

# Renewable Energies in Andalusia and Main projects developed by the Andalusian Energy Agency



Agencia Andaluza de la Energía  
**CONSEJERÍA DE ECONOMÍA, INNOVACIÓN, CIENCIA Y EMPLEO**

# THE ANDALUSIAN ENERGY AGENCY IN BRIEF



Agencia Andaluza de la Energía  
CONSEJERÍA DE ECONOMÍA, INNOVACIÓN, CIENCIA Y EMPLEO



Public entity created in 2005, assigned to the Regional Ministry of Economy, Innovation, Science and Employment of the Andalusian Government with the aim to implement a new sustainable energy model based upon:

- Promotion of renewable energies and energy saving and efficiency.
- Development of energy infrastructures that guarantee an optimal supply.
- Raising citizen awareness on the rational use of energy.
- Fostering a competitive industrial sector on clean energies.



Agencia Andaluza de la Energía  
CONSEJERÍA DE ECONOMÍA, INNOVACIÓN, CIENCIA Y EMPLEO



# ENERGY PLANNING OF ANDALUSIA 2007-2013

PLAN ANDALUZ DE SOSTENIBILIDAD ENERGÉTICA  
2007 - 2013 Hacia un nuevo modelo energético



Sets as objective a renewable energy contribution of 18.3% for 2013

Sets as objective an 8% energy saving in 2013, with respect to 2006

## Basic pillars of the *Andalusian Sustainable Energy Plan – PASENER*

1

Citizens, businesses and Public Administrations acquire an active and necessary role for the sustainable development of Andalusia.

2

Energy saving and efficiency acquire a wider dimension, not only encouraging technological changes, but also being incorporated as a determinant criteria in the functioning of the energy system and energy planning process.

3

Development of the potential of electricity generation using renewable energy sources, both for the grid as well as for consumption.



Agencia Andaluza de la Energía  
CONSEJERÍA DE ECONOMÍA, INNOVACIÓN, CIENCIA Y EMPLEO



(to be released along 2014)

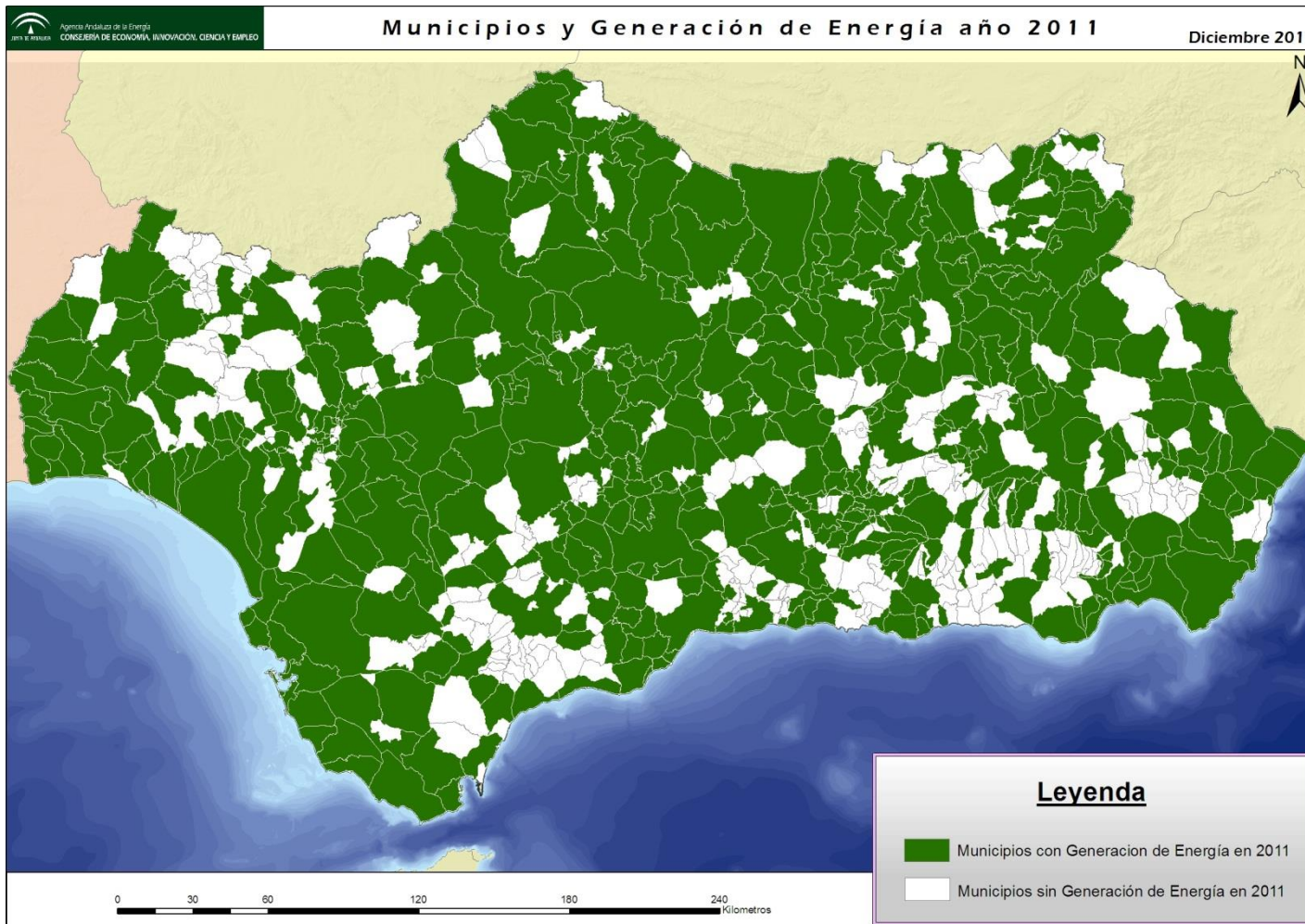
## ***Energy Strategy for Andalusia 2014-2020***

