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

2020 TOGETHER
torino is getting there

EPC CONTRACTS IN PUBLIC ADMINISTRATION

2020TOGETHER: Model and Results

Indice

THE PROJECT

2020Together is financed through a 490 thousand Euros European funding as part of the CIP - IEE, Intelligent Energy for Europe / Mobilizing Local Energy Investments - MLEI program.

Main purpose of the project: to respond to the needs of municipalities to overcome economic-financial concerns at local level and start energy efficiency refurbishment of public assets: buildings and street lighting.

Innovative measures: underwriting of Energy Performance Contracts (EPC) and implementation of new forms of financial partnership between local public administrations and private investors -ESCo (Energy Service Company).

WHAT IS AN EPC
WHAT IS AN ESCO

Energy performance contracts envisage a private investor (typically an Energy Saving Company, or ESCo) committing to use own or third parties' financial resources to carry out a number of integrated services and measures aimed at enhancing energy efficiency of installations and buildings that are public properties.

THE KEY TO SUCCESS

A wide territory, the Metropolitan City of Torino, acts as a coordinator and contracting authority: the initiatives of individual local public administrations are grouped in a single call for tender to form that critical mass required to make tenders appealing and realize economies of scale.

KEYWORDS

Aggregation

Participatory process

Joint tendering procedure

BRUINO Cesare Riccardo, Mayor

The 2020Together project has pointed out the importance of networking among small and medium municipalities. Interfacing with a wide range authority like the Metropolitan City has also proved very positive. The result is a significant energy efficiency retrofitting of the buildings of our Municipality.

THE STAKEHOLDERS .....

THE PARTNERSHIP

The partnership includes major institutions within the Piedmont region and a technical partner.

Piedmont Region Lead partner, ensuring that the conditions are met for long lasting replicable results

Metropolitan City of Torino Acting as contractor authority, and coordinator and aggregator of municipalities

City of Torino Experimenting an energy refurbishment model on a pilot case for large-scale replication in the future

Environment Park Technical partner performing energy audits and financial analysis

11 municipalities of the metropolitan area have benefited from the innovative model of energy efficiency tender developed within this project;
5 municipalities - Bruino, None, Orbassano, Piossasco, Volvera - have entered into a contract with the successful ESCo for the energy retrofitting of 18 buildings;
6 municipalities - Azeglio, Baldissero Torinese, Bibiana, Bussoleno, Pecetto Torinese, Rivalta Torinese are involved in the call for tender on public lighting opened the first days of January 2017 with final awarding within 2017.
10 other municipalities have started a similar project that will further replicate the initiative.
The **Municipality of Torino** has entered into an EPC for the replacement of over 120 boilers in 118 buildings.

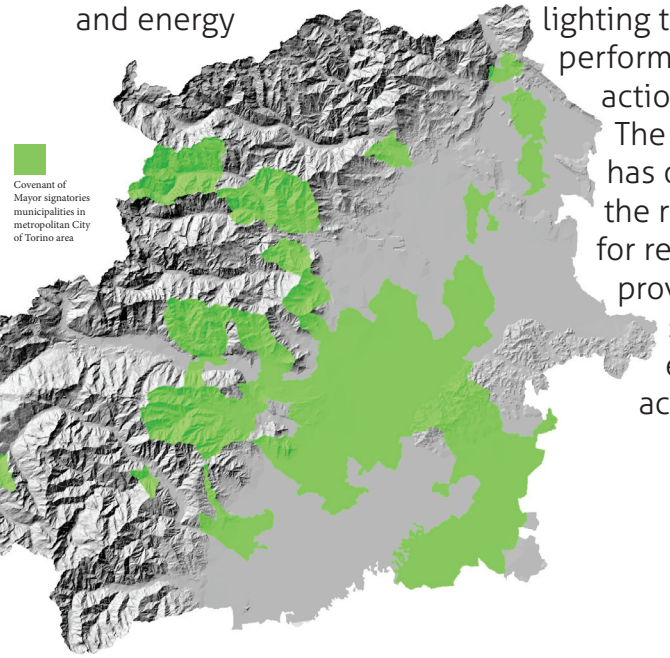
VOLVERA Francesco D'Onofrio, Deputy Mayor

The most positive results obtained from the contract with the ESCo were the proposals of structural interventions, particularly the external walls insulation. This solution has tangibly improved energy efficiency performance in 5 buildings of the Municipality of Volvera, proving more effective than any other measures affecting heating systems only.

THE CONTEXT

The Covenant of Mayors

The 2020Together project is part of a plan for sustainable energy started several years ago by local institutions.
Both the Piedmont Region and the Metropolitan City of Torino have been local coordinators of the Covenant of Mayors since 2010 and have worked in the last years to persuade the municipalities to sign up to the Covenant.
As a consequence, several Municipalities have adhered to the CoM and committed to medium-term European targets of reducing emissions and energy consumption, introducing renewable resources and, starting from 2016, adapting to climate changes.
The Metropolitan City has focused its efforts in providing a substantial technical support to the Municipalities with a view to set up, approve, implement and monitor Sustainable Energy and Climate Action Plans (SECAP): the tools to identify the targets and the actions required to achieve them. The refurbishment of buildings and public lighting to improve energy performance is key to most actions taken.
The Piedmont Region has outlined and revised the regulatory framework for reference, and provided the financial support for energy efficiency retrofitting actions.



Patto dei Sindaci
per il Clima e l'Energia

MUNICIPALITIES ADHERING TO THE COVENANT OF MAYOR SIGNATORIES

194 Municipalities of the Piedmont Region

62 Municipalities of the Metropolitan City of Torino

APPROVED PAES

145 in the Piedmont Region

58 in the metropolitan area

THE ECONOMIC CONTEXT

Public investments in Italy - in particular those at the level of municipalities - are held back by the financial crisis and debt constraints for public bodies. In this framework, also the energy sector is penalized as energy refurbishment of buildings - and public ones in particular - are also limited. The model provided by energy performance contracts that involve third-party financing can prove a valid contribution to overcome this stranglehold.

PROJECT DEVELOPMENT.....

At the early stages of the 2020Together project, the application of EPCs was still largely unheard of and little practised, in particular at the level of Municipalities, but also among small and medium-sized local companies. The project has developed with transversal initiatives directed to small and medium municipalities as well as a dedicated project - Revamping 2 - for the City of Torino, in line with the following scheme.
The experience acquired has led to the issuing of guidelines intended to promote the repeatability of this project.

