ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY.

Advances In the Spanish National Long Term Renovation Strategy (LTRS)

ERESEE 2020

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31st January, 2020. Barcelona

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ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY.

General aspects:

- **Coordination of LTRS with 2030 NECP and 2050 Decarbonization Strategy.**
- **Calculation models and results**
- **Governance and Public Participation Process**

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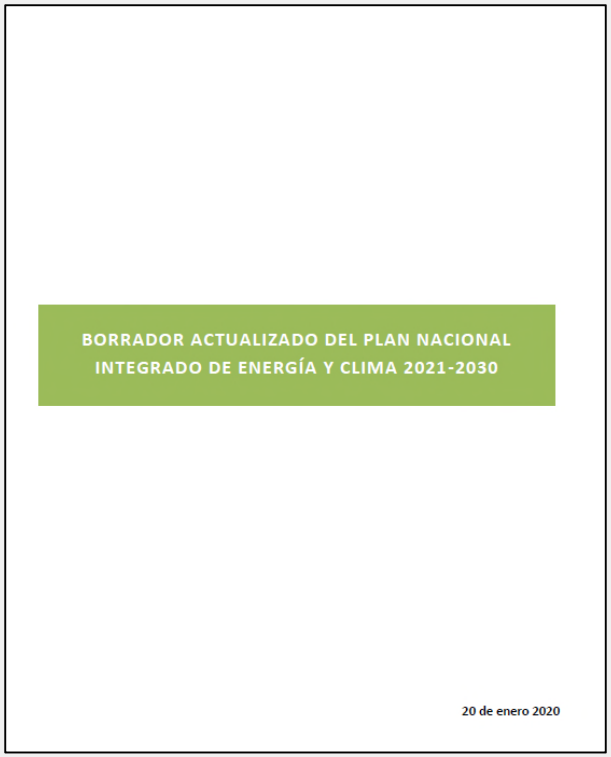
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. COORDINATION WITH NECP 2030 AND 2050 DECARBON. STRATEGY



Strong political commitment of the new government: (January 2020):

COP25 in Madrid, Ministry and Vicepresidency on Ecological Transition

2030: NATIONAL ENERGY AND CLIMATE PLAN is finished.

- Now there is a public participation process on the NECP Strategic Environmental Assesment

2050: NATIONAL DECARBONIZATION STRATEGY

Strong coordination between Ministries

- **Interministerial Working Group for the LTRS (DG level)**
- **Technical coordination (Daily…)**

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NECP & Decarb. Strategy calculation model: TIMES Sinergia +DENIO… Defining Energy & CO2 Objectives

LTRS calculation model: Detailing the general objectives in the territory (provinces, building types)

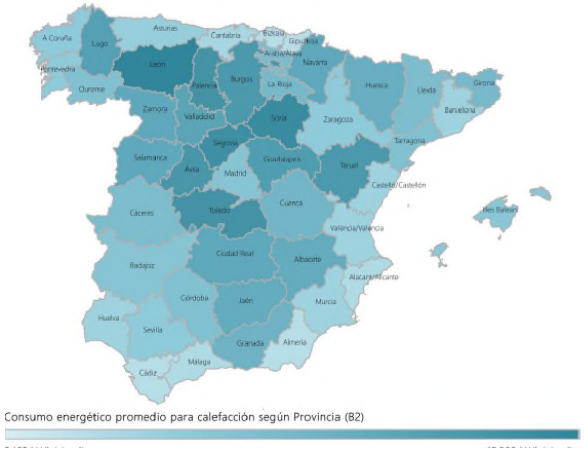
21 building typologies x 50 provinces (7 climatic zones) x 2 situations (urban/rural) x 9 heating systems

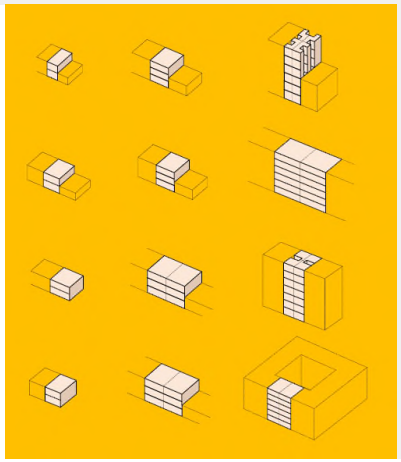
01	Tipología	02	Periodo de construcción	03	Tamaño del municipio	04.1	Zona climática
3		7		2		3	
3		**21**		**42**			
U	Unifamiliar	1 E1900	Hasta 1900	1 RU	Rural	1 A	Atlántico
C	Colectivas	2 E0140	De 1901 a 1940	2 UR	Urbano	2 C	Continental
B	Bloque	3 E4160	De 1941 a 1960			3 M	Mediterráneo
		4 E6180	De 1961 a 1980				
		5 E8107	De 1981 a 2007				
		6 E0820	De 2008 a 2020				
		7 *E2021*	*Desde 2021*				

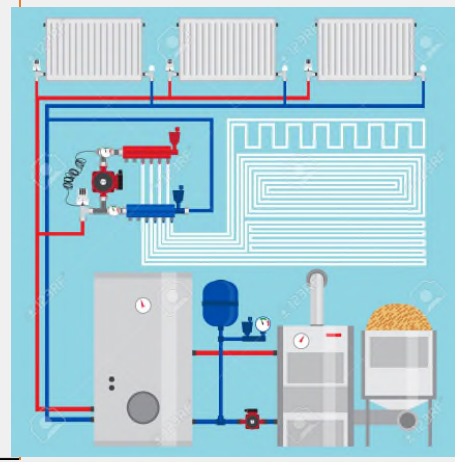
25 million dwellings….to 37 800 cases….

