

LONG-TERM STRATEGY FOR ENERGY RENOVATION IN THE BUILDING SECTOR IN SPAIN (pursuant to Article 4 of Directive 2012/27/UE



CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

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CT1: NEEAPs and annual reports and measuring progress in Energy Efficiency Article 4 building renovation strategies – good practices

FOR A SUSTAINABLE FUTURE

Delivering Article 4 of the EE Directive...

"ARTICLE 4: Building renovation: Member States shall establish a long-term strategy for mobilising investment in the renovation of the national stock of residential and commercial buildings, both public and private. This strategy shall encompass:

- a) an overview of the national building stock based, as appropriate, on statistical sampling;*
- (b) identification of cost-effective approaches to renovations relevant to the building type and climatic zone;*
- (c) policies and measures to stimulate cost-effective deep renovations of buildings, including staged deep renovations;*
- (d) a forward-looking perspective to guide investment decisions of individuals, the construction industry and financial institutions;*
- (e) an evidence-based estimate of expected energy savings and wider benefits."*

Methodology: The Spanish Strategy was coordinated by the Ministry of Public Works (2 Deputy Directorates: SG Urban Planning and SG Building Technical Regulation), and developed with broad participation from all the different sectors and stakeholders involved in the building rehabilitation process and/or in energy efficiency upgrading. A total of 21 meetings with stakeholders were held between the months of September 2013 and February 2014.

At the same time, statistical aspects were developed with the assistance of INE (Spanish National Statistics Institute) and technical aspects with GBCe-GTR (Spanish Green Building Council).

In parallel, consultation with other Administration levels and other Ministries was carried out.

Working Groups. Structure and Tasks.



6 Working Groups with Stakeholders: Utilities/Energy Companies and ESCOs; Companies of the Construction sector; Regional Administration (Autonomous Communities); Local Government; Professional Associations (Architects, Engineers, etc.) and Financial Institutions. A total of 21 meetings were held between the months of September 2013 and February 2014.

1. SWOT Analysis: Strengths, Weaknesses, Opportunities and Threats (on rehabilitation and energy efficiency from the perspective of each Stakeholder's Working Group).

2. Reflection on the role of each stakeholder involved to deliver a successful building rehabilitation and energy efficiency renovation.

3. Proposal of Measures and actions for the development of a building rehabilitation and energy efficiency renovation Strategy.

- Policy actions (regulation, legislation, etc.) and Administrative measures.
- Actions to facilitate financing and the development of rehabilitation operations.
- Information and communication actions.
- Actions to develop market strategies and business models, with special regard to the requirements of owners' at multifamily buildings/apartment condominiums.

4. A forward-looking perspective to guide investment decisions of individuals, the construction industry and financial institutions.

+ Coordination with INE (National Statistics Institute)

+Meetings & coordination with other Ministries (Ministry of Energy and Industry, OECC: Spanish Office for Climate Change, etc).



Overview of the residential building stock in Spain.

Segmentation of the whole stock in clusters. (Based on 2011 Census)

25.2 million existing dwellings in Spain: 71.5% permanent dwellings, 14.8% secondary dwellings (3 616 695) and 13.8% empty and other dwellings (3 374 291).

SINGLE FAMILY DWELLINGS		MULTIFAMILY DWELLINGS		NO DATA	TOTAL	
1 - 3	≥ 4	1 - 3	≥ 4			
< 1940	680.683	3.687	272.852	489.329	1.446.551	
1941 - 1960	624.646	1.457	346.055	889.611	1.861.769	
1961 - 1980	1.156.215	2.388	781.206	4.483.759	6.423.568	
1981 - 2007	2.236.882	7.774	1.312.285	3.444.532	7.001.473	
2008 - 2011	233.647	660	122.404	438.446	795.157	
Sin datos			130.073		425.073	
TOTAL	4.932.073	15.966	2.964.875	9.745.677	425.073	18.083.664

Number of dwellings in the building

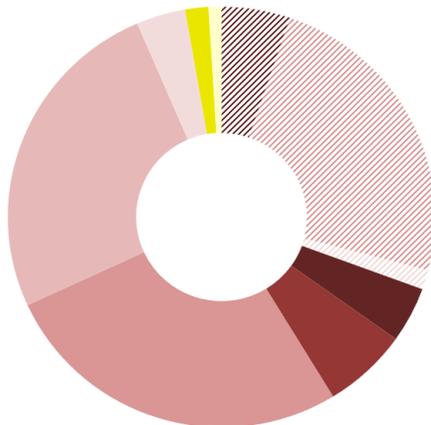
Number of storeys

A	-		G
B	-		H
C	-	E	-
D	-	F	-

< 1940
1941 - 1960
1961 - 1980
1981 - 2007
2008 - 2011
Sin datos
TOTAL

Construction year

Viviendas familiares según antigüedad y tipología. España (2011)



- UNIF. ANTES DE 1940
- UNIF. 1941-2007
- UNIF. 2008-2011
- PLURIF. ANTES DE 1940
- PLURIF. 1941-1960
- PLURIF. 1961-1980
- PLURIF. 1981-2007
- PLURIF. 2008-2011
- PLURIF. no consta año
- NO CONSTA ni tipología ni año



