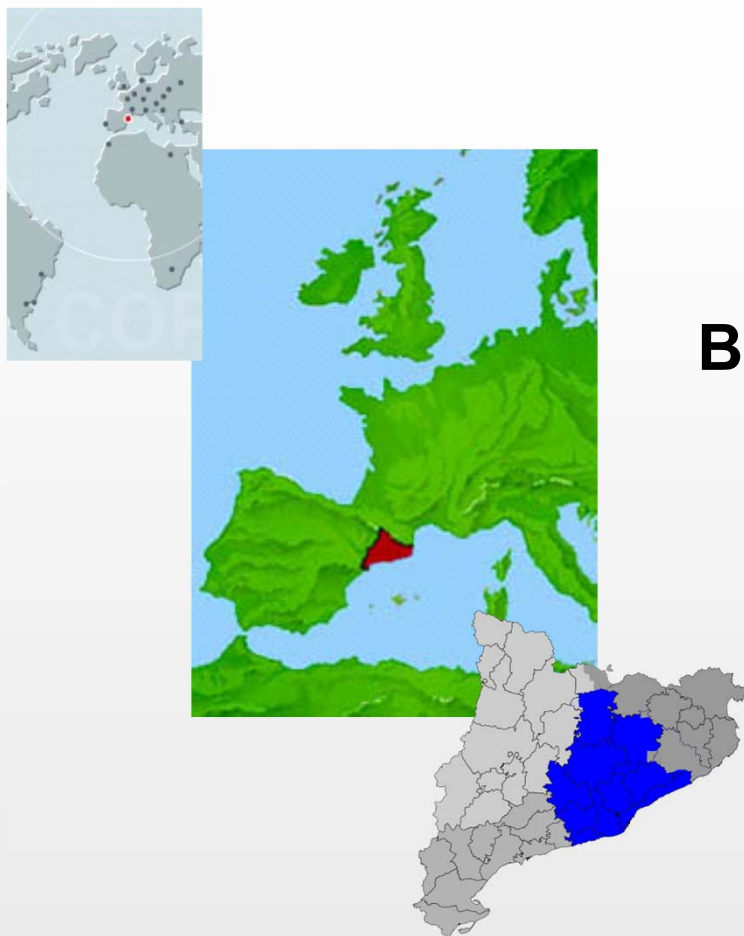


# **REDIBA (Renewables and energy efficiency in Barcelona Province).**

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# **Diputació Barcelona**

**Barcelona Provincial Council (DIBA)**  
is a **2nd level Local Government**  
whose mission is to promote the  
progress and welfare of citizens,  
acting in the territory and in  
cooperation (technically and  
economically) with municipalities.

**311 municipalities, with a population of 5.6 m  
inhabitants. Area: 7,719 km<sup>2</sup>  
Budget 2016: 820 m EUR**

## The Scenario that our Municipalities were and are facing



MUNICIPALITY

- Obligation to provide basic services, (public lighting, schools energy expenditures, sports facilities, swimming pools, public building energy consumptions ...)
- Reduction of income
- No investment capability
- No borrowing capacity
- Energy price increase
- Commitment to carry out SEAP actions

## **ELENA : European Local ENergy Assistance**

### **REDIBA: RENEWABLE AND EFFICIENCY DIPUTACIO DE BARCELONA**



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



**Project starts:** May 2010

**Project ended:** June 2014 (1  
year extension)



**TECHNICAL SUPPORT:**  
Executive projects  
Feasibility studies



**LEGAL SUPPORT:**  
Tendering clauses

**COACHING**



# 2,6 M€

**DiBa: 0,6 M€**

**EC: 2 M€**

**Staff costs :**

**586.000€**

**External support:**

**2.080.500 €**

**X25**

# 50 M€

**INVESTMENT TARGET**

## How REDIBA has worked

280 applications from  
212 municipalities

1. Municipalities apply for support. We send them an initial questionnaire

2. REDIBA  
TA analysis

3. Meeting with the city council

4. Mayors Commitment letter



5. External subcontracts or Direct support from REDIBA TA unit.

180 subcontracts for  
the municipalities

Energy  
audit/Executive  
project

Feasibility assessment  
(technical/economical)

