

Best Practice: Installing sensors and a computer application to measure energy consumption in public and private areas of the city's neighbourhoods.

The Best Practice involves creating an energy monitoring system to provide real-time data on energy consumption in every district of A Coruña. This project has two clear objectives. On one hand, we aim to understand the actual energy usage and environmental comfort levels of a collection of pre-selected residences and structures. On the other hand, we seek to precisely gauge and compare the outcomes of energy updates carried out in these properties.

Firstly, potential participants in the energy monitoring programme were identified. This consisted of organising [informative meetings](#) at various civic centres throughout the city. These meetings were aimed at informing owners' associations, property administrators, and others interested about the programme's qualities, selection criteria, and the benefits available to the users of the selected properties.



Image of the informative meeting at Elviña Civic Centre on 03/03/2022



Image of the informative meeting at Rosales Civic Centre on 08/03/2022



Image of the informative meeting at the ÁGORA sociocultural centre on 16/03/2022



Image of the informative meeting at the FÓRUM METROPOLITANO sociocultural centre on 17/03/2022

Following the meetings, 60 residential buildings were selected and energy profiles were generated for 600 dwellings identified in these buildings.

Secondly, the implementation of the programme started with the **energy characterisation process** of the selected units. Profiles were generated to determine the energy behaviour of the families residing in the identified dwellings and specific savings recommendations were made for each household.

Subsequently, the **monitoring process** was conducted to measure in real time the different energy and comfort parameters in 240 selected dwellings (among the 600 initially identified). In each of them, aspects such as natural gas consumption for heating and hot water, general electricity consumption and the degree of indoor comfort were recorded by measuring temperature, relative humidity and CO₂ levels.

As a result, it is possible to know the real consumption of each monitored home and to promote energy refurbishment processes to improve the resident's quality of life. This not only optimizes the allocation of grants for this purpose, but also benefits the environment by reducing the carbon footprint.

The eligible budget of the operation is 324,924.73 €, of which the **ERDF fund contributes 80%, equivalent to 259,891.78 €**. In addition, the City Council of A Coruña increases the initial eligible amount by 62,493.07 euros, bringing the total investment to 387,417.80 €.

The criteria for the identification of this action as a Best Practice are as follows:

1. THE FEDER'S ROLE IN THE ACTION HAS BEEN ADEQUATELY DISSEMINATED TO POTENTIAL BENEFICIARIES AND THE GENERAL PUBLIC.

In terms of regulatory communication, ERDF co-financing has been reported in all cases. At the participatory meetings, **printed and digital signage** were used for signage and presentation respectively. In addition, **leaflets** featuring the ERDF image were distributed.

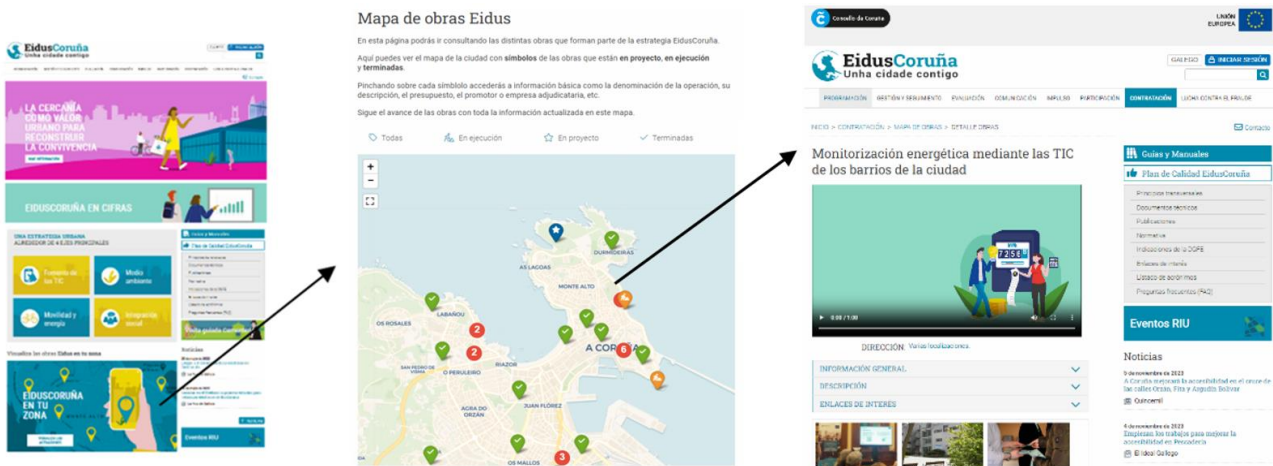


Print and digital signage at participatory meetings



Leaflets distributed at participatory meetings

[Details of this action](#) can be found in the specific section of the beneficiary's **website**:



