International PPP Centre of Excellence

People First PPPs for the United Nations Sustainable Development Goals

THE GLOBAL GOALS
For Sustainable Development

Project:	**Districlima**
Project Proponent:	**Barcelona City council**
Project Organization:	**Districlima**

Public Organization: The project is legally carried out on the basis of 2 contracts signed with both competent Public Authorities: Administrative Contract of Consorci del Besòs (Barcelona City Council + Aj. Sant Adrià City Council) and Administrative Contract of 22@BCN (Municipal company 100% Barcelona City Council)

Private Organization: Investor & developer: Districlima. Contractor: Engie for the production plants and several other contractors for network execution. Operator: Engie

Capital Providers: The stakeholders of Districlima S.A. are:
Engie (50,8%); Tersa (20%) – *Urban waste-to-energy plant;* Agbar (19,2%); IDAE (5%) – *Spanish Energy Agency;* ICAEN (5%) – *Catalan Energy Agency*

Why is this project a Case Study for People First PPPs:
Districlima approaches sustainable energy to people, helps to improve air quality, reduces primary energy dependence, reduces the consumption of power, water, refrigerants and fossil fuels, and helps to reduce the heat island effect. Districlima also integrates fatal energy from the waste-to-energy plant (Tersa), reinforcing energy independence, circular economy. A PPP was used to build a waste-to-energy plant that brings sustainable energy to degraded areas. The administration benefited from the private know-how and capital investment while the private firms participated in a milestone profitable and sustainable project.

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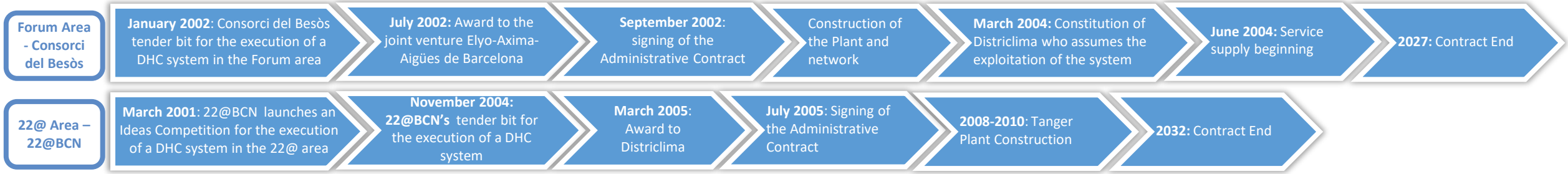
1) **Where:** Districlima is located in the area of Forum of the Cultures 2004 (in Sant Adrià de Besòs) and in the 22@ area, the technological district of Barcelona City. Districlima supplies heating and cooling to a surface of more than 970 000 m^2, in a high populated area (more than 60 000 people living) and with high density of enterprises, universities and public buildings (museums, hospitals, public housing for people with special social needs…)

2) **Why:** Both areas (22@ and Forum) were highly degraded areas, after the XIXth century industries disappeared in the 60's. Most of the buildings located there were abandoned, becoming a focus of filth and delinquency. Public Administration decided in early 2000's to urbanize both areas, under innovation and sustainability criteria, including therefore the execution of a DHC network in the project.

3) **What:** Districlima approaches sustainable energy to people, helps to improve air quality, reduces primary energy dependence, reduces the consumption of power, water, refrigerants and fossil fuels, and helps to reduce the heat island effect. Districlima also integrates fatal energy from the waste-to-energy plant (Tersa), reinforcing energy independence, circular economy.

4) **Who:** Local Administration has catalyzed de DHC energy deployment and foremost in its role as planner and regulator.

5) **When:**



a) Increase access to essential services and promote equity

The project contributes to the equity between the old and degraded areas at the Besòs side with de ongoing transformation under a new economic conception in 22@ technological district. So the integration of social housing and public facilities in the middle of a private economic initiative helps a model of social lift in which the citizens can in the live, access to education and work in the same area and with equal opportunities. Therefore the competiveness of the system has a great strength in the success of the sustainability and competiveness provided.