WHO IS PAYING?

ESCo's are paying back their investment with savings from energy bills of buildings, while the municipalities do not get into debt and benefit from immediate economic saving. Moreover, ESCo's will assume the sole liability for performance risk, i.e. the risk that investment do not actually produce the planned energy savings

NUMBERS

Small-medium Municipalities

11 Agreements with Municipalities involved in already existing tenders

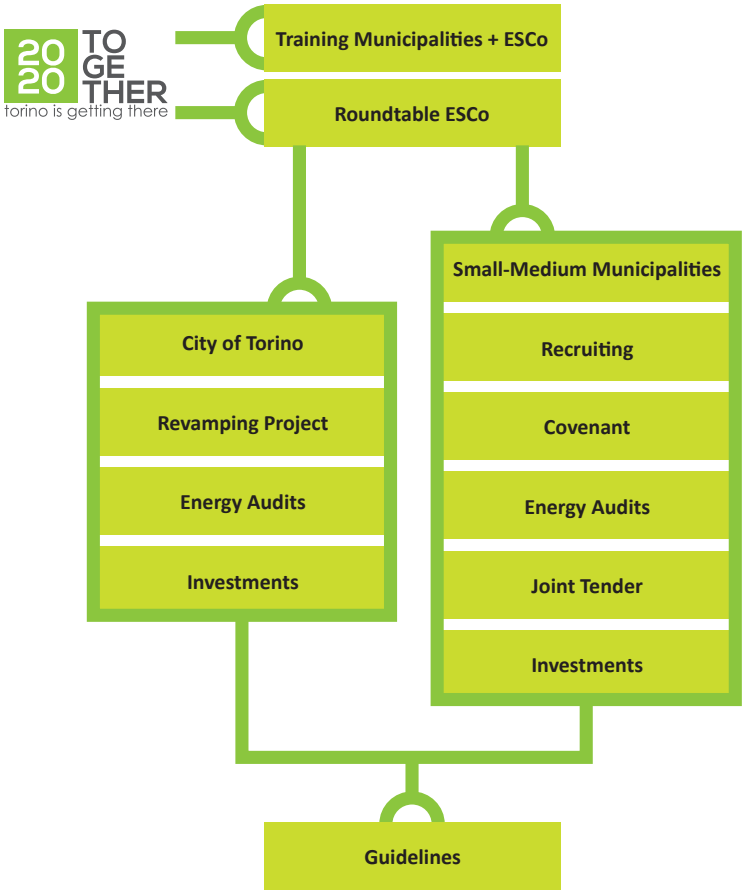
10 Agreements with Municipalities for future tenders

52 audits of buildings
6 audits of public lighting

1 EPC tender awarded for buildings
1 call for public lighting tender launched

Torino Revamping2:

1 EPC contract signed for revamping 120 thermal power plants



SMALL AND MEDIUM MUNICIPALITIES.....

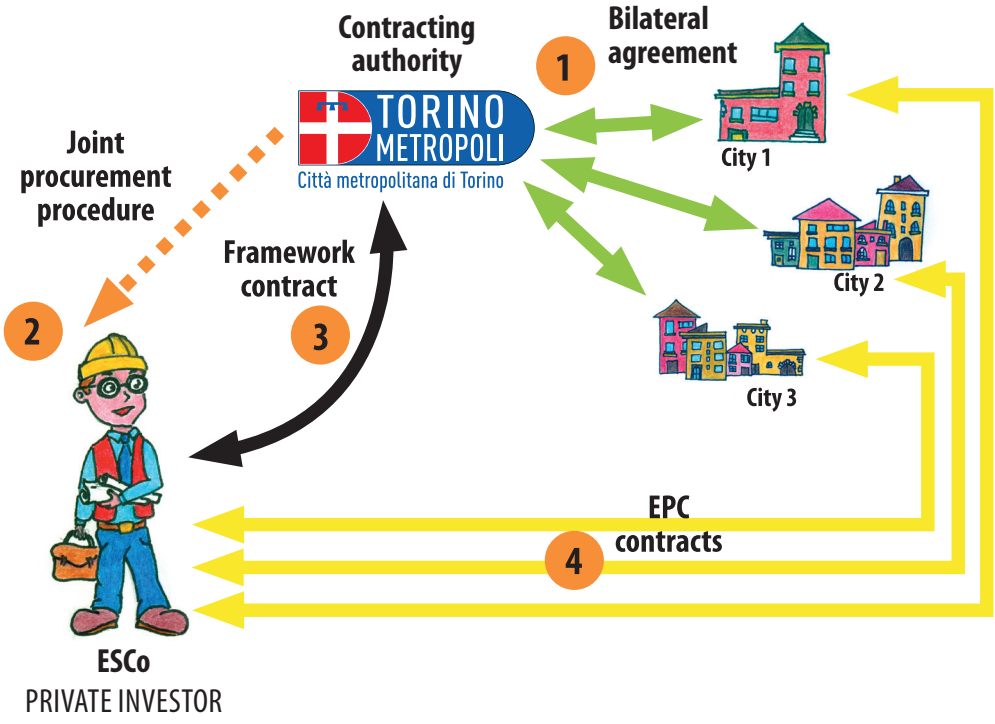
ADMINISTRATIVE AND MANAGEMENT MODEL

The aim of the 2020Together project is to aggregate the needs of small and medium municipalities for energy refurbishment in public building and street lighting, with the purpose to:

- Obtain a total investment capable to create interest among the ESCo's.
- Apply a replicable model.
- Realize economies of scale.
- The process is always based on constructive discussion aimed at bringing out needs, previous experience, critical issues, suggestions.

