Construye 2030

National Training Roadmap 2030

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The construction sector towards 2030

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Índice

Acronyms

CEF – Speciality Training Catalogue (Catálogo de Especialidades Formativas in Spanish)

CINEA - European Climate, Infrastructure and Environment Executive Agency

CNO – Occupational Code Number

EE - Energy Efficiency

EEEC - Spanish Strategy for the Circular Economy

EPC – Building Energy Performance Certificate

EPBD - Energy Performance of Buildings Directive

EPD - Environmental Product Declaration

EQF – European Qualifications Framework

ERESEE – Spanish Long-term strategy for energy renovations in the building sector

GHGs - Greenhouse Gases

GWP – Global Warming Potential

IDAE - Institute for the Diversification and Saving of Energy

LCA - Life Cycle Analysis

MITMA - Ministry of Transport, Mobility and Urban Agenda

ORP - Occupational Risk Prevention

PNIEC - National Integrated Energy and Climate Plan

REs - Renewable Energies

SEPE - State Public Employment Service

VET - Vocational Education and Training

ZEB – Zero-Emission Buildings

Foreword

The National Training Roadmap 2030 is a proposed set of measures aimed at supporting the energy transition of the construction sector in terms of training and employment while addressing the need to attract youth, women and professionals from highly polluting industries to the construction sector.

These measures are planned to be implemented from 2024 to 2030 and are defined by a number of parameters that explain the nature of the measure, the action plan and the level of feasibility, among others.

The identification of these measures has been the result of the collaborative work of sector professionals from five fields: political, economic, social, educational and environmental, in accordance with the Quintuple Helix methodology, which has ensured the inclusion of diverse approaches and points of view. This collaborative work has consisted of working groups held within the framework of the National Qualification Platform, called 'Red Construye: formación y competencias" (Construye network: training and skills), around four main themes: energy efficiency (EE) and renewable energies (REs); Industrialisation and Digitalisation; Circular economy; and Attraction to the sector.

This National Training Roadmap 2030 has the support of different entities and professionals through a signed letter of support. This will allow, within their respective areas of action, to enable implementing the various actions proposed in the Roadmap.

The **policy** sphere consists of public administrations and public organisations.

Regarding the Roadmap, the commitment of these organisations in the political sphere consists of promoting policies that attract professionals to the sector, especially women, youth and/or people working in more polluting industries; collaborating in the Red Construye in future events; or taking the National Training Roadmap 2030 into account in future decisions.

The **economic** sphere is mainly represented by business associations, but also by construction companies, marketing or sales departments, etc.

The support of this type of institutions is aimed at disseminating among workers, companies and citizens the training offer necessary for the decarbonisation of the sector, promoting activities that attract professionals to the sector, especially women, youth and/or workers in more polluting industries; and collaborating in events organised by the Red Construye.

Construye 2030 must necessarily have the backing of the **educational and training** sphere, i.e. the training centres of any educational level and of a formal and non-formal nature.

With regard to the Roadmap, its commitment aims to develop and/or provide training courses necessary for the decarbonisation of the sector; support the development of resources and instruments to support training and employment systems that facilitate qualifications in the construction sector; collaborate in the thematic networks of the Red Construye; and promote activities that attract professionals to the sector, especially women, youth and/or people working in more polluting industries.

The organisations belonging to the **social** sphere were especially the trade union organisations representing the sector, but also those representing consumers or company departments dealing with the professional development of their workers.

The support of social organisations is aimed at: Disseminating the training offer on sustainable construction proposed in the Roadmap; promoting the professional qualification of workers; promoting activities that attract professionals to the sector, especially women, youth and/or workers in more polluting industries; and collaborating in the topics of the Red Construye.

The **environmental** sphere is represented by EE and REs research departments, sustainable architecture studios, companies specialised or with a special interest in climate goals, etc.

The support of these institutions would be aimed at disseminating the results of the project and collaborating in the design and implementation of the actions in the Roadmap.

1. Executive Summary

Introduction

'The National Training Roadmap 2030' has been developed in the framework of the Construye 2030 project, funded by the LIFE programme, within the BUILD UP Skills initiative, which since 2011 has been funding projects that promote the increase in the number of qualified professionals in the construction sector, with the aim of contributing to the fulfilment of the climate goals committed by the European Union.

This document is a proposal for initiatives aimed at supporting the decarbonisation of the construction sector at national level, with a specific focus on attracting the sector and training and qualification of professionals in the sector.

For the development of this report, the project consortium has collaborated with a large number of experts from the political, economic, educational, social and environmental fields of the construction sector. Collaborative work channelled through the National Qualification Platform '**Red Construye**', a platform revamped thanks to the Construye 2030 project, which has brought together a community of professionals to address issues related to skills and training in the sector.

The design of this training roadmap is based on the findings of the '***Status Quo***. **Study on the Current Overview of the Construction Sector in Spain**', the first report published in Construye 2030, which analyses the evolution of the last ten years in the field of sustainable construction and, consequently, the current training needs. Through a study of primary and secondary sources, significant changes in the field have been examined, as well as the implications they have had in terms of updated training needs for professionals in the sector, as well as the emergence of new competencies or occupational profiles.

In this sense, the following table lists the ten blue-collar and white-collar occupations with the **greatest need for training**, and the skills that are currently most lacking in construction work and, therefore, where the greatest training effort is required:

Occupational profiles	MECU* level	Training needs	Level of presence on site
Watertightness Specialist	3	Identifying sealing requirements from technical documents.	1,50
		Performing an air tightness test	1,38
		Identifying the points of loss of watertightness of the building	1,38
Smart Metering Specialist - Electrical Engineering	3	Identifying the different types of smart meters	1,50
		Adjusting the different parameters of a smart meter	1,50
		Installing a smart meter	1,75
Specialist in green roofs	3	Pre-implementation checks (work equipment, site preparation, etc.)	1,57
		Reception, unloading and stockpiling of materials and products to be used on the roof.	1,57
		Execution of singular points on the roof: joints with parapets and other vertical elements, files, etc.).	1,57

Occupational profiles	MECU* level	Training needs	Level of presence on site
Specialist in Home and Building Automation Management Systems	3	Sealing the joints between the ventilation system ducts and floors, partitions and walls.	1,50
		Identifying the installation requirements of home and building automation systems from the technical documents of the project.	1,67
		Identifying the different components of an intelligent home automation system.	1,78
Green Facade Specialist	3	Determining the scope of the work to be conducted and identifying the characteristics of the support and the elements of the green façade system, by consulting the specific technical documentation.	1,67
		Checking the characteristics and properties of the substrate.	1,67
		Placing singular or finishing elements to resolve discontinuities in the façade.	1,67
Urban Planner	5	Providing efficient water management solutions	2.5
Construction Site Manager	5	Knowledge of circular economy	1.8
Building Designer	6	Knowledge of building life cycle analysis	2.2

*Level according to the Spanish Qualifications Framework for Lifelong Learning, aligned with the European Qualification Framework (EQF). Note: Rating on a scale of 1 to 5, where 1=skill with very little presence and 5=skill with very high presence.

Table 1. Selection of the skills least present on site in blue-collar and white-collar profiles, in accordance with the field study conducted for the Study on the Current Overview of the Construction Sector in Spain.

The **emerging occupational profiles** identified in the field of sustainable construction, considering the sector's own evolution and the new criteria for buildings established in recent national and European regulations (especially the Energy Performance of Buildings Directive - EPBD) were as follows:

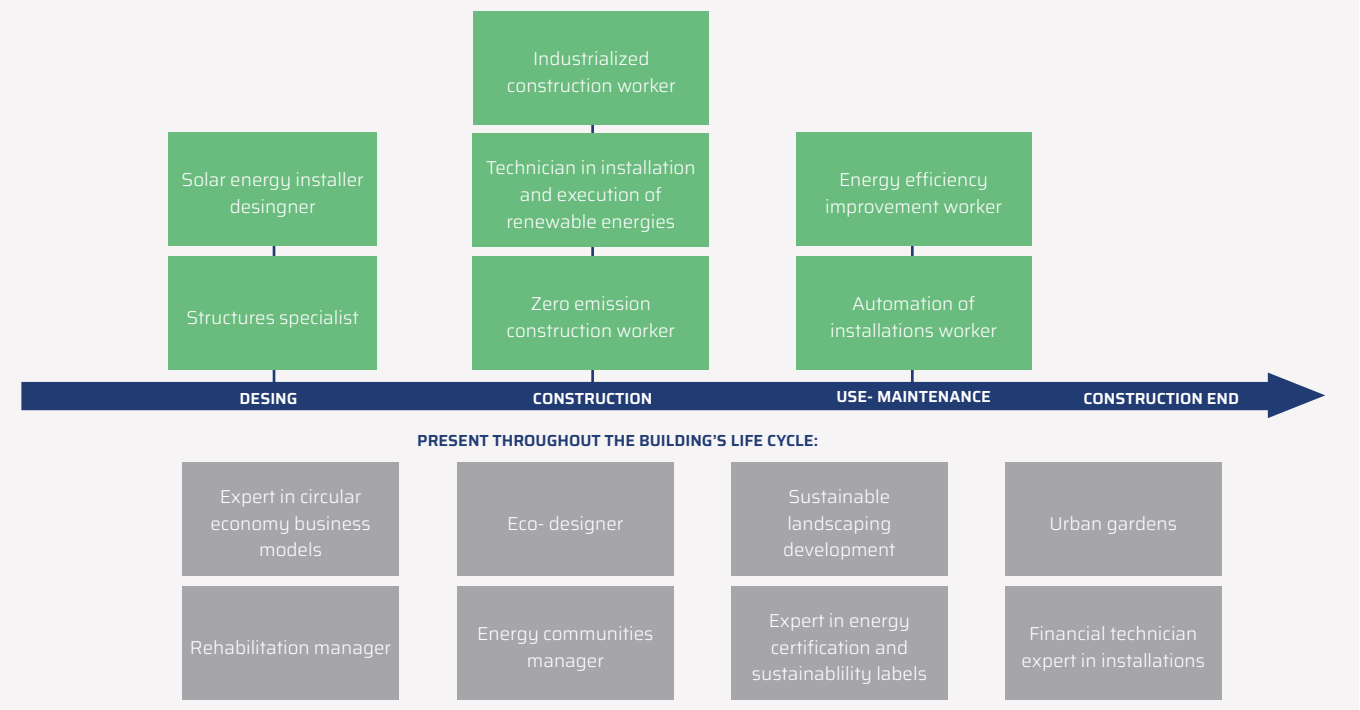


Illustration 1. Ranking of the emerging profiles identified in the fieldwork of the report 'Status Quo. Study on the Current Overview of the Construction Sector in Spain', according to the phases of the building's life cycle.

The National Training Roadmap 2030, an instrument to support the sector's energy transition through the qualification of its professionals

The Roadmap measures aim to respond to and contribute to meeting the 2030 climate goals and, to this end, address the most imAverage scorete and medium-term qualification challenges facing the sector, as identified in the aforementioned 'Study on the Current Overview of the Construction Sector in Spain'.

The most urgent and priority challenge today is the ageing of working people. By 2030, 30% of the workforce, mainly blue-collar workers, is expected to retire without sufficient generational replacement. Only 9% are women, predominantly in administrative positions. The sector urgently needs to attract youth, women and professionals from other sectors, especially those currently working in highly polluting industries.

Companies, workers, teachers and guidance counsellors in the construction sector need to be updated in terms of digitalisation, industrialisation, robotics, artificial intelligence, waste management, new taxonomy, life cycle analysis, energy measurements and building sustainability, among others.

This necessary qualification can be addressed in two ways. The first of these is the design of new training, which must consider the evolution of the sector itself, the new requirements driven by the new building regulations, the emerging occupational profiles and skills, and the promotion of other activities such as the installation of green roofs and façades or industrialised construction.

The second path is the renewal and promotion of existing training programmes. Despite the fact that the training offering aimed at the proper energy performance of the building has increased in the last ten years, some of the professionals who have collaborated in the project have detected that there is still a deficit in the correct execution of traditional activities such as thermal insulation.

To match business demands and related training needs, existing training programmes need to be updated and boosted; training and employment systems need to be resourced; and construction companies need to be supported in taking on apprentices. The possible solutions would address another more priority challenge faced by the sector: the low demand for training, which makes it necessary to attract trainees among the working population, the unemployed, youngsters, women and professionals from other sectors.

The National Training Roadmap 2030 is the result of collaborative work between the Construye 2030 project consortium and more than 40 experts from different areas of the construction and training sector, through three working groups held between January and April 2024. The Quintuple Helix methodology used for the identification of measures and their distribution in an Action Plan has ensured the inclusion of five types of perspectives and occupational profiles of partners: political, economic, social, training and environmental.

This is a set of specific solutions to the need to qualify professionals throughout the value chain of the building sector in those construction activities where a particular skills gap has been identified.

The National Training Roadmap 2030 consists of 35 measures, planned to be implemented between 2024 and 2030, structured in three main groups:

- **Training measures**, which propose, on the one hand, updating certain training actions due to an insufficient or outdated offer. On the other hand, other measures aim at designing new training aimed at specific occupational profiles or skills needed to meet the new requirements. Training measures address the sector in a **cross-sectional manner**, to the needs of **blue-collar profiles** or to those of **white-collar profiles**.
- **Support measures** for training and employment systems, aimed at facilitating the provision of training for public administrations, companies, workers and educational establishments and promoting entry into the construction sector from an early stage.
- **Measures to attract** women, youth and other professionals to the sector, the aim of which is to promote the incorporation of these profiles into the specific sector.

The target groups are white-collar and blue-collar occupational profiles, and other players related to construction: Public administration, companies and training centres, with the aim of having an impact on the main entities involved in sectoral training and employability.

On the other hand, the themes covered by the measures have taken into consideration the subjects around which the collaborating professionals have been grouped in the working groups of the Red Construye: EE and renewable energies (REs); Digitalisation and industrialisation; Circular economy and Sector attraction.

The National Training Roadmap 2030 complements the work developed in the Construction Blueprint project and is in line with the objectives of the Construction Skills Pact as part of the European Skills Agenda, signed by the European sectoral social partners.