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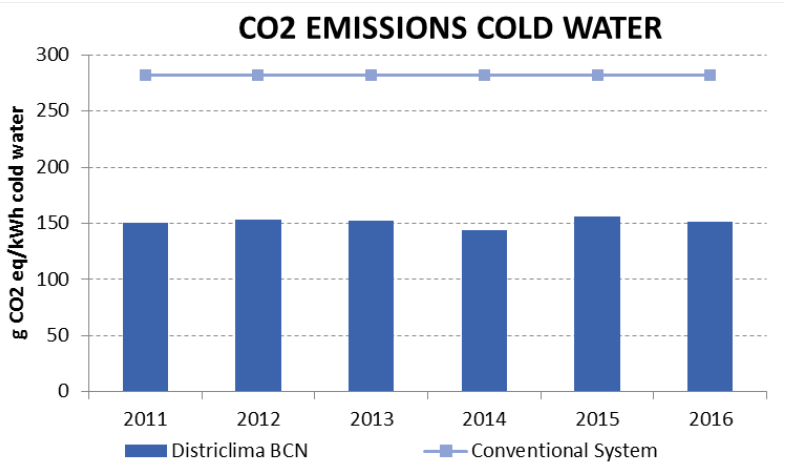
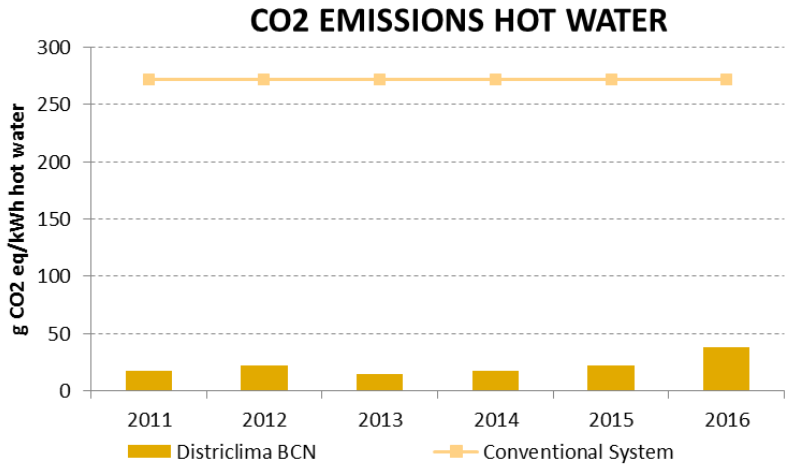
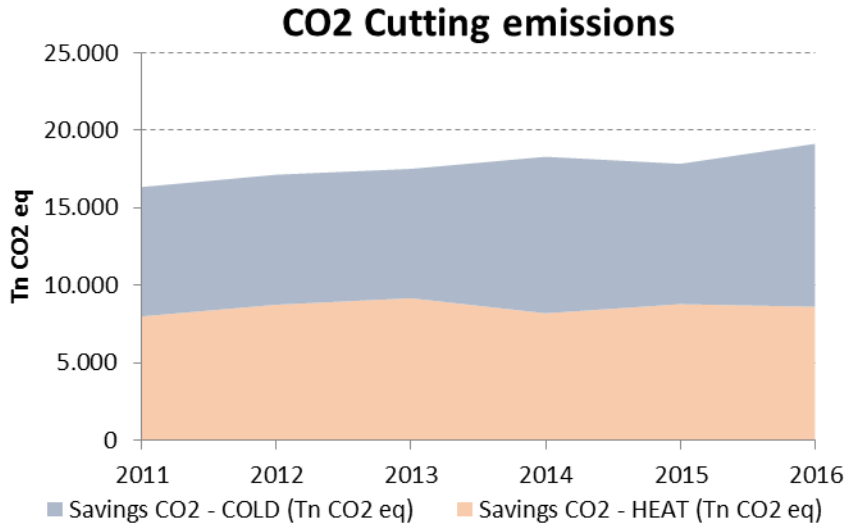
b) Develop a resilient infrastructure and improve environmental sustainability