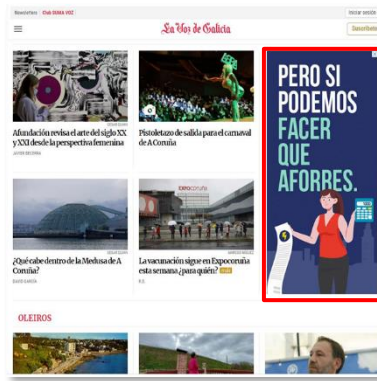
WEBSITE: www.coruna.gal/eidus

One permanent plaque was installed at the entrance of each building (a total of 60 plaques) showing the energy label and the ERDF image.



Information plaque with energy label and ERDF image

Furthermore, digital press advertisements, social media advertisements, organic social media communications and numerous press articles were published to raise awareness of the ERDF co-funding and the development of the energy monitoring project.



Digital press advertisements





Social media advertisements

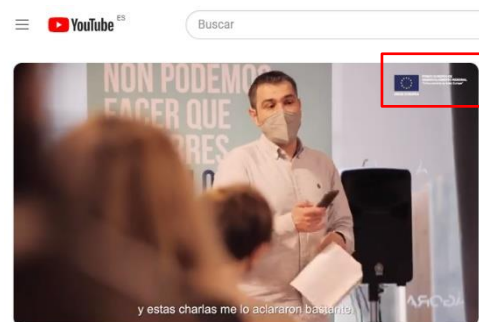


Organic social media communications
(click on the images to access the publication)



Press articles

In addition, a video was produced showcasing the participants' testimonies from the meetings. This audio-visual presentation includes the ERDF image and was distributed via social media platforms. Furthermore, it is featured in the [works map](#) section of the municipal web portal and in the municipal Youtube profile, where it is available in English, Spanish and Galician. Click here to access the [Youtube link](#).



Finally, on 15 June 2023, an event was held to share the progress of the programme and inform the citizens about the European co-financing through the ERDF fund. The event took place in the busiest area of the promenade and involved setting up a marquee, displaying posters and explanatory brochures. The latter were used as support materials, providing direct, clear, and concise information from municipal technician to all interested parties.



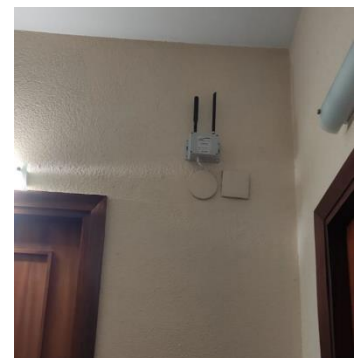
Event on the promenade

2. THE PERFORMANCE INCORPORATES INNOVATIVE ELEMENTS.

This Best Practice showcases a significant innovative initiative. Firstly, a **monitoring infrastructure** has been established to facilitate the identification of the current energy efficiency status of residential properties within the city. Through this system, energy consumption (gas and electricity) and indoor comfort conditions are regularly measured, which enables the identification of energy-deficient areas with the advantage of intelligent data processing.

Secondly, the data generated by the new system can be used to **evaluate the effectiveness of local grants** for energy refurbishment, as the conditions prior to and after renovation can be precisely measured and compared.

Monitoring is carried out with innovative small **devices** installed in meters and in one or two of the main rooms of the home. The devices are energetically autonomous and transmit the information through their own data network, so that their operation does not involve energy or data consumption in the monitored homes. In addition, a **communication network** is created to integrate all the devices installed and the information they transmit.



Finally, the project creates a digital platform to **monitor and track the energy** performance of buildings and homes. It also includes a **user application** that allows program participants to view their consumption data and self-regulate accordingly.

3. ADEQUACY OF THE RESULTS OBTAINED TO THE ESTABLISHED OBJECTIVES

With this Best Practice, the following objectives initially set have been achieved:

- Creation of an energy monitoring infrastructure to ascertain the current situation of the energy efficiency of the city's buildings and homes, identifying the most deficient building typologies with the greatest need for energy improvements.
- Improving citizens' knowledge of the energy situation in their homes, and the possibilities they have to improve it.
- Development of an evaluation instrument on the effectiveness of energy renovation actions, assessing improvements in energy savings and indoor comfort of dwellings.
- Promotion of energy refurbishment actions in selected buildings and dwellings, identifying possible improvements and subsidies.

