

The El Escudo wind farm will be the first in the world to use BIM methodology to reduce its impact

- *In collaboration with the Cantabrian company INGECID, a digital model will be made to anticipate any deviation from the design during construction.*
- *Biocantaber thus expands its commitment to the best available technology and raises its environmental and heritage requirements beyond regulatory compliance.*

The El Escudo wind farm will be the first in the world to use BIM (Building Information Modelling) methodology for its construction, with the aim of carrying out exhaustive control and guaranteeing that environmental and heritage protection criteria are met in every part of the process.

This is a pioneering experience, which has already taken its first steps in the world of building and other public and civil works facilities, but which is making its debut in the development of wind power facilities at the El Escudo wind farm. The Cantabrian engineering company INGECID, which emerged as a spin-off from the University of Cantabria and is already successfully implementing it in other unique installations in Europe and also in Spain, such as the Bank underground station in London, the decommissioning of the Garoña nuclear power plant or the construction of what will be the future logistics base of the Spanish Army.

The BIM methodology brings added quality to any construction process, bringing together in a specific software all the information from all the specialists involved in the design and execution of a project. In this way, it is capable of carrying out a reliable 3D modelling of what will be, in this case, the Escudo Wind Farm, anticipating possible problems or mismatches between the different layers of such a complex project.

But in addition to anticipating a digital twin of what will be a physical structure, this technology processes and interrelates a huge volume of information - tens of thousands of documents - so that professionals experience an improved work experience in terms of information management.

Thus, the use of the BIM methodology is a guarantee to support the step by step, from the projected idea to the effective execution, avoiding errors, saving costs and time and facilitating, in short, that the entire construction process is developed without incidents and rigorously complying with the measures established to minimise its impact.

The adoption of this methodology is a further commitment by Biocantaber to provide the El Escudo wind farm with the most innovative technology, as it did in the choice of the model of modern, high-power wind turbines, which will allow it to produce more energy by installing fewer machines and reducing land occupation.

Sustainable development

These are not the only measures contemplated by Biocantaber to make the Escudo Wind Farm project an example of sustainable development. The facility has been designed to produce 453,600 MWh per year, which will supply around 49,000 homes, while preventing the emission of 113,400 t/year of CO₂, a figure equivalent to the photosynthesis of approximately 5.5 million trees.

Furthermore, in order to cause the least possible impact, the design has gone beyond the exquisite compliance with the regulations, selecting the alternatives for the layout of internal roads that involve the least possible earthworks, taking advantage of the existing orography and roads and selecting the best possible locations for each of the elements.

This project is expected to have an economic impact of approximately one million euros per year in terms of social measures, taxes and royalties in the municipalities where it is located: Campoo de Yuso, San Miguel de Aguayo, Molledo and Luena. Last August, the company signed an agreement with the Molledo town council which includes a series of initiatives in this regard, aimed at improving the quality of life of the residents and promoting the development of the municipality.

Thus, there will be bonuses on energy consumption of up to 60%, economic resources will be allocated for the rehabilitation of the cultural centre of Molledo, with a budget of approximately €45,000, and €60,000 will be allocated annually for the maintenance of municipal infrastructure and social activities, either to support the livestock sector, the elderly, the disabled and children registered in the municipality.

The agreement also includes training activities for employment related to the works and maintenance of the wind farm, and others that favour the digitalisation and technological development of the area, the improvement of tourism competitiveness and the commercialisation of local products, as well as the recovery of cultural heritage.

On the other hand, a programme to compensate for the impact on the landscape will be implemented, which will include actions to adapt paths and viewpoints, interpretation and enhancement of the landscape, recovery of natural elements and other measures for the landscape and environmental integration of human activity.

Cañoneras Wind Farm, the example to follow

Iberdrola and the Cantabrian group Ocyener, partners in El Escudo, have been operating the only wind farm in operation in Cantabria, Cañoneras, for years. Since its commissioning, they have paid the Soba Town Council and the neighbourhood councils involved more than €4 million in rent and municipal licences alone. This wind farm is widely accepted by the residents of Soba and has been held up as an example of the integration of wind energy in rural areas at various meetings of the wind energy sector in Spain.