



Lighting and district energy systems in cities

Experience of a regional
Government

Mercè Rius
Catalan Institute for Energy
Director

Bonn, 6th June 2015

Catalan energy policy is fully aligned with EU policies



**Towards a low carbon emission,
innovative, competitive and
sustainable energy system.**

Catalan Energy and Climate Change plan 2012-2020. Underpinned by two pillars: energy efficiency and renewable generation.

ICAEN, as the Regional Energy Agency, is in charge of implementing the Catalan energy policy.

At a local level, 531 municipalities has joined the Covenant of Mayors and are implementing their SEAPs.

The most relevant actions are:

- **Public Lighting: implementation of ESCO projects**
- **District energy systems**

Catalonia has a large experience in the implementation of energy efficiency measures in public lighting.

- A significant number of municipalities have renewed their public lightings equipments by incorporating more efficient technologies.
- These improvements have been carried out, in the last years, under the modality of energy services by ESCOs.
- Municipalities can reduce their energy cost, minimize light pollution and, in some cases, finance the investment, total or partially, through the ESCOs.



Public lighting projects under ESCO model in Catalonia 2011-2013

ESCO tenders in
Catalonia 2011-2013:

8,1%

of lighting points

5,5%

of energy

- 19 tenders
- 30 M€ investment
- 40% saving

Year tender	Municipality	Number of municipalities	Lighting points	Investment	Energy saving
2011	Martorelles	2	3.450	1.164.449	50,9%
	Tona				
2012	Camarles	7	48.379	11.375.680	39,7%
	Sabadell				
	Deltebre				
	Corbera				
	Parets del Vallès				
	Santa Susana				
	Vilassar de mar				
2013	Cunit	10	62.651	16.872.597	40,2%
	Tortosa				
	Mora d'Ebre				
	Lleida				
	Dosrius				
	Vallirana				
	Tiana				
	Ametlla de Mar				
	Calafell				
	Sant Feliu de Guixols				
TOTAL		19	114.480	29.412.726	40,3%

And a current pipeline of 30 projects.

District energy systems

District heating systems with biomass

- Strong commitment of the Catalan Government and the local authorities for the use of biomass.
- 40 installations around Catalonia, mainly in the mountainous municipalities, that represent about 14 MW.
- 3 medium size energy district systems in Barcelona province:
 - Mataró: district heating and cooling using thermal energy from waste treatment plant, biogas and natural gas for heating, and chillers for cooling.
 - Molins de Rei: district heating using biomass, and natural gas as backup, supplying 695 dwellings.
 - Sant Pere de Torelló: district heating using biomass providing energy to 600 clients (private companies, dwellings and municipal buildings).



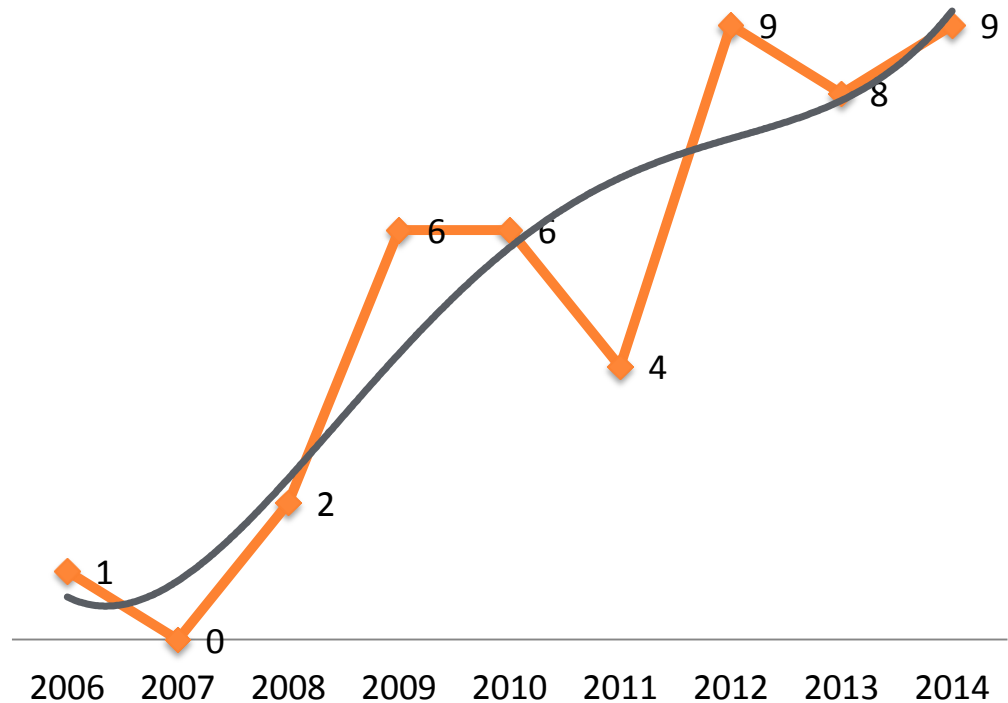
Biomass storage

Year	Power	kWh
2006	1	100
2007	0	340
2008	2	272,5
2009	6	1871
2010	6	1873
2011	4	2533
2012	9	3800
2013	8	1960
2014	9	3840

Total power installed: 16.5 MW

Total number of DH&C: 38

Discting heating learning curve for Catalonia



Conclusions

1. **The cooperation** between local governments or between second level governments **fosters the implementation of Energy Efficiency and RES projects.**
2. Public-private initiatives under the ESCO approach, are playing a major role for tackling the **main barriers on carbon abatement: financing Energy Efficiency and RES initiatives.**
3. Public lightning and District heating & cooling are flagship initiatives for RES and Energy Efficiency sectors, where **the role of a regional administration is based on:**
 - Creating value as a **technical assistance unit**
 - Becoming a **3rd party** and independent controller
 - **Scale up, plan and leverage investments**

Thank you very much for you attention.