



**infinitesolutions**  
FINANCING ENERGY TRANSITION IN CITIES

## **Udine smart city, European projects and Urban innovative actions**

**Agnese Presotto**

**Municipality of Udine**

# The city of Udine



POPULATION: ~ 100.000 inhabitants

METROPOLITAN AREA

POPULATION: 175.000 inhabitants

MUNICIPAL AREA: kmq 56.81

➤ 38 km cycle routes (9 % of overall roads)

➤ CARS/INHABITANTS: 64/100

➤ 67% waste separate collection

**Still good balance between human settlements and local environmental assets**

# Local public authority as an orchestra leader



**Strategic  
General city  
plan**

*Healthy cities plan +  
HUP*

*SEAP*



*Urban area mobility  
plan*

EMS



**Infinite solutions**

**infinite**solutions****  
FINANCING ENERGY TRANSITION IN CITIES

- CEC5



-Cityfied



**EU  
specific  
projects  
and  
initiative  
s**

- UIA: prj urban TIMES

- Urbact: prj 4EACH

# Sustainable Energy Action plan 2020

*Healthy cities  
plan + HUP*

**CO2 emissions**

**692.479**

**SEAP**

**action plan**

**Short term/**

**long term action - 20% CO2 tons**

*Strategic General city  
plan*

*Urban area  
mobility plan*

**2% CO2  
local authority**

EMS

**-18% CO2  
territory**

- involvement of citizens and private sector

- Involvement of relevant public and private stakeholder

## SHORT TERM ACTIONS

**Municipal Real estate Energy management;**

**Interventions on municipal buildings;**

**Photovoltaic plants on school roofs, solar thermal panels on sports facilities**

**Energy efficiency in traffic light network**

**Technology innovation in public light network and votive lights;**

**Micro hydropower plants in city canals**

**Fostering the creation of Ethical purchasing groups;**

## LONG TERM ACTIONS

**Cogeneration plant and district heating;  
- 60.000 TONS**

**Energy saving in private buildings and high efficiency rebuilding option;**

**Energy efficiency in large scale retail distributors;  
7500 tons**

**Increasing of green urban areas;**

**Transport rationalisation (people and goods)  
34000 tons**

**Energy info point**

**Large scale photovoltaic plants**



## ***Udine: SEAP actions done***



# Environmental Management System

*Healthy cities  
plan + HUP*

*SEAP*

*Strategic General city  
plan*

*Urban area  
mobility plan*

**EMS**

**ISO 14001 and EMAS –  
environmental management &  
Audit Scheme Certifications**



**Obtained in for the entire  
local authority organisation  
as elements of excellence in  
management of critical  
environmental aspects and  
good practice for both  
private and public actors**

**Infinite solutions Duration: 2014 -2017  
(IEE 07-13)**

-CEC 5

-Cityfied (SCC  
07-13)