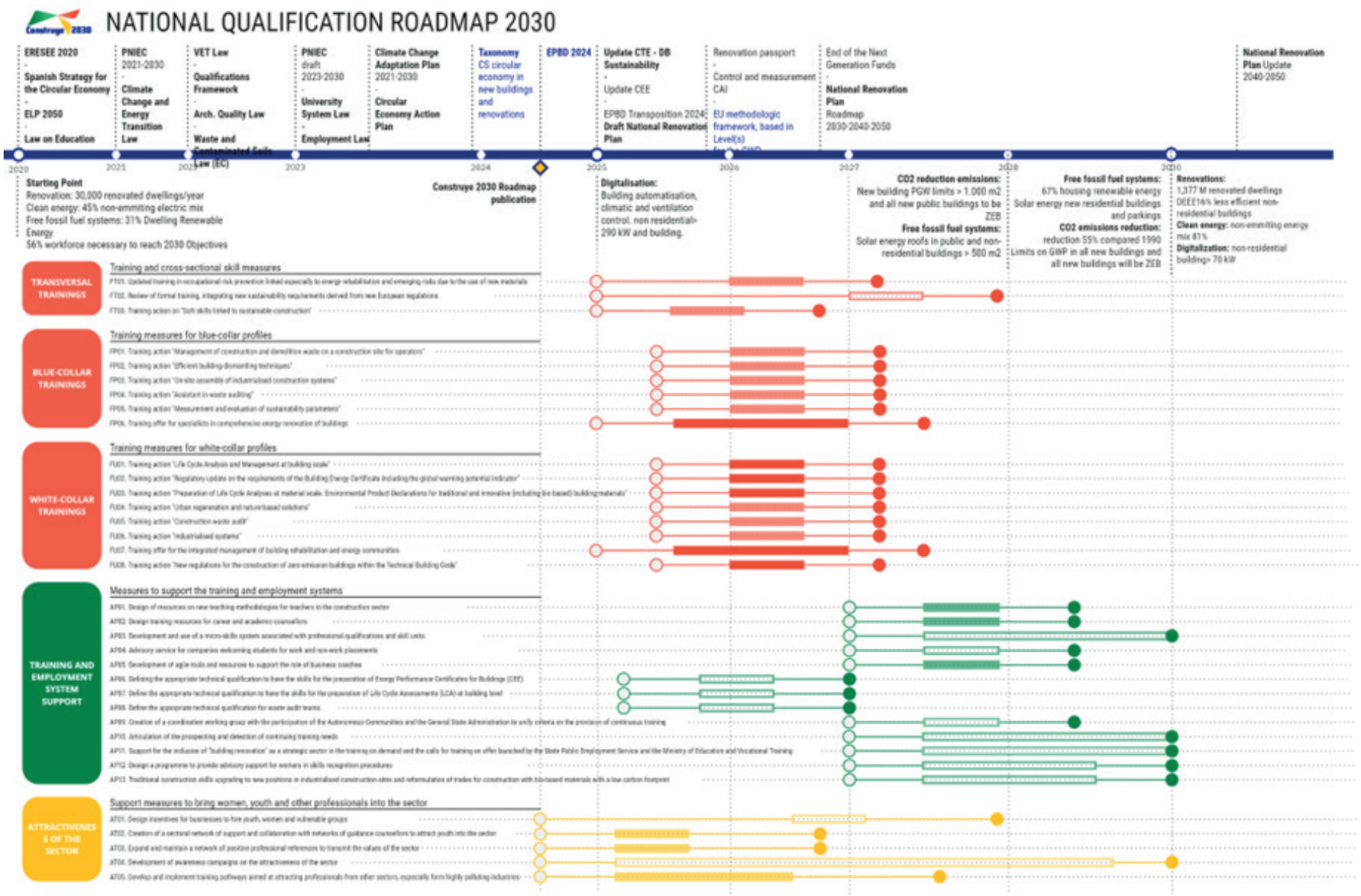


Illustration 2. List of measures of the 2030 Roadmap and Action Plan visualised in relation to the publication of relevant regulations for the fulfilment of the 2030 Goals.

The measures and Action Plan can be found here: https://miro.com/app/board/uXjVKY1EodY=/?share_link_id=103234875983

Roadmap commitments

In addition to the partner entities of the Construye 2030 project, many organisations have not only contributed to the identification and defining the measures included in Roadmap 2030, but have also shown a specific interest in some of them, depending on the type of measure, specified in a "support document", in which the reason for their commitment to Roadmap 2030 was specified: to develop and/or give courses in training required for the decarbonisation of the sector; to promote activities that attract professionals to the sector, especially women, youth and/or people working in more polluting industries; to support the development of resources and instruments to support training and employment systems that facilitate qualification in the construction sector, to collaborate in the Red Construye; to publicly disseminate the National Training Roadmap 2030 through corporate channels.

Thus, the National Training Roadmap 2030 is supported not only by the project partners, as mentioned in the Foreword to this document, but also by the following entities::

Letters of support

2. Introduction

As mentioned above, the objective of the Roadmap is to present a set of initiatives that support the decarbonisation of the construction sector at national level from the sphere of training and qualification of the sector.

These are 35 measures considered as priorities by the Construye 2030 consortium and by the professionals who have participated in its preparation process within the framework of the Red Construye, through three working sessions held between January and April 2024.

This collaborative working methodology, a hallmark of the BUILD UP Skills initiative, has enabled the involvement of stakeholders from the very beginning of the Roadmap development and has facilitated their support for the Roadmap, with xx entities supporting the document with different levels of commitment.

Chapter 2 of this document details the main results obtained in the report 'Status Quo. Study on the Current Overview of the Construction Sector in Spain' in terms of the characterisation of the sector, national strategies and policies, quantitative data on the labour market, mainly.

Chapter 3 focuses on the description of the methodology and work process conducted during the months of the Roadmap's preparation.

Chapter 4 deals with the characterisation of the Roadmap, and provides details of each measure, including the characteristics, target groups, necessary resources and timetable for action, among others, in the form of a sheet.

Chapter 5 identifies the different monitoring indicators that support the development of the different measures.

Chapter 6 details the final conclusions and impressions of the project consortium on the process of developing the Construye National Training Roadmap 2030, and Chapter 7 shows testimonials in support of the Roadmap.

The last chapters of the document mention the authors and collaborators in the creation of the Roadmap (Chapter 8), and indicating the bibliographical references used (Chapter 9).

A more detailed breakdown of the impact indicators described in Chapter 5 can be found in Annex I.

2.1 Characterisation of the sector

The construction sector is an essential pillar of the economy and employment, playing a crucial role in society. However, in recent years, the sector's weight in terms of Gross Value Added as a percentage of Gross Domestic Product has fallen by around six percentage points, from 10.84% in 2006 to 4.76% in 2022.

In Spain, the **working population** has grown by 19.1% from 2012 to 2023. Growth has been generalised in all productive sectors, and the construction sector has occupied second place in terms of increase, with an increase in the employed population of 17.2% in the aforementioned years, after the services sector (21.6%).

One of the main characteristics of the sector is its **atomisation**: the majority of companies in the sector have no employees, and the weight of these companies in the total has fallen from 59.9% in 2020 to 53.1% in 2023. Small and medium-sized enterprises (1-49 employees) have slightly increased their weight in the sector, from 39.7% in 2020 to 46.5% in 2023.

The workforce in the building sector is currently facing several challenges. Since 2017, the relative lack of working people has been conditioning activity, according to the European Commission's Business and Consumer Survey. Moreover, the National Institute of Statistics, through the Quarterly Labour Cost Survey, points out that it is becoming increasingly difficult to fill job vacancies.

The **ageing of workers** is emphasised in the construction sector. From 2012 to 2023, the age groups with the highest percentage weight among those employed in the sector were those aged 50 to 59 (+82.2%) and those aged 59 and over (+67.4%). While the younger age groups have less and less weight. Thus, the working population under 30 years of age represent 15.1% less in 2023 than in 2012, and those between 30 and 39 years of age represent 30.1% less.

Also, an increase in the weight of foreign workers has been observed, with the rate of growth of employment of foreign workers being higher than the growth of employed persons in the sector.

The construction industry has been characterised by **highly male-dominated occupations**, although women have increased their presence in the construction sector from 2012 to 2022, representing in the latter year almost 10% of the total number of people employed in the construction sector.

Finally, in the current situation of the sector, it should be noted that several players have contributed to an unusual increase in the prices of building materials since 2022, which has added additional pressure on the sector.

After the economic crisis of 2008, the building sector has shown great resilience and adaptability in the face of economic and technological challenges, with a diversification of companies, improvement in training levels and adoption of new technologies that augur a promising and more efficient future for the industry.

Construction is in a demographic, ecological and digital transition, and is key to meeting the Sustainable Development Goals of the 2030 Agenda. According to the latest annual report published by the Construction Industry Observatory and referring to the sector's activity in 2022, "construction has proven to be a solid sector with strong potential. Despite the pandemic and the current geopolitical context, it continues to be one of the economic engines and generators of employment, offering multiple professional career activities and job opportunities.

2.2 National policies and existing provisions on energy and Vocational and Educational Training

Since 2012, when the first BUILD UP Skills initiative in Spain came to an end, different policies and strategies have been approved in the fields of energy, education and vocational training, digitalisation, circular economy and public procurement. The following chart shows the most recent ones with the greatest impact on buildings.

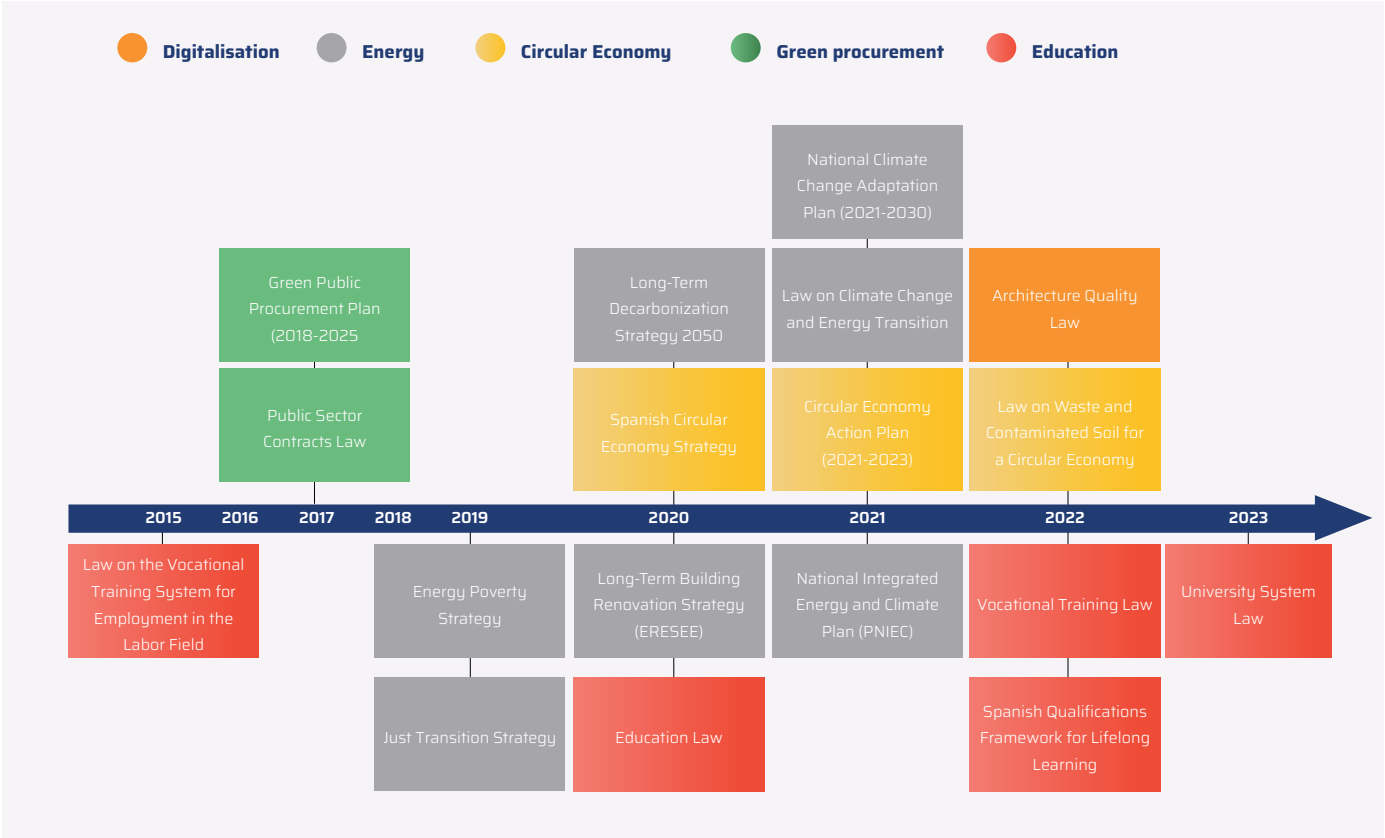


Illustration 3. Map of regulations relevant to the object of study, published in Spain from 2015 to 2023 in the fields of digitisation, energy, circular economy, public procurement and education. Source: Prepared by the authors based on the documentary study conducted in the report 'Status Quo. Study on the Current Overview of the Construction Sector

In the energy category, several key policies and strategies have been implemented in recent years. In 2019, the Just Transition Strategy was introduced to increase climate ambition, driven by the Strategic Energy and Climate Framework. In parallel, between 2019 and 2024, the Ministry for Ecological Transition's National Strategy against Energy Poverty, which includes urgent measures for energy transition and consumer protection, has been underway.

In 2020, a Long-Term Strategy for Energy Rehabilitation in the Spanish Building Sector (ERESEE) was developed, which aims to establish a roadmap for transforming the building stock into a highly energy efficient (EE) and decarbonised one by 2050. In the same year, the Long-Term Decarbonisation Strategy 2050 was launched, with the aim of achieving a modern, competitive and climate-neutral Spanish economy by that date.

From 2021 to 2030, the National Climate Change Adaptation Plan acts as the basic planning instrument to promote coordinated action against the effects of climate change in Spain. As mentioned at the beginning of the section, in 2021, the Climate Change and Energy Transition Law was enacted. In addition, the National Integrated Energy and Climate Plan (PNIEC) of the Ministry for Ecological Transition and the Demographic Challenge was implemented with the objective of reducing greenhouse gas (GHG) emissions by 23% compared to 1990.

Between 2018 and 2025, the Green Public Procurement Plan was implemented, which responds to the need to incorporate green criteria in public procurement, allowing administrations to promote and contribute to the objectives of economic and environmental sustainability. In 2018, the Public Sector Contracts Law was also enacted. In terms of digitisation, the Architecture Quality Law was implemented in 2022.

In the Circular Economy category, in 2020, the Spanish Circular Economy Strategy was launched under the name "Spain Circular 2030". In 2021, the Circular Economy Action Plan (2021-2023) was implemented as part of this strategy. On the other hand, in 2022, the Waste and Contaminated Land for a Circular Economy Law was enacted.

In terms of training and education, the third reform of the university system since 1978 (Organic Law 2/2023), which establishes the so-called "lifelong learning degrees", which are offered through different modalities, including the so-called micro-credentials, stands out. The Vocational Education and Training system has also undergone significant changes through Organic Law 3/2022, as it provides the system with a new structure whose main objective is the acquisition and accreditation of skills.

2.3 Energy data of the sector

Current energy consumption in the country and in the building construction sector

According to sources from the Institute for Energy Diversification and Saving (IDAE) and the Census 2021, two periods of increase in energy consumption and renewable energy use in Spain have been identified: one between 2000 and 2007, and the other between 2014 and 2017-2018. During the period under study, a decrease in the use of oil and coal and an increase in the use of natural gas and renewable sources (REs) is observed.

A comparison of final energy consumption by sector between 2000 and 2020 shows a decrease in domestic transport and industry, and an increase in the residential, services, and agriculture and fisheries sectors. In both years, the residential sector was the third largest energy user nationally, accounting for 20.2% of final energy consumption in 2020.

