
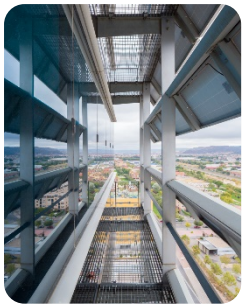

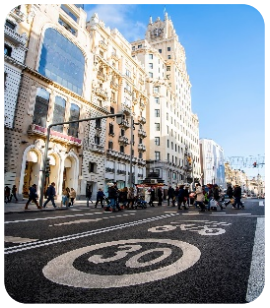


Examples of the combination of RES and EE measures in buildings in Spain (IDAE)

CA EED 8TH PLENARY MEETING
Info session 8.5 "Combining RES-EE measures"
25th of March, 2021

Diana López
Mobility Sustainable and City Department

MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO

IDAE
Instituto para la Diversificación
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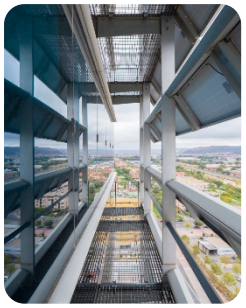

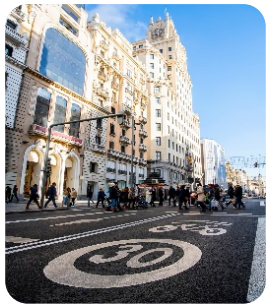


1. **Example 1: Energy Renovation of Buildings Programmes in Spain**
2. **Example 2: “Illa Eficient” project**

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Energy Renovation of Buildings Programmes in Spain

- **Objectives of the programmes:** to promote deep renovation actions on any type of building to improve the energy efficiency of building façades or their heating and cooling and domestic hot water systems.

2013

Budget: 125 M€
(no ERDF)

2016

Budget: 200 M€

2018

Budget: 204 M€

2021

Budget: 362 M€

Total budget PAREER + PAREER-CRECE + PAREER II + PREE: 891 M€

Energy Renovation of Buildings Programmes in Spain

- **Objectives of the programmes:** to promote **deep renovation actions on any type of building to improve the energy efficiency** of building façades or their heating and cooling and lighting installations, as well as the replacement of conventional power with solar and geothermal power for heating, air-conditioning and domestic hot water systems.

- **Beneficiaries:** holders and owners of all types of residential and other tertiary uses buildings. Actions can **range** from € 30,000 to € 4 million.

- **Aid modalities** (max. 90%):
  - Direct grant, graduated according to social criteria, energy efficiency (measured by the improvement of energy rating) and integration.
  - Loan (Euribor + 0%) for 12 years + one year of grace period.

Energy Renovation of Buildings Programmes in Spain

- **Typology of the actions:**

  1. Improvement of the energy efficiency of the **thermal envelop**
  2. Improvement of the energy efficiency and the use of RES in the **thermal heating systems, air conditioning and DHW**
  3. Improvement of the energy efficiency of the **lighting systems**

The actions of the projects must **improve the total energy rating of the building by at least 1 letter** measured on the scale of CO_2 emissions/m^2 year, with respect to the initial energy rating of the building

Energy Renovation of Buildings Programmes in Spain

There are **different levels of aid intensity** depending on whether the actions fulfill the following characteristics:

- Obtain an increase of more than one level in the energy rating of the building (the minimum required is an increase of one level), or reach the **A or B rating.**

- To carry out **integrated actions** that combine the implementation of different types of measures to improve energy efficiency, one of them being mandatory on the thermal envelope of the building combined with other actions in the heating, ventilation, cooling and lighting installations and / or actions to replace the conventional energy by biomass and geothermal in thermal installations.

- That the actions have been carried out in **residential social buildings** or in buildings located in areas under **Urban Regeneration and Renovation**.

Example of combination of RES and EE in PAREER+crece: energy renovation of house Kresala (2018)

Location: Basque Country, north of Spain.

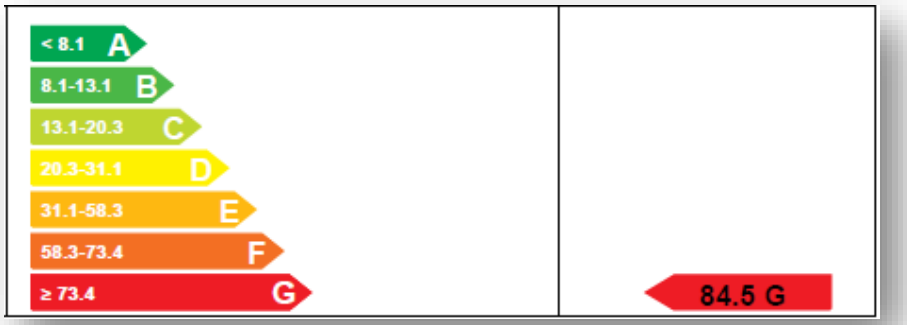
Year of construction: 1973.

Type: ingle familiar home.

Surface to be renovated: 216 m^2

PRIMARY NON RENEWABLE ENERGY CONSUPTION [kWh/m2 year]

CO2 EMISSIONS [kg CO2/m2 year]



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Energy renovation of house Kresala (2018)

INTERVENTION:

1) Improvement of the energy efficiency of the building façade.

2) Substitution of conventional energy for geothermal energy in thermal installations.