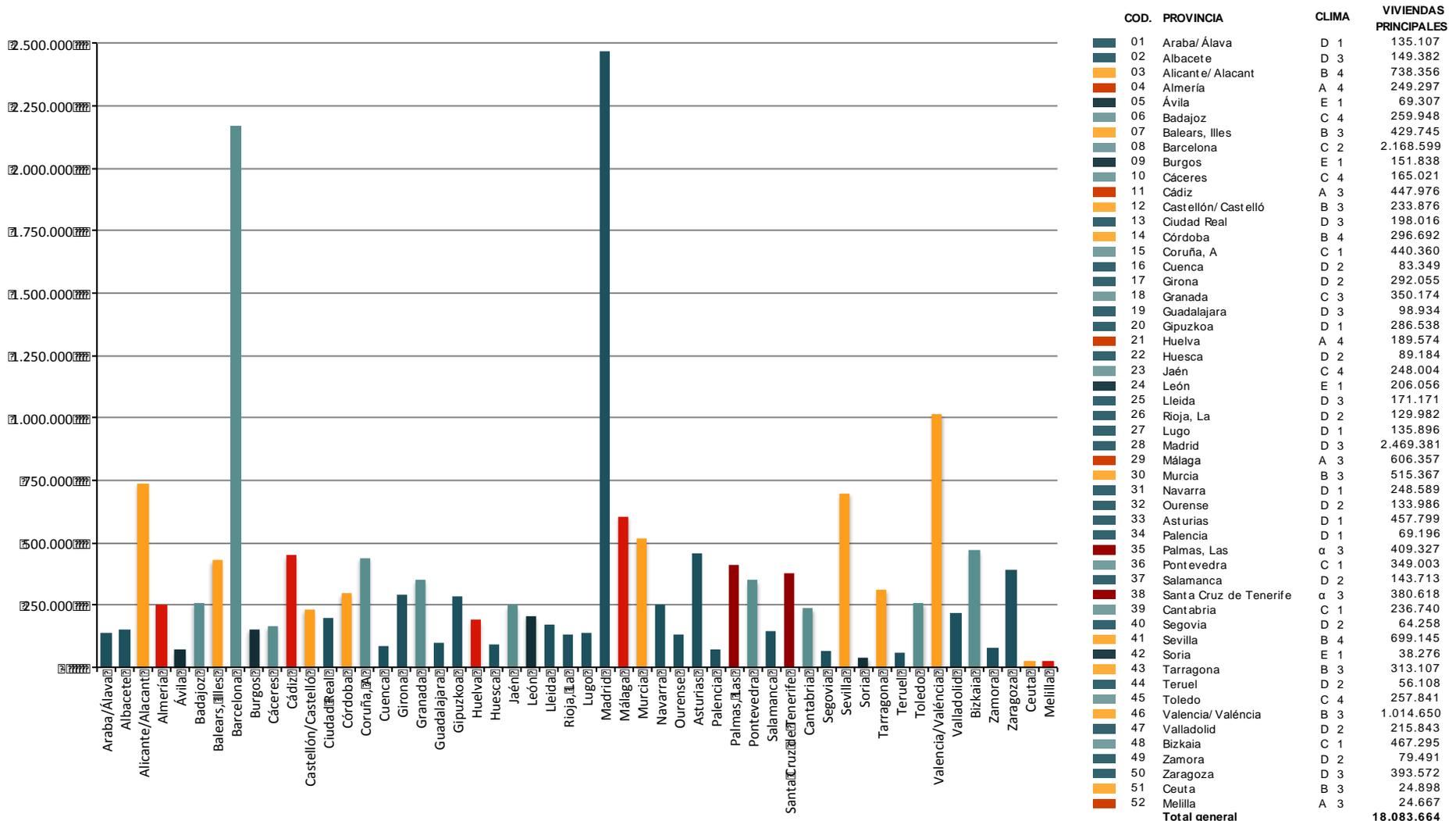
71.8% multifamily compared to 28.2% of single-family dwellings

78,7% owned; 13,5% rented; 7,6% other

Overview of the residential building stock in Spain.

Territorial segmentation, considering Climatic Zones. (Based on 2011 Census)

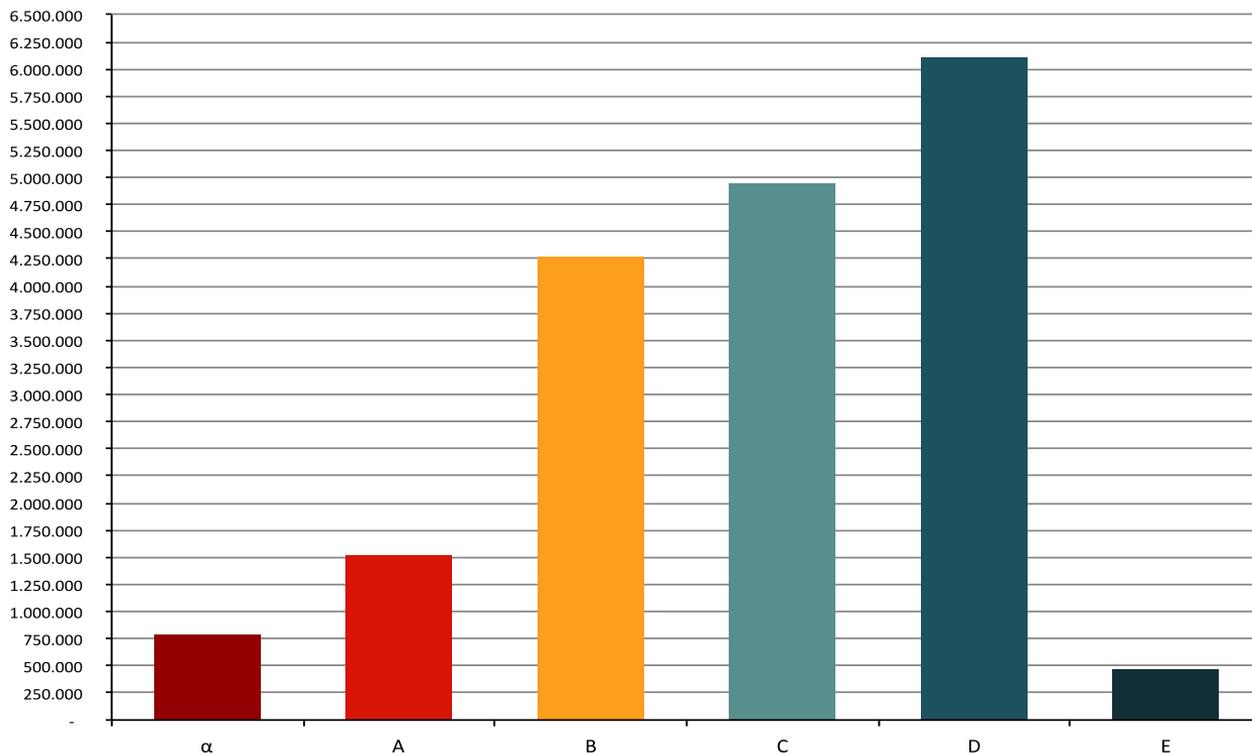
Summary of the distribution by provinces and climatic zones



Overview of the residential building stock in Spain.

