

“Here comes the sun rising”

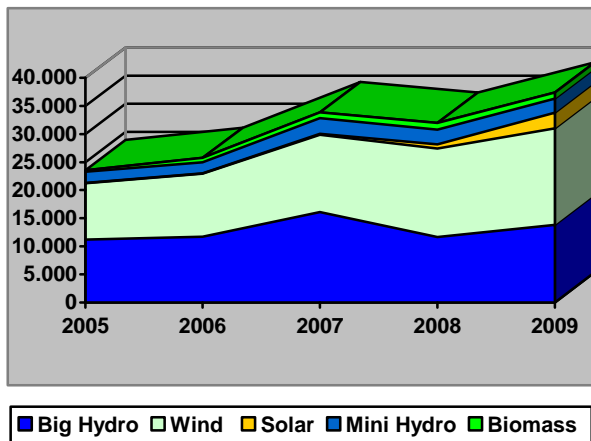
Spain 2009: Renewable power goes up while emissions and electricity prices go down

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The “sun goes up”...

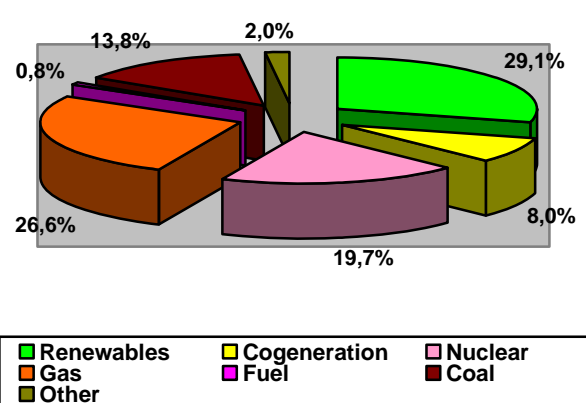
In the midst of a heated political and social debate about the future of the oldest and smallest nuclear power station in the country, **renewable technologies (RES) in Spain have continued to grow and have achieved a 29% of the market¹** in the first half of the year (just 1% point from the national 2010 objective set by the EU) coming from just 18% in 2005. The most remarkable data about this important growth is that this year solar power has grown to be a factor to be counted with in the power sector: by end of June more than **2% of the electricity delivered to the grid was produced with sun rays**. On a sunny summer day solar power technologies can generate up to 5-7% of the power required by the system and just when the air conditioning systems are taking the demand curve to its peak.

Power generation with renewable technologies, GWh (First half of the year 05-09)



(Source: Observatorio de la electricidad WWF, REE and CNE)

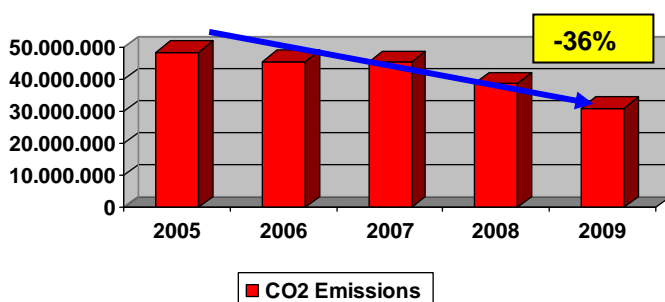
Production by technology (First half 09)



And emissions go down...

Even if the first half of 2009 has not been exceptional in terms of rainfall, which always help to reduce emissions by allowing for more hydro production, the combined contribution of more production by other RES and the decrease in power demand (-6,4%) have achieved a remarkable reduction in the CO₂ emissions of the electricity sector: **-36% compared to 2005**.

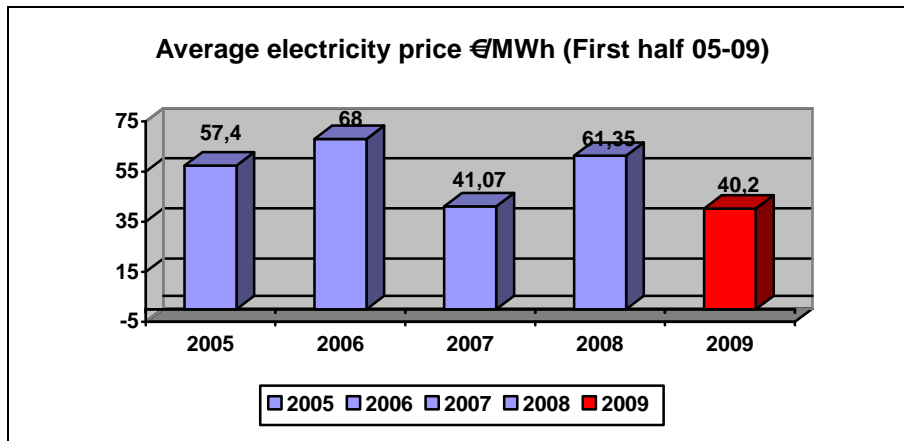
CO₂ emissions by the power sector (Mtonnes, First half 2005-2009)