9		2		2	
18.900		**37.800**		**75.600**	
GLP1	GLP, Caldera o calentador	1 ES	No pobreza energética	1 NO	Sin operaciones pendientes
GLP2	GLP, Estufas, braseros, chime	2 PE	Sí pobreza energética	2 RE	Con operaciones pendientes
GOIL	GAS, Caldera o calentador				
GN1	GN, Caldera o calentador				
GN2	GN, Convectores				
BM1	BM, Caldera o calentador				
BM2	BM, Estufas, braseros, chimeneas				
EL1	EL, Bomba de calor aerotérmica				
EL2	EL, Caldera o calentador				

04.2			Provincia de localización
			50
			2.100
1	P01	C	D1 Araba/Álava
2	P02	C	D3 Albacete
3	P03	M	B4 Alicante/Alacant
4	P04	M	A4 Almería
5	P05	C	E1 Ávila
6	P06	C	C4 Badajoz
7	P07	M	B3 Balears, Illes
8	P08	M	C2 Barcelona
9	P09	C	E1 Burgos
10	P10	C	C4 Cáceres
11	P11	A	C1 Cádiz
12	P12	M	B3 Castellón/Castelló
13	P13	C	D3 Ciudad Real
14	P14	M	B4 Córdoba
15	P15	A	C1 Coruña, A
16	P16	C	D2 Cuenca
17	P17	M	C2 Girona
18	P18	M	C3 Granada
19	P19	C	D3 Guadalajara
20	P20	A	C1 Gipuzkoa
21	P21	M	B4 Huelva
22	P22	C	D2 Huesca
23	P23	M	C4 Jaén
24	P24	C	E1 León
25	P25	C	D3 Lleida
26	P26	C	D2 Rioja, La
27	P27	A	D1 Lugo
28	P28	C	D3 Madrid
29	P29	M	A3 Málaga
30	P30	M	B3 Murcia
31	P31	C	D1 Navarra
32	P32	C	C2 Ourense
33	P33	A	C1 Asturias
34	P34	C	D1 Palencia
35	P35	M	A3 Palmas, Las
36	P36	A	C1 Pontevedra
37	P37	C	D2 Salamanca
38	P38	M	A3 Santa Cruz de Tenerife
39	P39	A	C1 Cantabria
40	P40	C	D2 Segovia
41	P41	M	B4 Sevilla
42	P42	C	E1 Soria
43	P43	M	B3 Tarragona
44	P44	C	D2 Teruel
45	P45	C	C4 Toledo
46	P46	M	B3 Valencia/València
47	P47	C	D2 Valladolid
48	P48	A	C1 Bizkaia
49	P49	C	D2 Zamora
50	P50	C	D3 Zaragoza







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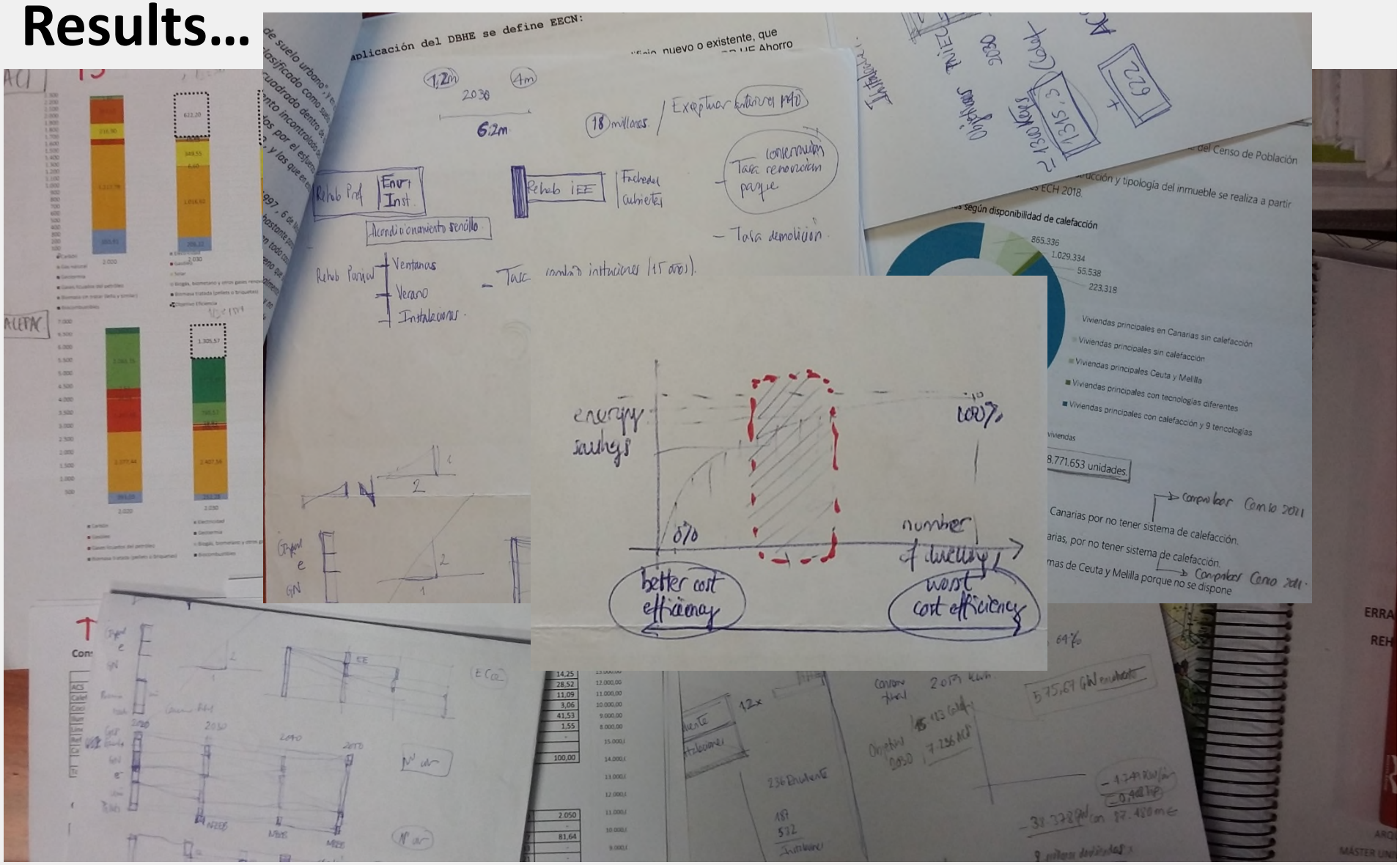
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. RESULTS