Territorial segmentation, considering Climatic Zones. (Based on 2011 Census)

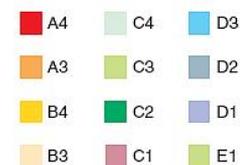
Summary of the distribution by climatic zones



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

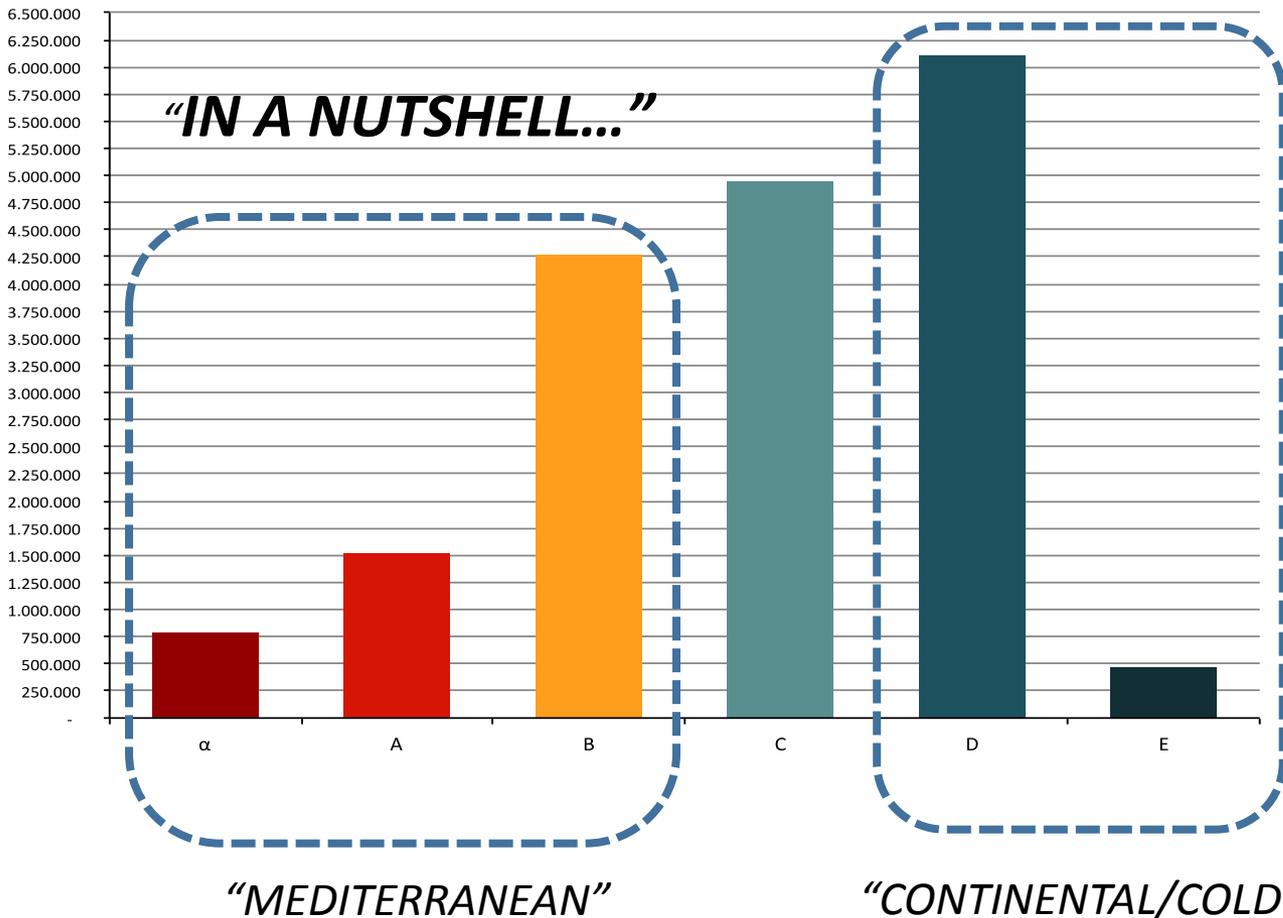
MAPA NACIONAL DE ZONAS CLIMÁTICAS



Overview of the residential building stock in Spain.

Territorial segmentation, considering Climatic Zones. (Based on 2011 Census)

Summary of the distribution by climatic zones



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Distribución Territorial de las Zonas Climáticas en España



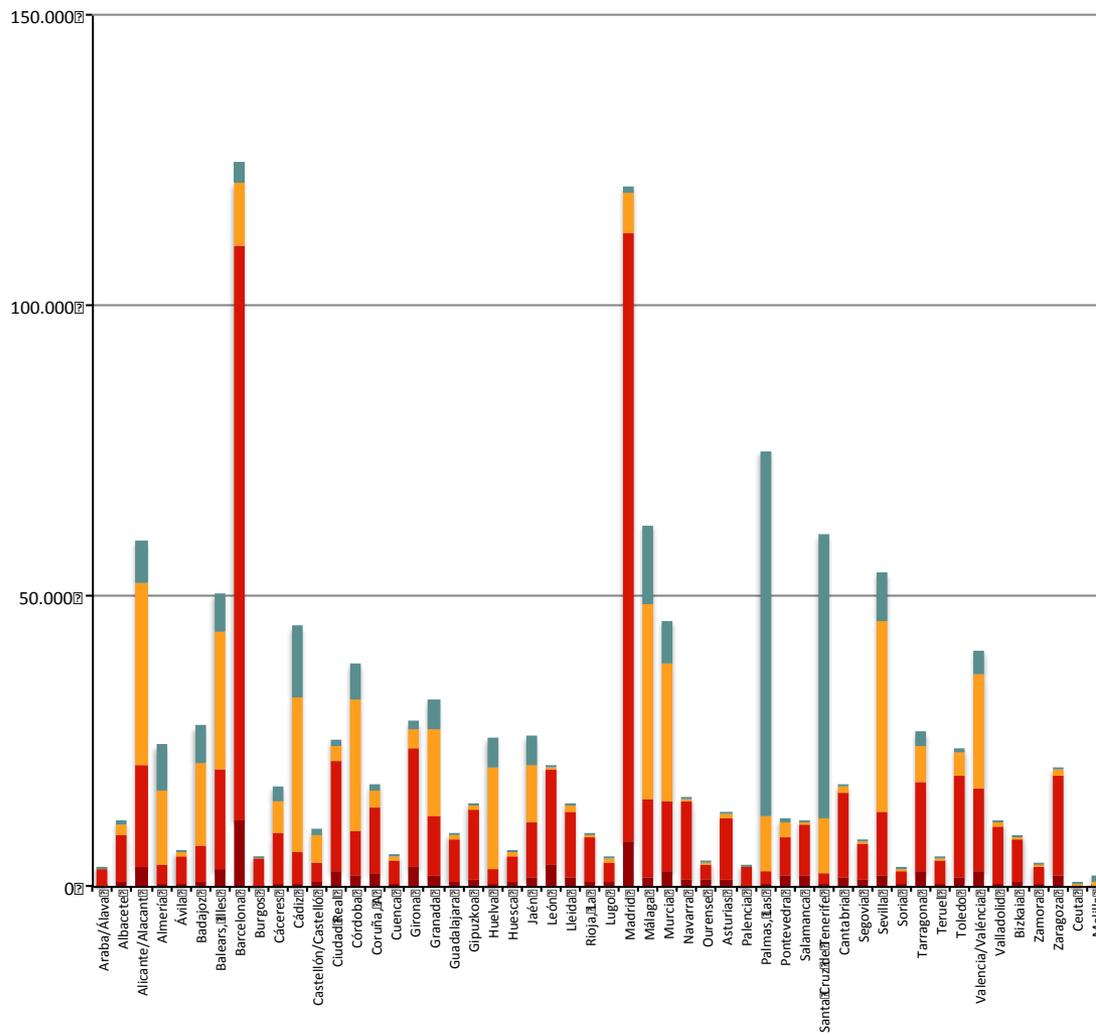
“CONTINENTAL/COLD”
“ATLANTIC”
“MEDITERRANEAN”

Overview of the residential building stock in Spain.