The Municipalities are:

- Informed and engaged through a number of meetings with the purpose to disseminate the contents of the project.
- Directly involved, empowered and compelled by signing with the Metropolitan City a Formal Agreement 1 approved by Town Councils. The Agreement specifically identifies those public buildings and street lighting that are to be involved in the tender and designates the Metropolitan City as the contracting authority, i.e. in charge with preparing tendering documents, calling the tender 2 awarding and signing a framework contract 3 with the successful bidder. Each Municipality will then sign its own performance contract with the ESCo 4



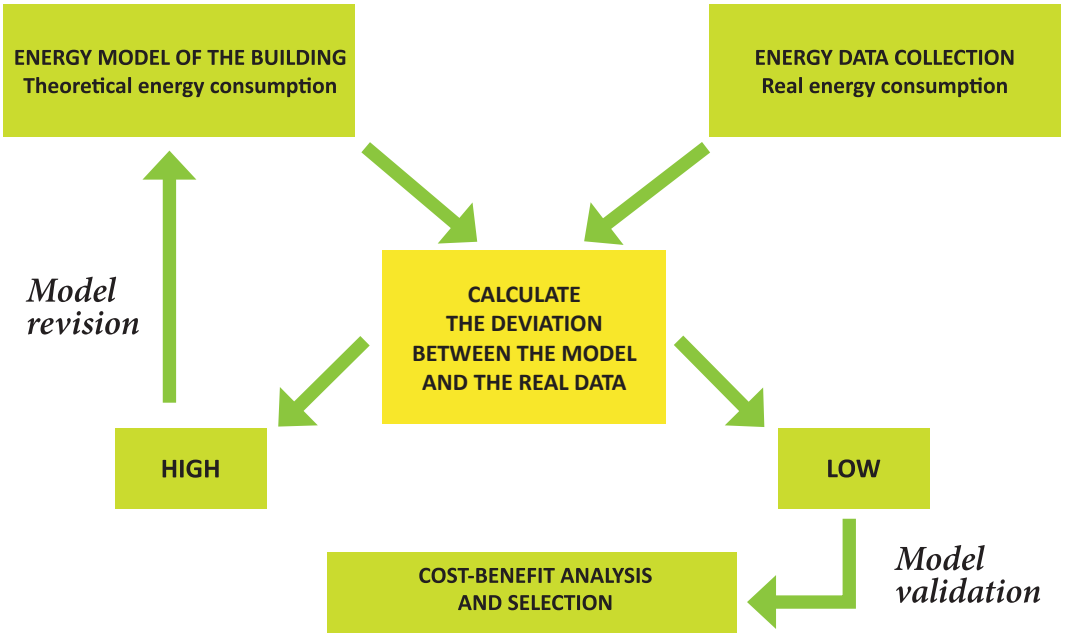
THE TECHNICAL MODEL

To increase the attractiveness of the tender, a preliminary technical analysis was performed to identify for each Municipality the buildings (or public lighting systems) mostly in need of efficiency retrofitting actions. A mandatory condition was the lack of any binding pre-existing contractual obligations in the management of the buildings. The designated buildings were then subjected to energy audit. To this purpose, a preliminary examination was carried out of the design documents produced by the Municipalities, followed by on-site surveys and measurements, assessment of the physical and dimensional characteristics of building external walls insulation and winter climate control systems. A reliable energy simulation model was set up and then validated by comparing theoretical energy requirement and actual consumption. The simulation model helps to establish the theoretical consumption of primary energy for heating and producing hot water. Next step is a bottom-up process aimed at validating the model by reversing the procedure and verifying input data by comparing theoretical requirement and actual consumption, and finally making any necessary adjustments to ensure that the two data are consistent.

ENERGY AUDIT

An energy audit is a systematic process having the purpose to assess the final use of energy in a building and recognize and analyze any inefficiency and critical issues in the building itself and in the existing systems under standard operating conditions. The process includes economic analysis and assessments of energy consumption and is aimed at identifying opportunities to reduce energy requirement and evaluating cost-effective measures for energy refurbishment.

If the deviations found are below 10% for all the years under consideration, the model is deemed to correctly simulate the behavior of the building.



To conduct a technical-economical assessment of any potential measures required to enhance energy efficiency in the building external walls insulation and in its systems, an energy "baseline" was created by applying average monthly temperatures of the seasons under consideration to obtain the average consumption for each season. The creation of a "baseline" for energy consumption and costs was a crucial step in the process of identifying existing critical issues and potential opportunities for savings and investment, and consequently defining technical and economic requirements for the tender.
A similar procedure was applied to public lighting systems with the purpose to carefully evaluate current state of the art and any potentiality for improvement.

ENERGY BASELINE

Defined by assessing:

- actual consumption as extrapolated from energy bills (thermal consumption);
- real climate data provided by the nearest ARPA weather stations in the building area - calculation of Heating Degree Days;
- internal temperature of the building rooms;
- hours and days of use of the thermal systems.

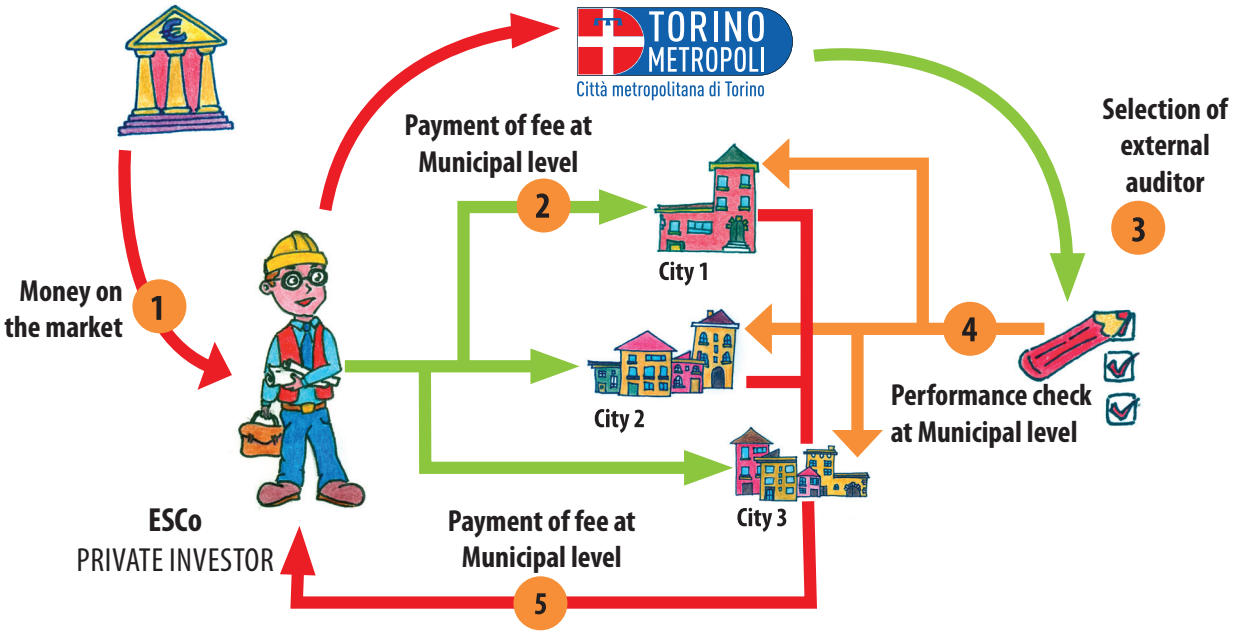
THE FINANCIAL SCHEME

The financial scheme is based on Third-Party Financing, meaning that the ESCo shall:

- make the capital available as equity, or
- be financed by a third party institution, or
- implement both solutions. 1

By underwriting individual performance contracts with the Municipalities, the ESCo is committed to:

- make investments in each of the buildings concerned 2. Provide the Municipalities with the guarantee that all their buildings - to a variable extent- will benefit from actual energy retrofitting measures, not only from cost savings resulting from improved energy management.
- Hire a professional, appointed by the Contracting Authority, to take part in the works of the Performance Monitoring and 3 Verification Commission
- Unlike the assessment of the investments made for each building, performance assessment is made globally for each Municipality 4. The Municipalities will pay to the ESCo a fee that is proportional to the actual achievement of performance goals 5.



TENDER DOCUMENTS

Tender documents include:
1. Call for tender
2. Tender specifications and relevant attachments for the preparation of technical-financial bids
3. Affidavit forms required to be admitted in the procedure
4. Contract templates (framework contract and performance contracts)
5. Tender service specifications templates
6. Performance monitoring and verification plan

The purpose of the tender service specifications is to define the minimum service level required from the Service Provider for the duration of the contract in order to achieve and maintain the goals set in the call for tenders. The Performance Monitoring and Verification Plan (PMVP) - set out on the basis of the main internationally recognized standard published by EVO (Efficiency Valuation Organization) - provides an objective feedback of the results obtained every year with the purpose to assess the achievement of the saving percentage declared by the service provider in its tender. A peer Commission is appointed to this purpose.

EVALUATION CRITERIA

The bids were evaluated based on the principle of the most economically advantageous tender as follows:

BUILDINGS	
TECHNICAL CRITERIA	**POINTS**
PROPOSED ENERGY SAVING	22
LIFESPAN OF THE PROPOSED INTERVENTIONS	20
CERTIFICATIONS AS PER THE STD. UNI CEI 11352	2
MAINTENANCE PLAN QUALITY	2
FURTHER REDUCTION OF CO_2 EMISSIONS DUE TO THE USE OF FER	8
CONSISTENCY AND COMPLETENESS OF DESIGN DATA PROVIDED	6
FINANCIAL CRITERIA	**POINTS**
TOTAL AMOUNT OF INVESTMENT PROPOSED	20
AMOUNT OF SAVINGS IN THE MUNICIPALITIES' BUDGET	20

PUBLIC LIGHTING	
TECHNICAL CRITERIA	**POINTS**
REPLACED SPOT LIGHTS (BEYOND MINIMUM CONTRACT REQUIREMENT)	18
REPLACED SPOT LIGHTS IN HISTORIC CENTERS	4
SMART CITY SYSTEMS INSTALLED	5
LIGHT FLOW DURATION OF INSTALLED DEVICES	10
GIS MANAGEMENT SYSTEM	5
ENERGY EFFICIENCY CLASS OF ILLUMINATION DEVICES	8
FINANCIAL CRITERIA	**POINTS**
ENERGY SAVING	30
ALLOCATION OF EXTRA SAVINGS	5
DISCOUNT ON EXTRAORDINARY MAINTENANCE NOT INCLUDED IN THE FEE	10
MAINTENANCE COSTS INCLUDED IN THE FEE	5

INVESTMENTS ON BUILDINGS

Following the results of the goods and service concession awarding for energy refurbishment and management of 18 buildings owned by 5 municipalities of the Metropolitan City, current prospects are for an average energy consumption reduction of over 60%, investments of the tender winner ESCo - BOSCH ENERGY & BUILDING SOLUTIONS - for over 3 million Euros, a reduction of energy and maintenance costs of over 11% and a substantial reduction of emissions of CO_2-eq.

Bruino

Guaranteed energy savings 61,5% Total financial savings 16%
Energy savings 615 MWh Production of renewable sources 15 MWh
Avoided CO_2-eq emissions 124 t Amount of investments proposed € 500,000

MARINELLA PRIMARY SCHOOL Year of construction: 1973
Heated useful surface: 674 m2 - Gross heated volume: 1934 m^3
Proposed measures • Windows replacement: 134 m^2 • External walls insulation: 596 m^2 • Roof insulation: 241 m^2 • Boiler revamping: 50 kW • Photovoltaic plant 10.5 kWp • Remote control and thermal regulation • NZEB CERTIFICATION- Nearly Zero Energy Building

NURSERY SCHOOL VIA VOLVERA Year of construction 1980
Heated useful surface: 1037 m^2 - Heated gross volume: 3736 m^3
Proposed measures • Roof insulation: 716 m^2 • Boiler revamping: 160 kW • Remote control and thermal regulation

ALDO MORO JUNIOR HIGH SCHOOL Year of construction: 1960s
Heated useful surface: 3290 m^2 - Heated gross volume: 10085 m^3
Proposed measures • External wall insulation: 50 m^2 • Roof insulation: 798 m^2 • Boiler revamping: 280 kW • Remote control and thermal regulation

TOWN HALL Year of construction: XIX century
Heated useful surface: 1035 m^2 - Heated gross volume: 4796 m^3
Proposed measures • External wall insulation: 80 m^2 • Roof insulation: 226 m^2 • Boiler revamping: 160 kW • Remote control and thermal regulation

GYMNASIUM OF ALDO MORO JUNIOR HIGH SCHOOL Year of construction: 1960s
Heated useful surface: 1007 m^2 - Heated gross volume: 7825 m^3
Proposed measures • External wall insulation: 938 m^2 • Boiler revamping: 135 kW • Remote control and thermal regulation

INVESTMENTS ON BUILDINGS

None

Guaranteed energy savings 58% Total financial savings 16%
Energy savings 1200 MWh Production of renewable sources 15 MWh
Avoided CO_2-eq emissions 241 t Amount of investments proposed € 900,000