Results…



….Work in progress…

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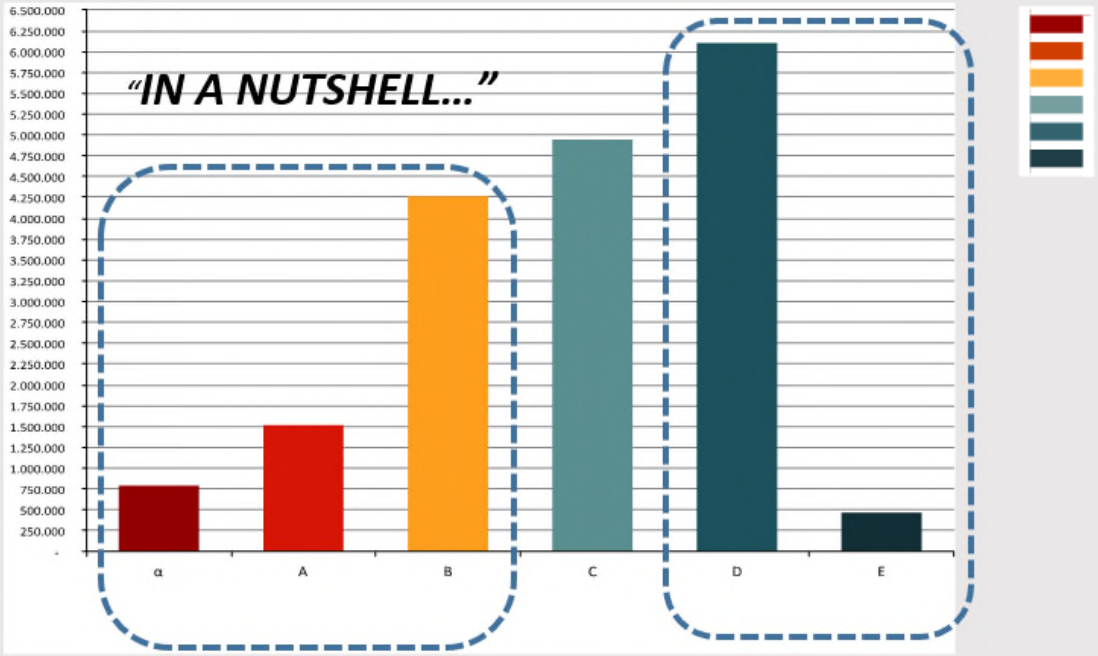
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. DEFINING DIFFERENT OPTIONS ACCORDING TO CLIMATE

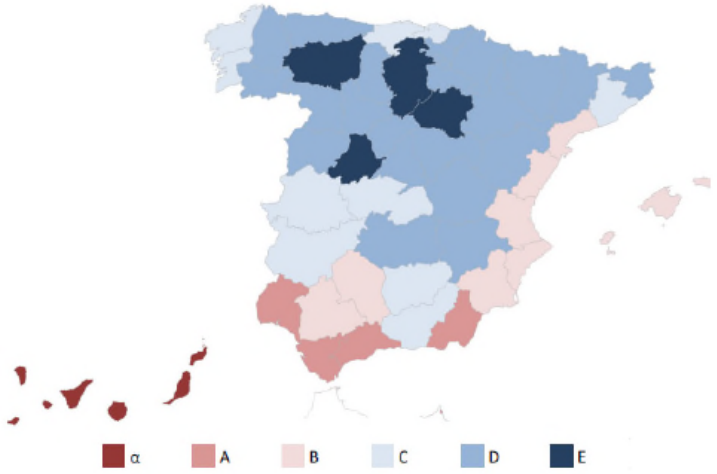
Summary of the distribution by climatic zones



"MEDITERRANEAN" "CONTINENTAL/COLD"

CLIMA	%	VIVIENDAS PRINCIPALES
α	4,37%	789.945
A	8,39%	1.517.871
B	23,59%	4.265.836
C	27,33%	4.942.985
D	33,74%	6.101.550
E	2,57%	465.477
Total general		18.083.664
α + A + B	36,35%	6.573.652
C + D + E	63,65%	11.510.012
Total general		18.083.664

"CONTINENTAL/COLD"
"ATLANTIC"
"MEDITERRANEAN"
"CANARY ISLANDS"



There is also a need to involve Regions (Comunidades Autónomas) and municipalities in the LTRS implementation

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ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. GOVERNANCE/PUBLIC PARTICIPATION PROCESS

6 WORKING SESSIONS (OCT-DEC 2019):

- JORNADA INAUGURAL
  PRESENTATION
- FINANCIACIÓN Y MODELO DE NEGOCIO
  FINANCING, BUSINESS SCHEMES
- EL VECTOR ENERGÉTICO EN REHABILITACIÓN INTEGRAL
  ENERGY AS A DRIVER
- LOS AYUNTAMIENTOS Y LA GESTIÓN EN LA REHABILITACIÓN
  MUNICIPALITIES, IMPLEMENTATION,
- COMUNICACIÓN, CAPACITACIÓN, PROFESIONALIZACIÓI
  COMMUNICATION, CAPACITY BUILDING
- JORNADA DE CONCLUSIONES
  CONCLUSIONS