Territorial segmentation, considering Climatic Zones. (Based on 2011 Census)

Distribution by provinces and provision/type of heating installations

Example Cluster F: multifamily dwellings 1981-2007, 1-3 storeys

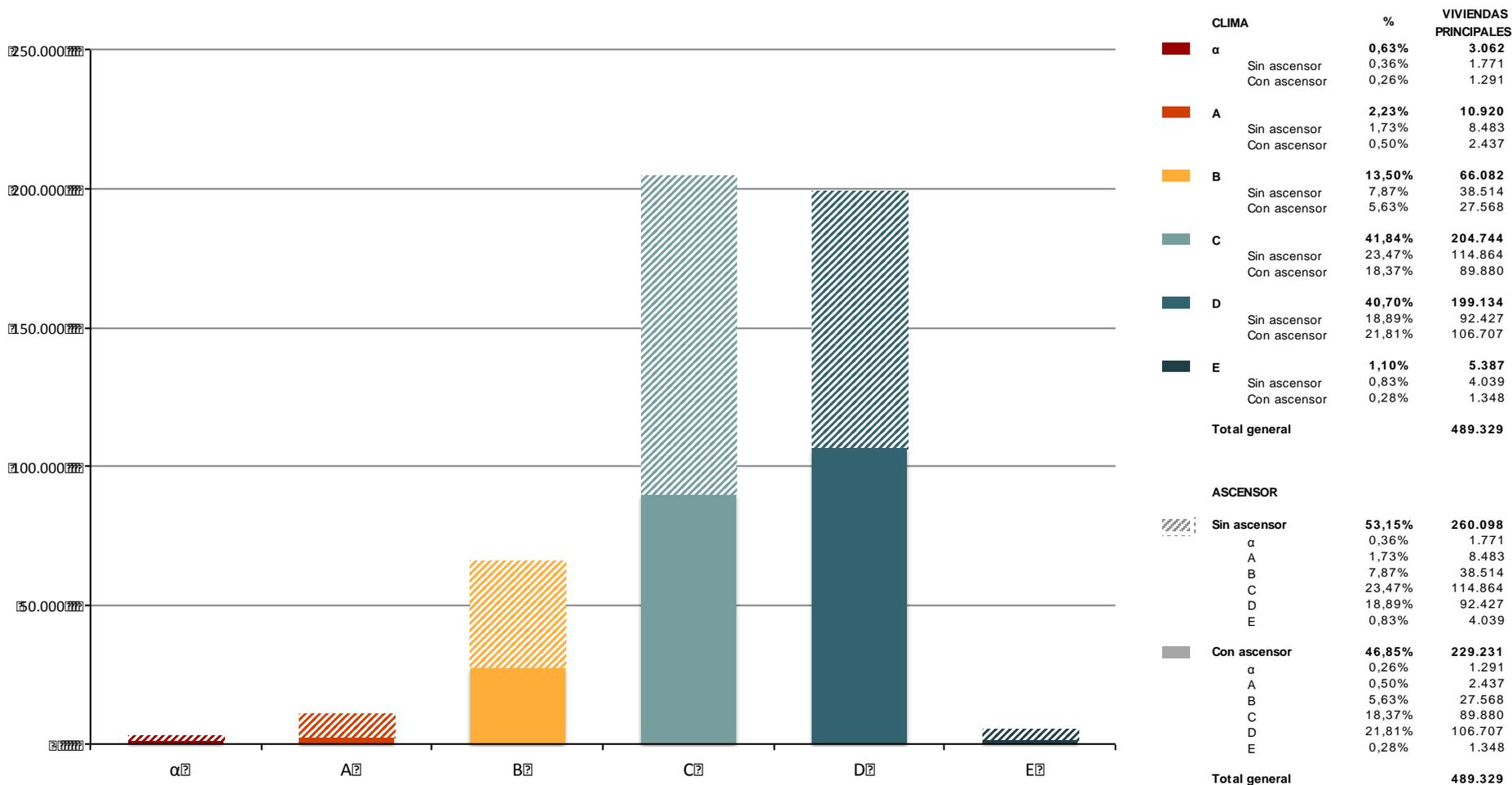


COD.	PROVINCIA	DISP. CALEFACCIÓN		TIPO CALEFACCIÓN		
		SINICAL	CONICAL	COLECTIVA	INDIVIDUAL	APARATOS
01	Araba/Álava	7	3.142	274	2.782	86
02	Albacete	727	10.601	926	8.152	1.523
03	Alicante/ Alacant	7.247	52.381	3.472	17.368	31.541
04	Almería	7.841	16.610	682	2.989	12.939
05	Ávila	263	5.841	627	4.560	654
06	Badajoz	6.453	21.309	754	6.381	14.174
07	Balears, Illes	6.454	44.126	3.048	17.205	23.873
08	Barcelona	3.529	121.188	11.642	98.795	10.751
09	Burgos	14	5.040	323	4.454	263
10	Cáceres	2.680	14.707	654	8.538	5.515
11	Cádiz	12.380	32.584	517	5.463	26.604
12	Castellón/ Castelló	1.096	8.833	833	3.452	4.548
13	Ciudad Real	1.045	24.307	2.818	19.003	2.486
14	Córdoba	6.150	32.353	1.861	7.657	22.835
15	Coruña, A	1.198	16.456	2.443	11.208	2.805
16	Cuenca	183	5.108	473	4.118	517
17	Girona	1.168	27.297	3.259	20.523	3.515
18	Granada	5.299	27.097	1.822	10.540	14.735
19	Guadalajara	106	8.887	962	7.335	590
20	Gipuzkoa	146	14.066	1.352	11.865	849
21	Huelva	5.155	20.607	376	2.659	17.572
22	Huesca	56	5.816	795	4.633	388
23	Jaén	5.057	21.029	1.505	9.558	9.966
24	León	214	20.537	3.704	16.467	366
25	Lleida	187	14.176	1.582	11.523	1.071
26	Rioja, La	19	8.944	882	7.722	340
27	Lugo	249	4.751	840	3.309	602
28	Madrid	1.110	119.529	7.888	104.577	7.064
29	Málaga	13.791	48.551	1.745	13.260	33.546
30	Murcia	7.206	38.637	2.809	11.891	23.937
31	Navarra	71	15.181	1.339	13.312	530
32	Ourense	162	4.218	1.185	2.696	337
33	Asturias	152	12.580	1.386	10.410	784
34	Palencia	25	3.355	101	3.167	87
35	Palmas, Las	63.034	12.100	401	2.487	9.212
36	Pontevedra	802	11.032	1.899	6.737	2.396
37	Salamanca	181	11.251	1.932	8.929	390
38	Santa Cruz de	48.640	11.959	357	2.140	9.462
39	Cantabria	355	17.301	1.639	14.576	1.086
40	Segovia	44	7.662	1.208	6.189	265
41	Sevilla	8.514	45.667	1.986	11.043	32.638
42	Soria	35	2.992	633	2.243	116
43	Tarragona	2.334	24.418	2.561	15.409	6.448
44	Teruel	72	4.911	635	3.759	517
45	Toledo	966	23.036	1.543	17.759	3.734
46	Valencia/ València	4.027	36.768	2.837	14.275	19.656
47	Valladolid	73	10.943	494	9.971	478
48	Bizkaia	75	8.594	1.046	7.131	417
49	Zamora	91	3.707	492	2.916	299
50	Zaragoza	276	20.176	2.007	17.266	903
51	Ceuta	580	338	0	24	314
52	Melilla	1.148	899	67	202	630
	Total general	228.687	1.083.598	86.616	630.628	366.354