-UIA: prj urban  
TIMES

- Urbact: prj  
4EACH

***EU  
specific  
projects  
and  
initiatives***

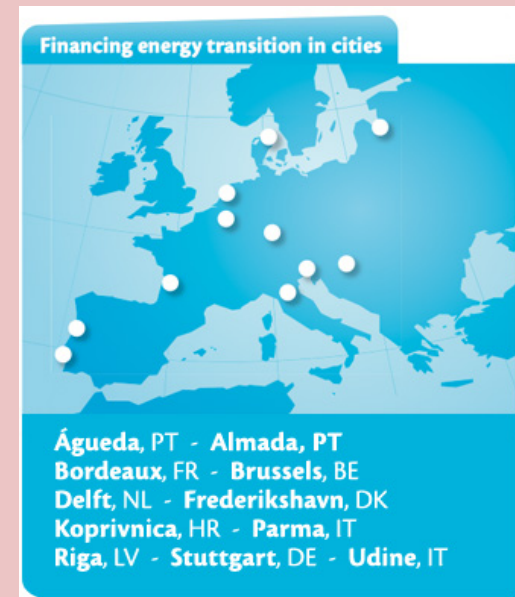
***Intracting scheme:***

**Stuttgart (DE), Agueda, Almada (PT),  
Koprivnica (HR), Udine (IT)**

***- Soft Loans scheme:***

**-Delft (NL), Parma (IT), CU Bordeaux (FR),  
Brussels (BE), Riga (LT), Frederikshaven  
(DK)**

**-[www.energy-cities.eu/infinitesolutions](http://www.energy-cities.eu/infinitesolutions)**





2014 -15

Energy/Finance  
Dpt activities

council

Local study/  
action Plan



Formal  
approval

2015 -17

How it will work

rules

-10% CO2 sav

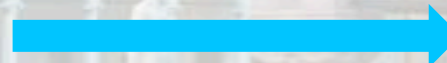
Life invest/ROI > 1

ROI < 10 yrs

Priority to schools

Priority to  
-integrated actions

**Climate Fund**

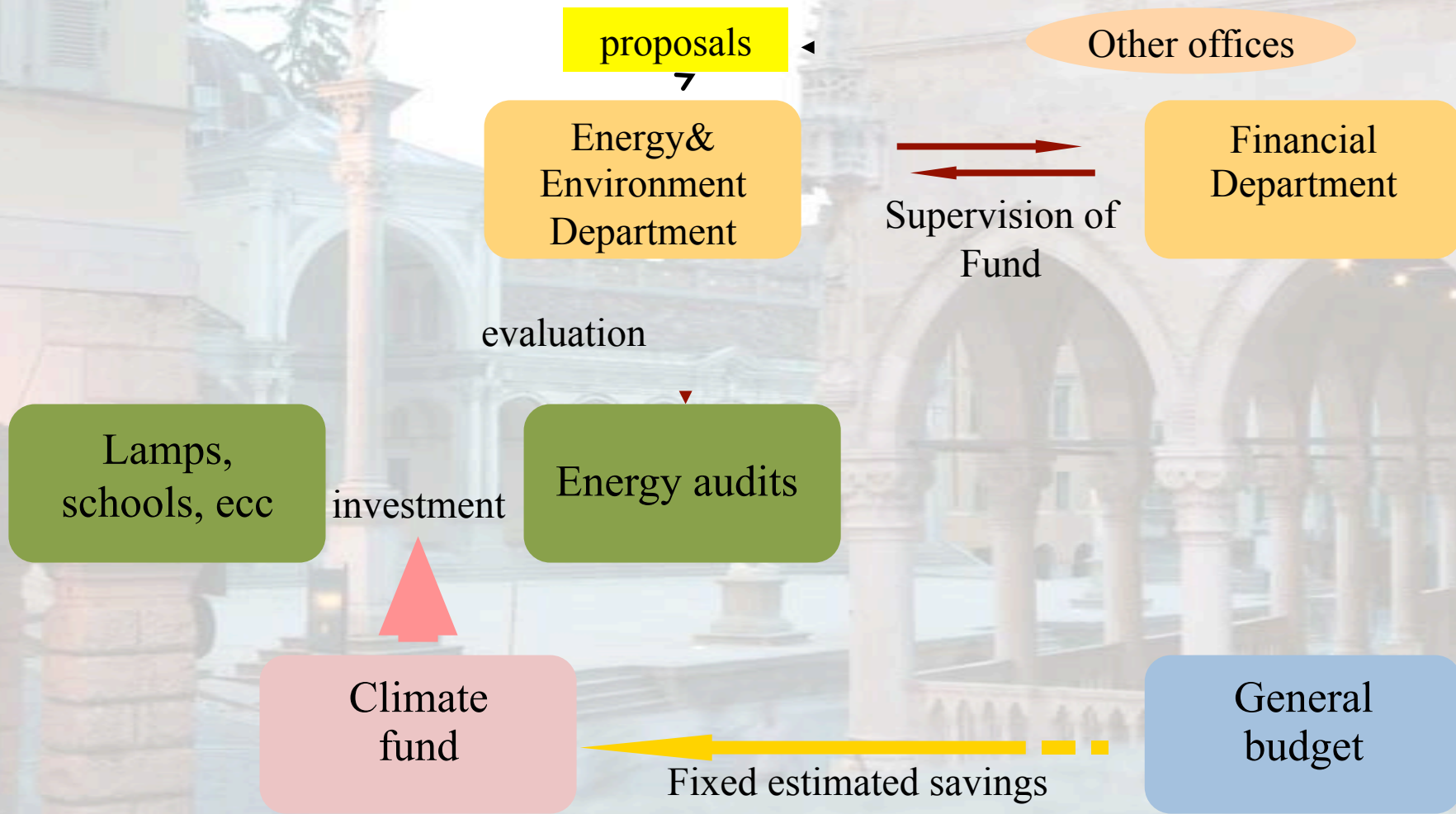


Council decision  
September 289/2015

Budget

# infinitesolutions

FINANCING ENERGY TRANSITION IN CITIES



# Climate Fund: Lighting System replacement PARKING CAR FACILITY

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## ACTION 1

parcheggio "VIA DEL VASCHELLO"	IMPIANTO ESISTENTE tecnologia tradizionale	NUOVO IMPIANTO tecnologia LED
ore funzionamento anno [h]	10.073	10.073
costo kWh [€/kWh]	€ 0,20	€ 0,20
potenza totale assorbita [kW]	2,1	1,0
energia [kWh]	20.983	9.912
differenza di energia	-53%	
Costo annuo energia [€]	€ 4.197	€ 1.982
Costo annuo manutenzione [€]	€ 150	€ 20
Costo totale annuo di esercizio [€]	€ 4.347	€ 2.002
Costo installazione impianto [€]	€ 148	€ 2.423
Maggior costo investimento LED [€]		€ 2.275
Minor costo gestione LED [€]		€ 2.344
ROI [anni]		1,0
Minor consumo di energia [kWh]		11.071
Riduzione emissioni di CO2 [tonn equivalenti]		5,88