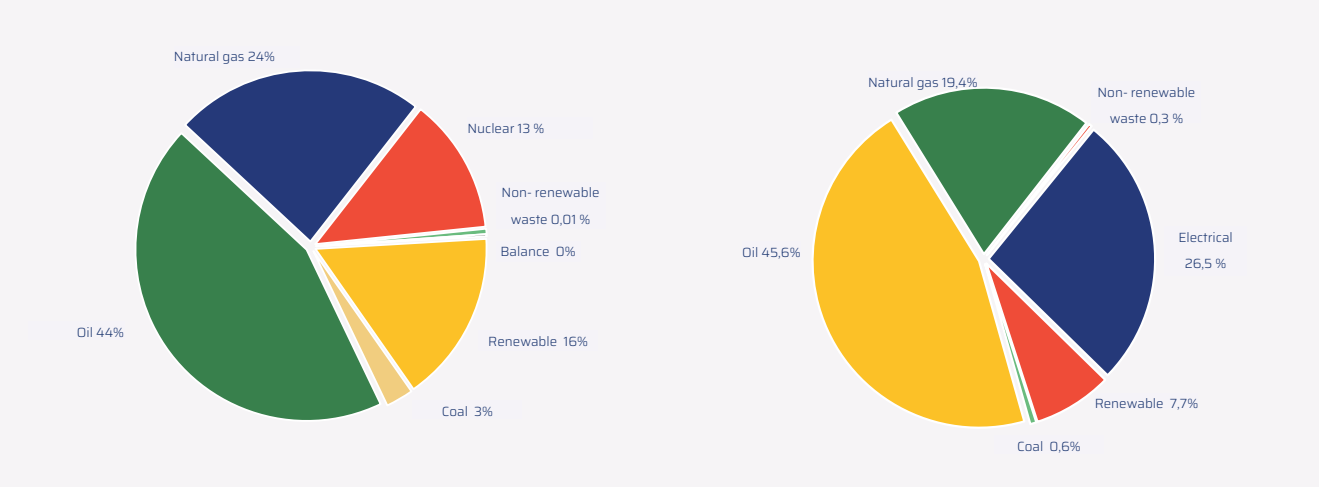


Chart 1. Gross available energy (left) and final energy consumption without international air transport (right), in 2022. Source: IDAE

The energy consumption of the residential sector in Spain for the years 2000 and 2020 is shown below.

Consumption in the residential sector [Mtep]		Coverage of energy demand		Thermal consumption per capita [toe/pers]	Electricity consumption per capita [kWh/pers]	Average surface area of dwellings [m²]	Average occupancy of dwellings [pers/dwel]
		Renewable energy [%]	Electricity [%]				
2000	12,06	22,1	31,1	0,205	1.077	89,04	3,11
2020	14,38	33,57	43,78	0,170	1.543	92,59	2,53

Table 2: Energy consumption in the residential sector for the years 2000 and 2020. Source: IDAE

According to IDAE sources, between 2000 and 2020, the sector's energy consumption grew until 2010 and then decreased slightly. End uses showed an increase in consumption by appliances, lighting and cooling, with the largest share of consumption in 2020 due to heating, followed by appliances and domestic hot water. Furthermore, when comparing unit consumption per use and per dwelling between 2000 and 2020, a decrease in consumption due to cooking and ACS was observed, while the use of household appliances increased.

Contribution of building construction to the 2030 climate goals at the national level

The Energy Efficiency Directive compels Member States to achieve a cumulative final energy savings target in two periods: from 1 January 2014 to 31 December 2020, and from 1 January 2021 to 31 December 2030. For the first period, the target is 15,979 ktoe, equivalent to 571 ktoe/year of new and additional final energy savings. For the second period, the cumulative target is 36,809 ktoe, which implies annual savings of 669 ktoe/year.

The 2030 climate goals at national level are defined the Law 7/2021 on climate change and energy transition:

- Reducing emissions in the Spanish economy as a whole by at least 23% by 2030 compared to 1990 and to achieve climate neutrality by 2050 at the latest.
- Making use of at least 42% of energy from renewable sources in final energy consumption.
- Achieving an electricity system with at least 74% of generation from renewable energy sources by 2030.
- Improving energy efficiency (EE) by reducing primary energy consumption by at least 39.5% compared to the baseline according to EU standards.

According to the National Integrated Energy and Climate Plan (under review at the time this document was written), the residential building sector has a target to achieve a total of 6,731.9 ktoe of cumulative final energy savings over the period 2021 - 2030. To this end, different plans are being implemented to achieve:

- Intervention on the thermal envelope of 1,200,000 dwellings over the whole period, starting with 30,000 dwellings/year in 2021 and ending with 300,000 dwellings/year in 2030.
- Renovation of thermal heating and DHW installations of 300,000 dwellings/year on average.
- Renovation of residential equipment and improvement of the refrigerators, freezers, washing machines, dishwashers and televisions energy class.

The same Plan establishes that the tertiary sector building sector should achieve 4,729.2 ktoe of cumulative final energy savings during the period 2021-2030, promoting the following actions:

- Energy renovation of 5 million m2 /year of the set of buildings of public and privately owned (thermal envelope, thermal facilities and lighting facilities).
- Improving the energy efficiency (EE) of cold-generating machinery and of large climate control installations in the tertiary sector and public infrastructures (lighting and water).

The cumulative final energy savings target of this Plan for the second period (2021-2030) is 36,809 ktoe, with annual savings of 669 ktoe/year, equivalent to 0.8% of the average annual final consumption of the three years prior to 1 January 2019. As described in the Plan, the main difference in the calculation between the two periods is that, for the latter, the 0.8% applies to all final energy consumption without exclusions and without flexibility mechanisms. This modification has increased Spain's ambition level by 57% for the period 2021-2030 compared to the previous cumulative savings.

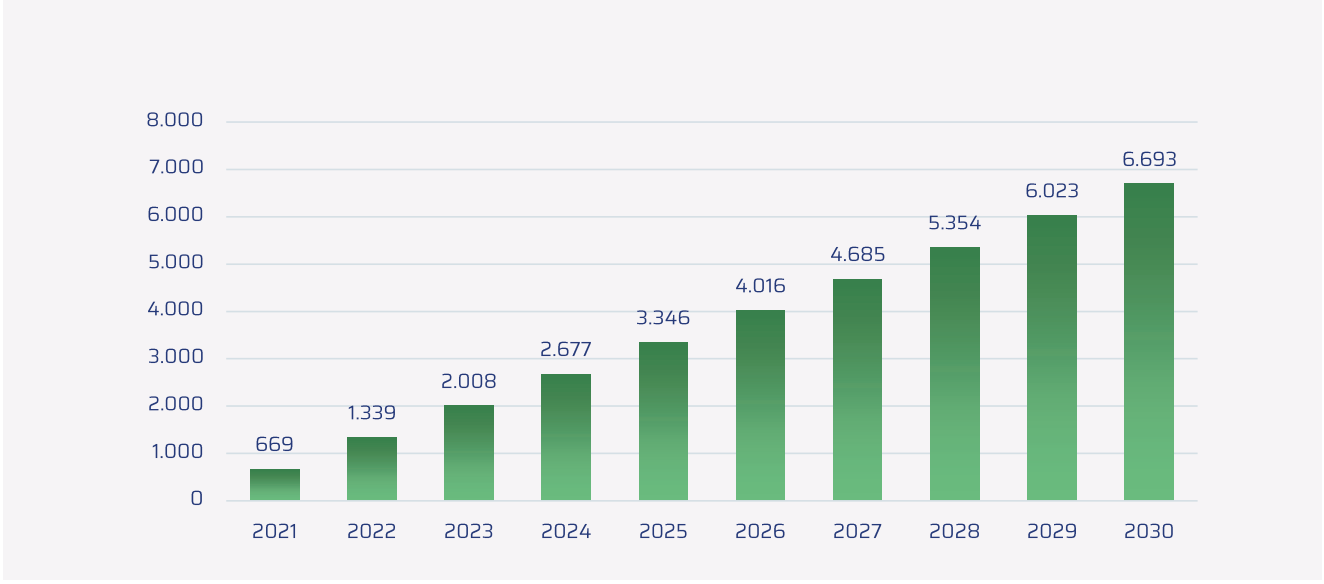


Chart 2. Cumulative final energy savings target for the period 2021-2030. Source: Prepared by the authors with data from the Ministry for Ecological Transition and Demographic Challenge. Note: Cumulative total 2021-2030: 36,809 ktoe

The largest contribution of the building sector to the objectives of the Energy Efficiency Directive comes from the energy renovation of existing residential buildings. These actions aim to improve the energy rating of buildings, in line with the Long-term Strategy for the Renovation of Buildings and the State Dwelling Plan, drawn up in collaboration with the Autonomous Communities. The PNIEC highlights the importance of EE certification as a key tool to encourage new investments in renovations.

The Plan prioritises investments in the improvement of the thermal envelope (façades, roofs and enclosures) over improvements in thermal installations, in order to reduce thermal demand and avoid over-sizing of heating and air conditioning equipment. This builds on the success of the PAREER Programme, which since 2013 has channelled more than 85% of funds towards improving the EE of the thermal envelope.

The measure aims to achieve cumulative savings of 4,755.9 ktoe of final energy over the period 2021-2030. These savings will be achieved through intervention on the thermal envelope of 1,200,000 dwellings, starting with 30,000 dwellings per year in 2021 and rising to 300,000 dwellings per year in 2030.

Chart 3. Indicative annual forecast of energy renovations 2021-2030. Source: Prepared by the authors with data from the Ministry for Ecological Transition and the Demographic Challenge, 2019. Note: total of 1,200,000 dwellings renovated 2021-2030

2.3 Number of professionals to be trained

The number of workers to be trained in energy efficiency (EE) and the use of renewable energy (REs) has been calculated by cross tabulating the number of workers in occupations and the estimated training needs.

Thus, considering the experts' assessments[1], it is estimated that they have needs for additional EE training and use of REs:

- Between 27,122 and 30,821 architects, engineers and other university technicians (EQF 6, 7, 8)
- Between 594,430 and 664,823 middle managers, construction skilled workers and fitters (EQF 3, 4 and 5) have additional training needs in EE and REs..

1 The experts rated the percentage of workers with additional training needs in Energy Efficiency and the use of Renewable Energy among the following options: 1%-10%, 11%-20%, 21%-30%, 31%-40%, 41%-50%, 51%-60%, 61%-65%, 66%-75%, 76%-85%, 86%-95%, 96%-100%.

Number of workers in main occupations	Architects, engineers and other holders of technical university diplomas (EQF 6, 7 and 8)		Middle management, officers and installers (EQF 3, 4 and 5)	
Number of workers in main occupations linked to Energy Efficiency and the use of Renewable Energies	41,094		782,145	
Percentage of workers with additional training needs in Energy Efficiency and use of Renewable Energies	66%	75%	76%	85%
Total number of employees with additional training needs in Energy Efficiency and the use of Renewable Energies	**27,122**	**30,821**	**594,430**	**664,823**

Table 3. Workers with additional training needs in EE and the use of RES. Source: Own elaboration based on data from the National Institute of Statistics and fieldwork conducted in the 'Status Quo: Study on the Current Overview of the Construction Sector in Spain' (Añadir hipervínculo: https://construye2030.fundacionlaboral.org/en/results/)

Additional workforce required

The study estimates the additional workforce needs to meet the objectives of the "Long-term strategy for energy renovations in the building sector in Spain (ERESEE)". As identified above, the targets aligned with the PNIEC 2021-2030, include the renovation of 1,200,000 primary dwellings and the construction of 1,367,040 new dwellings between 2021 and 2030, with an emphasis on nearly zero-energy buildings. The current workforce represents 56% of the workforce required to meet the 2030 targets.

Considering the number of workers expected to join the sector, as well as those who will retire in the next year, and those who have joined since the ERESEE came into force, the study estimates that 1,174,318 people would be needed by 2030.

This means that there would be 2,123,451 Construction workers in 2030. Considering job creation between 2021 and 2024, this implies that an additional 1,117,098 people would be needed in the sector in the coming years. However, by disaggregating between the most relevant occupations, those of medium relevance and those of low relevance, a more detailed picture of workforce needs is obtained.

Thus, 436,719 additional workers are needed in occupations that are highly relevant for the EU. Recruitment needs in these occupations are particularly important, as they are, in many cases, occupations with changing skill demands and closely related to energy efficiency (EE).

In a second tier, a total of 423,369 additional workers are needed in occupations of medium relevance and 257,010 in occupations not or not directly related to energy efficiency (EE).

2.4 Impact of the BUILD UP Skills Initiative in Spain

BUILD UP Skills is among the most important initiatives at European level whose specific focus is to address the training needs of the construction sector in its transition towards sustainability. BUS has made it possible to accompany the sector in national strategies and to anticipate future needs. In more than 10 years of implementation at the national level, the following progress has been achieved:

- Sustained collaboration over time between the most representative organisations in the field of education and training in the construction sector.
- Robust survey methodology to identify training needs.
- Creation of the National Qualification Platform, a multidisciplinary community of construction experts, which brings together the political, economic, social, educational and environmental spheres, and through which around 500 professionals have passed for more than a decade.
- Development of the platform, 'Red Construye: training and skills', thanks to which the collaborative space of the community of experts mentioned in the previous point has been digitalised. This platform aims to

2 The development of the methodology followed is detailed in the Status Quo: Study on the Current Overview of the Construction Sector in Spain report, available online. (Añadir hipervínculo: https://construye2030.fundacionlaboral.org/en/results/)

be a meeting point and a place of reference that facilitates the different entities specifically linked to training and employment in the sector to discuss the training needs of the entire value chain of the sector. In this way, a community organised around four main working groups (which will be expanded according to the needs of its members) has been made available to the sector: Energy Efficiency (EE) and Renewable Energies (REs); Industrialisation and Digitalisation; Circular Economy and Attraction to the sector.

- Raising awareness of sustainable construction and the importance of training for the entire value chain in the sector. BUILD UP Skills has been a key catalyst in engaging the most influential entities in formal and non-formal sectoral training. In particular, it has had a significant impact on those linked to vocational training levels, boosting training in the field of sustainable construction and promoting its importance in achieving adequate building energy performance.

- Anticipation and response to the training needs of the sector to meet climate goals and the requirements established by European directives, through different roadmaps based on sectoral studies that have allowed not only the identification of the training demands of the labour market, but also the emerging skills and occupational profiles.

- In this sense, in the field of non-formal training, thanks to BUILD UP Skills six training actions developed within the framework of this initiative have been included in the Catalogue of Training Specialities, being available to the sector through different calls, which has activated the participation of more than 2000 students. These training actions, according to the name given in the projects:

  - Energy Efficiency for Operators (8 hours)
  - Energy efficiency for middle management (8 hours)
  - Thermal insulation of buildings (60 hours)
  - Aluminium and PVC carpentry (60 hours)
  - Heating and air conditioning systems (60 hours)
  - Cost-effectiveness of energy efficiency in buildings (20 hours)

- Furthermore, in the scope of formal training, the existing professional qualifications in what regards EE have been updated, and the development and publication in the BOE of 2022 of the professional qualification "Energy Audit", transferring it to the Specialisation course on Energy Audit, currently available.

- Also derived from the aforementioned roadmaps, instruments to support training in the construction sector have been made available to the sector: manuals for teachers, applications for mobile devices and the eco label, a system for the recognition of skills in sustainable construction.