ORGANIZED WITH GREEN BUILDING COUNCIL SPAIN

GBCe

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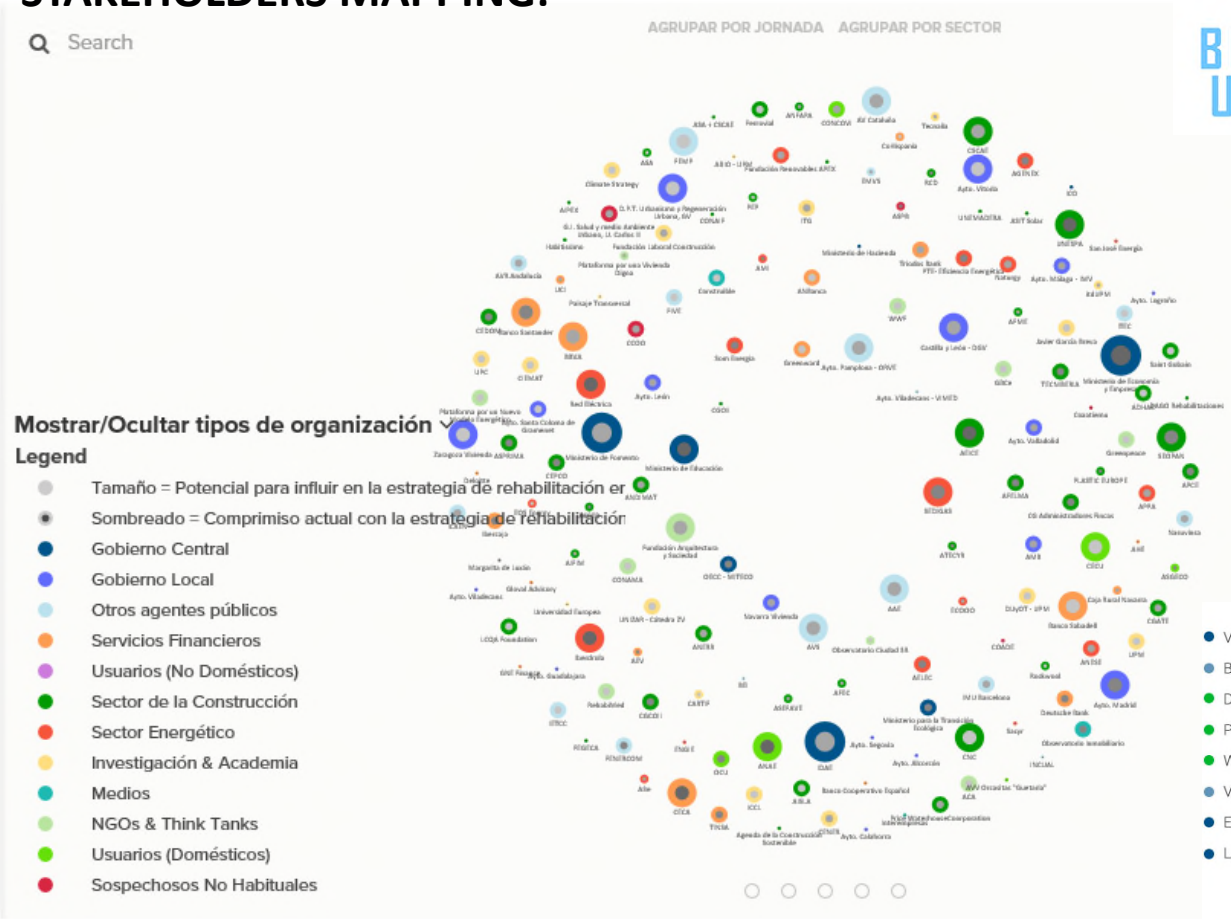
BUILDING UPON PREVIOUS WORKS
BOTTOM UP AND TOP-DOWN APPROACHES

GBCe

Participantes

STAKEHOLDERS MAPPING:



BUILD UPON
Co-Creating Europe's National Renovation Strategies

BUILD UPON²

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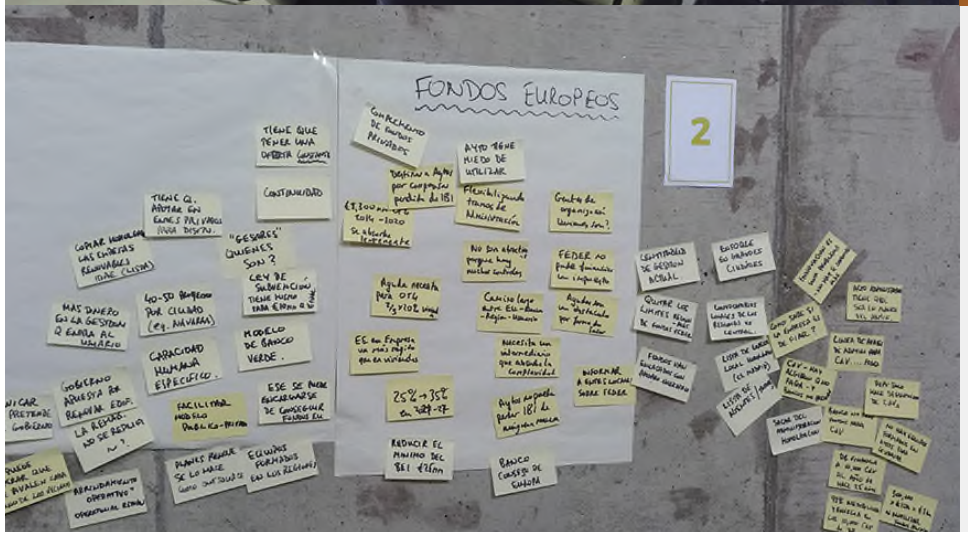
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. GOVERNANCE/PUBLIC PARTICIPATION PROCESS

WORKING SESSIONS REALLY MEANT WORKING: 6 x 60. MORE THAN 500 PEOPLE INVOLVED

GBCe



Conclusions and proposals of the working groups are being anlysed now by the **Interministerial Working Group** for the LTRS, and will be taken into account for the definition of the LTRS proposals.

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ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY.