4. CONTRIBUTION TO THE RESOLUTION OF A PROBLEM OR WEAKNESS DETECTED IN THE TERRITORIAL AREA OF IMPLEMENTATION.

The implementation of the energy monitoring process has resolved several weaknesses in municipal policies on refurbishment. On the one hand, the City Council did not have an infrastructure that would allow it to know the real consumption and environmental habitability conditions of the city's residential stock. On the other hand, it has been possible to evaluate the effectiveness of the refurbishment actions financed with municipal subsidies.

The mapping of energy consumption makes it possible to characterise the different urban areas in terms of energy performance and to identify the most energy-deficient areas. In this way, it is possible to prioritise the promotion of subsidies according to the area. For this purpose, classifications can be established and the most appropriate amounts can be determined for the objectives of each subsidy.

5. LEVEL OF COVERAGE OF THE TARGET POPULATION.

The level of coverage is significant because this action is aimed at all residents in the different neighbourhoods of the city. Specifically, it has a direct impact on the inhabitants of the 240 monitored homes and, more broadly, on the population reached by the communication and awareness-raising activities carried out to attract potential participants in the project, whose target audience was the entire population of A Coruña.

However, creating the infrastructure is the primary effort required for this action. Once operational, it can be easily scaled to reach all homes and buildings in the city, making it accessible to the entire population of 250,823 inhabitants (116,241 men and 134,582 women), according to the municipal census of August 2023.

6. CONSIDERATION OF THE HORIZONTAL CRITERIA OF EQUAL OPPORTUNITIES AND NON-DISCRIMINATION, SOCIAL RESPONSIBILITY AND ENVIRONMENTAL SUSTAINABILITY.

The performance complies with the principle of **equal opportunities and non-discrimination** through the specifications that governed the procurement procedure. These included special conditions of execution

referring to equal treatment and opportunities that the contractor had to guarantee. These conditions included compliance with current legislation and municipal instructions on equal treatment. Bidders were required to confirm their compliance with the current legal obligations on gender equality in a responsible declaration.

In reference to **environmental sustainability**, this principle is complied with in the design and execution of the entire project, aimed at improving the quality of life of the inhabitants of A Coruña. To this end, profiles have been generated based on the energy behaviour of families, the impact of energy in their daily lives and the degree of comfort in their homes. As a result, an energy characterisation of the households was created, identifying different situations that allowed for the development of energy and environmental improvement strategies.

Furthermore, all elements of this action are geared towards ensuring **accessibility** for users. For instance, in the process of recruiting potential participants, both digital and analogue media were used to reach the greatest number of people, thus guaranteeing the accessibility of those attending the participatory meetings and the instruments used to gather their opinions. In addition, the technical specifications establish that the contracted company must perform maintenance operations to ensure proper data transmission, visualisation, and accessibility for all participants. As for the user application, it has been developed in Spanish and Galician, and registered users have access to manuals and audio-visual materials to help them interact with their home's data.

7. SYNERGIES WITH OTHER POLICIES OR INSTRUMENTS OF PUBLIC INTERVENTION.

The action establishes synergies with other public policies as it has reinforced the action of other funds and contributed to strengthening different aspects of these policies.

Firstly, it is directly related to the modification of the current [Municipal Ordinance for the conservation and rehabilitation of buildings](#). As a result, the amount of aid for energy efficiency improvement works and rehabilitation of buildings has been increased for those that participated in the monitoring programme between October 2022 and May 2023.

The action is also related to the [Integrated Rehabilitation Master Plan \(PDRI\) of the Barrio de las Flores](#), a tool for the urban regeneration of the neighbourhood that plans actions to improve the urban environment, public space, housing and facilities and services. The IRDP has eight strategic objectives in the areas of habitability and housing, energy efficiency and renewable energies, mobility and public space, employment and economic activity, social cohesion and coexistence, environment and community health, culture and heritage, participation and governance.

Furthermore, it generates synergies with the municipal programmes of [Urban Regeneration and Renewal Areas \(ARRU\)](#). The Housing and Rehabilitation Service manages the rehabilitation and urbanisation actions financed through the urban regeneration and renovation programmes of the [State Housing Plan 2022-2025](#). This plan provides subsidies for urbanisation and material redevelopment works in public spaces. These works aim to improve the accessibility of public spaces and enhance environmental efficiency in terms of water, energy, materials, and energy efficiency through the use of renewable energies (art. 122 of [Royal Decree 42/2022, of 18 January](#)).

Finally, it is related to other operations of the [EidusCoruña Strategy](#) such as the [Modernisation of lighting in different roads of the city](#) and the [Improvement of the energy efficiency of the Elviña Civic Centre](#). Both operations are integrated in the Thematic Objective 4: "Supporting the transition to a low carbon economy".