Some hints...

- Keeps the basic principles from PASENER planning
- The citizen will play a main role
- Promotion of self-consumption of electricity (PV)
- Retrofitting of buildings
- Preparing smart cities deployment
- Adapted to the new EU financial instruments.
- A careful look on the transport needs (ca. 40% of the energy demand in Andalusia)



# GENERAL FACTS



- **SURFACE: 87,597 km<sup>2</sup>**
- **POPULATION: 8.4 million**
- **PROVINCES: 8**
- **TOWNS: 770**

- **Towns powered by renewables for electricity generation in 2011: 412**

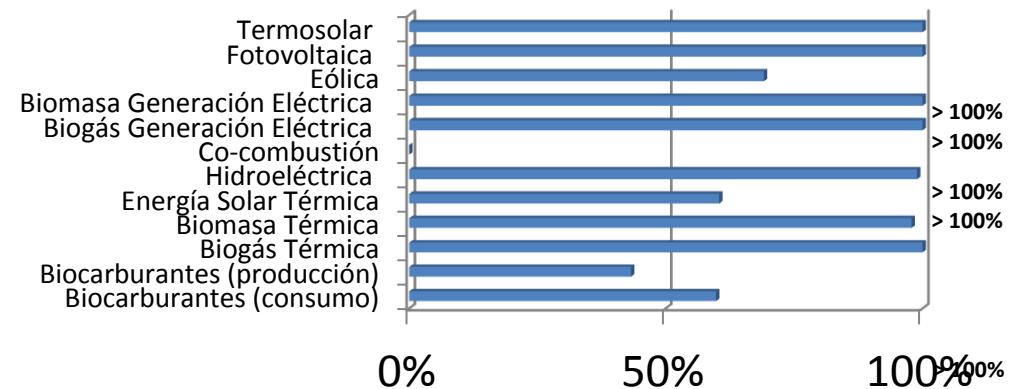