In short, BUILD UP Skills means, in Spain, activating the sector in the qualification of its professionals to achieve the climate goals. Activation coordinated by Fundación Laboral de la Construcción, promoted by the partner entities of the consortia formed throughout the four projects developed since 2011 and supported by numerous organisations, as will be detailed throughout this document.

Finally, this work continues with the implementation of some of the measures proposed in the Roadmap that is the subject of this document through the Construye 2030 plus project (which starts in October 2024), such as, for example, the provision of means to bring training closer to workers in the sector through a mobile classroom or specific training on the recently published Directive on EE in buildings.

2.5 Barriers to qualification in the construction sector

Limited access to training through public and private resources

Currently, the number of people accessing energy efficiency (EE) training is insufficient. The reasons for this include a lack of awareness of the diversity of training on offer and the lack of attractiveness of the sector, especially among youth. Continued and sector-specific public funding is a clear support to be able to offer training in the sector with a medium to long term objective.

Difficulty in establishing a training offering anticipating market needs.

There is an occasional lack of alignment between the qualifications offered and the skills required in companies. Training centres need to design or update tools to detect training needs in line with the rapid changes in the sector, especially in EE, use of renewable energies (REs), digitalisation and circularity.

Difficulties of the education system in responding to market needs

As new occupational profiles emerge, new skills will need to be acquired. These may be linked to the requirements of current regulations, but also to the expansion of a particular construction system. The new construction and skills models require evolution, and public-private collaboration is essential to adjust the training offer to the needs of both companies and workers.

Need for flexibility in the framework for channelling funding and in the requirements of the training offer.

Developing agile financing models and public-private partnership models adapted to the needs of both companies and workers is essential. In addition, more flexibility is required in the timetable for training, in the minimum number of participants and in the modes of delivery in order to ensure the continuity of the training cycles.

Difficulties in implementing Dual Vocational Training

There are difficulties in adapting regulatory requirements in an atomised sector, whose business fabric is mostly made up of companies with less than 10 workers. For this reason, dialogue between all the players in the sector involved is necessary.

Regulatory rigidity and insufficient trainers

It is best suited to the training system that teachers have a university academic profile and experience in the sector. Regulations governing access to the teaching profession for blue-collar profiles are very rigid, prioritising the need for teachers to have university degrees over experience in the sector. This regulatory rigidity is causing the loss of a chain of knowledge that is difficult to recover. On the other hand, specialised trainers have contracts limited to the duration of the specific course and work in multiple training centres, which limits their further training.

Low attractiveness to women and youth

Construction is perceived as unattractive in large sections of society, especially among youth and women. The stigmatisation suffered as a result of the 2008 crisis, the perceived lack of recognition of professionals and the traditional masculinisation of the sector are some of the causes, the consequence of which is the current difficulty in the generational changeover in the sector, especially in blue-collar profiles.

Business atomisation

For SMEs in the construction and associated sectors, the training of workers involves a greater organisational effort than for a large company, where more resources are available. On the other hand, in SMEs the number of workers to be trained is smaller and therefore economies of scale are not available. Despite this, SMEs rely on business associations, advisory and consultancy firms to keep companies up to date in terms of training.

Differences in the training of workers

There are great differences in terms of skills to achieve the 2030 goals for different groups depending on their qualifications and occupations within the sector. Highly

qualified technical staff need to acquire and develop more skills related to the application of EE and REs, although they have more possibilities, and a greater capacity to adapt than operators.

High turnover and lack of generational replacement

There is an alarming shortage of workforce in the construction sector, particularly in the comprehensive renovation segment. There is a higher turnover among senior and middle management due to the shortage and lack of generational replacement, which makes it difficult to plan the training of workers.

Lack of knowledge of the sector by vocational guidance networks

Vocational guidance requires further efforts, as in early stages of education construction is not always considered as an option. They need to be aware of the evolution of the sector, its demand and the training available.

Limited adaptation to the needs of foreigners

The construction sector appears as a host sector, after the necessary training, for migrants who have no qualifications or experience. During their training they encounter cultural and language barriers that make learning difficult. Attracting more migrants therefore requires tailored training resources.

Alignment between training supply and relative job demand

In order to make an effective transition from training to employment, a clear alignment between the training offer and the jobs demanded by companies is necessary, as well as giving more weight in training to the practical part in real environments. The accelerated pace of upgrading in the sector outstrips the system's capacity to update training provision.

Again, a lack of continuity in funding is identified in certain training cycles, which may affect the consistency and effectiveness of learning.

Shortage of training centres

The general lack of students in the sector is causing a reduction in the number of construction training centres, which in turn makes it difficult, especially in rural environments, for students who are interested in the sector to have an accessible training centre.

3.Strategy and methodology for the preparation of the National Training Roadmap 2030

The strategic objectives when preparing the Roadmap are:

- To collect proposals for measures with the **objective of offering specific solutions to the need to qualify professionals** of the whole value chain of the building sector in those construction activities where a special competence gap has been identified.
- Attracting youth and women to the sector, as well as retraining workers from highly polluting industries such as mining.
- Planning such measures t**o be able to implement them from 2024 to 2030**.
- Defining measures through a set of agreed parameters.
- Ensuring that the identification of these measures has been and is the result of the **collaborative work of sector professionals in different areas of building construction**.
- Using the Quintuple Helix methodology for the identification of measures and their distribution in an Action Plan. This methodology ensures the inclusion of five types of perspectives and of stakeholders in the construction sector: **political, economic, social, training and environmental**.
- Complement the work developed in the Construction Blueprint project.
- Being in line with the Skills Pact in construction as part of the European Skills Agenda.

The strategy has been divided into 3 phases: The initial internal phase of organisation and selection of baseline measures; the interAverage scorete phase of broad consultation with sector experts through participatory workshops; and the final phase of processing results, validation and gathering support for the final version of the Roadmap document.

Initial phase. Internal organisation and selection of basic measures.

As part of the initial phase of the strategy, the first task has consisted in performing a **biographical revision** which has included: the National Roadmap of the Project "Construye 2020", the roadmap and Action Plan for the project "Construction Blueprint", the Recommendations for the working groups for implementing ERESEE 2020 (Long-term energy renovation strategy in the building construction sector in Spain) and the report 'Status Quo. Study of the Current Overview of the Construction Sector in Spain' of the "Construye 2030" project.

The review has been an essential starting point, in which measures that have been considered relevant for the development of the National Training Roadmap 2030 have been compiled. For each measure, an assessment has been made of the sectoral need it intends to address, the skill barrier of the sector concerned (out of the 15 identified in the above-mentioned Status Quo. Study on the Current Overview of the Construction Sector in Spain'), the target groups of the measure, the type of measure (training, support to training and employment systems, attraction to the sector) and the topics covered (Energy efficiency and renewables, Digitalisation and industrialisation, Circular Economy, Attraction to the sector).

The second task consisted in answering a questionnaire whose objective was to define the **descriptive fields of the measures and action plan** considered relevant to be included, which helped to structure the National Training Roadmap 2030. The questionnaire has considered the fields indicated by CINEA, the current lead agency of the BUILD UP Skills initiative, both for the measures and for the action plan; those fields considered in the Roadmap 2020; as well as new fields identified as necessary by the consortium.

After completing the initial phase of the strategy, the results of the analysis and the questionnaire were processed. With all this, the deliverable **D4.1 National Training Roadmap 2030** was prepared.

Intermediate phase. Broad consultation with sector professionals through participatory workshops

The first task of the intermediate phase has been to identify and set up working groups to broaden the discussion on the measures to be included in the Roadmap and its action plan. These groups have been formed by including different players from the construction sector and the field of university education and vocational training.

Chart 4 shows the types of entities involved in the working groups formed during the intermediate phase to broaden the discussion on the measures to be included in the Roadmap and its action plan. Different actors from the construction sector and from the field of university education and vocational training participated. Specifically, 19 participants came from Vocational Training Centres and universities, 11 from companies in the sector and business associations, 9 from public administrations, 8 from trade unions, and 8 from other entities specialised in construction, such as professional associations and entities promoting the sector.

Out of the 55 participants, 36 of them are women and 19 of them men. Similarly, a varied geographical representation was sought, with the participation of professionals from 8 Autonomous Communities/provinces: Aragón, Castilla-La Mancha, Castilla y León, Canary Islands, Madrid, Navarra, Basque Country and Valencia.

Once the group was formed, and according to the timetable established for the collaborative development of the Roadmap, three workshops or working groups were designed following a methodology established to facilitate progress in the generation of ideas and agreements of the group, which is developed below. The formulation of the measures to be incorporated in the National Training Roadmap 2030 has required the implementation of a participatory process, essential to ensure the participation of different relevant players in the field of sectoral training and the exchange of ideas and comments.

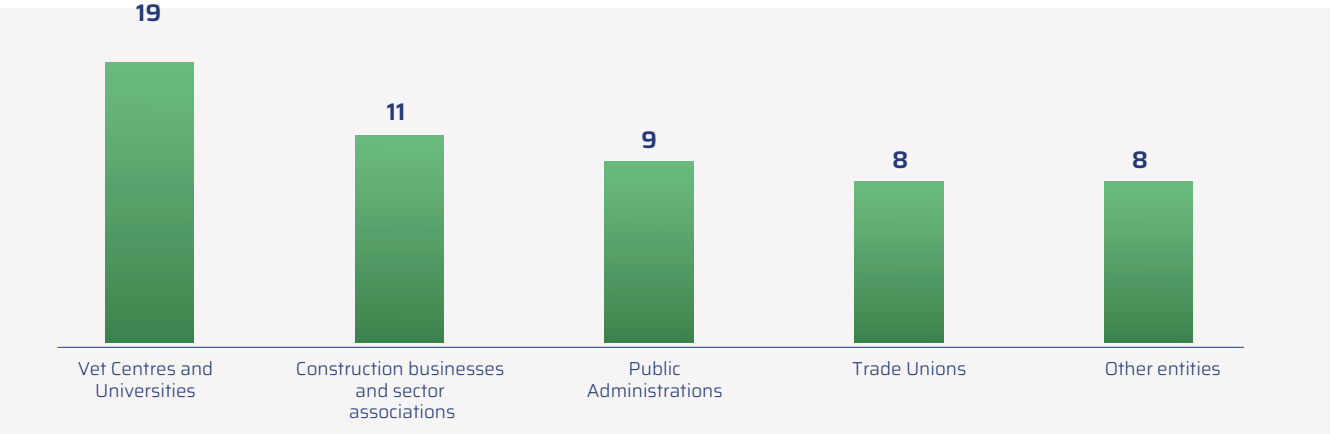


Chart 4.Types of entities that participated in the preparation sessions of the Construye 2030 Roadmap.

The aim of the working groups was to analyse the different perspectives, through collaborative dynamics, on the following aspects:

- List of priority measures to be included in the National Training Roadmap 2030.
- Defining these measures and their further description.
- Assessment of the feasibility of these measures in terms of time planning
- Compilation of complementary information to be considered.

To achieve these results, the dynamics of each workshop have incorporated a series of participatory exercises, both in plenary sessions and in small groups, designed to maximise the effectiveness of the working sessions. These dynamics allowed the group's ideas to be collected visually, while promoting an enriching debate. Examples include the following:

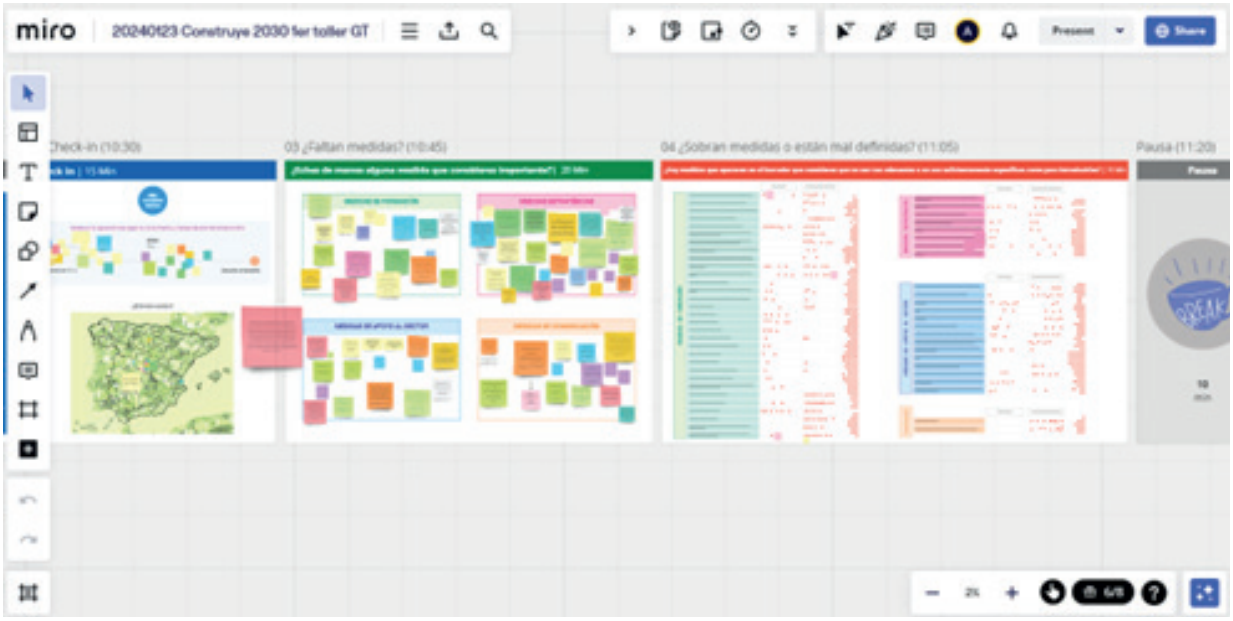
- Integration exercises: Initial activities to facilitate interaction between participants and to familiarise them with the tools and methods used.

- Idea generation: Brainstorming sessions on measures, emerging occupational profiles and new skills, using digital notes to collect input.

- Evaluation: Questionnaires for scoring measures, allowing prioritisation according to relevance, ease of implementation and potential impact.

- Voting process: Use of stickers to vote on statements that assess the group's consensus on certain outcomes, as well as their role and commitment to implementing actions within each participating organisation.

Due to the characteristics of the participants in the working group and its territorial distribution, it was decided to organise online working sessions, ensuring a larger attendance. In order to facilitate this type of collaborative processes in online format, the MIRO tool has been chosen for the design of the exercises and dynamics of the workshops.