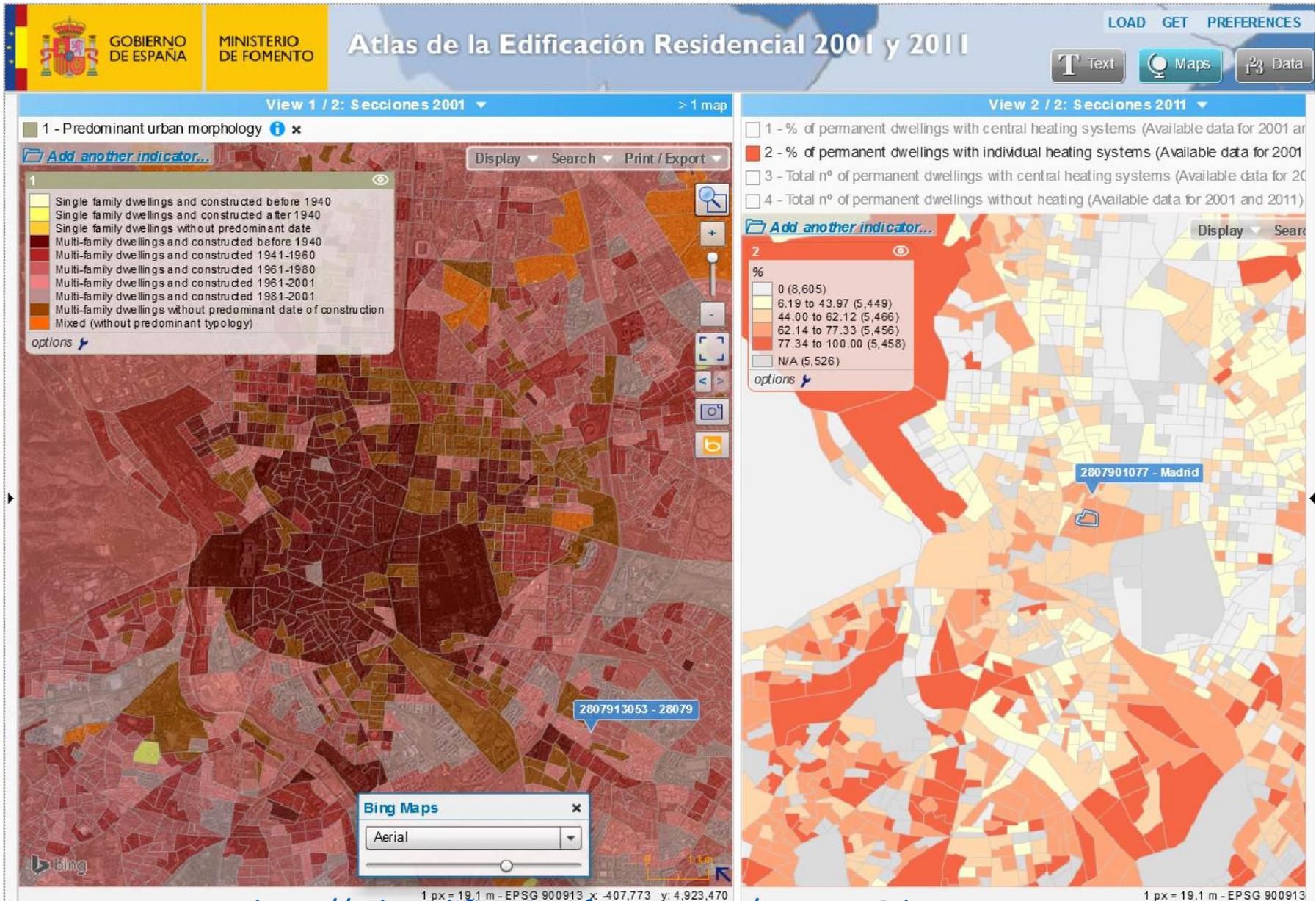
Overview of the residential building stock in Spain.

Other aspects considered (Based on 2011 Census)

Distribution by provinces, climatic zones and existence of elevator
 Example Cluster F: multifamily dwellings 1981-2007, 3 or more storeys



Overview of the residential building stock in Spain. Now working on GIS based tools...



<http://atlasedificacion.fomento.es/#v=map2;l=en>

Identification of cost effective approaches to renovation considering building typologies clusters and Climatic Zones. (Based on 2011 Census)

Characterisation of each cluster construction characteristics, U values, etc.

	A	B	C	D	E	F	G	H	I	J
FAÇADE										
Solid Masonry Wall										
Double leaf brick cavity wall										
Double leaf brick wall with insulation										
ROOF										
Pitched roof with ventilated chamber										
Pitched roof without ventilated chamber										
Flat roof										
FLOOR CONTACT WITH THE GROUND										
Floor directly over the ground										
Underfloor void or floor insulation										

Characterisation of the “intervention menus” for each cluster.

