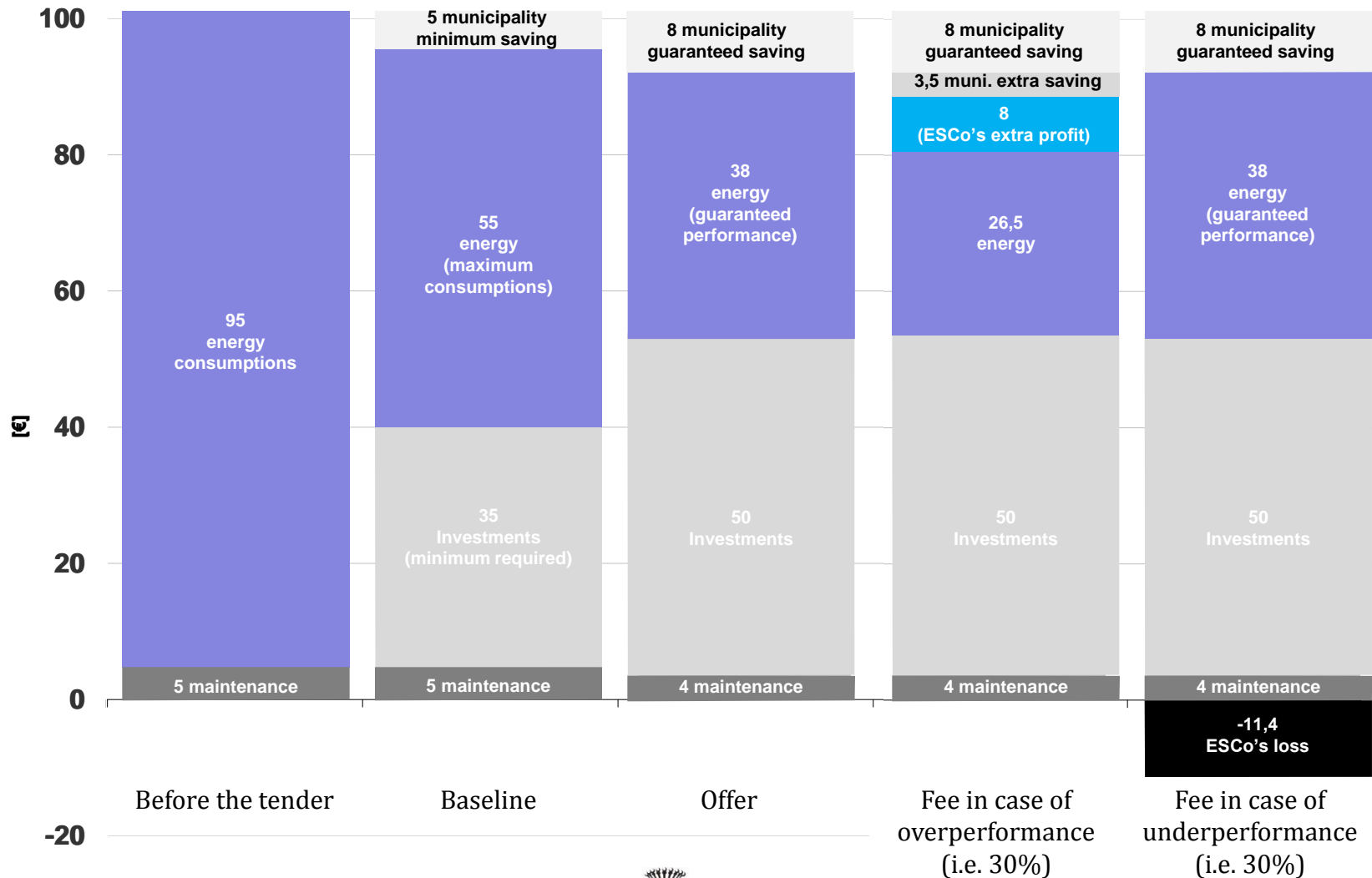
- Energy audit complied with technical norma UNI CEI EN16247
- Business case and financial simulation

