

SECRETARIA DE ESTADO DE PRESUPUESTOS Y GASTOS SECRETARIA GENERAL DE FONDOS EUROPEOS DIRECCION GENERAL DE FONDOS EUROPEOS



**BUENAS PRÁCTICAS** 

**Actuaciones** Cofinanciadas



## Una manera de Racer Europa

Transforming electricity infrastructure with a smart grid in Escúzar (Granada)

Andalusian Energy Agency

Programa Operativo de Andalucía

Año 2022

Fondo Europeo de Desarrollo Regional

#### TRANSFORMING ELECTRICITY INFRASTRUCTURE WITH A SMART GRID IN ESCÚZAR (GRANADA)

#### **Project Overview**

The Andalusian Energy Agency presents an example of its Best Practice, consisting of the aid granted through the **Sustainable Energy Development of Andalusia 2020 Incentive Programme, "Andalucía es más"**, which offers a **SMART NETWORKS** incentive line with a budget of **27 million euros**. With 11 different types of available actions, the initiative promotes the transformation of Andalusian cities towards a smart model, resulting in a balanced and energetically sustainable development of the region.

As part of this scheme, aid was granted in the province of Granada, and the company Montajes Eléctricos Cuerva S.L. in the town of Escúzar (Granada) was chosen as an example.

Montajes Eléctricos Cuerva S.L.'s work focused on developing, engineering, installing and maintaining all types of electrical, control and automation systems, mainly covering the fields of industrial process control, electricity production plants, public lighting, high and medium voltage power lines, transformer stations and electrical substations, as well as maintaining the Cuerva business group's infrastructure, to which it belongs.

The Granada-based Grupa Cuerva works across all areas in the electricity sector (generation, distribution and commercialisation of electricity, as well as other functions in the installation and maintenance of electricity infrastructures), **developing a very intense level of activity in innovating the electricity sector**, of which this project is a good example.

### The project consisted of transforming the **electricity infrastructure in Escúzar (Granada) into a smart grid**.

The project, called **Smart DSO-Living Lab**, developed a smart grid that tracks and efficiently integrates the behaviour and actions of all users connected to this electricity distribution network, both as consumers and generators. Achieving a synchronised real-time overview of consumption and production makes the company's energy management more efficient. It can then optimise power flows by anticipating overload situations or detect more quickly and accurately when a line suffers an incident and thus resolve it in less time, among other things.



The project received **800,000 euros from the ERDF**, representing 80% of the incentive of 1,000,000 euros out of a total investment of 2,597,700.60 euros. This innovative project for the digitalisation of the electricity system will help ensure a more secure, quality and sustainable electricity supply in the local municipalities.

The arguments for this project being considered Best Practice are listed below, in accordance with the criteria defined for this purpose:

## <u>Criterion 1. Widespread dissemination among both beneficiaries and the general public.</u>

Montaje Eléctricos Cuerva mounted an **information plaque** at its headquarters indicating the energy improvement action carried out and the ERDF co-financing, a communication requirement for fund beneficiaries.

The work was also disseminated on the Andalusian Energy Agency website, specifically in the section for the dissemination of successful projects co-financed with the ERDF.

A fact sheet for the project was also made and can be viewed here:





This fact sheet was also shared on the Andalusian Energy Agency's social media accounts (Twitter, Facebook, LinkedIn and Instagram).





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The group that owns the beneficiary company, Grupo Cuerva, also mention the grants on **their website**, highlighting the ERDF aid:

In terms of dissemination, it is also worth noting **the broad media coverage** this project received, specifically when the then Minister of Finance and European Financing of the Regional Government of Andalusia, Juan Bravo, and the managing director of the Andalusian Energy Agency, Francisco Javier Ramírez, visited the company on the 20th of January 2021 to see the project for themselves.

To further raise awareness of the work done, a **press release** was published on the Andalusian Energy Agency's website, the Andalusian Regional Government's website and the website of the Regional Ministry of Finance and European Funding.

As to its **media coverage**, the news appeared in eight media outlets, both regional and local, as well as media specialising in energy and smart networks. **All the coverage mentioned the ERDF's co-financing.** 





At the same time, the work was also being promoted on social media. It was shared from the Andalusian Energy Agency's accounts, as well as the then Regional Ministry of Finance and European Funding and the Regional Minister himself.