Specifications for the tender

108 investment projects

## Results

|                                       | Number     | Total amount        | average cost / study |
|---------------------------------------|------------|---------------------|----------------------|
| Street Lighting                       | 74         | 993.020,77          | 13.419,20            |
| Biomass                               | 39         | 276.289,39          | 7.084,34             |
| Legal                                 | 13         | 105.835,93          | 8.141,23             |
| Energy Efficiency Buildings           | 37         | 424.408,86          | 11.470,51            |
| Photovoltaics                         | 23         | 140.177,90          | 6.094,69             |
| Others (SWH systems, geothermal, etc) | 18         | 174.931,08          | 9.718,39             |
|                                       | <b>204</b> | <b>2.114.663,93</b> | <b>10.366,00</b>     |

|       | Investments (€) | Cost support | Leverage |
|-------|-----------------|--------------|----------|
| SL    | 84.174.919      | 993.020      | 85       |
| B     | 5.889.040       | 276.289      | 21       |
| EEB   | 2.796.741       | 424.408      | 7        |
| PV    | 748.402         | 140.177      | 5        |
| Other | 2.611.516       | 174.932      | 15       |

## Global impact

### Number of investments

**108**

### Investment

**96 M €**

### Leverage Achieved

**x48**

### Energy saved

**52.2 GWh/year**

### Renewable Energy production

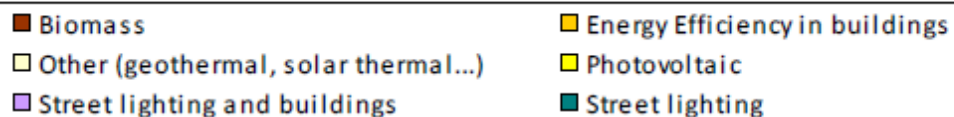
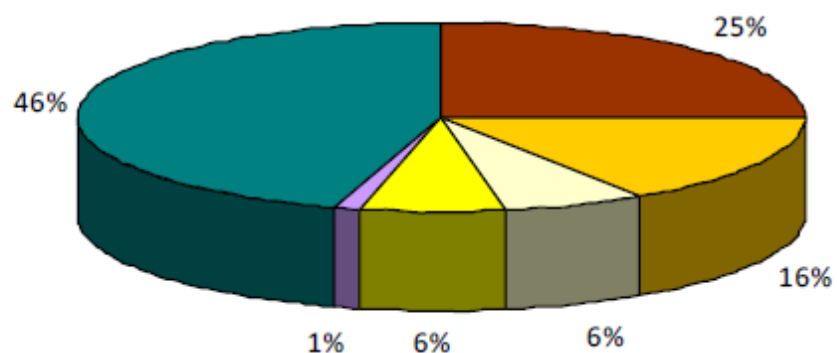
**9.8 GWh/year**

### CO<sub>2</sub> emissions saved

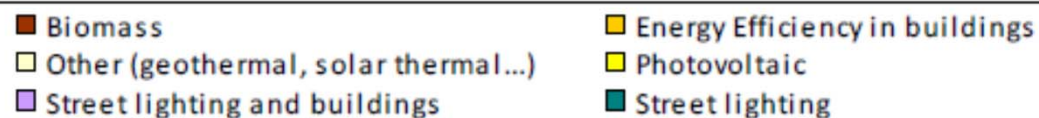
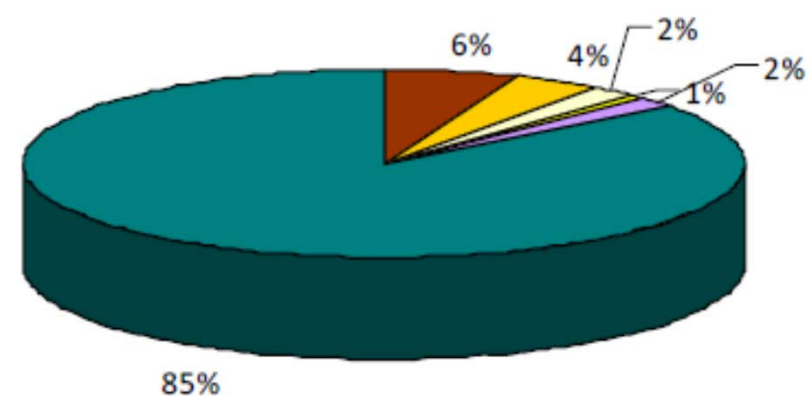
more than **21,600 t/year**