# ENERGY PLANNING OF ANDALUSIA 2007-2013

## PASENER Renewable power targets accomplishment

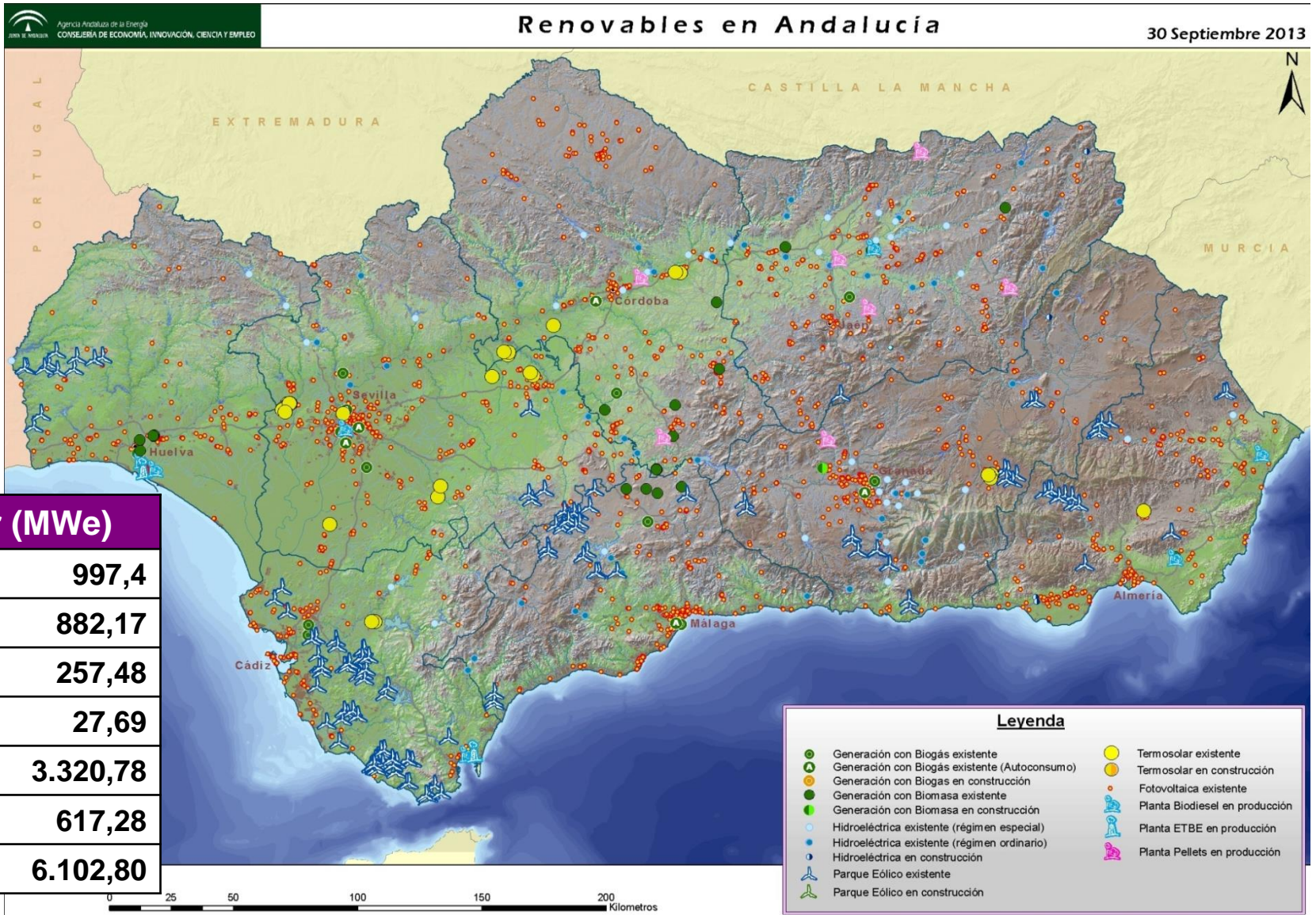
TECNOLOGY	MAGN.	AS OF 30/09/2013	PASENER Target
Biogas power	MW	27,69	20,10
Biomass power	MW	257,48	256,00
Co-firing	MW	0,00	122,00
Wind	MW	3.320,78	4.800,00
Hydro	MW	617,28	624,00
<b>PV</b>	MW	882,17	400,00
<b>CSP (thermal solar power)</b>	MW	997,40	800,00
Thermal biogas	Ktep	7,83	3,00
Thermal biomass	Ktep	635,20	649,00
Thermal geothermal	Ktep	0,432	-
<b>Low-temperature solar thermal</b>	m <sup>2</sup>	840.462	1.341.554
Biofuels, consumption	ktep	364,02	460,00
Biofuels, production capacity	Ktep	836,60	2.300,00

