

## Wind turbines, an alternative for self-sufficient energy production at home

**LOCATION:** Puerto Real, Cadiz

**LENGTH:** 1'49"

**SUMMARY:** It doesn't cause noise or vibrations. And also, unlike solar panels, it generates energy in the middle of the night. These are just some of the advantages of the prototype of a vertical axis wind turbine that the Electrical Engineering Department at the University of Cadiz is working on. "It could be a solution to reduce energy shortage and to supply electricity to developing countries," states Rafael Jiménez, who is in charge of the study. The project is a collaboration between the UCA (University of Cadiz) and the Company 'Ventum'. Along with domestic use, the scientists plan for this wind turbine to be used on boats when sailing in order to reduce fuel consumption.

### VTR

What you see here is a wind turbine which is able to produce electrical energy. And look closely, because it's quite possible that, in a few years' time, you might have one very similar to this at home.

**RAFAEL JIMÉNEZ**  
Researcher at the University of  
Cadiz

*"Wind turbines have an advantage over solar panels as they can also generate energy at night which, especially for domestic energy production, makes them particularly interesting."*

Big horizontal axis wind turbines are very common.

**Background:** "So, the idea is to simplify the blade."

The prototype that these researchers from the University of Cadiz are working on has, however, a vertical axis.

**JUAN M<sup>a</sup> GONZÁLEZ**  
Researcher at the University of  
Cadiz

*"The axis around which the mechanical elements, in this case the blades of the wind turbine, are going to revolve."*

This difference means that this system has, they say, important advantages for domestic use.

**RAFAEL JIMÉNEZ**  
Researcher at the University of  
Cadiz

*"Not much noise, not much vibration and above all, limited impact on bird life."*

**JUAN M<sup>a</sup> GONZÁLEZ**  
Researcher at the University of  
Cadiz

*"They work in very very strong wind conditions, where horizontal axis wind turbines would stop working."*

**RAFAEL JIMÉNEZ**  
Researcher at the University of  
Cadiz

*"They can endure wind speeds of over 80 kilometres per hour with no problem, or even much more."*

This is what would allow it to work on boats whilst they are navigating.



**RAFAEL JIMÉNEZ**  
**Researcher at the University of**  
**Cadiz**

*"And it would reduce fuel costs when sailing."*

The project, which is still being improved, emerged from the initiative of the private company 'Ventum', which turned to the university to develop the idea. Clean, cheap energy with great potential.

**RAFAEL JIMÉNEZ**  
**Researcher at the University of**  
**Cadiz**

*"With respect to the electricity supply, reducing energy shortage and supplying energy to developing countries."*

And so, the researchers at this engineering school beside the Bay of Cadiz, are working with these goals in mind.

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