## Results by type of technology

Number of investment projects per sector

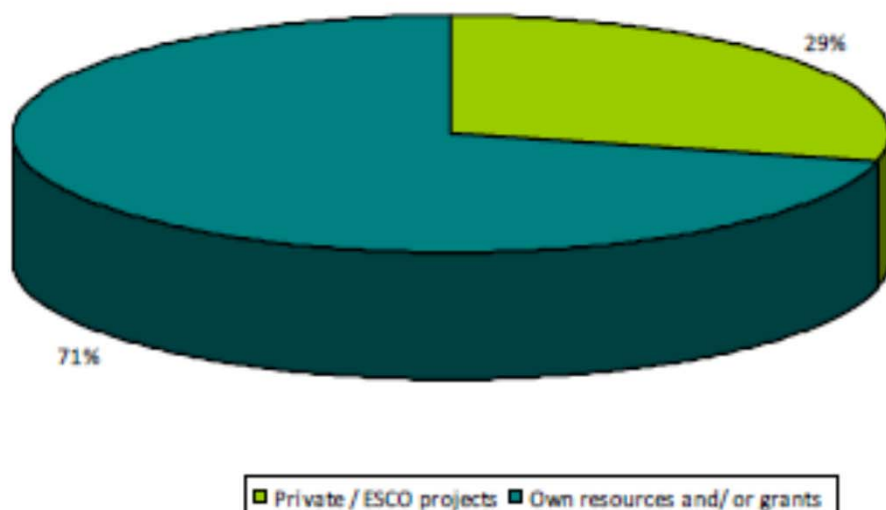


Euros invested per sector



## Results by source of funding

Number of CPP / own resources and grant projects



CPP means Public-Private cooperation and it includes EPC, ESC, leasings, etc.. 22 ESCO contracts (20 EPC and 2 ESC) accounts for 61M€, a 63,5%

Investment generate by CPP / own resources and grants projects





## Lessons learned with our ELENA

1. The case by case approach on the external subcontract has allowed to keep the know-how within our administration.
2. The subcontracted studies cost has been reduced significantly as the project progressed.
3. The importance of taking into consideration the election calendar in the investment programme.
4. However sure you feel about your investment programme: The importance of having alternative investment sectors and more investment projects forecasted in line rather than just the required amount.
5. If you are a second level administration. The added value of your ELENA activity is valuable, but comes also with added complexity: It's important to have control from the day one on the information required to justify the investment programme.

## Final conclusions from REDIBA project

- Although the economical context is very hard, REDIBA has mobilized investments in the province. The energy saving potential in public administration is high
- When public money is scarce the Public-Private cooperation is an efficient way to invest in public administration.
- Although the technical part of the project is very important, the key for the P-P is the legal and public accounting part. A clear statement from EC regarding ESCo contracts not counting against the public indebt capacity is needed.
- New models of contracting in public administration requires time. Once we have reference projects, the investments start to replicate.
- Financing is not enough. Municipalities need coaching throughout the process.