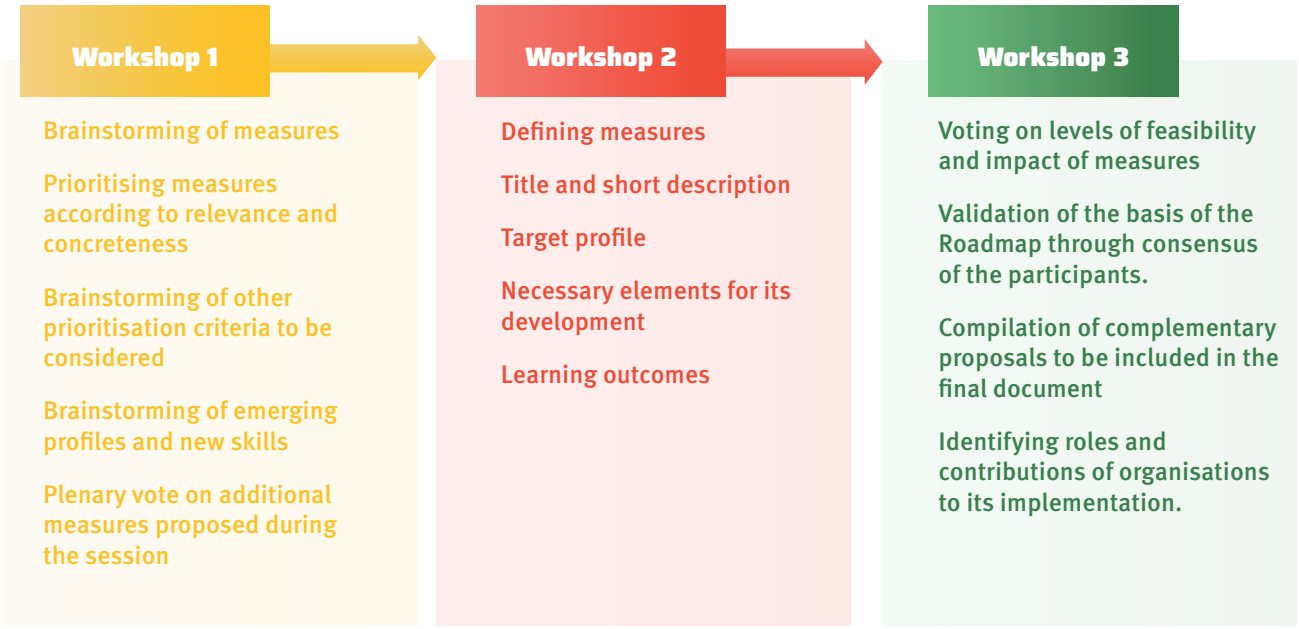


Caption 1. Screenshot of the first working session (January 2024.)

3 To follow up on the 2030 Roadmap and for future update of this document, it is recommended to conduct a territorial assessment of the different training needs and occupational profiles that vary depending on the industry existing in each territory, and the type of construction.

The three workshops were held **between January and April 2024**, with an average participation of 30 people each. During each session, participants were subdivided into **four discussion groups** to facilitate discussion and exchange of ideas, which were then shared with the rest of the groups in a plenary session.

The preparation of the Roadmap has not been a linear process but has required a continuous review of the list of measures and their structure from a more cross-sectional viewpoint to ensure a balance between vocational training measures, university training, measures to support training and employment systems and measures to attract people to the sector.



lustration 4. National Training Roadmap 2030 development process through the organisation of different collaborative workshops.

The table below in summarises the exercises conducted by the working group in the three working sessions. The agendas of each workshop and the complete MIRO boards can be consulted through the following links:

Date	Collaborative agenda and dashboard at MIRO	
23/01/24	Workshop 1	https://miro.com/app/board/uXjVN4b5ZEA=/?share_link_id=278315469048
06/03/24	Workshop 2	https://miro.com/app/board/uXjVNpLlam8=/?share_link_id=261798505118
29/04/24	Workshop 3	https://miro.com/app/board/uXjVKQeGWfI=/?share_link_id=850112915358

Table 4. Links to the MIRO dashboards of the working groups for the preparation of the National Training Roadmap 2030

Table 4. Links to the MIRO dashboards of the working groups for the preparation of the National Training

Roadmap 2030.

Once the phase of co-creation of the Roadmap measures and their characteristics has been completed, the consortium has worked in a coordinated manner to analyse the results of the workshops in order to transfer the content and the participants' assessments to the present document.

The following chapter includes the complete list of measures and a detailed sheet per measure where a series of fields are described according to the type of measure.

It is important to mention that, in addition to the workshops or working groups mentioned above, other events have been held during the period of preparation of the National Training Roadmap 2030 within the framework of the Red Construye: training and skills.

On the one hand, five of the seven Support Seminars organised (the remaining two have taken place in the process of drafting the Status Quo report), with the aim of transferring the results of the 'Status Quo report key players in the sector (social players, public administration, companies, training centres, professional associations, etc.). Study on the Current Overview of the Construction Sector in Spain', the objectives of the National Training Roadmap 2030 and to generate a debate on training solutions to the current challenges of the sector. The social partners in the construction sector (CNC, CC.OO-Habitat and UGT-FICA), GBCe and FLC had the opportunity to transfer these objectives to their organisational structure and their networks, gathering information that has been transferred to the different working sessions: proposals for training actions and measures to attract the sector mainly.. These seminars have also been beneficial in promoting formal support for the National Training Roadmap 2030.

On the other hand, seven Dissemination events have been held with the aim of disseminating the project results achieved so far to a more general, but mainly sectoral, public. In this sense, CNC, CC.OO-Habitat, UGT-FICA, Fundae, GBCe, FLC and IETcc. The latter was of particular importance, as it dealt with the industrialisation of the sector, and specific training needs were identified from this perspective, which were also passed on to the National Training Roadmap 2030 working groups.

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4. The Roadmap

4.1 Structure of the measures

The measures that make up the Roadmap are grouped into:

- Training: Training: these are new training actions or the updating of existing training actions. A distinction was made between those aimed at blue-collar and white-collar profiles. In addition, they have also pointed out those measures of a transversal nature when referring to recommendations of areas of knowledge or competences to be introduced in the education and training system, in general. Training measures are those aimed at developing new training actions (for emerging competences or professional profiles) or updating existing ones.

  With regard to training aimed at non-university students, it is important to mention that, according to the people collaborating in the development process of the Roadmap 2030, there is currently training related to energy efficiency and the use of renewable energies. However, it is also recognised that there are necessary competences that are not yet fully present in the works. In the area of continuous training, it is proposed to organise existing training into specialised training pathways in energy refurbishment, to update the contents by integrating new perspectives and to create attractive training resources.

  The training aimed at university profiles responds to emerging and required competences for the design of nearly zero-energy buildings and for the design and management of integral building renovations.

- Support for training and employment systems: measures aimed at improving the training system and its connection with the labour market.

- Attraction to the sector: support measures to incorporate women, youth and professionals from other sectors.

Each of the proposed measures forming part of the National Training Roadmap 2030 is described in a sheet containing a series of fields linked to the description and categorisation of the measure (Block 1). On the other hand, also for each measure, the action plan (Block 2) contains the elements that will be necessary for its development and implementation.

Thus, the sections that make up the sheet for each measure are described below.

Description of each sheet field

Title of the measure	**Alphanumeric code allowing the identification of the measure:** • TF: training measures and transversal competences • FP: training measures for blue-collar profiles • FU: training measures for white-collar profiles • AP: measures to support the education and employment system • TA: support measures to incorporate women, youth and other professionals into the sector

Type of measure	Barrier
• Cross-cutting training • Training for blue-collar profiles • Training for white-collar profiles • Support for training and employment systems • Attraction to the sector	This field identifies the barrier(s) to the qualification of the sector addressed by the measure. These barriers correspond to those detected in the 'Status Quo. Study on the Current Overview of the Construction Sector in Spain' and described in Chapter 2 of this report.
General description and elements of the measure	
Explanation of the measure	

CHARACTERISATION OF THE MEASURE		
EQF Level	Main occupations	Code
Level of the training proposed in the measure, according to the Spanish Qualifications Framework for Lifelong Learning (EQF).	Main occupations concerned by the measure	Occupational Code, according to the National Classification of Occupations (CNO)

Target group(s)	Final beneficiaries of the measure (blue-collar and white-collar profiles; businesses, workers, training centres, among others).
Impact level	
Six levels of incidence or impact are considered: Household members; Women, youth and workers in polluting industries; Workers in the sector; Social agents; Companies; Regulatory agents.	
Learning objectives	Main contents of the proposed training actions
Transversal skills and techniques	Training subjects that are considered to be transversal to the proposed training measure.
Other informaiton	Details of the measures which have not been mentioned in the Block, but which are considered relevant for their definition.

ACTION PLAN
Timing of the proposed measure in the period from 2024 to 2030, identifying graphically the beginning of the preparation phase, the development and rollout phase and the follow-up phase.

FINANCING	
Financing mechanisms	Identification of possible public or private mechanisms for the financing of the measure, as well as the estimated cost of the measure
Costs for implementing the measure	Estimated costs for the development, rollout and follow-up of the measure.
Certification and accreditation foreseen	If applicable, this field shall indicate whether the proposed measure leads to certificates or diplomas officially recognised by the Ministry of Education and Vocational Training.

FEASIBILITY ANALYSIS This section presents the results of the working group's assessment of the indicators of relevance, ease and impact of the measure. The figures are shown in green when their score is above the average of the assessments of the corresponding indicator, and in orange when it is below that average		
Relevance	Ease	Impact
Level of importance of the proposed measure for the achievement of national and European climate objectives.	Level of effort required for implementation	Degree of effect expected after implementation of the measure: • For training measures, impact on the quality of the productive system. • For measures to support the education and employment system, increase in the number of students and/or qualified professionals in the sector. • For measures to support the incorporation of women, youth and other professionals into the sector, impact on the number of new workers of these profiles
(1=slightly relevant; 4=very relevant)	**(1=very difficult; 4=very easy)**	**(1=very little impact; 4=very much impact).**

Table 5. Descriptive table of the fields of the measures. Note: The measures of Support to training and employment systems and Attraction to the sector do not contain in those fields included in the block 'Characterisation of the measure'"

4.2 National targets affecting the Roadmap Action Plan

Baseline data (2020)

Topic	Baseline data (2020)	Source
Renovations	30,000 dwelling renovations/year	PNIEC 2020
Clean energy	Electric mix 45% non-emissive	
Free fossil fuel systems	31% energy of Households on Renewable Energy	
Employment	56% of the workforce required for 2030 targets	Status Quo. Study on the Current Overview of the Construction Sector

Table 6. 1.:National targets on renovations, clean energy and installation, and employment. Source: Prepared by the authors based on the sources indicated in the table.

Status Quo Estimates - Construye 2030

Topic	Projection		Source of targets included in the calculation
Training	Total number of workers with additional training needs in energy efficiency and renewable energies EQF levels 6-7-8	Between 27,122 and 30,821	**ERESEE 2020 and PNIEC 2021-2030**
	Total number of workers with additional training needs in energy efficiency and renewable energies EQF levels 3-4-5	Between 594,430 and 664,823	
Employment	Additional workforce needed in occupations highly relevant to energy efficiency	436,719	
	Total number of workers needed to meet the sector's 2030 climate goals	2,123,451	

Table 6.2: Training and employment estimates. Source: Prepared by the authors based on fieldwork conducted in Status Quo. Study on the Current Overview of the Construction Sector

Quantitative objectives according to the national and European regulations in force during the period of the Roadmap's preparation.

Topic	Goal	Source	Compliance date
Digitalization	Climate and ventilation automation and control on Non-residential buildings > 290 kW	EPBD 2024	**2025**
	Climate, lighting and ventilation automation and control in Non-residential buildings > 70 kW	EPBD 2024	**2030**
Reduction of CO2 emissions	GWP limits on new buildings > 1,000 m^2 and all new public buildings to be ZEB	EPBD 2024	**2028**
	55% reduction compared to 1990	European Green Deal	**2030**
	GWP limits on all new buildings and all new buildings to be ZEB	EPBD 2024	**2030**
Free fossil fuel systems	Solar energy on roofs of existing public and non-residential buildings > 500 m^2	EPBD 2024	**2028**
	44% renewable household energy	ERESEE 2020	**2030**
	Solar energy on roofs of new residential buildings and new car parks	EPBD 2024	**2030**

Topic	Goal	Source	Compliance date
Clean energy	81% non-emissive energy mix	PNIEC 2023	**2030**
Renovations	1.377 million energy renovations	PNIEC 2023	**2030**
	Minimum Energy Performance Standards (MEPS) 16% less efficient non-residential buildings	EPBD 2024	**2030**
Vocational Education Training	Accreditation of occupational skills acquired through work experience of 2,000,000 people in units of skill of the National Catalogue of Professional Qualifications (CNCP in its Spanish acronym).	Strategic Plan for the Promotion of Vocational Training in the Spanish National Recovery and Resilience Plan[3]	**2025**
	Publication of at least 50 new vocational training qualifications.		
	Updating of 80% of the National Catalogue of Professional Qualifications.		
	Participation in modular training actions aimed at reskilling and upskilling 718,000 employed and unemployed people.		

Table 7. Quantitative objectives according to the national and European regulations in force in the period of preparation of the National Qualification Roadmap 2030.

4.3 Criteria for the action plan

In order to define the timetable for the Roadmap action plan up to 2030, a series of premises and criteria have been established to justify the year in which each phase of the measures begins: preparation phase, development and rollout phase, and follow-up phase

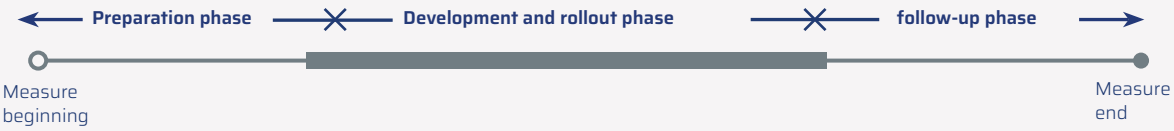


Illustration 5. Graphical example of a description and symbology used for the development of each measure in the Action Plan

- Preparation phase: estimated time to identify the prerequisites needed to start the next phase.
- Development and rollout phase: time of execution of those materials or resources necessary to implement the measure in question.
- Follow-up phase: time dedicated to review, check the implementation and include any updates, if necessary, by the players involved in the development phase.

As a general rule, the preparation phase of all measures lasts half a year. Similarly, the overall duration of the follow-up phase will be half a year .

Unlike the preparation and follow-up phases, the preparation phase has a flexible duration. Depending on the type of measure, the duration of the development phase will be half a year, 1 year or more than 1 year.

In the case of training measures, a duration of less than one year is taken as a standard for the implementation and development, except for training pathways, where the duration will be one year.

4 These objectives are global, as there are no specific objectives for training in the construction sector.

5 In parallel, monitoring indicators have been foreseen as specified in chapter 5.

The criteria defining the short or medium term are:

A. The regulatory requirements at the national or European level that apply to the measure.

B. The dependence on one or more public administration(s) or public entities for the implementation of the measure, and the consequent coordination with the private sector.

Applying the criteria, the measures addressing the attractiveness of the sector are in the short term, due to the urgency of incorporating women, youth and other professionals in order to achieve the climate goals proposed in the Roadmap. Linked to these measures, training actions for white-collar and blue-collar profile linked to the new regulatory requirements in terms of sustainability and digitalisation will also be implemented in the short term.

In the medium term, measures to support training and employment systems have been placed in the medium term, as most of them are measures in which public administrations or entities with skills for the implementation of the measure are involved.