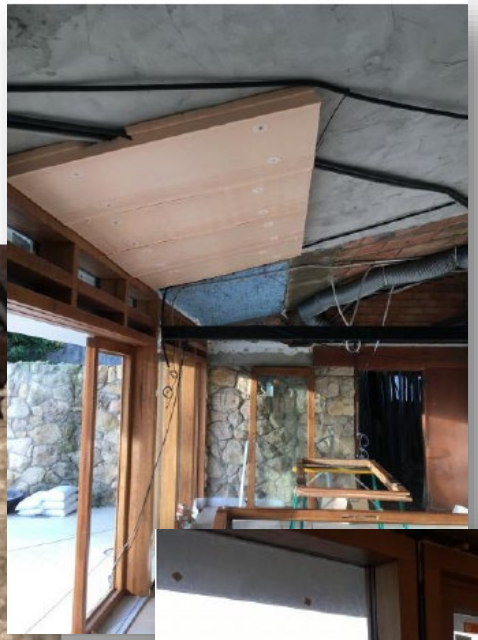
BUDGET:

ACTION	ELEGIBLE COST (€)	AID REQUESTED(€)
Improvement of the energy efficiency of the building façade	97.823,18	48.911,59
Substitution of conventional energy for geothermal energy in thermal installations	35.502,08	8.233,58
TOTAL	133.325,26	57.145,17

AID GRANTED: 52.254 € direct grant, 39,19% of the eligible cost

External insulation façade

Roof insulation



Insulation

Underfloor heating (geothermal)

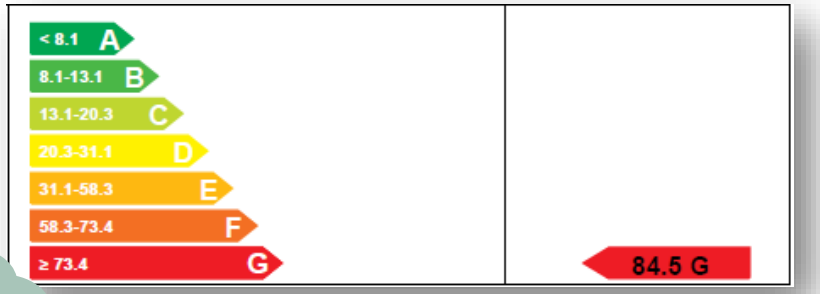
External carpentry and windows

Energy renovation of house Kresala (2018): final result

BEFORE:

PRIMARY NON RENEWABLE ENERGY CONSUPTION [kWh/m2 year]

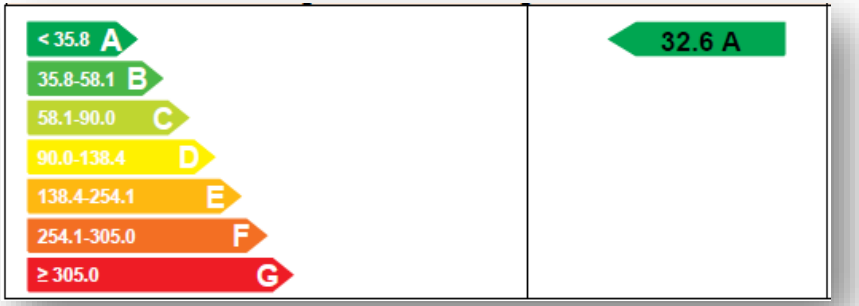
CO2 EMISSIONS [kg CO2/m2 year]



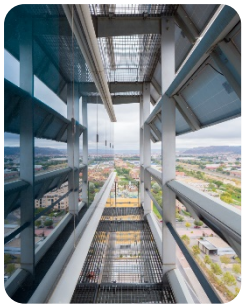
SAVINGS
89,84 %

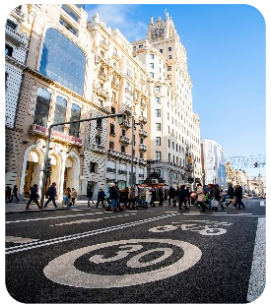
AFTER:

PRIMARY NON RENEWABLE ENERGY CONSUPTION [kWh/m2 year]



CO2 EMISSIONS [kg CO2/m2 year]




1. Example 1: Energy Renovation of Buildings Programmes in Spain
2. Example 2: “Illa Eficient” project

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“Illa Eficient”
Financing a pilot project of energy communities

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Illa Eficient

- **Project**: renovation of 8 buildings (160 homes) whose community owners have become a cooperative of consumers and users COOPIE, SCCL., working as one energy community for the realization of the energy renovation project "Illa Eficient“.
- **Total energy budget:** 3.8 M€. IDAE participates with a loan.
- **Technical measures:**
  - Works in the thermal envelope of the buildings (insulation of the façades, windows and roofs).
  - Improvement of the energy efficiency in the consuming energy facilities (interior lighting and engines of the elevators).
  - Installation of photovoltaic solar energy to cover part of the electrical energy consumption of the common services areas of the buildings and the DHW.
- **Results:**
  - Energy savings (thermal envelope of building + lighting) = 184.765 kWh/year.
  - At least the improvement of 1 letter in the energy rating of the buildings.

STRATEGIC INTEREST OF IDAE'S PARTICIPATION

- New management model through the **creation of a cooperative** of 8 communities of owners that goes beyond the scope of individual housing or building.
- Need to support the creation of energy communities. Fitting within the **IDAE programme of financing energy community projects.**
- In line with the **NECP**, which sets the goal of energy renovation **of** 1,200,000 homes between 2021-2030.
- Pilot project for the evaluation of a **shared and comprehensive management** of the energy renovation of homes: technical, contracting, legal, fiscal, economic, governance, energy and participation and communication.
- To foster **shared self-consumption** through photovoltaic installations covering common services areas.
- **Replicability** in the rest of the 500 Illas of the Eixample in Barcelona and in similar urban areas in Spain.

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Una manera de hacer Europa