RUBIANO NURSERY SCHOOL Year of construction: 1970s-1980s
Heated useful surface: 1440 m² - Heated gross volume: 5911 m³
Proposed measures • Boiler revamping: 160 kW • Remote control and thermal regulation

Orbassano

Guaranteed energy savings 58% Total financial savings 16%
Energy savings 1200 MWh Production of renewable sources 15 MWh
Avoided CO_2-eq emissions 241 t Amount of investments proposed € 900,000

FERMI JUNIOR SCHOOL Year of construction: 1980
Heated useful surface: 5604 m² - Heated gross volume: 21452 m³
Proposed measures • External wall insulation: 267 mc • Boiler revamping: 640 kW • Remote control and thermal regulation

NEGHELLI GYMNASIUM Year of construction: 1970
Heated useful surface: 524 m² - Heated gross volume 3004 m³
Proposed measures • Boiler revamping: 100 kW • Solar heating system: 10 m² • Remote control and thermal regulation

PAVESE JUNIOR SCHOOL + ANDERSEN NURSERY SCHOOL Year of construction: 1980
Heated useful surface: 5160 m² - Heated gross volume: 20961 m³
Proposed measures • Windows replacement: 75 m² • External wall insulation: 4019 m² • Solar heating system: 10 m² • Remote control and thermal regulation

RODARI JUNIOR SCHOOL Year of construction: 1980
Heated useful surface: 2291 m² - Heated gross volume: 9076 m³
Proposed measures • External wall insulation: 1994 m² • Boiler revamping: 400 kW • Remote control and thermal regulation

INVESTMENTS ON BUILDINGS

Piossasco

Guaranteed energy savings 63% Total financial savings 2%
Energy savings 430 MWh Production of renewable sources 58 MWh
Avoided CO_2-eq emissions 87 t Amount of investments proposed € 500,000

ANDERSEN NURSERY SCHOOL Year of construction: 1981
Heated useful surface: 549 m² - Heated gross volume 2263 m³
Proposed measures • Windows replacement: 83 m² • External wall insulation: 335 m² • Roof insulation: 560 m² • Boiler revamping: 67.6 kW • Solar heating system: 10 m² • Photovoltaic plant: 10 kWp • Remote control and thermal regulation

CRUTO JUNIOR HIGH SCHOOL Year of construction School: 1976 - Gymnasium: 1983
Heated useful surface: 3455 m² - Heated gross volume: 15874 m³
Proposed measures • External wall insulation: 1225 m2
Roofing insulation: 1171 m² • Boiler revamping: 640 kW • Remote control and thermal regulation

MONTESSORI JUNION SCHOOL Year of construction: 2006
Heated useful surface 1225 m² - Heated gross volume 5680 m²
Proposed measures • External wall insulation: 740 m² • Boiler revamping: 120 kW
Solar heating system: 10 m² • Remote control and thermal regulation

PIOSSASCO Roberta Maria Avola Faraci, Mayor

The contract with third-party financing signed with Bosch is channeling large investments for energy refurbishing in 3 schools, that could not be carried out otherwise. Moreover, the role of contracting authority played by the Metropolitan City has provided large support to the Municipality that was lacking the necessary human resources.

INVESTMENTS ON BUILDINGS

Volvera

Guaranteed energy savings 64 % Total financial savings 7%
Energy savings 740 MWh Production of renewable sources 115 MWh
Avoided CO_2-eq emissions 150 t Amount of investments proposed € 1,200,000

DON BALBIANO JUNIOR SCHOOL Year of construction 1960-1966
Heated useful surface: 1366 m² - Heated gross volume: 6387 m³
Proposed measures Windows replacement: 78 m² • External wall insulation: 1032 m² • Under roof insulation: 629 m² • Thermal plant revamping: 280 kW • Remote control and thermal regulation

DON MILANI JUNION SCHOOL Year of construction: 1972-1973
Heated useful surface: 658 m² - Heated gross volume 3069 m³
Proposed measures • Windows replacement: 102 m² • External wall insulation: 582 m² • Roof insulation: 724 m² • Boiler revamping: 67.6 kW • Photovoltaic plant: 10 kWp • Remote control and thermal regulation

PRIMO LEVI JUNIOR SCHOOL Year of construction: 1979
Heated useful surface: 1291 m² - Heated gross volume: 5000 m³
Proposed measures • External wall insulation: 710 m² • Roof insulation: 450 m² • Boiler revamping: 280 kW • Remote control and thermal regulation

CAMPANA UNIFIED SCHOOL Year of construction: 1977
Heated useful surface: 3318 m² - Heated gross volume: 14906 m³
Proposed measures • External wall insulation shell: 1570 m² • Roofing insulation: 425 m² • Boiler revamping: 640 kW • Remote control and thermal regulation

RODARI NURSERY SCHOOL Year of construction: 1973-1974
Heated useful surface: 1496 m² - Heated gross volume: 6376 m³
Proposed measures • Windows replacement: 122 m² • External wall insulation: 625 m² • Roofing cover insulation: 772 m² • Boiler revamping: 169 kW • Solar heating system: 10 m² • Photovoltaic plant: 10 kWp • Remote control and thermal regulation

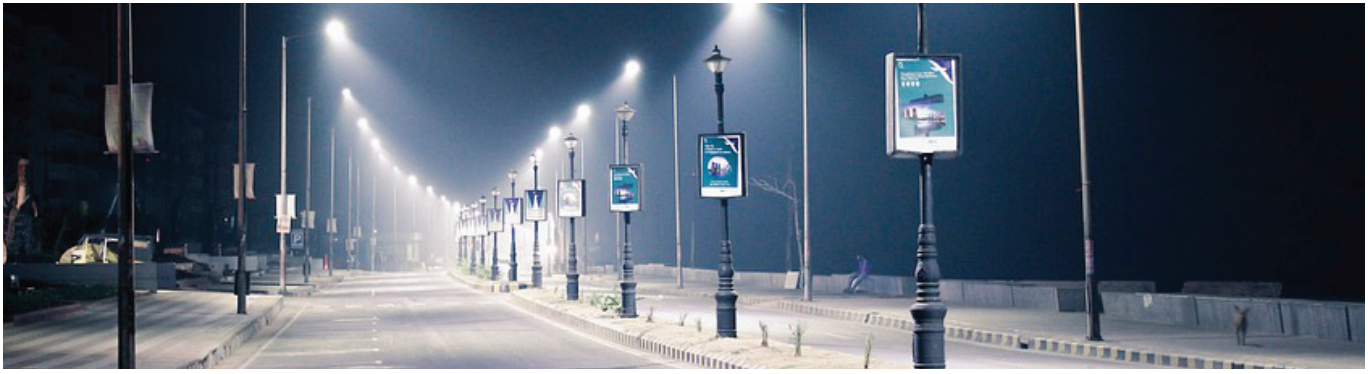
BOSCH Energy and Building Solutions Carlo Papi, Public Administration Commercial Manager

EPC contracts bring about major advantages to Public Administrations, enabling buildings refurbishment, savings on energy bills, reduced emissions of pollutants, and allowing the transfer of technical and financial risks to the ESCo. The future scenario is one of further expansion at local and national level.