## Grado de cumplimiento Objetivos PASENER



Porcentaje sobre el total (2013)

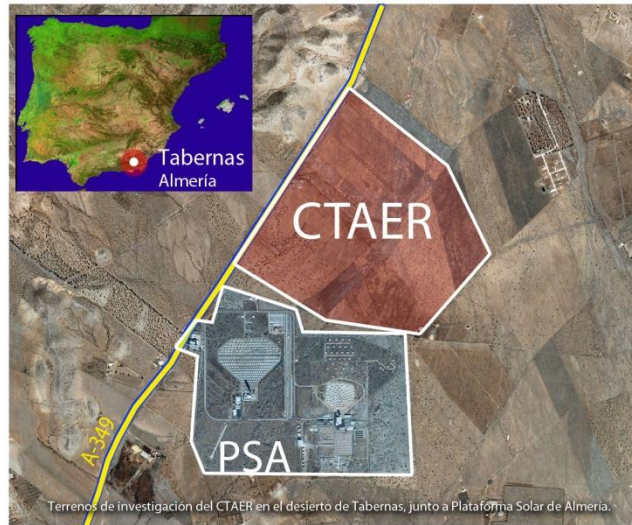
# RENEWABLE ELECTRIC POWER. SEPTEMBER 2013



# SOLAR R&D&i IN ANDALUSIA – Test labs

Andalusia has been and is a pioneer in the research and development of concentrated solar power technologies (CSP) mainly through research carried out in regional universities and experiences realised in the **Solar Platform of Almeria (PSA)**, - considered as one of the most important technological research centres in the world.

- Since 1981 -



In addition, Andalusia counts on the **Advanced Technological Centre of Renewable Energies (CTAER)**, devoted to the promotion of R+D+i and the technological transference between the companies and institutions related to the sector. The projects of this technological centre are mainly aimed at the improvement of the performance and decrease of technological costs related to renewable resources.



# CSP: Solúcar Platform ABENGOA (Sevilla)



## Solúcar Solar Platform (Seville)

By Abengoa

181 MW of total power, both tower and parabolic trough  
Main R&D center



Exported worldwide



Solana CSP power plant. 280 MW. AZ, USA

*PS10 (10 MW) and PS20 (20MW) tower and heliostat scheme solar thermal power generation.  
Below solar thermal power generation with cylinder-parabolic collectors (3 fields of 50MW each)*

# CSP: Gemasolar SENER (Sevilla)



*17 MW tower scheme solar thermal power. First commercial-scale plant in the world to work with molten salts as heat transfer fluid. 15 hours autonomy. Non-stop power delivering during 39 days (solar power during the night). 2500 solar-tracking heliostats.*

# PHOTOVOLTAICS: Lucainena de las Torres (Almería)



*Grid-connected solar PV power plant. 21 MW*

# Main projects developed by the Andalusian Energy Agency



**SUBSIDY SCHEME** for the sustainable energy development of Andalusia.

**Programme aimed at subsidising** additional investments that allow improving energy consumption and generation in any activity sector (except primary agriculture).

**2008-2012: Subsidies for 60,175 projects** totalling an amount of **185 M€** which have generated an investment of more than **1,500 M€**.

**REVOLVING FUNDS** for promoting renewable energy and energy efficiency.

**Programme aimed at the concession of** ordinary loans, participative loans and granting of guarantees, in market conditions preferably for SMEs.



# Main projects developed by the Andalusian Energy Agency



## REDEJA Network – Energy Management Network of the Andalusian Regional Government

### What is REDEJA?

Tool designed to promote the principles of sustainable energy within the Andalusian Regional Government.

### Why was REDEJA created?

To take advantage of the high potential for energy and economic savings in public centres of the Andalusian administration.

### How does REDEJA achieve its potential?

Through a specific, coordinated and effective management of the energy billing of all entities and organisms of the Andalusian Regional Government.