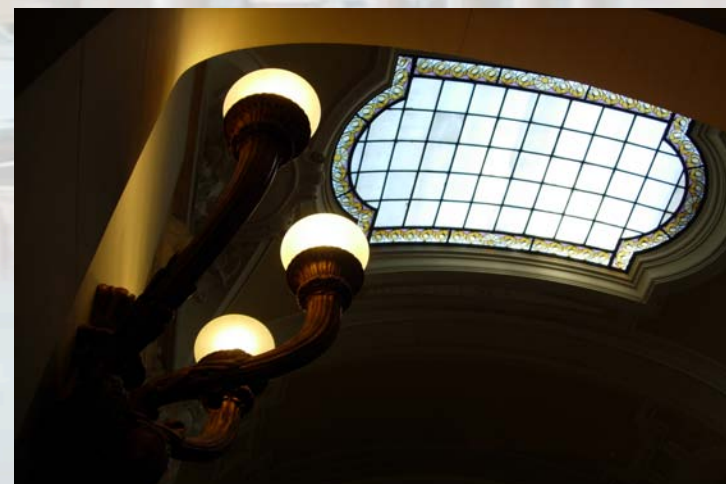
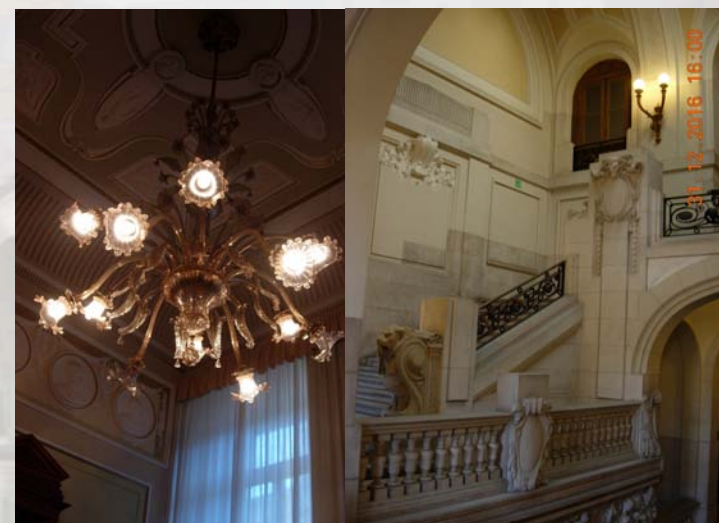


# Climate Fund: Lighting System replacement: MAIN MUNICIPAL BUILDING

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FINANCING ENERGY TRANSITION IN CITIES

## ACTION 2

palazzo "D'ARONCO"	IMPIANTO ESISTENTE tecnologia tradizionale	NUOVO IMPIANTO tecnologia LED
ore funzionamento anno [h]	2.160	2.160
costo kWh [€/kWh]	€ 0,20	€ 0,20
potenza totale assorbita [kW]	4,2	0,8
energia [kWh]	9.072	1.620
differenza di energia	-82%	
Costo annuo energia [€]	€ 1.814	€ 324
Costo annuo manutenzione [€]	€ 10	€ 0
Costo totale annuo di esercizio [€]	€ 1.824	€ 324
Costo installazione impianto [€]	€ 250	€ 1.620
Maggior costo investimento LED [€]		€ 1.370
Minor costo gestione LED [€]		€ 1.500
ROI [anni]		0,9
Minor consumo di energia [kWh]		7.452
Riduzione emissioni di CO2 [tonn equivalenti]		3,96



# Climate Fund: Lighting System replacement: SCHOOL BUILDING

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FINANCING ENERGY TRANSITION IN CITIES

## ACTION 3

scuola primaria "FRUCH"	IMPIANTO ESISTENTE tecnologia tradizionale	NUOVO IMPIANTO tecnologia LED
ore funzionamento anno [h]	3.388	3.388
costo kWh [€/kWh]	€ 0,23	€ 0,23
potenza totale assorbita [kW]	4,2	2,9
energia [kWh]	14.147	9.879
differenza di energia	-30%	
Costo annuo energia [€]	€ 3.254	€ 2.272
Costo annuo manutenzione [€]	€ 1.520	€ 0
Costo totale annuo di esercizio [€]	€ 4.774	€ 2.272
Costo installazione impianto [€]	€ 678	€ 25.510
Maggior costo investimento LED [€]		€ 24.832
Minor costo gestione LED [€]		€ 2.502
ROI [anni]		9,9
Minor consumo di energia [kWh]		4.268
Riduzione emissioni di CO2 [tonn equivalenti]		2,27