Some detailed insights:

- **The role of Renewables: Solar energy and self-consumption.**
- **Energy Poverty.**
- **EPC+Building Passport +Trigger Points: Putting it all together.**
- **Article 7 and the National Energy Efficiency Fund.**

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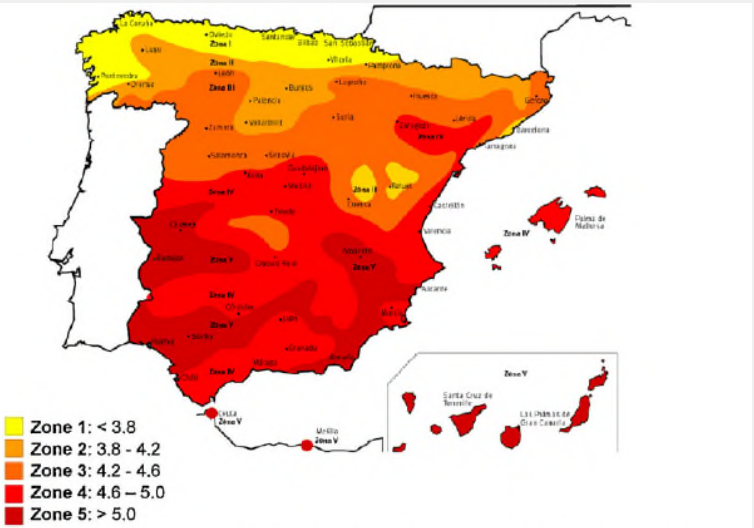
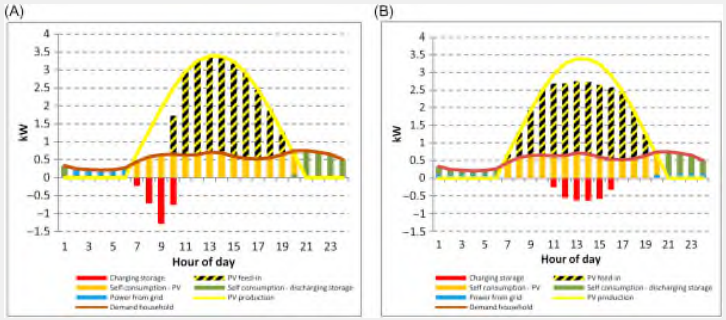
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. THE ROLE OF RENEWABLES: SOLAR ENERGY AND SELF CONSUMPTION

1. HIGH POTENTIAL



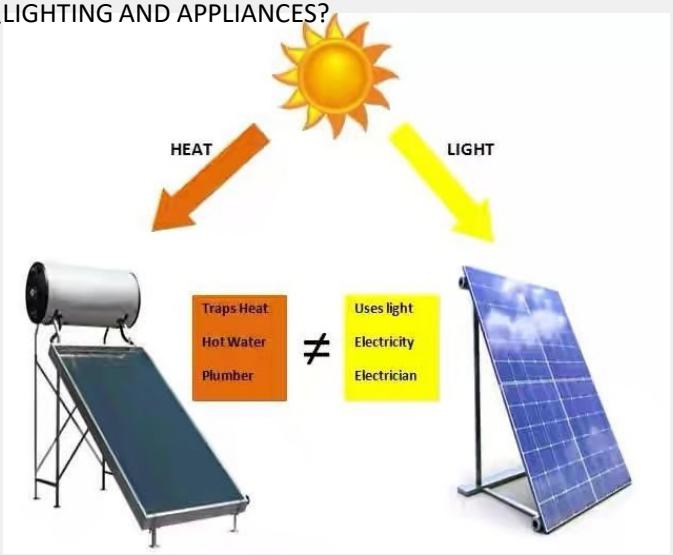
Source: Spanish National Meteorological Institute. Note: Average daily irradiation in kWh/m² generated from annual global solar radiation isolines on horizontal surface.

2. NEW REGULATION OF SELF CONSUMPTION. SURPLUS BALANCE BETWEEN CONSUMPTION AND PRODUCTION



3. ¿SOLAR THERMAL OR PHOTOVOLTAIC?

¿SOLAR FOR WHAT? ¿HEATING?¿HOT WATER?
¿LIGHTING AND APPLIANCES?



4. SOLAR IN SINGLE FAMILY HOUSES OR MULTIFAMILY BUILDINGS

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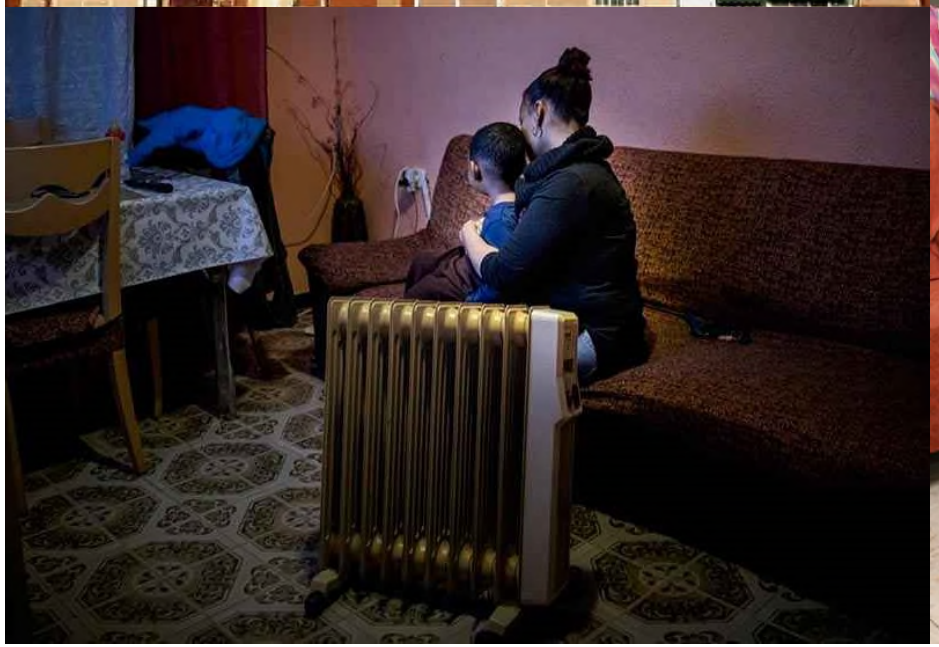
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. ENERGY POVERTY: DEFINING DIFFERENT STRATEGIES



"MESA CAMILLA" CON "BRASERO":
HEATED TABLE WITH CHARCOAL BRAZIER

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ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. ENERGY POVERTY: DEFINING DIFFERENT STRATEGIES

- **Big houses in rural areas inhabited by old people:** energy efficiency measures only in the living-space (living-room+bedroom).
- **Solar kit (with heat pump) for self consumption.**
- **Single family housing:** case by case…

- **Deprived neigbourhoods:** Pockets of concentration of "not-only-energy" poverty/Integrated urban regeneration at neighbourhood scale (adressing other problems) or -at least-at building scale.