Call for tenders

number and minimum performance required

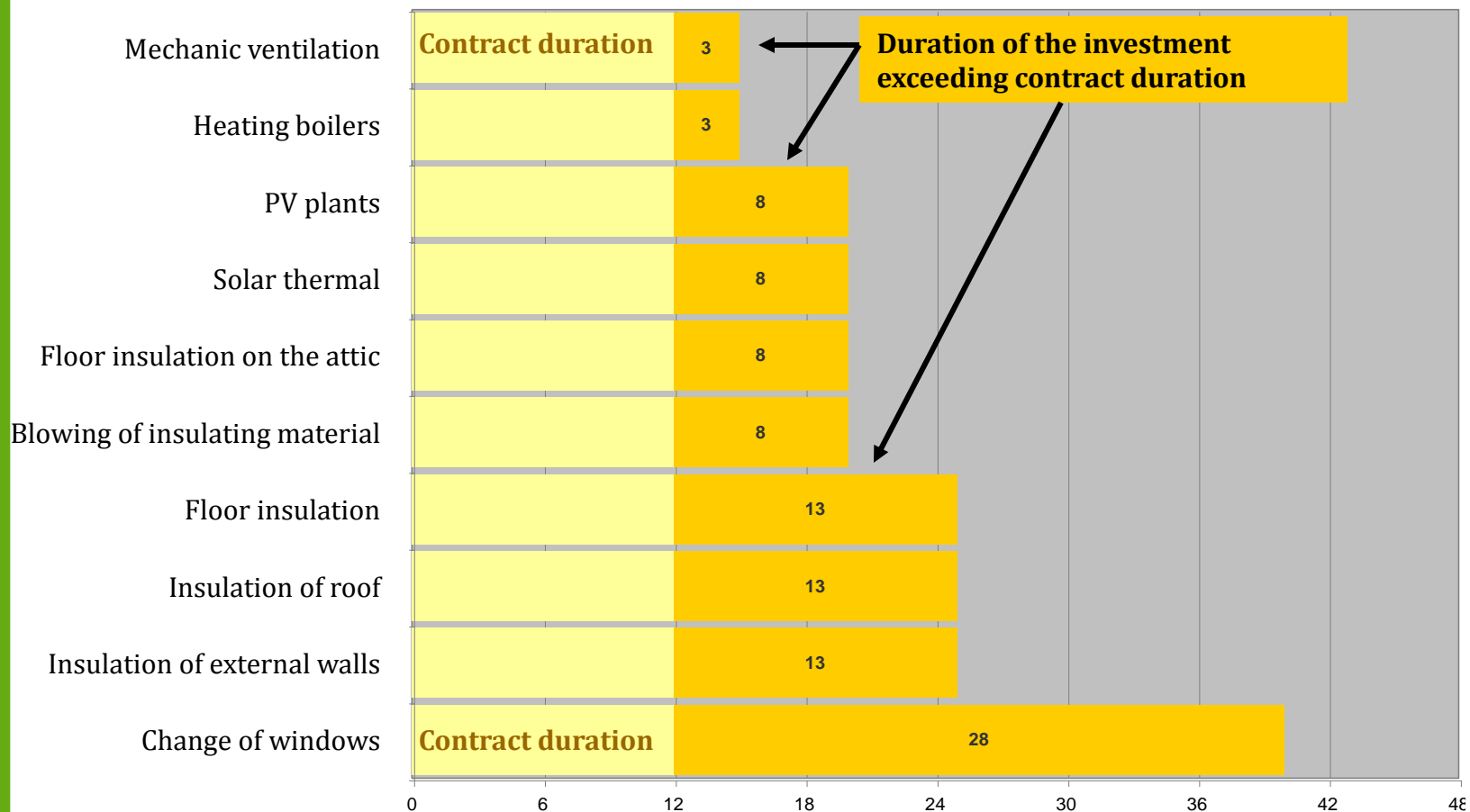
municipality	Es	TG	rc min	Cc max	baseline MS	rMS min	CM max	I min	Tc	CI min	C max	Atot-1 max	Canno1	Atot max
municipality	Sm ³ gas	Metan gas benchmark consip	Energy saving minimum	Maximum fuel consumption fee for year	baseline O&M	Minimum cost saving on O&M	Maximum O&M fee for year	Minimum investments required	Contract duration	Minimum Fee for investments = $I_{min}/Tc-1$	Maximum Total fee for year after the first year = $Cc_{max} + C_{M_{max}} + C_{min}$	Maximum Total fee for 12 years canone annuo oltre il primo (C_{max}) per la durata del contratto (Tc) -1	Total fee in the first year baseline tot d -10%	Totla maximum fee for 13 years = $A_{tot-1max} + Canno1$
bruino	104.070,00	0,6125	27%	€ 46.532	€ 4.000	6%	€ 3.760	€ 273.445	13	€ 22.787	€ 73.079	€ 876.952	€ 69.970	€ 946.922
none	13.238,00	0,6125	19%	€ 6.568	€ 1.000	8%	€ 920	€ 22.134	13	€ 1.845	€ 9.332	€ 111.987	€ 9.129	€ 121.116
orbassano	213.020,00	0,6125	13%	€ 113.513	€ 4.077	1%	€ 4.036	€ 374.473	13	€ 31.206	€ 148.755	€ 1.785.064	€ 135.232	€ 1.920.296
piossasco	70.681,00	0,6125	25%	€ 32.686	€ 10.400	2%	€ 10.192	€ 203.816	13	€ 16.985	€ 59.862	€ 718.347	€ 54.976	€ 773.323
volvera	120.434,00	0,6125	40%	€ 44.259	€ 9.743	5%	€ 9.256	€ 917.416	13	€ 76.451	€ 129.967	€ 1.559.603	€ 123.127	€ 1.682.730
TOTALE	521.443		24%	€ 243.558	€ 29.220		€ 28.164	€ 1.791.284		€ 149.274	€ 420.996	€ 5.051.953	€ 392.433	€ 5.444.386