The beneficiary also promoted the project and the councillor's visit to its headquarters on its social media profiles, both by sharing other publications and with its own content.





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#### Criterion 2. Incorporating innovative elements.

Innovative elements are at the heart of the work carried out by Montajes Eléctricos Cuerva and co-financed by the ERDF.

The transformation of an electricity infrastructure into a smart grid is an example of what the current electricity system should move towards, placing the citizen at the centre of the energy system and incorporating renewable sources through efficient energy management.

Through the Smart DSO-Living Lab project, Montajes Eléctricos Cuerva has equipped parts of its distribution network with the necessary infrastructure, implementing control and supervision systems that analyse and act intelligently on the system's components, providing information on their individual status, which will make it easier to adopt preventive and predictive maintenance strategies, improving the reliability of communications.

More specifically, a communications and monitoring system (fibre optic) was integrated into the distribution grid owned by the group in Escúzar, in order to have better information by incorporating elements in the electrical infrastructure that provide flexibility, stability, wave quality, electric vehicle charging adaptability (V2G services) and greater operational efficiency.

This communications system includes realtime data collection systems for the electricity grid and the environment, intelligent analysis and management



systems for the electricity grid, remote management and remote action systems for grid elements, data extraction, management and processing systems in the cloud.

The project also enables the development of a Smart City, focusing on demand management and zero balance, reinforcing the concept of self-sufficiency and communal self-sustainability.

#### Criterion 3. Aligning the results with the established objectives.

The main objective of this project was to improve the municipalities' electricity supply, served by the electricity infrastructure.

This objective has been achieved with the Smart DSO Living Lab project, which covers everything from the infrastructure, analysis and evaluation, as well as the application of ICT in the energy networks, thereby achieving an economically more efficient and sustainable electricity supply, with few losses and high quality, security of supply and reliability; also incorporating elements of smart energy management at the municipal level.

It will also facilitate the smart development of the local municipalities in the area, which was another objective. By improving the energy distribution system through the grids, new technologies can be applied to manage the efficient use of resources.

#### Criterion 4. Contributing to the resolution of regional problems or weaknesses.

Montajes Eléctricos Cuerva has contributed to solving the problem of smart development in small municipalities. With the transformation of the electrical infrastructure covered by the project into a smart grid, progress is being made in the digitalisation and smart management of energy throughout Andalusia (and not only in the big cities).

Initiatives like this help keep populations in rural areas and contribute to the economic growth and development of small municipalities, by improving the quality of electricity supply and enabling the implementation of projects linked to new technologies and smart grids.



Installing smart grids has been key to providing the area with a more secure and stable electricity system, with better wave quality, eliminating grid micro outages and capable of efficiently integrating the behaviour and actions of all the grid's users.

#### Criterion 5. Reaching a high percentage of the target population.

This project reached Grupo Cueva's 16,000 customers, as it delivers energy to 36 Andalusian municipalities through four distributors.

Of course, the municipalities were directly impacted by the electrical infrastructure's transformation to a smart grid, the Escúzar Metropolitan Park in particular.

#### <u>Criterion 6. Consideration of the cross-cutting criteria of equal opportunities and environmental</u> <u>sustainability.</u>

The company has taken into account the criteria of equal opportunities, non-discrimination and social responsibility by committing in its project to the development of Andalusia's small municipalities so that neither men nor women in these municipalities need to migrate to the big cities to access new technologies or implement their business ideas in small towns, thus advancing rural women's digital development. Environmental sustainability was also key, as the work done supports the incorporation of renewable sources.

#### Criterion 7. Synergies with other policy areas and public intervention instruments.



The project synergises with the Andalusia Energy Strategy 2020, one of the objectives of which is to improve the quality of Andalusia's electricity supply by 15%, through the appropriate development of infrastructures, especially in rural areas, facilitating productive and urban development activities.

It also shares synergies with the Andalusia 2020 Industrial Strategy, which covers the development of smart grids as an area of industrial opportunity for Andalusia. And it aligns with the Andalucía Smart 2020 Action Plan, through

which a series of infrastructures and services based on Information and Communication Technologies have been implemented, to create a sustainable "Smart Region" model.



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