<http://www.agenciaandaluzadelaenergia.es/administracion/redeja>

# Main projects developed by the Andalusian Energy Agency

REDEJA - The Energy Management Network of the Andalusian Regional Government is already a **reference in the energy area within the Andalusian Regional Government** and is a success story in the field of management of the Public Administration.

## Since its creation, the REDEJA network has::

- **optimised almost 5,000 electricity contracts** of the Andalusian administration.
- achieved **very advantageous energy prices** through **CENTRALISED CONTRACTS**, which will result in economic savings understood between **31.8 M€** and **43.4 M€** in the next four years.

Investments have been made in energy saving, efficiency and implementation of renewable energy for a value of more than **15 M€**, achieving an annual economic saving of more than **1.5 M€**.

- ✓ **More than 340 audits, with an annual saving potential of 11.8 M€** and an investment detected of **88.5 M€** in 1,524 measures of energy saving, energy efficiency and implementation of renewable energy.
- ✓ **500 energy inventories, three large sectorial studies, 12 integral transport plans for work centres of the Andalusian Regional Government.**
- ✓ **Valoration of offers than have produced an annual saving of 15 M€.**



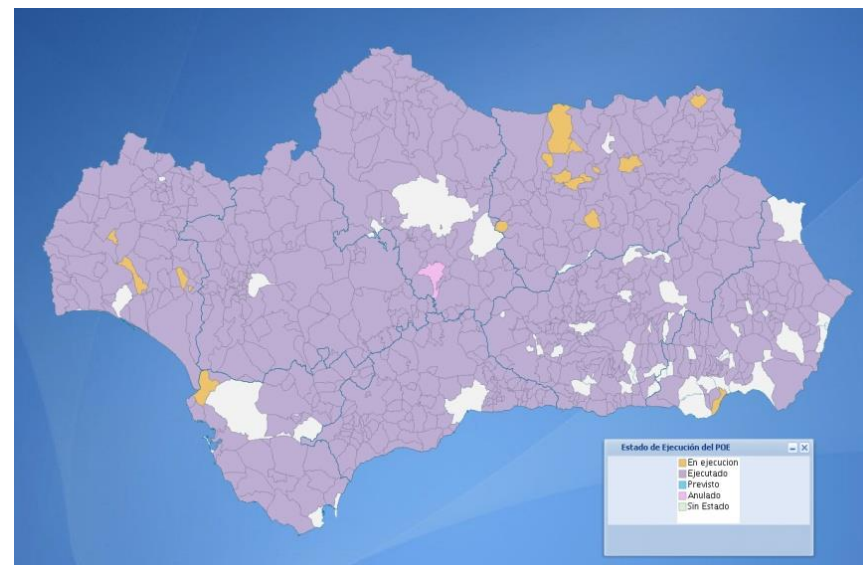
# Main projects developed by the Andalusian Energy Agency



## Energy Optimisation Plans (POEs)

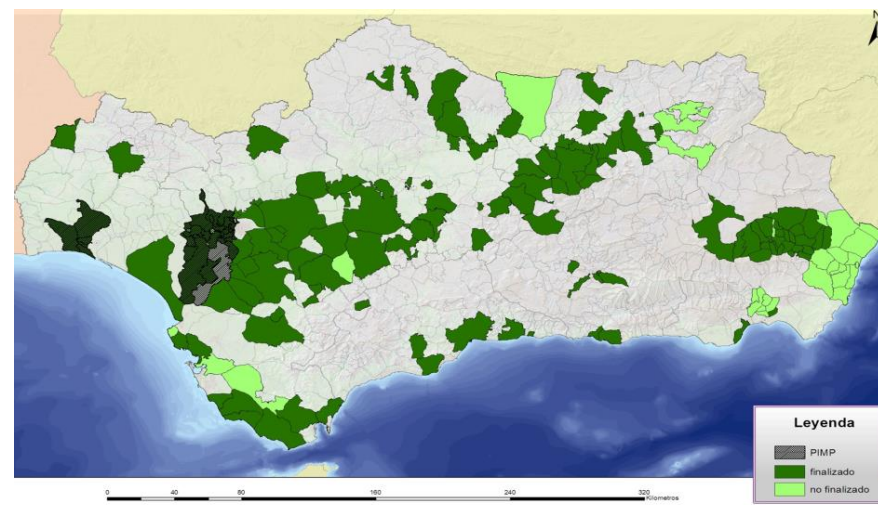
in 98% of Andalusian municipalities

- Inventory of facilities
- Identification of potential saving
- Investment plan
- Management and control installations
- Training and pilot projects



## Sustainable Urban Mobility Plans (PMUS)

in almost one third of Andalusian municipalities.



