

"LOW CARBON REGIONAL DEVELOPMENT"
ZARAGOZA (ARAGON, SPAIN) .

Outlook and Future Perspectives of Renewable Energies.

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1) The current situation. The Spanish success.

2) The Future.

3) The Threats.

The Current Situation. The Spanish Success



The current energy model is in crisis: strong dependency on fossil resources and strong environmental impact. It is not sustainable

Step 1: European renewable directive 2001.

- Focus: the development of renewable sources.

- **Principle of Stability :**
 - Long Term vision. Remuneration frame.
- **Principle of effectiveness:**
 - To achieve the international objectives.
 - Different remuneration for each technology.
- **Principle of Sufficient remuneration:**

Capacity Installed of renewable sources

MW	2004	2005	2006	2007	2008	2009(*)	Objetivo 2010 y % cumplimiento(*)
Eólica	8.522	10.097	11.891	14.423	15.709	16.107	20.155 80%
Fotovoltaica	23	48	146	695	3.342	3.459	400 835%
Termoeléctrica	-	-	-	11	81	81	500 16%
Biomasa	469	499	540	557	582	634	1.317 48%
Hidráulica <10MW	1.104	1.147	1.190	1.376	1.397	1.922	2.200 87%

(*) Dato provisional hasta julio

The Future



The objectives of The Green Package imply a 40 % electricity production with renewable sources by 2020

Stability+ Effectiveness + Sufficiency



Step 2: Green Package (2008).

- Focus: to achieve goals in an efficient manner.

- **Principle of efficiency:**
 - Incentives for reducing costs
 - More competency among Investors and technologies
- **Principle of Security.**
 - Avoid risk of energy supply

Continue with the system of premiums (cap and floor) over the market price (feed-in Tariff)

The Threats



1) Subsidies to the coal technology and CO₂ emitters

2) The market and final prices

3) The stability and confidence of the regulation

4) Lack of Premiums for capacity backup. Interconnections between countries

Capacity GW Energy TWh	2008			2020		
	Capacity	Production	Use	Capacity	Production	Use
Thermal	34	133	45%	35	80	26%
Renewable	38	62	19%	64	130	23%
Nuclear	7,5	56	85%	7,5	55	84%

5) Regional environmental taxes with the sole aim of increasing governments revenues