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Decarbonization of the residential sector in Spain.

The role of the electrical installation in dwellings.

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FISUEL Seminar
Barcelona

OREVE
Observatorio de la rehabilitación eléctrica de la vivienda en España

OREVE, Observatory of the electrical refurbishment of dwellings in Spain

Generating knowledge

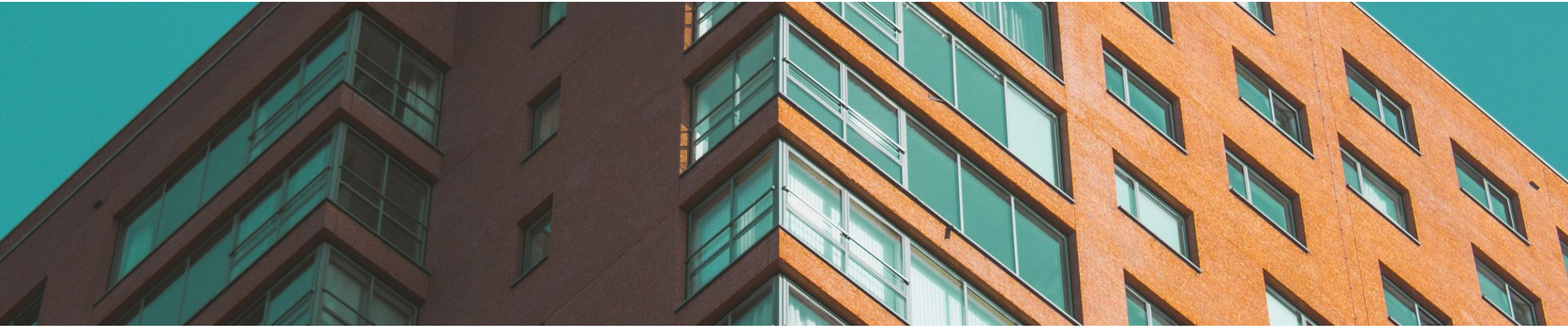
The electrical installation of dwellings in the energy transition and decarbonisation targets.

Objectives

- To provide information for decision-making: citizens, sector and administrations.
- Raise the profile of the electrical installation in dwellings and its role in the energy transition.
- Opportunities derived from updating the installation :
  - Favouring electrification for the incorporation of energy-efficient technological solutions.
  - Preparing for current consumption and generation.
  - To strengthen the role of the citizen in the energy transition.
  - Increasing the safety of dwellings and people.

Decarbonisation of the residential sector. Context

- EU objective**: decarbonise the entire residential estate by 2050**
  - To optimise the efficiency of buildings and dwellings (more efficient building envelope and technologies).
  - Electrification of domestic uses from renewables. **Change of energy model.**
- 40% of direct energy consumption in Spanish dwellings is of fossil fuel origin.
- The actions and public funds have focused on the envelope of the building and, to a lesser extent, on favouring the incorporation of more efficient technologies in energy use.

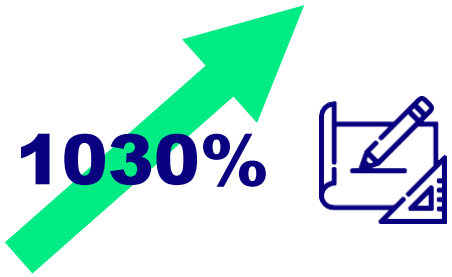


Decarbonisation of the residential sector. Context

- Only **22.44%** of the 26.6 million dwellings were built under current wiring rules (REBT Spanish regulation): **a large part of the stock is liable to having inadequate and deficient electrical installations.**

- **Low rehabilitation rate in Spain.** 0.1% per year (approx. 26,000 - CSCAE / MIVAU, 2022).

  - PNIEC targets for 2030: 300,000 dwellings per year, 1.13% of the current stock.
  - 1030% increase in 7 years.



- The electrical installation of dwellings does not receive specific treatment in the political strategies for renovation. **It is the most neglected area in the public funds for decarbonising the sector.**

- It is essential to make **the electrical installation visible**: the backbone of the energy transition in the home..

- Energy efficiency and energy transition, understood as **electrification of the dwellings**, must go together.

Quantitative survey of 1223 homeowners

Why do owners act?