<http://www.agenciaandaluzadelaenergia.es/administracion/ahorro>

# Main projects developed by the Andalusian Energy Agency



## CESEA, Centre for the Evaluation and Monitoring of Energy in Andalusia

Serious electricity supply incidents in summer 2004 affecting several Andalusian provinces

The Andalusian Regional Government creates the **Centre for the Evaluation and Monitoring of Energy in Andalusia (CESEA)**



### OBJECTIVES:

1. To ensure a continuous and quality energy supply in Andalusia.
2. Elaboration of information to facilitate decision making.
3. Improvement and development of the electricity grid.

The Centre receives and processes more than a million data daily concerning the operation of the power lines and substations in Andalusia to ensure the safety and quality of the monitoring, through tracking a network of more than 9,500 km of power lines.

<http://www.agenciaandaluzadelaenergia.es/administracion/cesea-centro-de-evaluacion-y-seguimiento-energetico-de-andalucia>



# Main projects developed by the Andalusian Energy Agency

- Reduction of the TIEPI (*Interruption time equivalent to installed capacity*) by 66% since 2004.



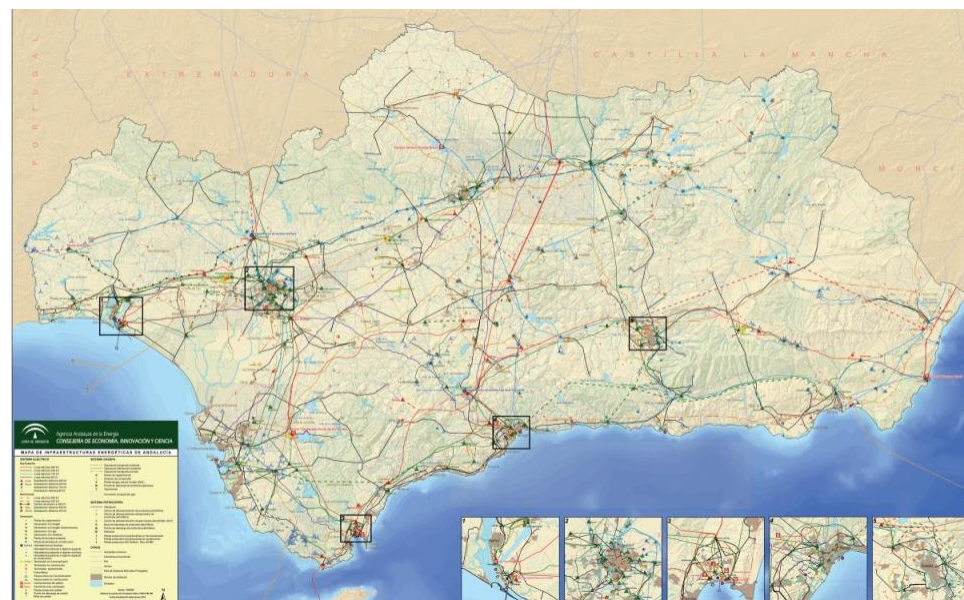
# Main projects developed by the Andalusian Energy Agency



## Infoenergía

<http://www.agenciaandaluzadelaenergia.es/administracion/estadistica-info-energia>

Application that collects official statistics included in the Annual Statistical and Cartography Programme 2012, developed by the Andalusian Energy Agency as part of the Statistical and Cartography System of Andalusia.





Agencia Andaluza de la Energía  
CONSEJERÍA DE ECONOMÍA, INNOVACIÓN, CIENCIA Y EMPLEO

[www.agenciaandaluzadelaenergia.es](http://www.agenciaandaluzadelaenergia.es)