	A	B	C	D	E	F	G	H	I	J
FAÇADE										
Provision of insulation from the outside wall leaf										
Provision of insulation from the inside wall leaf										
Insulation filling in cavity wall										
Batt insulation filling in cavity wall										
Windows with low air permeability										
ROOF										
Roof chamber insulation										
Provision of Insulation under tiles										
Provision of Insulation in flat roofs										
FLOOR CONTACT WITH GROUND										
Insulation over existing floor										
Insulation in underfloor void										
Provision of extra floor insulation										



Economic evaluation of renovation options.



CONTENTS: Economic evaluation of rehabilitation options.



Economic evaluation of rehabilitation options.

- Economic analysis of different rehabilitation options for each building cluster.
- Identification of the most cost-effective options, including quantification of costs, energy savings, CO2 emissions, as well as other non-energy benefits. Selection of the optimal set of rehabilitation measures and implementation schedule for each building cluster.

Distribution of consumption according to final energy fuels in heating by SEC-SPAHOUSEC climatic zones and dwelling type (single family/multi-family).

DISTRIBUTION ACCORDING TO FINAL ENERGY FUEL IN HEATING	Dwelling type	
	Single family	Multi-family
NORTH ATLANTIC ZONE	MWh	MWh
TOTAL PETROLEUM PRODUCT HEATING	2 145 662	862 921
TOTAL GAS HEATING	291 781	1 595 117
TOTAL RENEWABLES HEATING	2 526 742	2 835
TOTAL ELECTRICITY HEATING	137 152	539 250
TOTAL	5 101 336	3 000 123
CONTINENTAL ZONE		
TOTAL PETROLEUM PRODUCT HEATING	8 145 127	8 950 298
TOTAL GAS HEATING	2 601 256	7 221 319
TOTAL RENEWABLES HEATING	10 806 596	4 427
TOTAL ELECTRICITY HEATING	480 435	1 181 465
TOTAL	22 033 413	17 357 508
MEDITERRANEAN ZONE		
TOTAL PETROLEUM PRODUCT HEATING	5 977 658	1 480 953
TOTAL GAS HEATING	2 099 425	5 491 210
TOTAL RENEWABLES HEATING	13 627 833	1 847
TOTAL ELECTRICITY HEATING	594 419	1 392 030
TOTAL	22 299 335	8 366 040
TOTAL	49 434 085	28 723 671

Final results of applying the intervention menus by 'cluster': Examples of savings obtained and costs.

OIL to NATURAL GAS	Cost	Saving
Cluster A	€ 18 989.00	68.8%
Cluster B	€ 18 585.00	69.5%
Cluster C	€ 25 714.00	80.9%
Cluster D	€ 20 763.00	72.5%
Cluster E	€ 19 283.00	83.5%
Cluster F	€ 19 482.00	76.7%
Cluster G	€ 13 508.00	82.5%
Cluster H	€ 16 647.00	82.8%
Cluster I	€ 12 873.00	80.2%
Cluster J	€ 12 955.00	76.0%

DEEP RENOVATION
60-90% ENERGY DEMAND REDUCTION

Article 4 c). Policies and measures to stimulate cost-effective deep renovations of buildings...

“PROVIDE INFORMATION ON POLICIES AND MEASURES TO STIMULATE COST-EFFECTIVE DEEP RENOVATIONS OF BUILDINGS (Article 4c EED) .

Appraisal of existing measures/policies:

- *Regulatory (EU, national, regional and local)*
- *Fiscal (tax incentives, grants, subsidies, loans, etc).*
- *Information Campaigns*
- *Labelling (EPCs, etc).*
- *Voluntary agreements*

Provide an analysis of barriers.

Give an appraisal of relevance of policies used in other territories.

Provide a design of new policy landscape that addresses barriers and enables the delivery of the required roadmap.”

II.3. LIST OF MEASURES RECENTLY APPROVED (2014) OR IN PROGRESS.

II.3.1. APPROVED REGULATORY MEASURES (2014).

The Council of Ministers of 5 April 2013 approved a ‘Comprehensive Housing and Land Plan’, with regulatory and development measures, whose fundamental objectives are focused on facilitating access to housing for more disadvantaged people, reinforcing the housing rental market, and promoting building refurbishment and their energy efficiency upgrading.

- *Law 8/2013 on Urban Renovation, Regeneration and Renewal.*
- *Royal Decree 235/2013 approving the basic procedure to certify the energy efficiency of buildings (Official State Gazette of 13 April 2013)*
- *Royal Decree 238/2013 of 5 April amending certain articles and technical instructions in the Regulations on Building Heating Installations (RITE) of 20 July 2007 to set out stricter requirements concerning the energy performance of heating and cooling equipment, as well as equipment used to move and transport fluids.*
- *Order FOM/1635/2013 of 10 September updating the Basic Document DB-HE ‘Energy Saving’, from the Technical Building Code, approved by Royal Decree 314/2006 of 17 March (Official State Gazette of 12 September 2013).*

II.3.2 APPROVED DEVELOPMENT MEASURES (2014).

II.3.2.1. Approved development measures specifically aimed at the residential sector.

II.3.2.2. Approved development measures with an impact on the residential and non-residential sectors.

II.3.2.3. Approved development measures specifically aimed at the non-residential sector.

II.3.3. REGULATORY AND DEVELOPMENT MEASURES IN THE PROCESS OF IMPLEMENTATION (2014).

II.3.4. FISCAL MEASURES (2014).

II.3.1. APPROVED REGULATORY MEASURES (2014).



Law 8/2013 on Urban Renovation, Regeneration and Renewal.

This law, together with Law 4/2013 of 4 June on measures to develop and make the house rental market more flexible, constitute the keystone of the abovementioned 'Comprehensive Housing and Land Plan'. The draft law was sent to the Parliament on 5 April 2013, and was approved on 26 June 2013. The purpose of the law is to regulate the basic conditions that will ensure sustainable, competitive and efficient development of the built urban environment, by means of driving and promoting actions that will lead to the renovation of old buildings and the regeneration and renewal of the existing urban fabric, to ensure a suitable quality of life for citizens and the effectiveness of their right to enjoy decent and adequate housing, focusing on the following aspects in particular:

- Regulation to improve the state of conservation of buildings.
- Regulation to ensure universal accessibility and non-discrimination against persons with disabilities.
- Regulation to facilitate, on a voluntary basis, the energy efficiency upgrading and renovation of existing buildings.
- Legislative amendments to remove obstacles and make the existing regulation more flexible, which basically consisted in amending the Land Law, Multiproperty Residential Buildings Law and the Technical Building Code.
- New mechanisms for funding and public-private partnerships.