Fee (an example)



Main evaluation criteria

Standard duration of Investments



Main evaluation criteria

60 for technical criteria and 40 for economic criteria

Criteria	Maximum score	
Energy savings	22	Technical
Duration of investments	20	Technical
ESCO Certification	2	Technical
Quality of the maintenance service	2	Technical
CO2 emission saved from RES production	8	Technical
Coherence and completeness of the offer	6	Technical
Amount of investments	20	Economic
Economic savings for municipalities	20	Economic

The general approach in scoring the bids was based on the calculation of a weighted average

.....*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 2016!!**

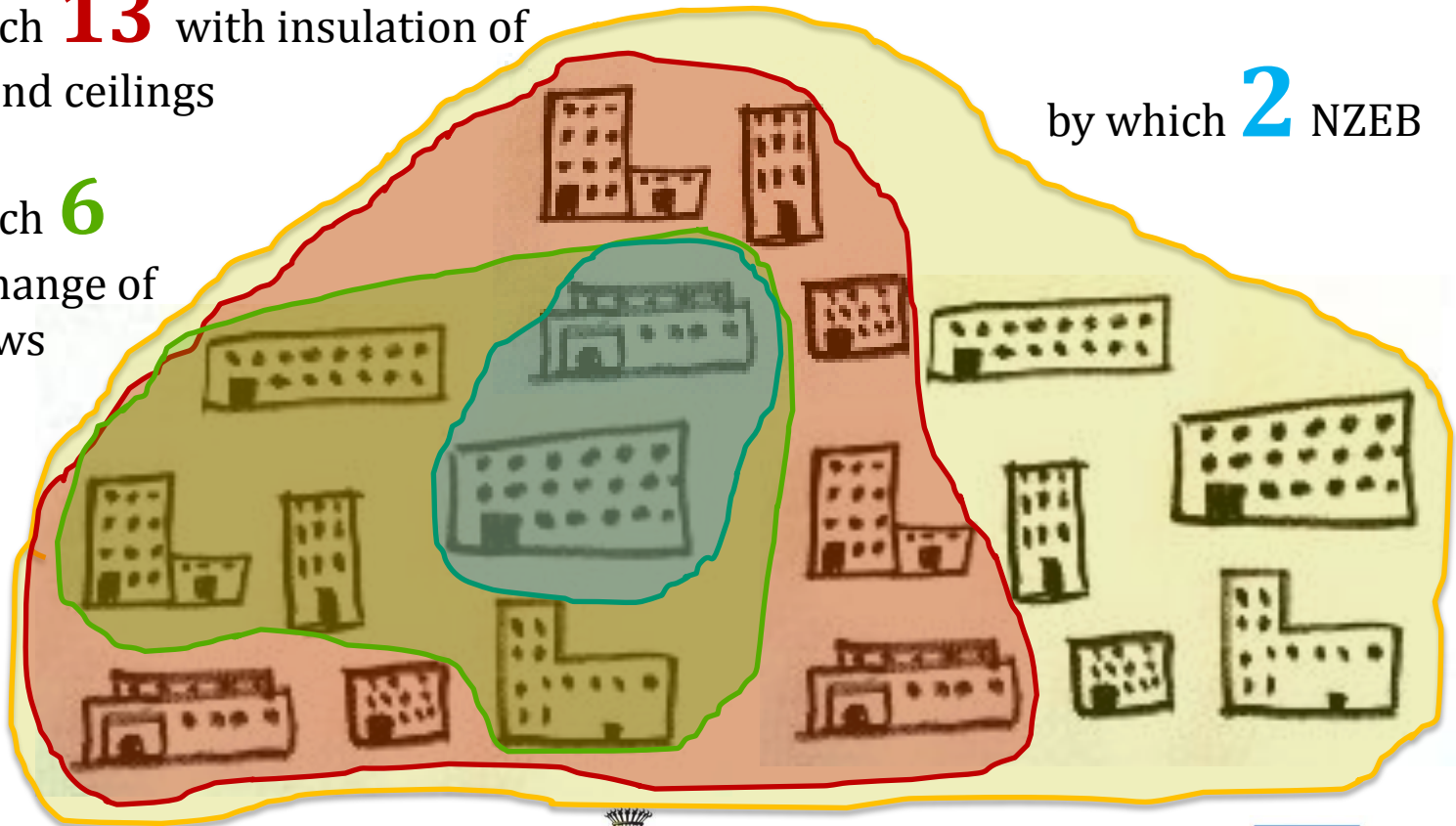
Planned investments for deep renovation

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



Public Light

- *Bundling Investments for small and medium municipalities*

Call for tender... Just launched!

WHEN: tender ongoing

WHAT: energy renovation of 3000 street light points

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

WHO: 6 Municipalities, the Metropolitan City of Torino and ESCO to be selected

Minimum Guaranteed savings: variable from 22% to 44% with shared savings in case of over-performance

Minimum Investments: 1.4 M€

Minimum economic savings: variable from 5% to 16%

Main evaluation criteria

50 for technical criteria and 50 for economic criteria

Number of light points renovated (over minimum threshold)

Duration of the luminous flux at 80% of standard values

Energy performance of the light points

Energy saving

Project indicators

KPI	Planned	Achieved*	Forecast
Investments	9.5 M€	14 M€ 14 M€	16 M€ 16 M€