# CEC 5 - Demonstration of energy efficiency and utilisation of RES through public buildings

Infinite solutions (IEE 07-13)

- CEC 5

-Cityfied (SCC 07-13)

- UIA: prj urban TIMES

-Urbact: prj 4EACH

**Duration:**  
**2012 -2014**

## Partners

Vorarlberg Region (AS)  
Chamer of architects (CZ)  
Slin Region Energy agency (CZ)  
ysogina Region Energy agency (CZ)  
City of Ludwisburg – DE  
Ministry of Development HU  
City of Udine (IT)  
City of Bydgoszcz (PL)  
Development centre (SI)  
Ministry of agriculture and environment (SI)  
Engineering and infrastructure institute (SI)  
Trnava Region (SK)



**EU specific projects and initiatives**



# CITYfied

ReplICAble and InnoVAtive  
Future Efficient Districts and cities

## Replicable and innovative future Districts and cities

Technical  
solutions  
(IEE 07-13)

- CEC 5

-Cityfied  
(SCC  
07-13)

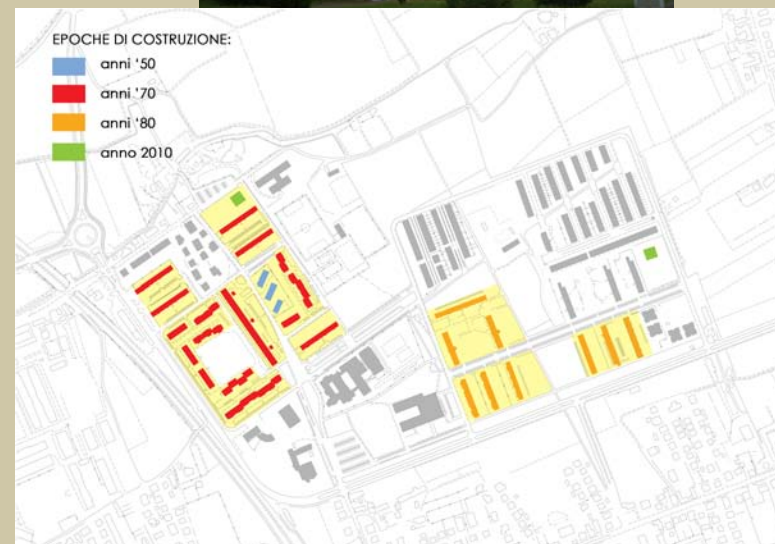
UIA: prj  
urban  
TIMES

-Urbact: prj  
4EACH

**Duration:**  
**2014 -2019**  
**Partners**

Demo sites  
Lund (SE)  
Laguna de Guero (SP)  
Soma (TU)

City Cluster  
Udine (IT)  
[Botkyrka](#) (SE)  
[Firenze](#) (IT)  
[Izmir](#) (TK)  
[Ludwigshafen](#) (DE)  
[Málaga](#) (SP)  
[Napoli](#) (IT)  
[Rovereto](#) (IT)  
[Salerno](#) (IT)  
[Udine](#) (IT)  
[Valladolid](#) (SP)  
[Värmdö](#) (SE)



**EU  
specific  
projects  
and  
initiatives**

# URBANTIMES

## Urban Transformation & Innovation of Migrants and Refugees

**EU  
specific  
projects  
and  
initiatives**

Infinite solutions  
(IEE 07-13)

- CEC 5

-Cityfied  
(SCC  
07-13)

**UIA: prj  
urban  
TIMES**

Urbact: prj  
4EACH

### Partners

City of Udine  
Informest

Caritas  
Enea

University of Udine  
University of Rome  
Golder (private)  
Platform 31 (NL)



address the urgent challenge of integrating the incoming migrants, through networking innovative social services

Recovery of a *non-place* a dismissed military area and transforming it a hub where to receive, orient, educate, guide, train

migrants

Coproduction

Co-management





# EACH

## 4 elements against climate change

**EU  
specific  
projects  
and  
initiatives**

Infinite solutions (IEE 07-13)

- CEC 5

- Cityfied (SCC 07-13)

- UIA: prj urban TIMES

**URBACT III:  
prj 4EACH**

### Partners

- City of Udine (IT)
- City of Agueda (PT)
- City of Farsala (GR)
- City of Frederkshaven (DK)
- City of Galati (RO)
- City of Karlshamn (SE)
- City of Ludwigsburg (DE)
- City of Vllanova (SP)
- City of Zadar (HR)



addresses the climate change adaptation challenge in 9 cities around north and south Europe

Exchange of experience

Co-production of operational frameworks of action

Measurement & monitoring

Cope with communication barriers





**Thank you!**

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