Specifically, the measures included to improve energy efficiency in buildings can be summarised as follows:

- a) making it possible to occupy open space or public domain areas to do thermal insulation work from outside the building, install solar collectors on the roof and centralise energy installations, where there is no other technically viable option. It also makes it possible to close off terraces and balconies, in a uniform way and for the entire building, provided that this achieves energy savings of more than 30%;
- b) encouraging methods to fund works that will be added to traditional public subsidies and owner contributions. To that end, economies of scale are sought, as well as a suitable design for building renovation actions and for urban regeneration and renewal, that may allow for the operations to be cost-effective, generate their own resources and will make it possible to attract private capital. Construction companies and energy services companies will be able to enter into these operations, providing own capital in exchange for new possibilities to build or density and making changes in use profitable, or by means of mixed coordination schemes with owners; and
- c) promoting public-private partnership between the acting public administrations and those responsible for management (owners or companies previously contracted by owners for that purpose).

II.3.1. APPROVED REGULATORY MEASURES (2014).

Law 8/2013 on Urban Renovation, Regeneration and Renewal.

IEE: Informe de Evaluación del Edificio/Building Evaluation Report.

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

- 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.
- 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.
- Inclusion of the **ENERGY PERFORMANCE CERTIFICATE**. (Result: 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.



II.3.1. APPROVED REGULATORY MEASURES (2014). CONTINUATION.



Royal Decree 235/2013 approving the basic procedure to certify the energy efficiency of buildings

This law partially transposes Directive 2010/31/EU regarding the certification of the energy efficiency of buildings, including the basic procedure for certifying the energy efficiency of existing buildings, also taking into consideration the experience of applying this law over the past five years.

There is a basic procedure in place that must be followed by the method for calculating the energy efficiency rating, considering any factors that have the most impact on the energy consumption, as well as the technical and administrative conditions for building energy efficiency certifications.

Royal Decree 238/2013 of 5 April amending certain articles and technical instructions in the Regulations on Building Heating Installations (RITE) of 20 July 2007 to set out stricter requirements concerning the energy performance of heating and cooling equipment, as well as equipment used to move and transport fluids.

Order FOM/1635/2013 of 10 September updating the Basic Document DB-HE ‘Energy Saving’, from the Technical Building Code, approved by Royal Decree 314/2006 of 17 March

This order updates the Basic Document concerning energy saving and partially transposes into the Spanish legal system Directive 2010/31/EU regarding energy efficiency requirements of buildings set out in Articles 3, 4, 5, 6 and 7 thereof, as well as Directive 2009/28/EC regarding the requirement of minimum levels of energy from renewable sources in buildings, set out in Article 13 thereof.

In this sense, the update of the Basic Document on Energy Saving and the requirements set out therein form the first phase of moving towards the objective of getting buildings with nearly zero energy consumption before 31 December 2020 (2018 in public authority buildings), and it represents a considerable step forwards in terms of the requirements regarding energy efficiency of buildings that were in force up to that point.

II.3.2 APPROVED DEVELOPMENT MEASURES (2014).

II.3.2.1. Approved development measures specifically aimed at the residential sector (2014).

Royal Decree 233/2013 of 5 April regulating the State Plan to promote rental housing, building renovation and urban regeneration and renewal, 2013–2016.



ICO [Official Credit Institute] Line for the ‘Renovation of dwellings and buildings’ 2013 and 2014, within the line ‘ICO businesses and entrepreneurs’ 2013 and 2014.

The line ‘ICO businesses and entrepreneurs 2014’ provides funding aimed at the self-employed, businesses and public and private entities, both Spanish and foreign, that make productive investments within Spain. The portion associated with renovation is aimed at addressing the funding requirements of individuals and homeowners associations, in order to undertake renovation or refurbishment projects on their homes and buildings, common elements and homes. The transactions are processed directly through the credit institutions.

Institute for Energy Diversification and Saving (IDAE) PAREER Programme: ‘Aid programme for integral energy efficiency and saving projects in residential buildings’.

The IDAE’s PAREER Programme came about in order to encourage the implementation of integral energy efficiency saving and improvement actions, as well as the use of renewable energy sources, such as the renovation of windows, façades, roofs, boilers, air conditioning equipment, the incorporation of equipment to individually measure heating and domestic hot water consumption, replacing conventional energy with biomass or geothermal energy, etc. The legislation regulating this aid is set out in Decision of 25 September 2013 of the State Secretariat for Energy of MINETUR published the Decision of 25 June 2013 of IDAE specifically establishing the regulatory bases and organising the programme of aid for the energy renovation of existing buildings in the residential sector (both for housing and hotel use).

II.3.2.2. Approved development measures with an impact on the residential and non-residential sectors (2014).

JESSICA-FIDAE Investment Fund to finance energy efficiency and renewable energy projects.

The FIDAE Investment Fund is aimed at funding sustainable urban development projects that will improve energy efficiency, use renewable energies and that are developed by energy services companies (ESCOs) or other private companies. It is a fund that is co-financed by ERDF and IDAE and operated by the European Investment Bank (EIB). This fund will finance all investments that are directly related to increasing energy efficiency and the use of renewable energies in urban environments, and it is compatible with other sources of public or private funding, as well as subsidies that may be co-financed by ERDF.

MAGRAMA Clima Project.

The Clima Project seeks to promote a low-carbon economy. The 2014 call for Clima Projects was launched on 15 February 2014 by opening the period for submitting proposals for projects that should be operational no later than 2015. This aid instrument is designed to redirect economic activity towards low-carbon models at the same as contributing to meeting the international targets assumed by Spain concerning reducing greenhouse gas emissions.

II.3.2.3. Approved development measures specifically aimed at the non-residential sector.

PIMA SOL Plan. Royal Decree 635/2013 of 2 August in implementation of the 'PIMA Sol Plan to Promote the Environment in the hotel sector'.

The PIMA SOL Plan to Promote the Environment is an initiative aimed at reducing greenhouse gas (GHG) emissions by the Spanish tourism sector. Specifically, it promotes the reduction of direct emissions of GHGs at hotel facilities, achieved by means of the energy renovation of these facilities.

II.3.3. REGULATORY AND DEVELOPMENT MEASURES IN PROCESS OF IMPLEMENTATION (2014).

II.3.3.1. Energy efficiency in the Building Sector in the National Energy Efficiency Action Plan 2014–2020.

II.3.3.2. Energy efficiency obligation schemes and alternative policy measures (Article 7 of Directive 27/2012/EU): Energy efficiency obligation scheme and Energy Efficiency National Fund.

II.3.3.3. Metering and billing information (Articles 9, 10 and 11 of Directive 27/2012/EC).