## Present and future after REDIBA

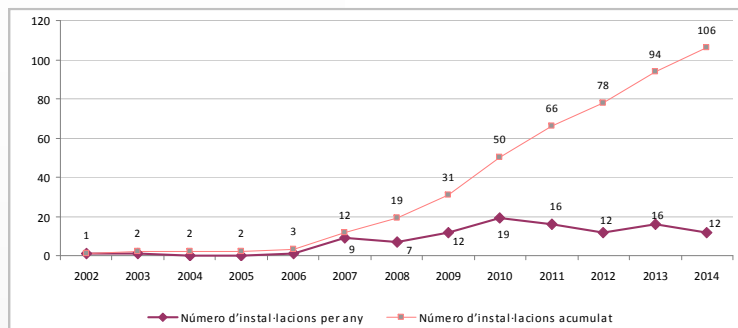
- The challenges for the near future:
  - Small and medium sized municipalities are more challenging to get investments because of scale economy effect.
  - To find a way to fund PV projects in municipalities with citizen participation.
- Specific push for biomass:
  - We are looking for additional funds to support our policy: European Regional Development Funds.
  - Grant system than don't cover 100% but triggers private money.
  - Studied 8.152 public facilities. Identified 1.690 where the switch to biomass would be feasible: > 100.000 KWh/year, free space for storage facilities, etc. It means 720 GWh/year, 60% of thermal energy needs of our public buildings. 200.000 tn woodchip

## **Biomass heating systems in public buildings in Barcelona at 2016**

- 126 biomass heating systems in our province
- 27,6 MW installed
- almost 10.000 tn of biomass consumed/year (mainly wood chip)
- 12 M€ investment

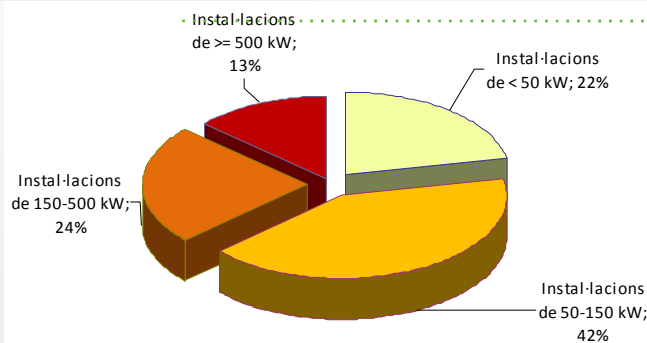


# Evolution of the biomass heating systems in the Province in public buildings



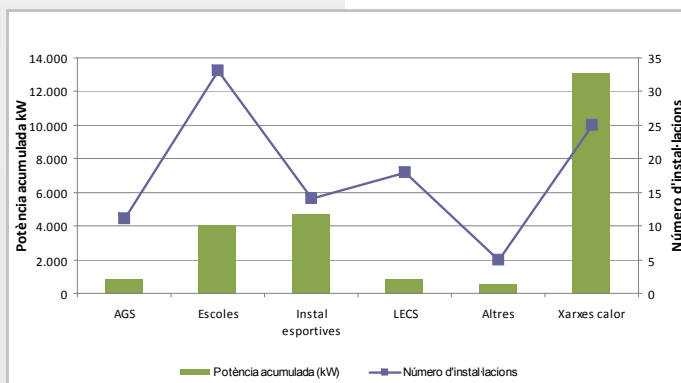
## Number of installations

- Even with the strong push of Diputació, there has not been an extraordinary leap in installations/year. The administrative process needs time, from 6 months to 2 years.



## Power installed

- The average heater in public buildings is 150 kW



## Type of installations

- The average installation is a small district heating of 3-5 buildings

## Particularities of the BIOMASS tenders promoted by Diputació

- When possible, always include in the contract the maintenance and a price for the biomass. Even better is a system where you pay for energy provided in kW. This system avoids you to have to worry with different actors about maintenance, biomass supply, etc.
- Is possible for the public administration to sell energy to private consumers. The easiest way is to tender it via ESE.
- In a bidding process look for something else than price of the investment: offers with longer maintenance periods, better energy prices..

## Lessons learned

1. Biomass heating systems are a bit more complex than gas heaters: key is a good design and a proper maintenance. If your budget allow it, choose an automatic heater.
2. Look for bigger consumers first. More than 100.000 kWh/year.
3. Look for the possibility to create District Heatings.
4. Financing is not enough. Municipalities need coaching throughout the process.
5. New models of contracting, such ESCO, in public administration requires time. Once we have reference projects, the investments start to replicate.

# Thanks for your energy

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