INVESTMENTS ON PUBLIC LIGHTING

The purpose of the call for public tenders issued by the Metropolitan City in January 2017 is to identify the ESCo that shall be awarded for the energy retrofitting project and the management of public lighting systems in the municipalities of Azeglio, Baldissero Torinese, Bibiana, Bussoleno, Pecetto Torinese and Rivalta Torinese. The project covers 3075 spot lights for a minimum contract starting investment of about 1.4 million Euros (excl. VAT). The minimum contract starting energy savings ranges between 22% and 44%, according to the municipalities, while expected contract duration is 13 years, of which the first year will be focussed on energy refurbishment and the following twelve years on service management. The tender will be awarded within 2017.

LIST OF MUNICIPALITIES	ELECTRIC POWER HISTORIC CONSUMPTION kWh	TOTAL NUMBER OF SPOT LIGHTS	MIMUM NUMBER OF SPOT LIGHTS TO BE REFURBISHED	MUNICIPALITY SAVINGS PERCENTAGE	CONTRACT STARTING FEE FOR MAINTENANCE AND MANAGEMENT	MINIMUM INVESTMENT REQUIRED FOR SYSTEM EFFICIENCY UPGRADING (excl. VAT)	MINIMUM CONTRACT STARTING ENERGY SAVINGS
AZEGLIO	189.738	333	182	5%	€ 5.328	€ 141.513	22%
BALDISSERO T.SE	511.802	758	596	16%	€ 12.128	€ 364.826	44%
BIBIANA	237.541	413	209	5%	€ 6.608	€ 127.150	27%
BUSSOLENO	324.083	473	351	10%	€ 7.568	€ 208.129	34%
PECETTO T.SE	402.845	716	416	8%	€ 11.456	€ 341.678	23%
RIVALTA T.SE	232.486	382	300	5%	€ 6.112	€ 189.334	44%
	1.898.495	**3.075**	**2.054**		**€ 49.200**	**€ 1.372.631**	



TORINO: REVAMPING 2 PROJECT .....

The reference framework
The 2020Together is part of a broader plan, called Torino Smart City, that identifies targeted actions for implementing energy savings in public properties and supporting innovation within the reference market. Among key actions are:

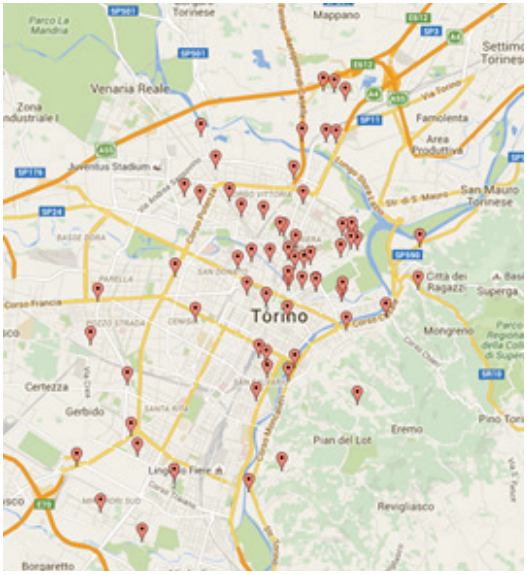
- Creation of a global **Energy Management System**, capable to integrate all applications used in building management into a single system and enable a systematic collection of all available data related to existing buildings. In the future, the system will ensure automatic data acquisition from monitoring systems installed in the buildings, and become a valuable tool to assist estate managers in running the systems more productively and plan more effective future efficiency upgrading actions.

- **Implementation of a global energy efficiency upgrading measures on a number of public buildings** (systems and External wall insulation), resulting in energy requirements cut down by about 60%. In particular, in the years from 2007 to 2016, six school buildings have been refurbished and the first step of a technological renovation of boilers has been implemented in about 40 buildings of the city (Revamping 1 project). Innovative energy efficiency strategies were also tested in the framework of European projects for indoor lighting systems in another 2 school buildings (PROLITE Europen project-www.prolitepartnership.com) or innovative energy management systems (PROBIS European project-www.probisproject.com).

- **TORINO-LED Project**: replacement of about 55,000 public spot lights with LED technology through a third-party financing contract under the current service performance contract with Iren Servizi e Innovazione S.p.A. for public lighting management. The project is expected to produce savings for 25.000 MWh a year and about 5 million Euros.

- **Realization of the "Energy Center"**, supporting public and private research and innovation in the field of energy efficiency, and an example of nearly zero energy building.

Short project description
The REVAMPING2 initiative was launched under the 2020together project as an example of **massive operation of technological renovation of boilers in 118 buildings owned by the municipalities**, implemented by underwriting an energy performance contract with IREN Servizi e Innovazione S.p.A



THE FIGURES OF REVAMPING 2

- 118 MUNICIPAL BUILDINGS, MOSTLY SCHOOLS AND OFFICES
- INSTALLATION OF HIGH-EFFICIENCY LOW-EMISSION CON DENSING BOILERS, THERMOSTATIC VALVES AND METERING SYSTEMS IN MOST BUILDINGS.
- VOLUME COVERED: ABOUT 1,400,000 M^3
- TOTAL INSTALLED POWER: 71,876 KW

Revamping boilers means technologically renovating those thermal plants that are critical for poor energy efficiency and high pollutant emissions. The new systems are fueled by high-tech natural gas condensing boilers ('4 stars' – Class 5 – Low NOx classification), and consequently implemented with a number of new components that are compatible with this technology in compliance with the regulations.