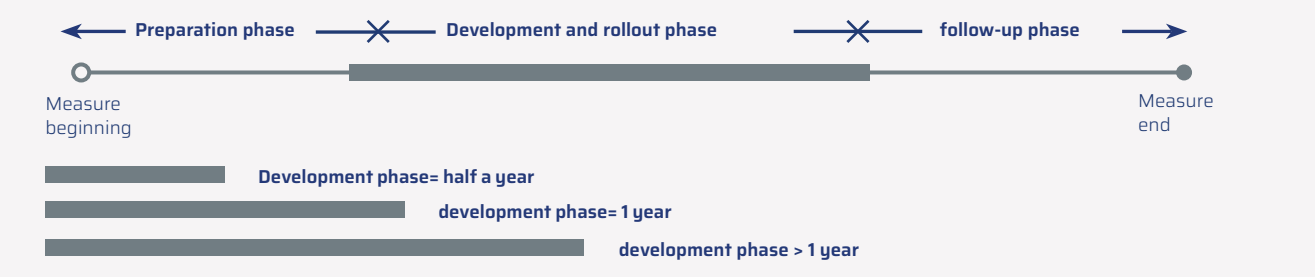


Illustration 5. Graphical example of a description and symbology used for the development of each measure in the Action Plan

Furthermore, in the Action Plan, the development and implementation phase of each of the measures is characterised in a different format, depending on the level of linkage to regulatory requirements or the number of bodies involved:

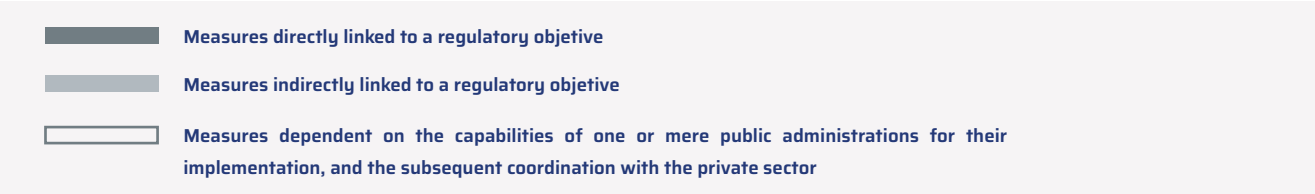


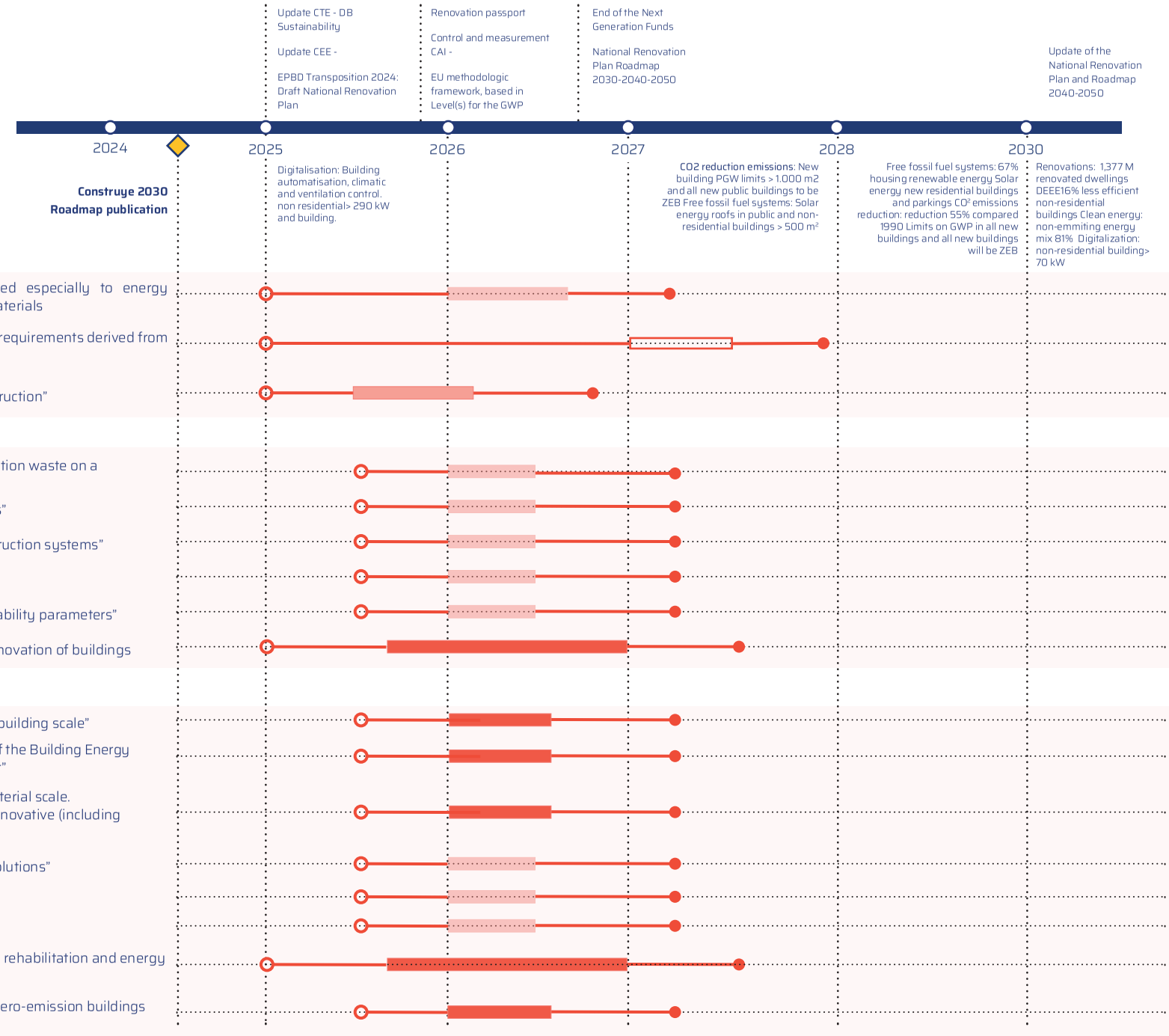
Illustration 6. Characterisation of the measure represented in the Action Plan

The complete list of measures and the chronogram following the above-mentioned criteria are shown in the next section.

6 Since the present Roadmap covers a 6-year period, it refers to short- and medium-term measures, without including long-term measures, which may be considered in future updates and extensions of this action plan.

7 Criteria A will prevail over Criteria B.

Training and cross-sectional skill measures


Update CTE - DB Sustainability
Update CEE -
EPBD Transposition 2024: Draft National Renovation Plan
Renovation passport
Control and measurement CAI -
EU methodologic framework, based in Level(s) for the GWP
End of the Next Generation Funds
National Renovation Plan Roadmap 2030-2040-2050
Update of the National Renovation Plan and Roadmap 2040-2050
2024
2025
2026
2027
2028
2030
Construye 2030 Roadmap publication
Digitalisation: Building automatisation, climatic and ventilation control. non residential> 290 kW and building.
CO2 reduction emissions: New building PGW limits > 1.000 m2 and all new public buildings to be ZEB Free fossil fuel systems: Solar energy roofs in public and non-residential buildings > 500 m²
Free fossil fuel systems: 67% housing renewable energy Solar energy new residential buildings and parkings CO² emissions reduction: reduction 55% compared 1990 Limits on GWP in all new buildings and all new buildings will be ZEB
Renovations: 1,377 M renovated dwellings DEEE16% less efficient non-residential buildings Clean energy: non-emmiting energy mix 81% Digitalization: non-residential building> 70 kW
Training and cross-sectional skill measures
Update training in occupational risk prevention linked especially to energy renovations and emerging risks due to the use of new materials
Review of formal training, integrating new sustainability requirements derived from new European regulations
Training action on “Soft skills linked to sustainable construction”
Training measures for blue-collar profiles
Training action “Management of construction and demolition waste on a construction site for operators”
Training action “Efficient building dismantling techniques”
Training action “On-site assembly of industrialised construction systems”
Training action “Assistant in waste auditing”
Training action “Measurement and evaluation of sustainability parameters”
Training offer for specialists in comprehensive energy renovation of buildings
Training measures for white-collar profiles
Training action “Life Cycle Analysis and Management at building scale”
Training action “Regulatory update on the requirements of the Building Energy Certificate including the global warming potential indicator”
Training action “Preparation of Life Cycle Analyses at material scale. Environmental Product Declarations for traditional and innovative (including bio-based) building materials”
Training action “Urban regeneration and nature-based solutions”
Training action “Construction waste audit”
Training action “Industrialised systems”
Training offer for the integrated management of building rehabilitation and energy communities
Training action “New regulations for the construction of zero-emission buildings within the Technical Building Code”

Update training in occupational risk prevention linked especially to energy renovations and emerging risks due to the use of new materials — FT01

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Cross-sectional training	Difficulties of the education system in responding to market needs

General description and elements of the measure

Updating of occupational risk prevention (ORP) training focused on energy renovations and the emerging risks associated with the use of new materials, both those introduced in recent years and those that may arise in the future. Special emphasis should be placed on raising awareness of the risks of asbestos and its identification by all workers on site, due to its high presence in the old building stock.
Updating ORP training requires identifying novel materials, including insulation and sealing materials, finishing, bituminous, and sustainable materials, analysing the existing scientific evidence that materials pose risks, and finally, updating existing ORP training in the construction industry.

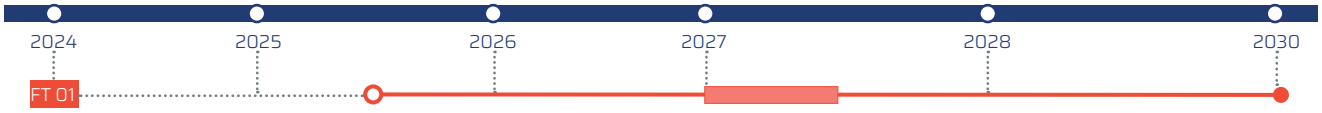
EQF Level	Main occupations	Code
1-8	Construction workers, in general	N/A
Target groups	Construction workers, in general	

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	N/A
Cross-cutting skills and techniques	• Health and safety • Energy transition of the building sector • Inclusions • Teamwork
Miscellaneous	The training must be specific to the job or function performed by the worker, in accordance with Law 31/1995 on the prevention of occupational hazards. The General Agreement of the Construction Sector includes compulsory training in occupational risk prevention for those workers subject to the Collective Agreement of the construction sector

ACTION PLAN



Financing

Financial mechanisms	Training financed in accordance with the provisions of the collective bargaining agreement for the sector.
Development costs of the action	Update of the training action with 20 face-to-face hours including: • Design and micro-programming of the training action: €2,000-€3,000 • Teaching material: development, revision and layout: €3,000-€5,000 • Pilot course: €5,000-€7,000 **Total: €10,000-€15.000**

Feasibility Analysis

Relevance	Ease	Impact
3,30	**3,05**	**3,05**
Average score 3,53	Average score: 2,84	Average score: 3,32

Table 8: Measure FT01. Update training in occupational risk prevention linked especially to energy renovations and emerging risks due to the use of new materials

Review of formal training, integrating new sustainability requirements derived from new European regulations — FT02

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Cross-sectional training	Difficulties of the education system in responding to market needs Low attractiveness of the sector for women and youth

General description and elements of the measure

Integration of new knowledge on energy efficiency, circular economy, healthy building, digitalisation, new materials and innovative solutions in formal training in accordance with the sustainability requirements derived from the new European regulations affecting the construction sector.
This requires a thorough analysis of the training needs arising from the European directives, identifying and integrating changes in existing training and retraining actions.

EQF Level	Main occupations	Code
1-8	Construction workers, in general	N/A

Target groups	Construction workers, in general

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	N/A
Cross-cutting skills and techniques	• Teamwork • Effective communication • Troubleshooting
Miscellaneous	The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN

Financing

Financial mechanisms	Public funds for training
Development costs of the action	Analysis of the different training actions affected by the new requirements derived from the new European regulations, in regulated training for white-collar and blue-collar students - €20,000. Exhaustive analysis of training needs arising from European directives: € 20,000 **Total: €40,000**

Feasibility Analysis

Relevance	Ease	Impact
3,67	**1,78**	**3,33**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 9: Measure FT02. Review of formal training, integrating new sustainability requirements derived from new European regulations

Training action on "Soft skills linked to sustainable construction" FT03

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Cross-sectional training	Difficulty in establishing a training offering anticipating market needs. Difficulties in implementing Dual Vocational Training

General description and elements of the measure

Development of training actions that develop new knowledge and cross-sectional skills to support the green transition in construction according to the European Classification of Skills, Skills, Qualifications and Occupations (ESCO).
Once the green personal and social skills have been identified, they should be stratified by the different site profiles (site managers, construction workers, installers, etc.). Micro-programming should then be developed and integrated into existing training

EQF Level	Main occupations	Code
1-8	Construction workers, in general	N/A

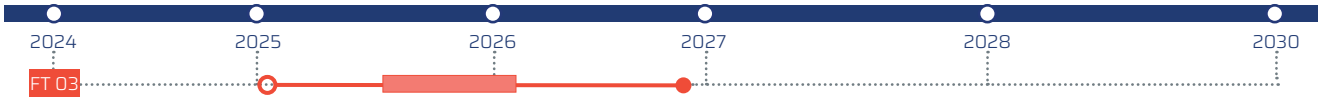
Target groups	Construction workers, in general

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	Know and communicate the advantages and benefits of sustainable materials to customers and colleagues.
Cross-cutting skills and techniques	• Energy transition of the building sector • Customer Service
Miscellaneous	More information on green skills and ESCO here It is suggested to develop an educational resource, such as a Basic Guide to Sustainable Building, which includes the essential cross-cutting skills to facilitate the energy transition of the sector.

ACTION PLAN



Financing

Financial mechanisms	Public funds earmarked for training.
Development costs of the action	• Implementing the training action would require 8 face-to-face hours, including: • Design and micro-programming of the training action: €1,000 - €2,000 • Teaching material: development, revision and layout: €1,000 - €2,000 Pilot course: €4,000 - €6,000 **Total: €6.000- €10.000**

Feasibility analysis

Relevance	Ease	Impact
3,30	**3,05**	**3,05**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 10: Measure FT03. Training action on "Soft skills linked to sustainable construction".

Training measures for blue-collar profiles

Training action "Management of construction and demolition waste on a construction site for operators"	FP01

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for blue-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Designing the training action 'Management of construction and demolition waste on a construction site for operators' with the aim of training the different profiles of site operators on the integrated management of waste on a construction site, with special attention to the prevention and management of waste generation. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
2-4	Bricklayers, Construction labourers, Carpenters, Construction electricians, Plumbers and pipe fitters, Formworkers, Earthmoving machinery operators, Painters and wallpaperers, Plasterers, Other professionals in structural construction works.	7121,9602713,751, 722,7111, 8331,7231721,719

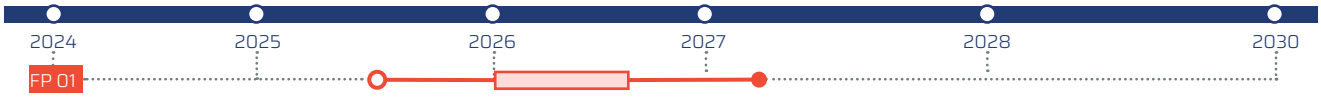
Target groups	Construction workers, in general

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Knowing the main concepts established in the current regulations. • Knowing the type of construction and demolition waste, hazardous waste and other associated waste. • Properly store and remove, and recycle or reuse construction and demolition waste, if appropriate
Cross-cutting skills and techniques	• Health and safety • Energy transition of the building sector • Inclusions • Teamwork
Miscellaneous	The current legislation of reference is the Law 7/2022 on Waste and Contaminated Land for a Circular Economy.

