



Dron view mills



David Vicente and Luis Llorente, engineers Arborea Intellbird, listen to Ignacio Armentia, Iberdrola. :: PHOTOS: JESUS ANDRADE



The aracnoptero in midair next to the wind turbine.



IN CONTEXT

Maintenance. Iberdrola is currently reviewing the blades of 18 wind turbines in the Sierra de Elgea Wind Farm. In total it is composed of 78.

Aracnoptero. It is a remotely piloted aerial system that performs passive thermographs. It is developed by the technology company Arborea Intellbird.

Characteristics. The titanium and carbon fiber drone is powered by renewable energy generated by the wind turbines themselves. Take a picture every two seconds.

Advantage. Cost savings, reduction of occupational accidents and greater efficiency by performing more inspections in less time.

Pioneer. This system has laid the foundations for a new standard and is already used in Japan or Uruguay.

SARA LOPEZ DE PARIZA



Iberdrola uses the Aracnoptero system to carry out the maintenance of 18 wind turbines at Elgea wind farm.

VITORIA. He places the chair at a safe distance from the wind turbine structure, sits down, adjusts the thermal vision goggles that give him a halo of science fiction movie protagonist and gives his partner the 'O. K.' to let the drone fly. Luis Llorente, an engineer at Arborea Intellbird, manages the latest technology device and through the lenses he is able to see the inside of the windmill blade in front of him.

This is how Iberdrola performs these days the review of the blades of 18 of the 78 wind turbines that make up the wind farm from the Sierra de Elgea, located between Álava and Gipuzkoa. It does so through the so-called Aracnoptero, a drone developed by the Arborea Intellbird technology company, which is responsible for collecting a great diversity of useful data for the maintenance of the structure. «The blades are a fundamental element of the wind turbine. A light structure but at the same time very resistant with an inner beam and a copper lightning rod», explains Ignacio Armentia, responsible for operations and maintenance for the northern area of Iberdrola.

With an ocular inspection it would be impossible to check the internal state of the blade, and what a few years ago was done by means of a telescope with integrated camera, the drones now do it. "Before the process was much slower," says Armentia. This technology allows to detect internal damages such as breakage or lack of glueing at first sight and also generates a series of images thanks to which the detection of failures can be anticipated and the propellers can be ordered in a risk ranking.

«The information obtained allows the blades to be reconstructed, including their internal skeleton as if it were an X-ray. Thus, maintenance becomes more predictive than corrective» says Carlos Bernabéu, director of Arborea Intellbird.



While the work is being carried out, the weather accompanies, but surrounded by horses and goats the wind turbines of the Sierra de Elgea endure for too many months cold, rain, frost and snow that accelerate their deterioration. «Although they happen little, severe damage is very expensive to repair. But with climate change, violent storms are becoming more frequent» says Armentia as the drone continues its work at more than 45 meters high.

One photo every 2 seconds

The titanium and carbon fiber Aracnoptero has lipo batteries and is powered by renewable electricity generated by the wind turbines themselves.

It has an autonomy of about 20 minutes, although it does not usually fly more than 12 in a row, and with the camera it has integrated it takes a photograph every two seconds. Among the advantages of this maintenance system is the saving of costs thanks to the use of a fully digital platform, the reduction of occupational accidents and greater efficiency to perform more inspections and better quality in a shorter period of time.

Iberdrola and Arborea became pioneers in 2013 when implementing this technology, which has already expanded to wind farms in Japan or Uruguay. «This procedure is absolutely pioneer and has set a new standard in the wind sector. With him we have opened the way throughout the industry» Bernabéu celebrates.

[Link to original story](#) (Spanish)