



Summary report on investments

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2020TOGETHER
2020 Torino is getting there
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Short Description

This document summarize the investments and the related available evidence.

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1 Summary Table on the investments and achieved impact

#	Municipality	Address	Description	Investment in €	CO2 savings	Energy savings	RES production
					tCO2/year (in %)	MWh/year (in %)	MW (MWh/year)
1	City of Torino	Several building's addresses	Renovation of 200 heating boilers and installation of thermostatic valves in 118 Municipal buildings (1,3 M cm of heated volume for a baseline consumption of about 6 M cm of natural gas consumption). Guaranteed savings of 10% according to the baseline energy consumption. The renovation program is based on a third party financing system and EPC contract signed with IREN. Real expected savings thanks to the sharing savings system designed are envisaged at 30%.	€ 7.693.320	3.541,62 (30%)	17.532,75 (30%)	0 (0)
2	City of Bruino	<ul style="list-style-type: none"> - Via Amedeo Modigliani - Via Volvera n.6 - Piazza Donatori di Sangue (2 buildings) - Piazza Municipio n.3 	Deep renovation of 5 municipal buildings (4 schools and 1 office building). Investments planned are: 134 mq of windows changed, 1.550 mq of external walls insulated, 3000 mq of ceiling insulated, 5 boilers changed (1 heat pump and 4 condensing boilers), 11 kWp of PV installed, 63 thermostatic valves installed, BEMs installed.	€ 499.343	124,15 (61,50%)	614,59 (61,5%)	0,01 (14,73)



#	Municipality	Address	Description	Investment in €	CO2 savings	Energy savings	RES production
					tCO2/year (in %)	MWh/year (in %)	MW (MWh/year)
3	City of Orbassano	- Via Dante Di Nanni n.20 - Via Neghelli n.11 (2 buildings) - Piazza Edmondo De Amicis	Deep renovation of 4 municipal schools. Investments planned are: 75 mq of windows changed, 6.000 mq of external walls insulated, 270 m3 of inflated insulating material into external walls, 3 boilers changed (condensing boilers, 1 in common between 2 buildings), 20 mq of solar thermal panels installed, 585 thermostatic valves installed, BEMs installed.	€ 899.416	240,51 (58,2%)	1.190,66 (58,2%)	0,01 (15,00)
4	City of None	- Piazza Cavour 10	Renovation of 1 municipal school. Investments planned are: 1 boiler changed (condensing boiler), 81 thermostatic valves installed, BEMs installed.	€ 39.678	15,84 (61,7%)	78,43 (61,7%)	0 (0)
5	City of Piosasco	- Via Cavour (2 buildings) - Via Cumiana	Deep renovation of 3 municipal schools. Investments planned are: 83 mq of windows changed, 2.300 mq of external walls insulated, 1.200 mq of ceiling insulated, 3 boilers changed (1 heat pump and 2 condensing boilers), 20 mq of solar thermal panels installed, 11 kWp of PV installed, 109 thermostatic valves installed, BEMs installed.	€ 500.508	86,90 (63,4%)	430,21 (63,4%)	0,03 (58,07)



#	Municipality	Address	Description	Investment in €	CO2 savings	Energy savings	RES production
					tCO2/year (in %)	MWh/year (in %)	MW (MWh/year)
6	City Volvera	of - Via Risorgimento n.2 - Via Garibaldi 1 (3 buildings) - Via Risorgimento 19	Deep renovation of 5 municipal schools. Investments planned are: 300 mq of windows changed, 4.000 mq of external walls insulated, 3.000 mq of ceiling insulated, 5 boilers changed (1 heat pump and 2 condensing boilers), 10 mq of solar thermal panels installed, 20 kWp of PV installed, 316 thermostatic valves installed, BEMs installed.	€ 1.216.204	148,79 (63,7%)	736,57 (63,7%)	0,03 (113,48)
7	City Azeglio	of 333 street lights	Energy renovation and management of at least 182 street lights with and energy savings of at least 22%	€ 172.646	12,90 (22%)	97,08 (22%)	0
8	City Baldissero T.se	of 758 street lights	Energy renovation and management of at least 596 street lights with and energy savings of at least 44%	€ 445.088	69,58 (44%)	523,70 (44%)	0
9	City Bibiana	of 413 street lights	Energy renovation and management of at least 209 street lights with and energy savings of at least 27%	€ 155.123	19,82 (27%)	149,15 (27%)	0
10	City Bussoleno	of 473 street lights	Energy renovation and management of at least 351 street lights with and energy savings of at least 34%	€ 253.918	34,05 (34%)	256,25 (34%)	0
11	City Pecetto T.se	of 716 street lights	Energy renovation and management of at least 416 street lights with and energy savings of at least 23%	€ 416.848	28,63 (23%)	215,48 (23%)	0