- **Energy poverty households scattered in multifamily buildings:** insulation from the inside, windows replacement, etc dwelling by dwelling.

"MESA CAMILLA" CON "BRASERO":
HEATED TABLE WITH CHARCOAL BRAZIER

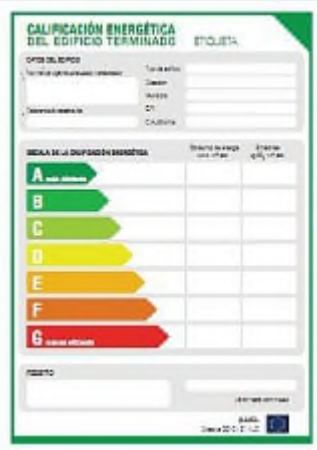
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. EPC+BUILDING PASSPORT+TRIGGER POINTS: PUTTING IT ALL TOGETHER

IEE
informe de evaluación del edificio

IEE: BUILDING'S EVALUATION REPORT

By law, the owners of multifamily buildings **older than 50 years old** (or those who ask for public funding for building renovation) have to submit a Building Evaluation Report, which should include **3 PARTS:**

- **Part 1.** Evaluation of **CONSERVATION** status. (Result: Acceptable/Non acceptable). It is compulsory (by law) to carry out the necessary works/repairs in order to have an acceptable conservation status.
- **Part 2.** Evaluation of the **ACCESSIBILITY "reasonable adjustments"** (Result: Need of making adjustments/No need. If needed, they have to be defined and quantified). It is also compulsory (by law) to carry out the "reasonable adjustments" before 2017.
- **Part 3.** Inclusion of the **ENERGY PERFORMANCE CERTIFICATE.** (Result: EPC Label) **Upgrading is just voluntary**, but the EPC includes recommended measures to upgrade the energy efficiency of the building, either in connection with a major renovation of the building envelope, or measures for individual building elements.



After the first IEE evaluation when the building is 50 years old, it has to be re-evaluated again each 10 years.

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EPC+BUILDING PASSPORT+TRIGGER POINTS: PUTTING IT ALL TOGETHER

IEE
informe de evaluación del edificio

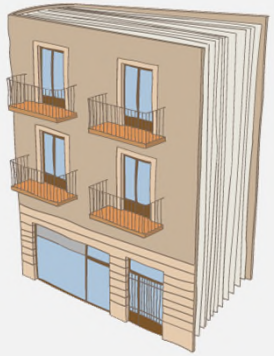
IEE=BUILDING'S EVALUATION REPORT

CURRENT IEE: BUILDING'S EVALUATION REPORT: TRYING TO CREATE SINERGIES BETWEEN COMPULSORY CONSERVATION WORKS AND VOLUNTARY ENERGY EFICIENCY UPGRADING

APLICACIÓN INFORMÁTICA PARA ELABORACIÓN DEL IEE

IEE+ OR **IEE 2.0**: POSSIBLE LINKS BETWEEN THE BUILDING'S EVALUATION REPORT WITH THE BUILDING PASSPORT. CONSERVATION AND MAINTENANCE PLAN ("BOOK OF THE BUILDING"), ETC.

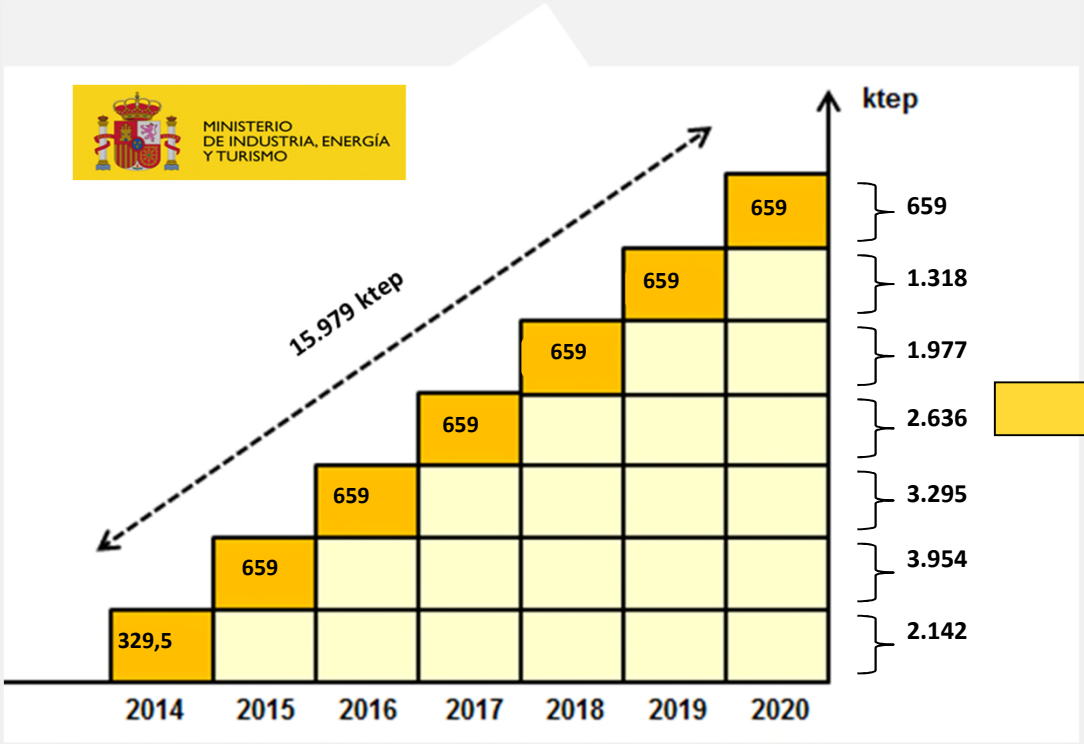
IEE 2.0=¿BUILDING'S EVALUATION REPORT+PASSPORT?



ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. ARTICLE 7 AND THE NATIONAL ENERGY EFFICIENCY FUND

Minimum EE Savings Objective 2014-2020 derived from EED

In April 2013 and in compliance with the EE Directive, Spain sent to the European Commission the *"Report on the national energy efficiency objective 2020-Spain"*, in which -in accordance with the provisions of Article 7 EED- established the objective of minimum savings for the 2014-2020 period (in terms of final energy). This is a cumulative objective that requires new additional savings every year; with a total of 15,979 ktoe, which is equivalent to an additional annual saving of 659 ktoe/year (since July 2014).



From the historical average of final energy consumption between 2010 and 2012, the DEE establishes a binding annual savings objective of 1.5%
(incremental for 2014-2020, and with the possibility of certain flexibility mechanisms)

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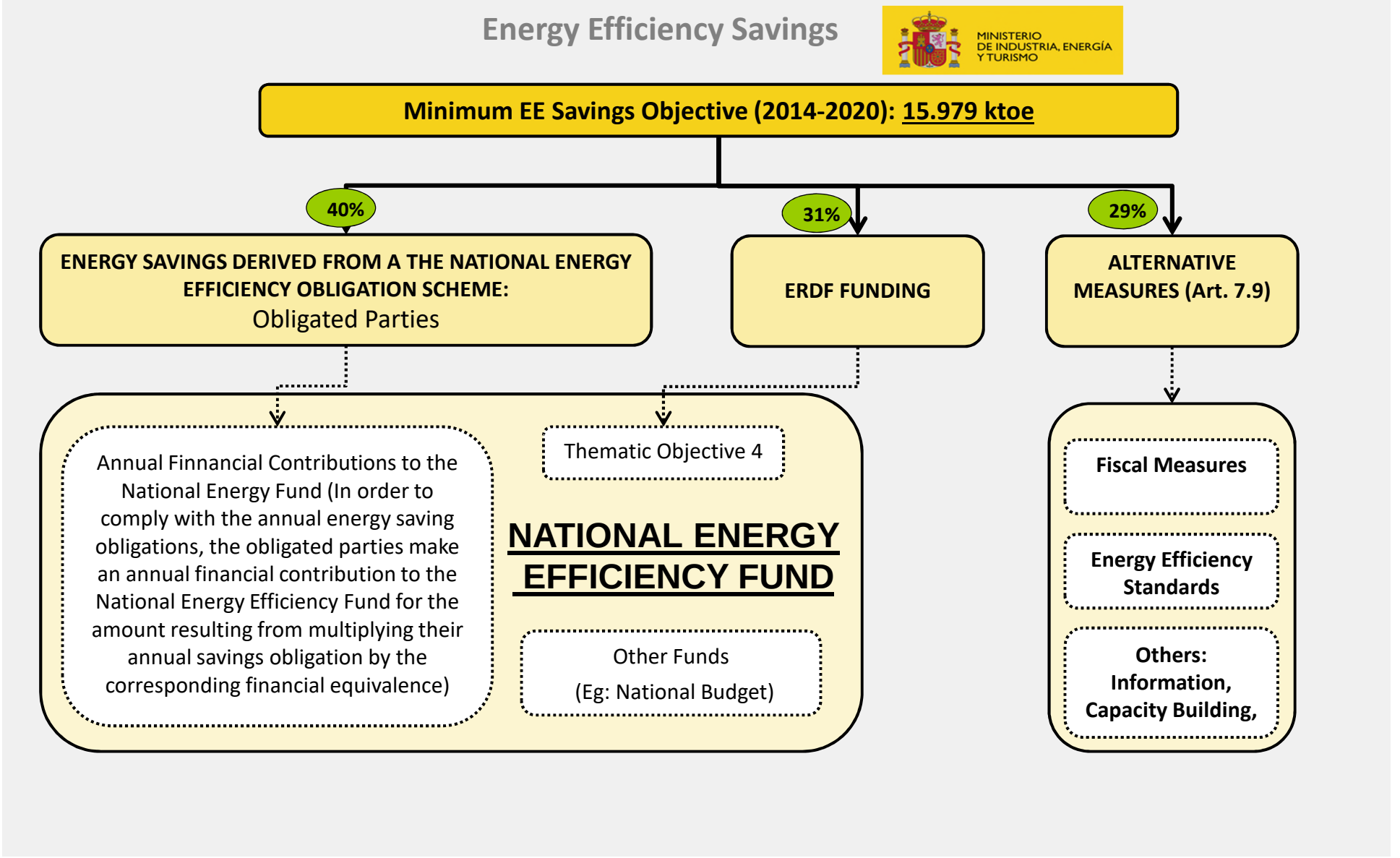
STRUCTURE OF THE NATIONAL ENERGY EFFICIENCY FUND



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ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. ARTICLE 7 AND THE NATIONAL ENERGY EFFICIENCY FUND

National Energy Efficiency Fund

FONDO NACIONAL DE EFICIENCIA ENERGÉTICA

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This Fund, managed by the IDAE, allows the implementation of financial support mechanisms, technical assistance, training and information, and other measures that increase energy efficiency in different sectors and help to achieve the established savings objective

PAREER II/Program for Financing Energy Retrofit of Existing Buildings

FONDO NACIONAL DE EFICIENCIA ENERGÉTICA — IDAE

PAREER II

Ayudas para la Rehabilitación Energética de Edificios

- **240.000.000 €** for financing EE in Existing Buildings.
- **Actions supported:** Improvement of EE in the Building Envelope (insulation), renovation of Heating Systems and lighting, replacing existing systems by solar or geothermal energies.
- Allows **combining Grants and Loans**:
  - Basic Grants: 30% for Building Envelope+
  - Extra Grants+: Social criteria, Better EE, Integrated Actions.
  - Loans: up to 60% for Building Envelope

- **EE Minimum standards:** The actions subject to public financing must improve the total energy rating of the building by at least 1 letter measured on the EPC scale of CO2emissions (kg CO2/m2 year), with respect to the initial energy rating of the building. Extra financing will be granted to actions that reach energy class “A” or “B”, or that increase the initial energy rating of the existing building by more than two letters in the EPC scale.
- **Central Management** by IDAE (Launching of the Call, Evaluation of application, etc.).