CO2 emissions avoided	4.300 tons	1.780 tons 4.109 tons	2.200 tons 4.530 tons
Primary energy saved	1.800 toe	745 toe 1.735 toe	1.000 toe 1.990 toe
Renewable energy produced	103 toe	33 toe 33 toe	33 toe 33 toe

**still to be validated by EASME*

Revamping calculated at 10% of savings
Revamping calculated at 30% of savings

The website



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 ELETTRICITÀ

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

The project 2020 TOGETHER, activated thanks to European funding amounting to € 407,950, under the Programme ERDF

Intelligent Energy for Europe / Mobilizing 1 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 sup
- ✓ **coordination** of Municipalities and group terms and conditions;
- ✓ launch of **one or more tenders** for the in



Investments mobilized by the project



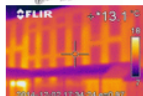
Energy audits

Project documentation

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



Investments mobilized by the project



Energy audits



Project documentation



Events and Newsletters

Tender documents

.....and coming soon:

- Guide on EPC
- Final Publication
- Public report on ERDF Energy Fund

...what's next?

STEPPING



2017-2019 – Piedmont Region as LP of a consortium made by 9 PP from Italy, Spain, Portugal, Slovenia, Greece, France, Malta.

Main objective: To adapt the application of EPC investment for public building in Mediterranean Area

- Prepare 8 investment plan in MED AREA
- Launch 4 investment plan in 4 countries
- Deliver MED guidelines for EPC in public buildings for wider dissemination

THANKS!!

2020Together project:

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