

Key issues for the future of wind energy

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This is a wind park. Credit: SINC

The prestigious journal *Energy Policy* has recently reported two studies that highlight some key issues for the future of wind energy in Spain. A team of engineers from the University of Zaragoza believes it is "technically viable and economically reasonable" for wind energy to account for 30% of Spain's overall energy production. A report by two researchers from the University of Alcalá (UAH) and the European Wind Energy Association (EWEA), meanwhile, says the number of jobs generated by this sector in the European Union has increased by 226% since 2003.

"Nowadays, wind farms supply around 12% of the electric [energy](#) produced in [Spain](#), but by 2030 this could rise to 30%", José Luis Bernal, of the Department of Electric Engineering of the University of Zaragoza and co-author of a study published recently in the journal

Energy Policy, tells SINC.

His team has developed its own calculation method based on the amounts of energy contributed by various sources. The results show that an energy mix, with [wind energy](#) providing 30%, solar energy 20% and gas turbines a further 20% (10%-15% biogas and 5%-10% natural gas), is technically and economically viable in Spain. The remainder would be made up of hydroelectric, geothermal and biomass energy (20% between the three) and energy from carbon power plants (10%), which should apply CO2 capture techniques in order to reduce their impact on global warming.

The proposal factors in the issue of wind turbines potentially standing still when there is wind, looks to a contribution by fossil fuels of less than 20% and does not consider the use of nuclear energy. "According to our calculations, the cost per kilowatt-hour (kWh) could be maintained at between 5.5 and 6.1 Euro cents", says Bernal.

The study shows that wind parks were already providing around 10% of Spain's electricity in 2007 (260 TWh), when their energy generation capacity increased by 33.2%, going from 11.63 GW in January to 15.5 GW by December that year. This growth trend has held steady until the present day, both in terms of the megawatts produced and in generation of employment.

Favourable winds for employment

In 2008, wind energy provided around 104,000 jobs in the European Union, according to a report, also published in *Energy Policy*, by Maria Isabel Blanco, from the University of Alcalá (UAH) in Madrid, and Glória Rodrigues, from the European Wind Energy Association (EWEA). "This is an increase of 226% in comparison to 2003", the authors tell SINC.

The study shows that generation of this energy provides direct employment for 38,000 people in Germany, 20,500 in Spain and 17,000 in Denmark, the three major producing countries in the EU.

Manufacturers of turbines and their components account for the largest number of jobs created, which are taken mostly by men (who account for 78%), as is generally the case in industrial production chains.

The report, based on a survey carried out among the leading companies in the sector, shows that a new market linked to wind energy is arising in Europe, with France, Italy, Ireland and Portugal also playing an active role. However, despite these dynamic developments, there is "a lack of specialists, project managers, engineers and operation and maintenance experts" for the wind farms. In order to resolve this situation, the study calls for measures to be put in place to educate workers and boost their mobility.

References:

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