- **Confusion of concepts:** refurbishment and renovation are mostly understood as synonyms and include any action on the dwelling.
- **Low** level of **awareness of the political objectives of decarbonisation** of the residential sector, its impact and the actions to be carried out.
- **They are not the driving force behind** actions in their homes.

12,6% **Of the owners act for reasons linked to** decarbonisation (15% if we include self-consumption and electric vehicle charging).

45% **They carry out actions in the home out of necessity (repairing).**

30% **Of the actions on the property are for aesthetic reasons.**

Quantitative survey of 1223 homeowners

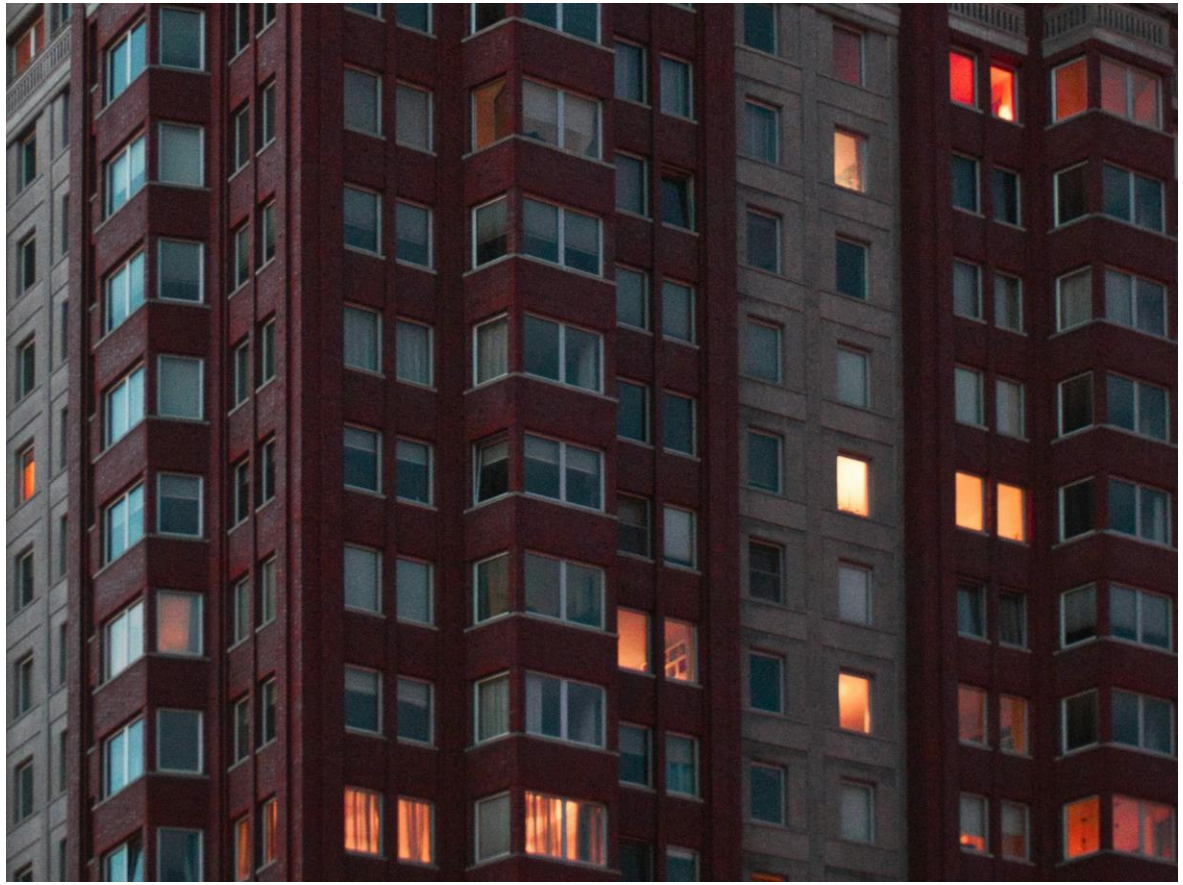
Funds programmes

→ **Low awareness of the existence of** subsidies for refurbishment and efficiency improvements:

62% 62% of owners who have invested **less than €15,000** or have not carried out an action are unaware of the subsidies.