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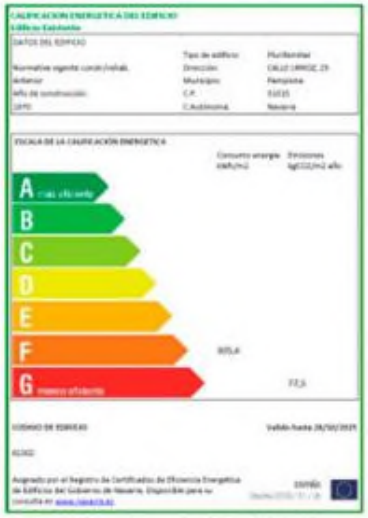
ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. ARTICLE 7 AND THE NATIONAL ENERGY EFFICIENCY FUND

EXAMPLE OF EXISTING PROGRAMME: PAREER (IDAE)

Energy Renovation undertaken in the Neighbourhood of La Txantrea, in Pamplona, is presented as a best practice for the 2015 - 2017 call of the Renovation of Existing Buildings Programme (PAREER-CRECE)

ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY. ARTICLE 7 AND THE NATIONAL ENERGY EFFICIENCY FUND

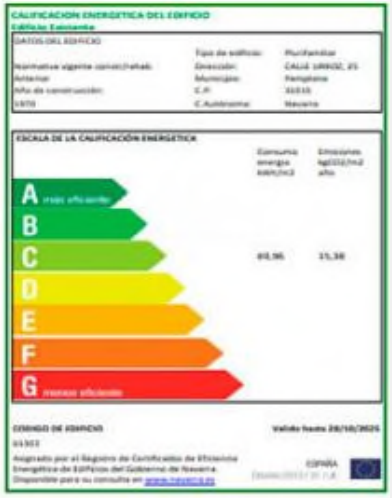
EXAMPLE OF EXISTING PROGRAMME: PAREER (IDAE)



Calificación Energética antes de la rehabilitación

Edificio C/Urroz, 25 antes de la rehabilitación

Edificio C/Urroz, 25 después de la rehabilitación



Calificación Energética después de la rehabilitación

The action in the neighbourhood of La Txantrea involves improving the energy efficiency of 23 private housing tower blocks buildings (23 homeowners' associations), in which actions were carried out involving their thermal envelopes that resulted in improvements to their roofs, facades, floors and windows. The total eligible cost of this activity was €9,695,773, with an ERDF grant of €4,721,817.

The projects were presented directly by the homeowners' associations to the PAREER-CRECE Programme.

In the framework of the Social Housing category of PAREER-CRECE, projects were carried out to improve the thermal envelopes of buildings and the energy efficiency of their facilities at an eligible cost of €26,000,000, with an ERDF grant of €14,500,000, which resulted in a reduction in carbon dioxide emissions of 4,454 tCO_2/year

ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY.

WE HAVE A GREAT CHALLENGE…

... nearly 60% of Spanish dwellings (about 13.8 million homes) were built before the first regulation that required minimum energy efficiency standards in Spain (NBE 79, 1979) ...

ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY.

BUT WE ARE WORKING HARD…

ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY.

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ADVANCES IN THE SPANISH LONG TERM RENOVATION STRATEGY.

BUT WE ARE WORKING HARD…

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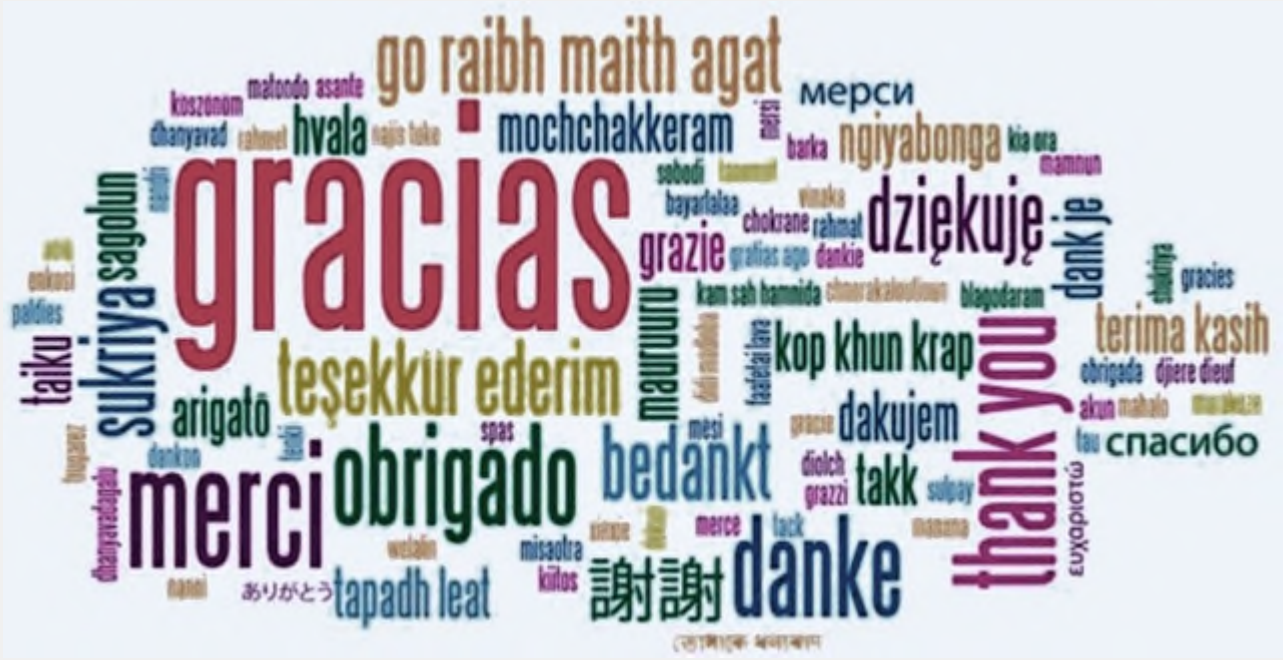

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