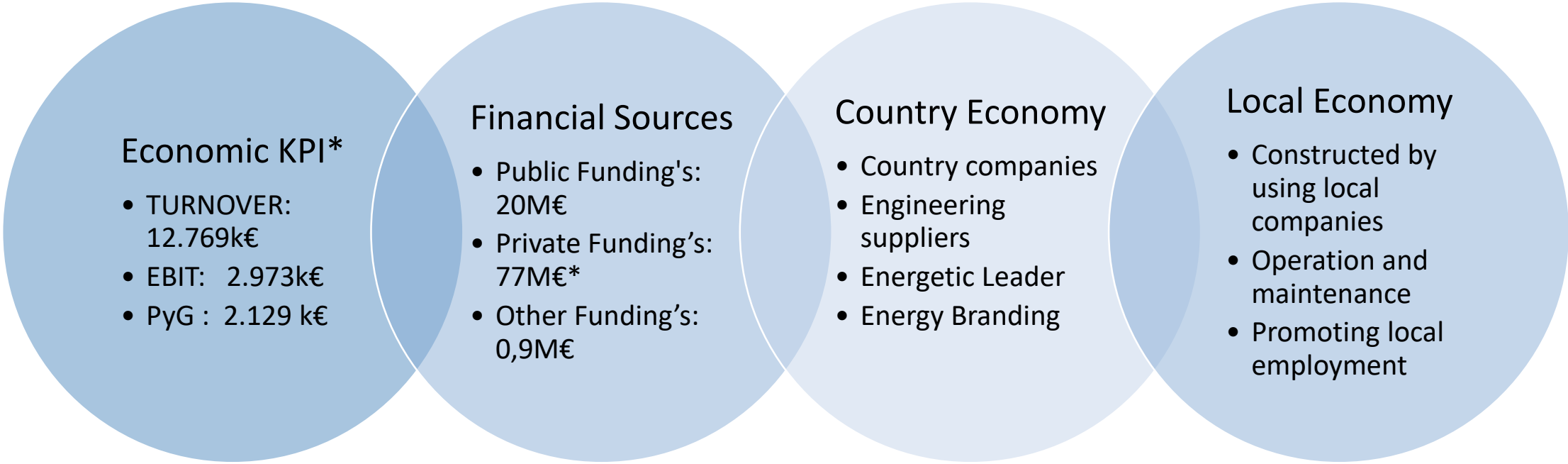
The technology integrated in Districlima project is saving about 20,287 Tn in CO_2 emissions per year in Barcelona (That would equal to €1,217,220 accounting for a SCC* of €60 in 2020).



The development of district heating and cooling systems, based on renewable sources help communities on saving, not only CO_2 emissions, moreover reduces acoustic pollution and the cities global warming produced heating/cooling systems.

*SCC: Social Cost of Carbon (Worldbank, 2017)

c) Demonstrate the economic and financial effectiveness of the project



- In 2004, the contracted cold energy was 19,2 MWh while the contracted heat energy was of 13,4 MWh, with a total of 10 buildings connected to a network of 4,4 Km.
- In 2017, the contracted cold energy was 104 MWh and while the contracted heat energy was of 72MWH for a total of 102 buildings connected to a network that increased up to 18.6 Km.

*Values year 2017.

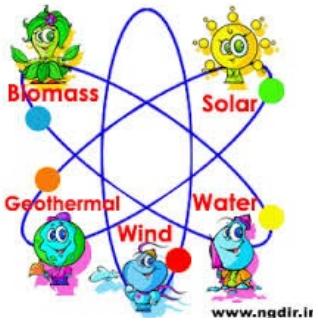
d) Be replicable and scalable

DHC Technologies

- High temperature DH
- Low temperature DH
- Cooling district networks
- Cooling and heating networks

Potential costumers

- Industries
- Residential buildings, neighborhoods.
- Hospitals, Universities, Hotels,…



Renewable energies/ Sources

- Geothermal
- Biomass
- Solar Thermal
- Waste Heat or RES
- Co-generation