The Contract Model

For the implementation of the project, the City of Torino has developed an energy performance contract model compliant to Decree Law no.102/2014, that integrates the existing Performance Specification signed with IREN Servizi e Innovazione S.p.A. IREN Servizi e Innovazione S.p.A. is a company of the IREN S.p.A. group certified to UNI11352 Standard that acts as an ESCO on behalf of the City of Torino.

The contract provides for:

- Installation of high-efficiency boilers and burners.
- Acquisition and installation of thermostatic valves for part of the buildings.
- Management of the refurbished buildings until 31.12.2020. The fee shall be paid until June 2021 to cover 2020 heating season.

The remuneration of supplies and services provided by the ESCo is granted in the form of annual fees against the fulfilment of energy performance goals.

The main provisions of the EPC contract are:

- Expected energy savings of about 30% of previous recorded consumption, 10% of which guaranteed by contract.
- Any performance below the minimum guaranteed savings implies penalties in terms of reduced contract fee.
- In case of performance above the guaranteed savings, the contract provisions are as follows:

    1. savings between 10% and 15%: benefits in favor of the Municipality;
    2. savings between 15% and 20%: shared benefits, 30% to IREN Servizi e Innovazione S.p.A. and 70% to the Municipality;
    3. savings above 20%: shared benefits, 50% to IREN Servizi e Innovazione S.p.A. and 50% to the Municipality.

The contract also governs access to national incentives (Conto Termico) for the implementation of energy efficiency upgrading that are still largely underexploited by Italian Public Administrations. IREN Servizi e Innovazione S.p.A. shall be entitled to access Conto Termico incentives (DM 28/2011 and further amendments) in their capacity of entity in charge. The estimated amount of the incentive is about 2M€ in five yearly installments.
Performance verification is regulated by a Monitoring Plan - that forms an integral part of contract documents - and is intended to assess the compliance to contractual obligations. The procedure adopted is in line with international standards and provides for an adjustment of consumption according to the variation of volumes, hours of use, room temperatures and degree days.

ECONOMIC-FINANCIAL PLAN	VALUE
TOTAL INVESTMENT, INCL. VAT OF WHICH, INVESTMENT FOR ENERGY EFFICIENCY UPGRADING	11.3 MILLION EUROS 7,7 MILLION EUROS
INITIAL CONTRIBUTION OF THE CITY OF TORINO	1.7 MILLION EUROS
ESTIMATE PAYBACK OF CONTO TERMICO	2 MILLION EUROS
TOTAL FEES	7.6 MILLION EUROS

Annual fees shall be redefined after the completion of the works according to actual costs sustained for tenders and yearly, according to the savings achieved and verified by the Monitoring Plan mentioned above.

TOTAL RESULTS AND INDICATORS OF THE PROJECT .....

TOTAL INVESTMENTS INCL. VAT	12.5 MILLION EUROS
PROJECT BUDGET	490,000 EUROS
LEVERAGE	25
CO_2-eq EMISSIONS AVOIDED	4360 TONS
PRIMARY ENERGY SAVED	22050 MWH
RENEWABLE ENERGY PRODUCED	200 MWH

TOTAL INVESTMENTS	3.1 MILLION EUROS
NO. OF BUILDINGS	18
GUARANTEED ENERGY SAVINGS	60%
PRIMARY ENERGY SAVED	3050 MWH
AVERAGE COST SAVINGS	11%
PRIMARY ENERGY SAVED	620 TONS
RENEWABLE ENERGY PRODUCED	200 MWH

BUILDINGS IN THE METROPOLITAN AREA:
Bruino, None, Orbassano, Piossasco, Volvera

TOTAL INVESTMENTS	7.7 MILLION EUROS
NUMBER OF BUILDINGS	118
EXPECTED ENERGY SAVINGS	30%*
MINIMUM PRIMARY ENERGY SAVED	17,500 MWH
MINIMUM AVOIDED EMISSIONS OF CO_2-eq	3540 TONS

CITY OF TORINO

*Granted savings is 10%, but contractual conditions push the realization of about 30% energy saving

MINIMUM CONTRACT STARTING INVESTMENT	1,7 MILLIONS EUROS
MINIMUM NUMBER OF SPOT LIGHTS TO BE REFURBISHED	2054
MINIMUM CONTRACT STARTING ENERGY SAVINGS	22%-44%
MINIMUM PRIMARY ENERGY SAVINGS	1500 MWH
MINIMUM AVOIDED CO_2-eq EMISSIONS	200 TONS

PUBLIC LIGHTING IN THE METROPOLITAN AREA:
Azeglio, Baldissero Torinese, Bibiana, Bussoleno, Pecetto Torinese, Rivalta Torinese

ORBASSANO Eugenio Gambetta, Mayor

Our adhesion to 2020Together is part of an effort of the Municipality to create awareness of the need to reduce energy consumption and CO2-eq emissions through signing up the Covenant of Mayors. The massive work carried out for energy refurbishment in 5 municipal buildings is going in the direction of the goals set by the Covenant.

COMMUNICATION AND NETWORKING .....

The communication of the actions carried out and of the results obtained is one of the most important steps in a project that, like 2020Together, involves a number of different stakeholders. The main goals are: raising awareness among local authorities and public opinion about the opportunities provided by this project and by IEE Program, and give the highest visibility to work progress in this direction.
The tools:

- internet site
- roll-up
- press releases
- articles on media and social networks
- newsletters
- final leaflet

Exchanging information, experience and good practice with similar projects is of the essence in developing innovative projects like 2020Together. For this reason, networking has involved mutual invitations to events and workshops and the participation in webinars with other national and international bodies and organizations.

NETWORKING

Region of Marche: MARTE project, Province of Chieti: ELENA project, Province of Milano: ELENA project, Municipality of Padova: PadovaFIT project, Province of Matera: FESTA project, Agency for Energy and Sustainable Development of Modena: ELENA project, Consortium for Scientific and Technological AREA Research of Trieste: EMILIE project, Province of Teramo: Paride project, Province of Girona (Spain): BEenerGI project

THE FIGURES IN COMMUNICATION

- 11 press releases
- 4 newsletters
- 77 articles
- 5 Facebook postings
- 7 tweets
- 2 videos
- 4 presentations at national events
- 6 presentations at international events
- 1 roll-up
- 1 leaflet

VOLVERA Ivan Marusich, Mayor

The communication of the results obtained with this project to both citizens and companies is critical, in particular as part of an effort to raise awareness and convey good practices that can be replicated.