ACTION PLAN



Financing

Financial mechanisms	Public funds earmarked for training.
Development costs of the action	•Implementing the training action would require 8 face-to-face hours, including: • Design and micro-programming of the training action: €1,000 - €2,000 • Teaching material: development, revision and layout: €1,000 - €2,000 • Pilot course: €4,000 - €6,000 **Total: €6.000 - €10.000**

Feasibility analysis

Relevance	Ease	Impact
3,47 Average score: 3,53	**3,20** Average score: 2,84	**3,43** Average score: 3,32

Table 11: Measure FP01. Training action "Management of construction and demolition waste on a construction site for operators".

Training action "Efficient building dismantling techniques" FP02

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for blue-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Designing the training action with the aim of providing training on efficient dismantling techniques, promoting sustainable practices to facilitate the reuse of components and materials, as well as the correct management of waste.
For this purpose, the following steps are recommended: The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
2-4	Bricklayers, building construction workers, crane and forklift operators, and operators of other similar machinery used to move materials, other structural work professionals in construction.	7121, 9602,8332,719

Target groups	Construction workers, in general

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Being familiar with the law in force on waste management and circular economy, among others. • Dismantling buildings, structures and construction elements. • Operating specialised dismantling machinery such as cranes and jackhammers. • Preparing the work area and ensuring the safety of the environment. • Separating dismantling materials and sorting them for recycling or disposal.
Cross-cutting skills and techniques	• Health and safety • Energy transition of the building sector • Inclusions • Teamwork
Miscellaneous	In the case of including the training action in the SEPE's Catalogue of Specialities, the Public Employment Services would guarantee compliance with the necessary quality requirements for its delivery

ACTION PLAN

Financing

Financial mechanisms	Public: Subsidies from different European and national programmes and/or own resources from bodies of the General State Administration. These specific training programmes could be financed through the allocation of funds derived from environmental taxes.
Development costs of the action	Implementing the training action would require 40 face-to-face hours, including: • Design and micro-programming of the training action: €4,000 - €6,000 • Teaching material: development, revision and layout: €6,000 - €9,000 • Pilot course: €6,000 - €8,000 **Total: €16.000 -€ 23.000€**

Feasibility analysis

Relevance	Ease	Impact
3,53	**2,84**	**3,28**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 12: Measure FP02. Training action "Efficient building dismantling techniques"

Training action "On-site assembly of industrialised construction systems" FP03

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for blue-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Designing the training action with the aim of (re)qualifying current construction workers in the installation and assembly of industrialised components or systems.The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
2-4	Bricklayers, Construction labourers, Carpenters, Construction electricians, Plumbers and pipe fitters, Formworkers, Earthmoving machinery operators, Painters and wallpaperers, Plasterers, Other professionals in structural construction works, Crane operators	7121,9602713,751, 722,7111, 8331,7231721,719, 8332

Target groups	Construction workers, in general

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Receipt and storage of prefabricated components • Knowing the techniques necessary to prepare and level the land. • Lifting and placing the prefabricated components in their correct position. • Joining and sealing prefabricated components using different methods. • Electrical, plumbing, air-conditioning and other installations necessary for the operation of the building. • Interior and exterior finishes.
Cross-cutting skills and techniques	• Health and safety • Energy transition of the building sector • Inclusions • Teamwork

ACTION PLAN

Financing

Financial mechanisms	Public: Subsidies from different European and national programmes and/or own resources from bodies of the General State Administration. These specific training programmes could be financed through the allocation of funds derived from environmental taxes.
Cost of implementing the action	Implementing the training action would require 40 face-to-face hours, including: • Design and micro-programming of the training action: €4,000 - €6,000 • Teaching material: development, revision and layout: €6,000 - €9,000 • Pilot course: €6,000 - €8,000 **Total: €16.000 - €23.000**
Planned certification and accreditation	In the case of being designed as a new qualification, it could become part of INCUAL's catalogue of skill standards and in the future, it would be a certifiable and accreditable action by the Ministry of Education and Vocational Training.

Feasibility analysis

Relevance	Ease	Impact
3,47	**3,20**	**3,43**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 13: Measure FP03. Training action "On-site assembly of industrialised construction systems".

Training action "Assistant in waste auditing" FP04

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for blue-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Designing the course in order to qualify in the support activities of the construction waste audit.
Given that this is an emerging occupational profile and skills, the steps to be followed to design the training action are the following:
1. Identifying the skills of the occupational profile.
2. Designing the training action.
3. Developing training resources.
4. Pilot test the course to identify improvements

EQF Level	Main occupations	Code
3-4	Construction workers, in general	N/A
Target groups	Construction workers, in general	

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	The learning outcomes are to be established after defining the appropriate technical qualification for waste audit teams (AP08).
Cross-cutting skills and techniques	The cross-cutting skills and techniques have to be established once the appropriate technical qualification for the waste audit teams has been defined (AP08).

ACTION PLAN

Financing

Financial mechanisms	Public: Subsidies from different European and national programmes and/or own resources from bodies of the General State Administration. These specific training programmes could be financed through the allocation of funds derived from environmental taxes.
Development costs of the action	Implementing the training action would require 40 face-to-face hours, including: • Design and micro-programming of the training action: €4,000 - €6,000 • Teaching material: development, revision and layout: €6,000 - €9,000 • Pilot course: €6,000 - €8,000 **Total: €16.000 -€ 23.000€**

Feasibility analysis

Relevance	Ease	Impact
3,38	**3,05**	**2,89**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 14: Measure FP04. Training action "Waste audit assistant"

Training action "Measurement and evaluation of sustainability parameters" FP05

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for blue-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Designing the training action with the aim of training in the measurements required to assess the sustainability parameters of a building. It is important to value this training as a complement to the current specialisation course in Energy Auditing (higher vocational training). The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
3-4	Construction and related trades electricians Other construction workers	75 - 7199 - 7293

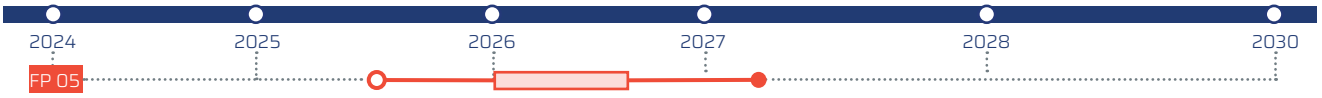
Target groups	Construction workers, in general

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	- Understanding the concepts and importance of sustainable construction in its different impact categories: energy, atmosphere, water, materials, waste, biodiversity, etc. - Learning basic concepts of certification systems and learning to identify, classify and evaluate sustainability and environmental impact indicators in buildings. - Learning the procedures and systems for sustainability assessment and certification at all stages of a building's life cycle and generating reports based on collected data. - Knowing and applying relevant regulations such as the DB on sustainability (currently under development) and understanding the value of environmental certifications. - Developing strategies for continuous improvement of sustainability in construction and effectively communicating the results and benefits of sustainable practices. - Knowing elements of the different international and national certification systems.
Cross-cutting skills and techniques	• Health and safety • Energy transition of the building sector • Inclusions • Teamwork
Miscellaneous	The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN



Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Cost of implementing the action	Implementing the training action would require 40 face-to-face hours, including: • Design and micro-programming of the training action: €4,000 - €6,000 • Teaching material: development, revision and layout: €6,000 - €9,000 • Pilot course: €6,000 - €8,000 **Total: €16.000 - €23.000**

Feasibility analysis

Relevance	Ease	Impact
3,40	**3,15**	**3,15**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 15: Measure FP05. Training action "Measurement and evaluation of sustainability parameters".

Training offer for specialists in comprehensive energy renovation of buildings — FP06

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for blue-collar profiles	Difficulties of the education system in responding to market needs Need for flexibility in the framework for channelling funding and in the requirements of the training offer. Difficulties in implementing Dual Vocational Training Low attractiveness of the sector for women and youth

General description and elements of the measure

Designing a training offer as specialists in the comprehensive renovations of buildings aimed at three different profiles: foremen, installers and operators. The modules would have to be ordered and stratified for each occupational profile. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
3-5	Construction workers, in general	N/A

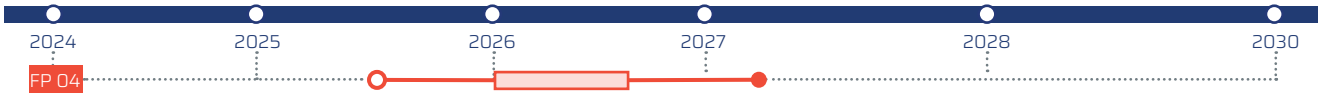
Target groups	Foremen, installers and operators

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	Adapting the following modules and subjects to foremen, installers and operators. The modules would have to be ordered and stratified for each occupational profile. • Installation of thermal insulation • Work related to the opaque elements of the building and installation of prefabricated elements • Work related to the watertightness of buildings • Installation and maintenance of high-performance, high-efficiency heating and cooling equipment • Indoor air quality systems and integration of innovative technological solutions • Domotic and inmotic management systems
Cross-cutting skills and techniques	• Health and safety • Energy transition of the building sector • Inclusions • Teamwork • Competences related to the regulatory framework established in the Technical Building Code (CTE DB-HE and DB-HS).
Miscellaneous	Measure related to FU07 from the perspective of the white-collar profile.

ACTION PLAN



Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	Each module would have 60 hours and the training offer would amount to 360 classroom hours in total, including: • Design and micro-programming of the training action: €36,000 - €54,000 • Teaching material: development, revision and layout: €54,000 - €81,000 • Pilot training: €22,000 - €32,000 **Total: €112,000 - €167,000**

Feasibility analysis

Relevance	Ease	Impact
3,74	**2,90**	**3,45**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 16: Measure FP06. Training offer for specialists in comprehensive energy renovation of buildings

Training measures for white-collar profiles

Training action "Life Cycle Analysis and Management at building scale"	FU01

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Designing the course, with the aim of learning about the methodology for the assessment of impacts in the different phases of the life cycle, the available databases and the limits at national level that will be established from the transposition of the EPBD. Practical tools to facilitate its preparation and how to interpret and communicate the results of a life cycle analysis will be shown in a practical way. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
6-8	Architect, technical architect, environmental engineer	2451, 2481, 2437
Target groups	Architects, engineers, sustainability consultants and project managers	

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	Understanding of Life Cycle Assessment (LCA) methodology at building level. • Database management and LCA tools at building level. • Knowledge of the regulations established at national level, derived from the transposition of the EPBD. • Preparation, interpretation and communication of LCA results at building level. • Practical application of LCA in real construction and building management projects, integrating sustainability into decision-making.
Cross-cutting skills and techniques	• Energy transition of the building sector • Project management. Planning, execution and supervision of construction projects integrating life cycle analysis. • Regulatory development: Knowledge and application of national and international regulations related to the EPBD.
Miscellaneous	Measure related to FU07 from the perspective of the white-collar profile.

ACTION PLAN

Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 120 hours in online format, including: • Design and micro-programming of the training action: €19,000 - €29,000 • Teaching material: development, revision and layout: €29,000 - €43,000 • Pilot course: €6,000 - €8,000 **Total: €54,000 - €80,000**

Feasibility analysis

Relevance	Ease	Impact
3,53	**2,87**	**3,27**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 17: Measure FU01. Training action "Life Cycle Analysis and Management at building scale".

Training action "Regulatory update on the requirements of the Building Energy Certificate including the global warming potential indicator".	FU02

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Due to the new requirement of the EPBD 2024, the Energy Performance Certificate (EPC) will be updated in 2025, including new features such as the inclusion of the Global Warming Potential (GWP) indicator. The aim of this training action is to update the skills of the technicians in order to correctly draw up the new version of the EPC. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

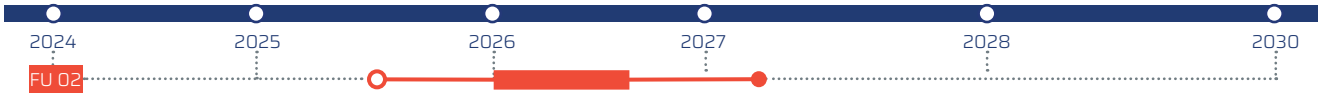
EQF Level	Main occupations	Code
6-8	Architect, technical architect, environmental engineer	2451, 2481, 2437
Target groups	Workers of the construction sector	

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Knowledge of the methodological framework Level(s), especially as regards GCP indicator 1.2 • Knowledge of the latest version of the CTE, derived from the transposition of the EPBD. • Understanding the methodology of PCG calculation at the building level • Preparation and interpretation of PCG results at building level for inclusion in the EPC • Handling tools to prepare EPC
Cross-cutting skills and techniques	• Database management and building-level LCA tools • Energy transition of the building sector
Miscellaneous	Measure related to AP06. Defining an appropriate technical qualification to have the skills to set up the EPC. Ver indicadores propuestos en la tabla 17 (Capítulo 5)

ACTION PLAN



Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 80 online hours, including: • Design and micro-programming of the training action: €13,000-€20,000 • Teaching material: development, revision and layout: €20,000-€29,000 • Pilot course: €4,000-€6,000 **Total: €37,000-€55,000**

Feasibility analysis

Relevance	Ease	Impact
3,67	**3,00**	**3,36**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 18: Measure FU02. Training action "Regulatory update on the requirements of the Building Energy Certificate including the global warming potential indicator".

Training action "Preparation of Life Cycle Analysis at material scale. Environmental Product Declarations for traditional and innovative (including bio-based) building materials". FU03

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

The training action focuses on the Preparation of Life Cycle Assessments (LCA) at the scale of building materials (A1-A3) + D, covering both traditional and innovative products, including those of bio-based origin. The course will explore in detail Environmental Product Declarations (EPD), making use of available databases and complying with relevant national and international standards. Participants will learn in a practical way how to use the tools necessary to conduct these analyses and how to effectively communicate the results of the EPDs.. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

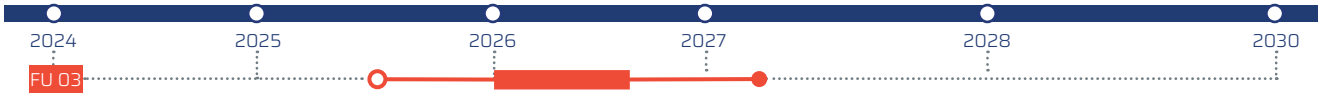
EQF Level	Main occupations	Code
6-8	Architect, technical architect, environmental engineer	2451, 2481, 2437
Target groups	Architects, engineers, sustainability consultants and project managers	

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Training in life cycle assessment (LCA) methodology at building materials scale • Produce Environmental Product Declarations (EPD) • Practical application of relevant normative and technical knowledge in the evaluation and selection of sustainable materials
Cross-cutting skills and techniques	• Energy transition of the building sector • Project management. Planning, execution and supervision of construction projects integrating Environmental Product Declarations (EPD).
Miscellaneous	Measure related to AP06. Defining an appropriate technical qualification to have the skills to set up the EPC. The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN



Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 150 online hours, including: • Design and micro-programming of the training action: €24,000 - €36,000 • Teaching material: development, revision and layout: €36,000 - €54,000 • Pilot course: €9,000 - €12,000 **Total €69,000 - €102,000**

Feasibility analysis

Relevance	Ease	Impact
3,53	**2,73**	**3,07**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 19: Measure FU03. Training action "Preparation of Life Cycle Analysis at material scale. Environmental Product Declarations for traditional and innovative (including bio-based) building materials".