II.3.3.4. Exemplary role of public bodies' buildings in compliance with Article 5 of Directive 2012/27/EU.

II.3.3.5. Measures for development with European Funds associated with the new programming period 2014–2020.

II.3.4. FISCAL MEASURES (2014).

Value Added Tax (VAT).

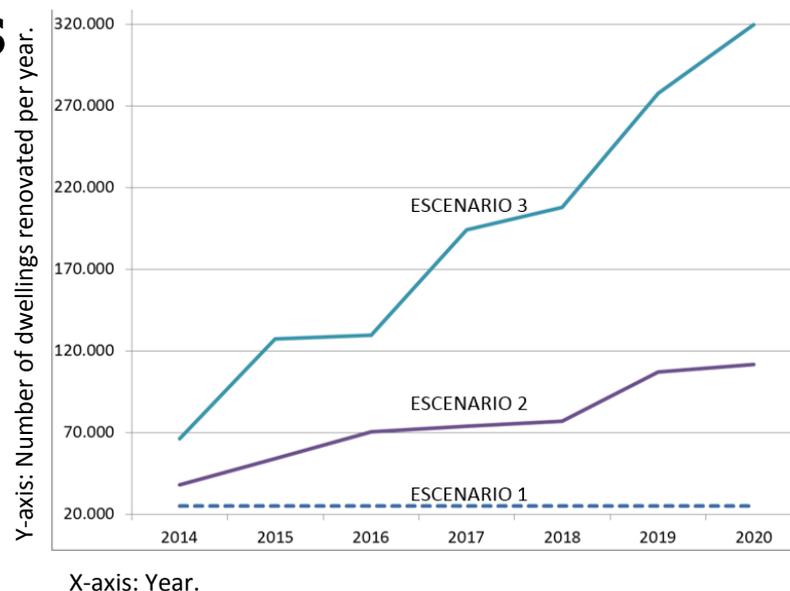
Royal Decree-Law 20/2012 of 13 July on measures to ensure budgetary stability and promote competitiveness sets out the option to apply the reduced VAT rate to certain refurbishment, renovation and repair works.

Personal Income Tax. (IRPF).

The current national regulations on personal income tax do not envisage the possibility of applying any kind of deduction for refurbishment, renovation or improvement works for dwellings built after 31 December 2012. Nevertheless, there are still deductions in some autonomous communities related to refurbishment works carried out on main dwellings.

RESULTS: STRATEGIC SCENARIOS

2014-2020	ESCENARIO 2	ESCENARIO 3
TOTAL INVERSIÓN PÚBLICA:	2.303,3	4.818,1
INVERSIÓN PRIVADA EFIC. ENERG+CONSERV.:	6.773,3	24.547,5
INVERSIÓN PRIVADA INDUCIDA:	675,7	11.157,7
AHORROS DE ENERGÍA (ktep):	1.044	3.468
AHORROS DE EMISIONES (t):	2.606.990	8.381.362
CREACIÓN DE EMPLEO (media anual):	22.117	96.842
VIVIENDAS REHABILITADAS (media anual):	51.040	163.899



Scenario 1 ("Business as usual"). (Not considering public funding already available). It would yield an average figure of about 25,000 rehabilitation dwellings per year.

Scenario 2. (Public subsidization). Based on the hypothesis of extending public investments already available today until 2020, which makes a total amount around 2,303 million €. An annual average of 22,117 jobs would be generated, 51,040 homes a year could be renovated, 1,044 Kteps of energy could be saved, and 2.6 million Tons of CO2 emissions could be reduced.

Scenario 3. (Public subsidies progressively replaced by adequate loans). Based on the hypothesis of the existence of adequate financial support for owners (loans at 5% interest rate and 20 years payback period), in addition to the existing subsidies. An annual average of 96,842 jobs would be generated, 163,899 houses a year could be renovated, 3,468 Kteps of energy could be saved, and 8.3 million Tons of CO2 emissions could be reduced.

RESULTS: IDENTIFICATION OF FUTURE ACTIONS (1).

Information and communication actions:

- Designing and carrying out awareness-raising campaigns for citizens.
- Launching specific training and participation days of a technical nature, as well as information days more focused on users and residents associations.
- Publication of explanatory guides of the process and benefits of rehabilitation.
- Developing websites, for information and assistance.
- Spreading good practices, pilot projects and model examples.
- Incorporating renovation and energy efficiency into training plans in university activity related to intervention techniques in the consolidated city and in existing buildings.
- Vocational training should also be adapted so as to train the workforce and specialist craftsmen that are required by intervention in existing buildings.

Administrative Measures.

- Simplifying, standardising and reducing time in administrative procedures for building permissions, licences and authorisations.
- Promoting “Local Agencies” or Municipal Services for Building Renovation/ Urban Regeneration in order to inform citizens, guide developers throughout the renovation process, mediate in any conflicts that arise, prepare intervention programmes, draw up regulations on renovation aid (renovation ordinances), etc. This measure would also include management and information through so-called ‘one-stop shops’.

RESULTS: IDENTIFICATION OF FUTURE ACTIONS (2).

Actions to facilitate financing and the development of rehabilitation operations.

- Channelling resources from the Energy Efficiency National Fund (from contributions, *inter alia*, from obligated companies and from ERDF funds from 'Thematic Objective 4: Towards a Low-Carbon Economy') towards building energy renovation actions, due to their particular contribution to energy savings in the long term and their potential to reduce families' and business' energy bills, as well as their contribution to the competitiveness of the economy and the reactivation of economic activity.
- Working with the European Investment Bank (EIB) to design programmes to support the funding of building renovation, particularly energy renovation. This would make it possible to inject liquidity from the European Central Bank to our banks. An example could be the JESSICA-FIDAE Sustainable Development Urban Fund managed by IDAE, which uses the EIB JESSICA financial instrument to promote urban energy renovation actions.
- Making it possible for energy services companies, construction companies or renovation management companies to receive aid from public administrations, with explicit consent from the client.
- Reinforcing the ICO line for homeowners associations that it has been doing since 2013, seeking to improve two aspects as far as possible: making it cheaper to raise funds on the capital markets and obtaining 'soft' funding from international financial institutions (or institutions such as KfW, CEB, etc.).
- Supporting financial entities in designing specific products to fund renovation. One of the measures to take into account would be the one that would provide guarantees to these entities against loan defaults by homeowners associations (which banks identify as 'high risk'). From this point of view, a 'limited guarantee fund' or some method of guarantee that would make it possible to partially cover the risk of residual late payment that could possibly occur, would be measures to examine. There are already some models in this regard, in other sectors, such as 'SAECA' or the 'Loan Coverage' model.