PROBLEMS AND RECOMMENDATIONS .....

The development of a project like 2020Together faces a number of obstacles and weak points that are inherent to any innovative path:

- Political approval of the agreements with Municipalities: political elections during project development can slow down its progress.
- One central purchasing body: while it is an advantage in terms of better technical and administrative competence, it can also represent a constraint that causes delays due to the priorities set by the contracting authority.
- The time for data collection and energy audit should not be underestimated if an accurate baseline analysis is required.
- Lack of sufficient knowledge and experience of local authorities about energy performance contracts involving third-party financing.
- Need for legal aid and complexity of tender document preparation.

The experience acquired has brought about some considerations and recommendations:

- Need for **strong political commitment** of contracting authority and of the Municipalities for sustainable energy;
- The central contracting authority and the Municipalities must be capable of mutual influence to ensure that the project does not run aground when problems arise: **compelling agreements**, binding the parties and including penalties for non-compliance;
- **Technical -administrative support and training** of Municipalities are vital;
- Efficacy of **energy pre-check** for identifying the most suitable building;
- Need for the utmost **transparency and involvement** of Municipalities in all phases of the project;
- Need for **accurate and detailed information** for the preparation of tenders by the ESCo's;
- Efficacy of **communication and discussion** with ESCo's potentially interested in EPC market.
- Higher efficiency through the **reduction of the number of calls for tenders**: each call for tenders applies the same procedure with the same timing; however, the scope of the tender must be carefully evaluated to ensure the participation of the largest possible number of bidders.
- Proposing and discussing **successful experiments already implemented** in similar conditions is useful to avoid any mistrust among Municipalities.

DISSEMINATION AND REPLICABILITY .....

Disseminating the content of an innovative project like 2020Together is crucial to ensure its replicability in the largest possible number of different scenarios. Replicability also means durability in time of the results and expertise obtained.
In the process of its development, 2020Together has been presented in several occasions, both in Italy and abroad, always arising the interest of the audience. While describing the development of the project, we have also emphasized the difficulties met, the ongoing adjustments required during works, and the lessons learned so that these could be of help for those who were interested in starting similar projects.

Another tool designed to promote the repeatability of the project is the "Guide for drawing up EPC contracts - The 2020 Together experience", exploring the details of the key points emerged while the project was in progress, including the tendering process (with particular reference to the experience acquired on buildings). Thanks to the work and experience gained during the implementation of the this project, 25 more buildings in 10 Municipalities are now ready to be submitted to the same procedure during 2017 at the care of the Metropolitan City of Torino.

All documents related to this project are available at:
www.cittametropolitana.torino.it/cms/ambiente/risorse-energetiche/progetti-energia-sostenibile/2020together

NONE Roberto Bori Marrucchi, Deputy Mayor
Thanks to the EPC contract started under the 2020Together project, our Municipality shall make cost savings for 30% of current expenditure in one of our school buildings.

PROJECT: 2020TOGETHER

European Program: Intelligent Energy Europe – IEE
Measure: Mobilising Local Energy Investment - MLEI
April 1st, 2014 – March 31st, 2017
Total budget: 487,955 Euros
EU share of funding : 365,967 Euros

Contacts:

Regione Piemonte
Settore Sviluppo Energetico Sostenibile
Corso Regina Margherita, 174
10152 Torino – Italia
silvio.denigris@regione.piemonte.it

Publishing and editorial coordination:

Silvio De Nigris e Barbara Girardi

With the collaboration of:

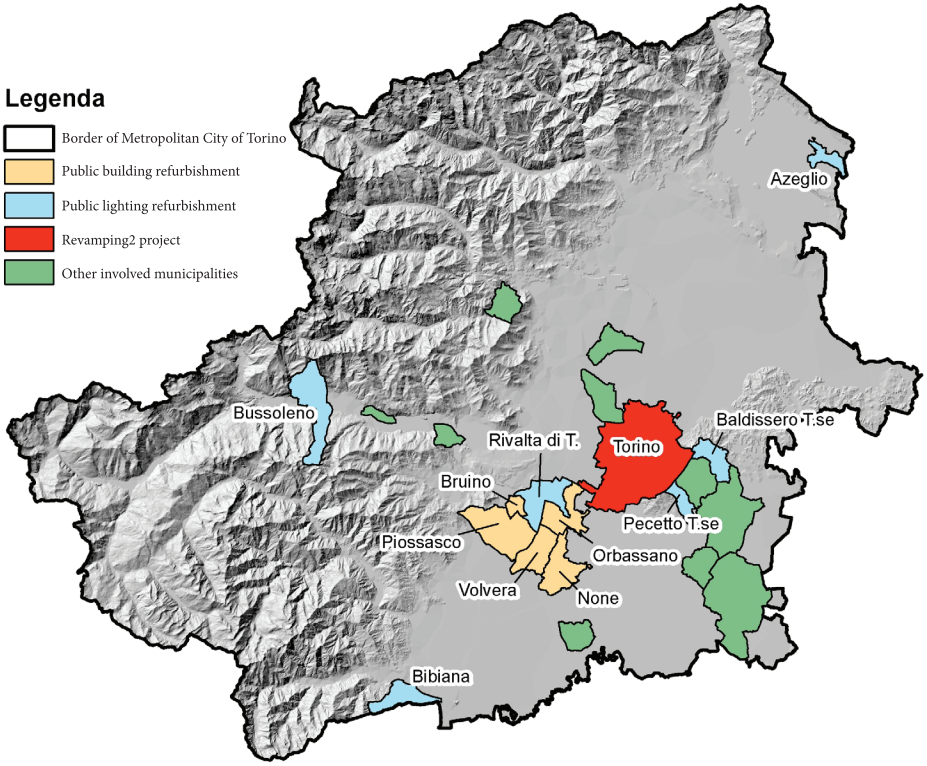
Elena De Ambrogio e Sergio Ravera

Desktop Publishing:

Servizio Comunicazione of the Metropolitan City of Torino

Printed by:

Centro Stampa Regione Piemonte



20 TO GE THER
torino is getting there

REGIONE PIEMONTE
TORINO METROPOLI Città metropolitana di Torino
ENVIRONMENT PARK Parco Scientifico Tecnologico per l'Ambiente
CITTA' DI TORINO
Cofinanziato dal programma "Energia intelligente-Europa" dell'Unione europea