#	Municipality	Address	Description	Investment in €	CO2 savings	Energy savings	RES production
					tCO2/year (in %)	MWh/year (in %)	MW (MWh/year)
12	City of Rivalta T.se	382 street lights	Energy renovation and management of at least 300 street lights with and energy savings of at least 44%	€ 230.988	31,61 (44%)	237,89 (44%)	0
Total				€12.523.079	4.354	22.063	0

Regarding the investments on buildings, the energy savings are reported as the contractual data for investments from 2 to 6 (bundling buildings), whereas for Investment 1 the savings are reported as the expected ones. The guaranteed savings in Revamping2 (investment 1) is set out at 10%, but it is expected to be 30%, due to a favorable energy sharing system. The data assessed for the first season seems to demonstrate the validity of such assumptions. A short report on energy consumption recorded at the end of the first winter season (2016-2017) is enclosed to the document.

The energy savings for public light (investments from 7 to 12) are reported as the baselines set in the tender documents. The CO₂ emission savings are calculated as follows: the baseline electric energy consumptions are multiplied with the minimum savings to be achieved set the tender documents, thus the savings are estimated as 636 MWh/y. Such consumptions are converted into primary energy (1.479 MWh/y), dividing them by the average conversion yield for power generation (0.43). The CO₂ emissions avoided are calculated by multiplying the electric consumption for 0.309 (CO₂kg/kWh_{el}) conversion factor, which is the average for Italian power generation nowadays.



2 Summary table on available evidence

#	Municipality	Address	Investment in €	Available evidence	Page number
1	City of Torino	Several building's addresses	€ 7.693.320	Deliberation Act EPC contract	page 7 of the deliberation act Annex D of the EPC
2	City of Bruino	<ul style="list-style-type: none"> - Via Amedeo Modigliani - Via Volvera n.6 - Piazza Donatori di Sangue (2 buildings) - Piazza Municipio n.3 	€ 499.343	Framework contract and EPC contract	<ul style="list-style-type: none"> - page 11 of the framework contract - Article 11.1 of EPC
3	City of Orbassano	<ul style="list-style-type: none"> - Via Dante Di Nanni n.20 - Via Neghelli n.11 (2 buildings) - Piazza Edmondo De Amicis 	€ 899.416	Framework contract and EPC contract	<ul style="list-style-type: none"> - page 11 of the framework contract - Article 11.1 of EPC



#	Municipality	Address	Investment in €	Available evidence	Page number
4	City of None	- Piazza Cavour 10	€ 39.678	Framework contract and EPC contract	- page 11 of the framework contract - Article 11.1 of EPC
5	City of Piosasco	- Via Cavour (2 buildings) - Via Cumiana	€ 500.508	Framework contract and EPC contract	- page 11 of the framework contract - Article 11.1 of EPC
6	City of Volvera	- Via Risorgimento n.2 - Via Garibaldi 1 (3 buildings) - Via Risorgimento 19	€ 1.216.204	Framework contract and EPC contract	- page 11 of the framework contract - Article 11.1 of EPC
7	City of Azeglio	333 street lights	€ 172.646	Tender documents	Pag. 5 of the terms of reference of the call + Annex B
8	City of Baldissero T.se	758 street lights	€ 445.088	Tender documents	Pag. 5 of the terms of reference of the call + Annex B
9	City of Bibiana	413 street lights	€ 155.123	Tender documents	Pag. 5 of the terms of reference of the call + Annex B



#	Municipality	Address	Investment in €	Available evidence	Page number
10	City of Bussoleno	473 street lights	€ 253.918	Tender documents	Pag. 5 of the terms of reference of the call + Annex B
11	City of Pecetto T.se	716 street lights	€ 416.848	Tender documents	Pag. 5 of the terms of reference of the call + Annex B
12	City of Rivalta T.se	382 street lights	€ 230.988	Tender documents	Pag. 5 of the terms of reference of the call + Annex B
			€12.523.079		



Framework Contract signature with Bosch



EPC signature between Bosch and the City of Orbassano



List of Annexes

Annex for Investment n. 1

- Deliberation Act. N. 1579/2016
- Annex 1 (EPC contract)
- Annex A, B, C, D, F, G
- Calculation of energy savings for revamping 2 initiative (first winter season)

Annex for Investments n. 2, 3, 4, 5, 6

- Framework Contracts
- EPC for Bruino City
- EPC for None City
- EPC for Orbassano City



- EPC for Piosasco City
- EPC for Volvera City
- BOSCH Offer (**confidential**)

Annex for Investments n. 7,8, 9, 10, 11, 12

- Terms of reference
- Annex A
- Annex B-H
- Maintenance and management specifications
- Monitoring and Evaluation Plan
- Framework contract scheme
- EPC scheme