(Source: Observatorio de la electricidad WWF and REE)

And prices also go down...!

The market price of electricity has gone down by 34,5% compared to the first half of 2008 and 30% compared with 2005. Behind this drop in prices there is a combination of several factors: economic crisis reducing power demand, the ETS Directive, new RES displacing the costliest power plants from the market, and to a certain extent the reduction in international prices of fossil resources.



Source: OMEL and CNE.

Conclusion: a cleaner, cheaper and safer electricity is possible!

Main elements that have worked :

- Feed-in tariff system that attracts power companies to invest in RES plants giving them a medium-long term regulatory framework that has enabled them to secure private financing for the projects. On-time adjustments of the level of the feed-in tariffs are needed in order to integrate technological cost reductions. This will spur further investigation to lower cost. The system has also spurred the development of Spanish RES technology companies.
- Diversification in the development of RES technologies. Starting from mainly hydro, first wind and now solar power have become significant players in the Spanish power market.
- Reduce power demand. In the Spanish case the reduction in 2009 compared to 2008 was a combination of the economic crisis and efforts by the Government. The identified potential of reduction without net cost for the country is about 20% compared to 2005 consumption. At the moment demand is 0,4% above 2005 data so there is plenty of potential to continue reducing demand.
- Implementation of an ambitious objective for the power sector in the National Allocation Plan NAP (ETS framework). The Spanish power sector was allocated a 36,3% reduction in the II NAP (08-12), the highest amongst industrial sectors.
- Relatively high price of CO₂ EUAs: 12,5 €/Ton (Average spot price January-June 09. Source: ECX). Together with the ambitious reduction objective in the NAP II it has prompted power companies to continue shifting production from coal to gas facilities (CCGT).
- No investment in new nuclear. Power production by nuclear facilities is at its lowest level for the last 10 years (-10% compared to the average production for this period) and yet neither the price of electricity, nor the emissions of the power sector have grown. The good thing stemming from the lower nuclear production is that the amount of radioactive residues generated has decreased.

Some “clouds” and the future :

- The “clouds”:
 - o The financial crisis can significantly reduce investment in RES.
 - o Actual over-capacity of the electrical system (the crisis has reduced demand by more than 6%), brand new gas fired CCGT installations are not functioning the expected hours, thus making them not profitable. If more renewable technologies are installed these CCGT installations could become a serious financial problem for the utilities. The same utilities that are investing in RES.
 - o Accumulated deficit (>20.000 M €) in the power sector (during last five years the revenues have not covered the costs for the utilities to generate, transport and distribute the electricity, but the Government is supposed to pay back the deficit to the utilities during the next fifteen years). Most of the deficit is due to the fact that the electricity prices set by the Government are too low to cover the costs mentioned. Part of the deficit has been attributed to the RES sector, but if the energy imports and the CO2 avoided by the RES are taken into account, these have actually saved money to the national economy.

- The future:
 - o The European Objective of 20% RES by 2020 should assure continued support by the Spanish government to this sector. For the Spanish power sector the objective is 40% but several expert voices claim that 50% is possible if demand is curbed with energy efficiency measures.
 - o The fact that most utilities have considerable amounts of wind power makes them “interested parties” in maintaining the actual support system and to improve the management of the contribution by wind power to the electrical sector.
 - o The existence of an important industrial development in the RES sector (also for export) makes it one of the pillars that the Government is looking for in order to achieve a recovery of the economy. The messages that the USA president is giving on the energy issue and the importance of RES reinforce the orientation of the Spanish Government. Currently, the Ministry of Industry is preparing a National Renewable Plan identifying the potential of RES up till 2030.

ⁱ All data is referred to the Spanish peninsular power sector. The Canary and Balearic Islands, Ceuta and Melilla are excluded as they have autonomous power systems.