51% 51% of owners who have spent **more than €15,000 are also unaware of them.**

38% Ignorance of the existence of subsidies **is reduced to 38%, if a technician** (mainly an architect) **is involved.**



Quantitative survey of 1223 homeowners

The electrical installation

- **Potential bad situation of the electrical installation of dwellings in Spain.**
  80% of the Spanish residential stock predates the 2002 REBT. In addition:

0,1% **Low refurbishment rate.**

20% **Of the owners, consider that action on the electrical installation is a priority.**

38% **Owners consider as “good condition” that the installation operates.**

- The electrical installation **is the forgotten element in the decarbonisation of the residential sector**.
  Without a well planned, efficient and safe electrical installation, it won´t be possible to electrify the energy uses of the dwellings.

- Updating the electrical installation is secondary when the owner thinks about renovation of the dwelling:

15% **In budgets of less than 5,000 euros,** only 15% include specific actions in the electrical installation.

Quantitative survey of 1223 homeowners

Knowledge of the energy transition

- **The energy transition in dwellings** involves electrifying all the elements that currently require fossil energy, in addition to the possibility of generating renewable energy. .
- **Without energy transition there is no decarbonisation:** a ready electrical installation is essential to face this change. Acting on the envelope of the dwelling is very important, but insufficient to achieve the decarbonisation objectives.
- The concept of energy transition, which is widely recognised by the public in other areas, is not part of the story in the building sector and its regulation.

71,7% **Of the owners does not know what means this concept.**

16,2% **It sounds familiar, but they don't know exactly what it is or its associated actions.**

12,1% **Say to be familiar with the concept of energy transition in housing.**

Quantitative survey of 1223 homeowners
Energy transition as a motivational lever

→ Knowledge of the concept of ‘energy transition’ and its meaning acts as a powerful motivational lever.

Before knowing the concept:

63,2% **Of the owners did not consider important to act on the electrical installation.**

17% **They considered it important but not a priority.**

20% **Considered it as a priority.**

After learning about the concept and its implications:

58,1% **Of the owners consider the electrical installation as a priority.**

Quantitative survey of 1223 homeowners

Energy transition as a motivational lever

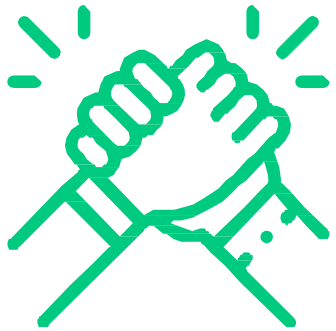
- **The impact of knowledge of the concept of energy transition in dwellings is real:** 79.4% of homeowners who have carried out actions for a value of more than €15,000 and who showed awareness of the implications of the energy transition in housing, updated the electrical installation.
- Awareness of the energy transition in dwellings, by highlighting the value of electrification, has the potential to change the attitudes of homeowners. **Informed citizens choose to take action.**
- **It is necessary to introduce the concept of energy transition in dwellings** and develop it in all the areas and people involved: owners, professionals involved in the renovation and refurbishment processes, public administrations, etc.
- **It is important to inform homeowners of the positive implications** (revaluation, adaptation, savings, updating, subsidies, safety, commitment, etc.) **and the negative** implications (future new obligations, end of subsidies, elimination of fuels, obsolescence, taxation, devaluation, limitations on the availability of dwellings, etc.).

The OREVE - 2024 report. Main findings

- **The electrical installation is the backbone of the dwelling** in achieving the decarbonisation targets for the dwelling. Without an up to date and capable electrical installation it will be impossible to achieve them.
- Decarbonisation of the residential sector is based on **efficiency** and **energy transition**. **Electrification is an essential vector of the energy transition**. The public, in general, does not understand its meaning and relevance.
- The electrical installation has been invisible: in energy efficiency policies, in subsidies and in the narrative.
- The focus has been solely on energy efficiency, especially on the envelope, and has forgotten to talk about energy transition and electrification.
- Policies and subsidies have so far failed to achieve their objectives: **integral dwellings refurbishments are far below expectations.**
- It is presumed that the decarbonisation subsidies in the residential sector have favored the transformation of the **dwellings stock of those with higher incomes.**
- **A new approach** to citizenship, with a commitment to the energy transition in dwellings, accompanied by measures to boost and restrictive proposals for the disposal of property, will help to change trends and bring us closer to the planned targets.

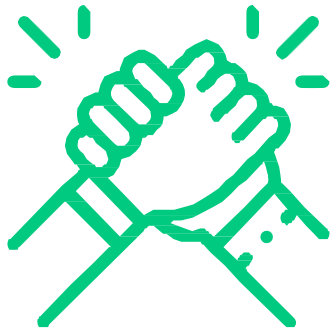
Recommendations to Public Administrations

- **Incorporate the energy transition of dwellings** into the strategy and roadmap for the decarbonisation of the residential sector the strategy and roadmap for the decarbonisation of the residential sector and **make visible** the relevance **of the electrical installation as its backbone.**
- **Incorporate the upgrading of electrical installations** explicitly **in the policies and public funds** for refurbishment for decarbonisation.
- Establish **mechanisms for the checks** of electrical installations.
- Include basic **information about the electrical installation and whether or not all or part of the electrical installation** has been renovated in the basic documentation to have data and statistics.
- Establish **periodic revisions** every 5 or 10 years, depending on the degree of electrification or power of the electrical installations**, for dwellings older than 25 years.**
- Promote the **participation of representatives** of the electrical sectors linked to the energy transition of dwellings and **electrical installation in working groups aimed at designing and promoting policies and regulating the refurbishment of the residential sector.**



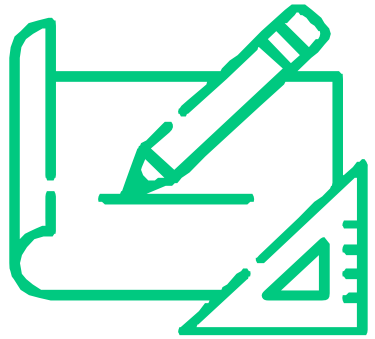
Recommendations to Public Administrations

- Promote **awareness campaigns** on the energy transition in dwellings and the need to upgrade electrical installations.
- **Simplify the management of subsidies** and facilitate access to information and its direct application.
- Encourage the **creation of specific long-term, low-interest public and private** credit lines for the energy transition of dwellings and the upgrading of electrical installation.
- Anticipate, announce and implement **restrictive measures on the use and transfer of properties that do not comply with the requirements of the energy transition** and, on transfer, oblige the seller to have a report from a third party on the state of the installation.
- Take measures to facilitate the energy transition and the improvement of the efficiency of **low-income** homeowners' dwellings.



Recommendations to the construction sector

- **Encourage the updating of the electrical installation** in renovation projects of dwellings.
- **Strengthen the prescription capacity of the professional** groups involved on the importance of electrification and the key role of the electrical installation.
- **Collaboration with the electrical sector,** through partnerships to ensure refurbishment projects that include advanced and efficient technological solutions.
- **Implementation of energy transition best practices in dwellings,** including upgrading of electrical installations.
- Promote the **updating of the electrical installation** in common areas and car parks.
- **Plan all actions as an integral process of preparation for the energy transition,** avoiding premature obsolescence of dwellings actions due to lack of planification.



Recommendations to the electrical sector: installations, engineering companies, manufacturers, wholesalers...

- **Collaboration with the Public Administration** and the construction sector in **the creation of practical tools and procedures for the conformity assessment and diagnosis** of electrical installations.
- **Promote the prescription role of installers and wholesalers**, as experts, in the conformity assessment of electrical installations in homes with regards to their capacity to adapt to the energy transition.
- **Promotion of the importance of electrical installations in the energy transition** through awareness-raising campaigns for professionals and homeowners.
- **To offer homeowners comprehensive global solutions and projects for the renovation of technical installations.** Through a list of available technologies/sectors (air conditioning, insulation, lighting, electrical installation...), establish the project that best fits the needs of the dwelling and optimise the performance.

Recommendations to owners and citizens

- Consider dwellings refurbishment as an investment and not as an expense, with a **long-term vision.**
- Consult with **qualified professionals** and demand a proven response to any doubts.
- Acquire a series of habits in **the care of your electrical installation**: request the electrical certificate from installers after each intervention and demand that they are accredited professionals.
- **Get involved in the improvement of communal areas** and car parks.
- **Demand the creation of public-private credit lines** with a low financial burden and favorable taxation for actions in the electrical installation of dwellings in order to promote electrical installation.
- Raise awareness and inform about the importance of **LED lighting technologies and control systems** as an immediate measure of savings and efficiency.

¡Thank you!

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