Training action "Urban regeneration and nature-based solutions" FU04

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

The training action focuses on urban regeneration through the use of nature-based solutions. The course will cover the study and implementation of sustainable strategies that promote urban biodiversity, improve environmental quality and strengthen the resilience of cities to climate change. Concepts such as green infrastructure, green roofs, urban green areas and sustainable water management techniques will be explored. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
6-8	Architect, technical architect, environmental engineer	2451, 2481, 2437

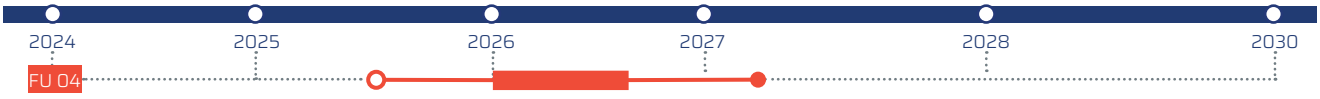
Target groups	Architects, civil engineers, urban environment specialists, sustainability consultants and urban project managers

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Learning about the benefits of nature-based solutions and their incorporation into cities. • Knowing the general concepts of climate change mitigation and adaptation. • Understanding and analysing urban regeneration strategies and practices that incorporate nature-based solutions. • Designing and planning projects with a focus on natural solutions.
Cross-cutting skills and techniques	• Energy transition of the building sector • Project management. Planning, implementation and supervision of urban regeneration projects.
Miscellaneous	Measure related to AP06. Defining an appropriate technical qualification to have the skills to set up the EPC. The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN



Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 120 hours in online format, including: • Design and micro-programming of the training action: €19,000 - €29,000 • Teaching material: development, revision and layout: €29,000 - €43,000 • Pilot course: €6,000 - €8,000 **Total: €54,000 - €80,000**

Feasibility analysis

Relevance	Ease	Impact
3,07	**2,73**	**2,87**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 20: Measure FU04. Training action "Urban regeneration and nature-based solutions".

Training action "Construction waste audit". FU05

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

The measure aims to effectively include construction waste management in the life-cycle process of the building. The EU, through the waste management protocol, the LEVEL(s) framework or the European Taxonomy regulation, incorporates the need for responsible management of construction waste, with knowledge of the entire value chain of the sector. The illustration of the construction waste auditor is indispensable for the correct application of construction waste and compliance with the regulations. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
6-8	Architect, technical architect, environmental engineer	2451, 2481, 2437

Target groups	Architects and technical architects, civil engineers, urban environment specialists, sustainability consultants and project managers.

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Developing a waste management plan with updated regulations. • Understanding the concepts of the Circular Economy. • Knowledge of the European Taxonomy. • Applying the EU protocol on waste management. • Applying the legal requirements applicable to waste generation. • Analysing the life cycle of different construction materials and their likelihood of recycling and recovery.
Cross-cutting skills and techniques	• Energy transition in the building sector. • Impacts on biodiversity and water • Toxicity of materials • Circular Economy in the project.
Miscellaneous	The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN

Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 75 online hours and 20 face-to-face hours for visits to construction sites and waste managers. • Design and micro-programming of the training action: €15,000-€23,000 • Teaching material: development, revision and layout: €23,000-€34,000 • Pilot course: €8,000 - €12,000 **Total: €46,000 - €68,000**

Feasibility analysis

Relevance	Ease	Impact
3,47	**3,00**	**3,20**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 21: Measure FU05. Training action "Construction waste audit".

Training action "Industrialised systems" FU06

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

The course aims to provide knowledge of the different technologies and methods of industrialised construction, ranging from prefabrication to modular construction. The benefits of these systems in terms of efficiency, sustainability and quality will be explored, as well as the barriers and challenges associated with their implementation. Participants will learn to identify and select the most suitable systems for different projects, adapting to the specificities of each industry. In a practical way, case studies and real application examples will be shown, as well as the tools and techniques for the management and execution of projects with industrialised systems. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
6-8	Architects, technical architects and engineers	2451, 2481, 243

Target groups	Architects, technical architects and engineers.

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	Select and implement industrialised systems
Cross-cutting skills and techniques	Analysis and selection of appropriate technology or systems according to the specificities of each project.
Miscellaneous	The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN

Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 50 hours in online format, including: • Design and micro-programming of the training action: €8,000 - €12,000 • Teaching material: development, revision and layout: €12,000 - €18,000 • Pilot course: €2,000 - €4,000 **Total: €22,000 - €34,000**

Feasibility analysis

Relevance	Ease	Impact
3,60	**3,13**	**3,60**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 22: Measure FU06. Training action "Industrialised systems".

Training offer for the integrated management of building renovations and energy communities FU07

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

Due to the impetus of the Next Funds, which have provided the sector with subsidies for renovations, numerous training programmes for the management of these subsidies have emerged as part of a comprehensive service or "turnkey" model. This renovation agent role is mentioned in Royal Decree 853/2021 of 5 October, which regulates the aid programmes for residential renovation and social dwelling under the Recovery, Transformation and Resilience Plan.
This measure FU07 seeks to expand the existing training offer aimed at renovation players beyond the Next Funds to guarantee a comprehensive quality service to citizens. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

EQF Level	Main occupations	Code
6-8	Architects, technical architects, engineers	2451, 2481, 243
Target groups	Training centres and professional associations whose public are renovation players, from a technical profile (architects, technical architects, engineers) and other hybrid profiles (property management players, mediators, social players).	

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	Training for a comprehensive energy renovations and energy community service brings together several approaches: technical, legal-administrative, financial and social.
Cross-cutting skills and techniques	• Current context of renovation targets at European and national level • Planning tools for an integrated offer • Rehabilitation management: grants and other renovation incentives • Social accompaniment to neighbourhood communities • Technical construction solutions for façade and roofing interventions • Technical solutions with active equipment (renewable energy installations and systems) • Basic knowledge of measurement and budgeting, as well as contracting issues. • Financial solutions for residents' associations • Documentation required for comprehensive renovation projects
Miscellaneous	Among the providers of this training, the professional associations have a role in the continuous training of renovation players and the connection to the service offered by these associations through the OAR Network of renovation support offices. Depending on the profile of the target group, the skills should be focused on specific learning, although a minimum of the other skills is essential. The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN

Financing

Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 120 hours in online format, including: • Design and micro-programming of the training action: €19,000 - €29,000 • Teaching material: development, revision and layout: €29,000 - €43,000 • Pilot course: €6,000 - €8,000 **Total: €54,000 - €80,000**

Feasibility analysis

Relevance	Ease	Impact
3,64	**2,79**	**3,50**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 23: Measure FU07. Training offer for the integrated management of building renovation and energy communities

Training action "New regulations for the construction of zero-emission buildings within the Technical Building Code" — FU08

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Training for white-collar profiles	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs

General description and elements of the measure

This training action focuses on the new regulations for the construction of zero-emission buildings within the Technical Building Code. Recent changes in the regulatory framework, sustainable technologies, environmental impact and economic benefits will be addressed through case studies and practical examples. The course will train participants in regulatory compliance and the effective integration of requirements for low carbon buildings, promoting responsible and sustainable building practices. The identification of the existing and related training offer, the updating of contents, the development of appealing training resources for students, as well as their dissemination.

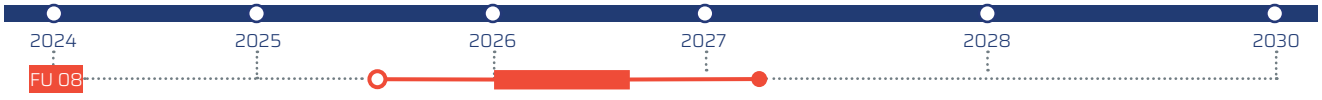
EQF Level	Main occupations	Code
6-8	Architects, technical architects, engineers	2451, 2481, 243
Target groups	Architects, engineers, sustainability consultants and project managers	

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

Learning outcomes	• Mastery of the zero-emission building regulations of the Technical Building Code. • Advanced knowledge in sustainable building technologies. • Competences to assess environmental impacts and economic benefits of sustainable projects.
Cross-cutting skills and techniques	Energy transition of the building sector
Miscellaneous	The proposed impact indicators can be seen in table 17 (Chapter 5).

ACTION PLAN



Financing

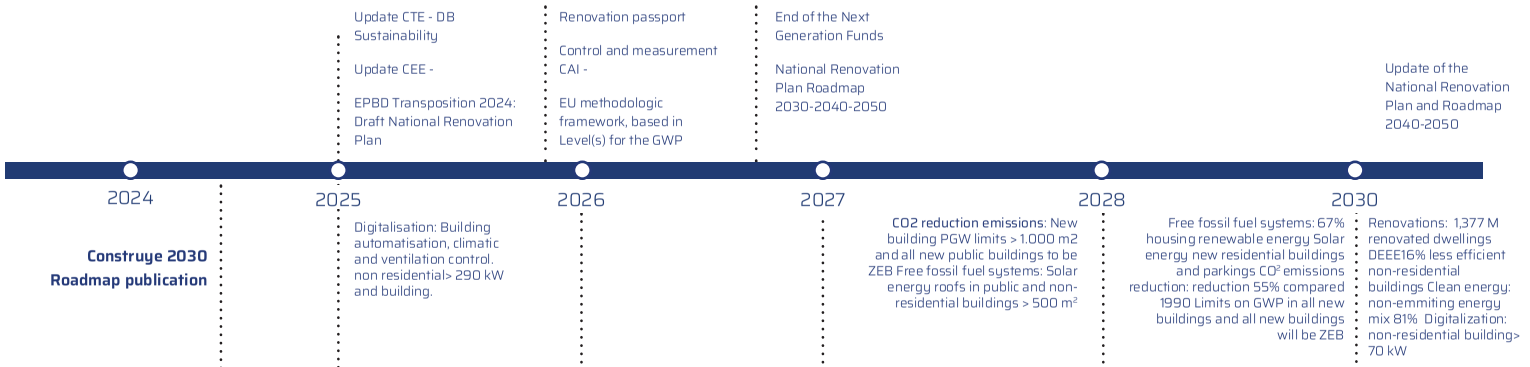
Financial mechanisms	Through subsidies from different European programmes, direct subsidies from the Government or Autonomous Communities. In turn, it can be financed through environmental taxes. It can also be co-financed with funds from organisations interested in the training of workers.
Development costs of the action	The training action would consist of 20 hours in online format, including: • Design and micro-programming of the training action: €3,000 - €5,000 • Teaching material: development, revision and layout: €5,000 - €7,000 • Pilot course: €1,000 - €2,000 **Total: €9,000 - €14,000**

Feasibility analysis

Relevance	Ease	Impact
3,53	**3,07**	**3,20**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 24: Measure FU08. Training action "New regulations for the construction of zero-emission buildings within the Technical Building Code".

Measures to support training and employment systems



Measures to support the training and employment systems

- Design of resources on new teaching methodologies for teachers in the construction sector
- Design training resources for career and academic counsellors
- Development and use of a micro-skills system associated with professional qualifications and skill units
- Advisory service for companies welcoming students for work and non-work placements
- Development of agile tools and resources to support the role of business coaches
- Defining the appropriate technical qualification to have the skills for the preparation of Energy Performance Certificates for Buildings (CEE)
- Define the appropriate technical qualification to have the skills for the preparation of Life Cycle Assessments (LCA) at building level
- Define the appropriate technical qualification for waste audit teams
- Creation of a coordination working group with the participation of the Autonomous Communities and the General State Administration to unify criteria on the provision of continuous training
- Articulation of the prospecting and detection of continuing training needs
- Support for the inclusion of “building renovation” as a strategic sector in the training on demand and the calls for training on offer launched by the State Public Employment Service and the Ministry of Education and Vocational Training
- Design a programme to provide advisory support for workers in skills recognition procedures
- Traditional construction skills upgrading to new positions in industrialised construction sites and reformulation of trades for construction with bio-based materials with a low carbon footprint

Design of resources on new teaching methodologies for teachers in the construction sector — AP01

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Regulatory rigidity and insufficient trainers Low attractiveness of the sector for women and youth Limited adaptation to the needs of foreigners

General description and elements of the measure

Developing resources in order to update the teaching skills of classroom and workshop teachers in the construction sector. Resources should preferably be made available in an online format to facilitate their dissemination.
These resources should address the following main themes:

- Using artificial intelligence for teaching, enabling them to improve the planning and delivery of classes.
- Using training resources developed in Virtual Reality and Augmented Reality adapted to the different training centres. Application of these technologies to simulate construction environments, providing an immersive, firsthand learning experience.
- Gender perspective and inclusiveness. Training in the integration of a comprehensive gender and inclusive perspective in teaching, ensuring that all students, regardless of their gender, origin or abilities, receive an education that is equitable, of quality and adapted to their particular conditions.

Target groups	Classroom and workshop teachers

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Public: Subsidies from different European and national programmes and/or own resources from bodies of the General State Administration through the allocation of funds derived from environmental taxes. Private: co-financing
Cost of implementing the action	• Design and programming of teaching resources: €19,000 • Teaching material: €12,000 • Validation by experts: 8.000 € Total: €39,000
Specific indicators to monitor the measure	**AP01.1** No. of resources to design **AP01.2** No. of specialisations that include the necessary skills to provide guidance on training, new employment niches, new occupations/professions/positions. **AP01.3** No. of designed resources

Feasibility analysis

Relevance	Ease	Impact
3,44	**3,06**	**3,47**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 25: Measure AP01. Design of resources on new teaching methodologies for teachers in the construction sector

Design training resources for career and academic counsellors — AP02

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Lack of vocational guidance networks Low attractiveness of the sector for women and youth

General description and elements of the measure

On the one hand, it is proposed to design and disseminate resources for academic counsellors in secondary schools and primary education centres with the aim of raising awareness of the construction sector and making it an option for the future.
Secondly, it is proposed to design and disseminate training resources for job counsellors to support their updating on labour market trends, new job search tools, counselling skills, the technical and soft skills needed in the sector, vocational testing, information needed to address stereotypes associated with the sector, information on professional internships and the promotion of collaborations with companies and educational centres through networking.

Target groups	Job counsellors

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Public: Subsidies from different European programmes and direct subsidies from the Spanish Government, through the competent Ministry or the Autonomous Communities. Private: co-financing
Cost of implementing the action	• Design and programming of teaching resources: €29,000 • Teaching material: €10,000 • Validation by experts: 8.000 € **Total: €47,000**
Specific indicators to monitor the measure	**AP02.1** No. of resources to be designed **AP02.2** No. of specialisations including the necessary skills to provide guidance on training, new employment niches, new occupations/professions/jobs **AP02.3** No. of models of leaflets designed **AP02.4** No. of total leaflets printed

Feasibility analysis

Relevance	Ease	Impact
3,72	**3,17**	**3,78**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 26: Measure AP02. Designing training resources for career and academic counsellors

Development and use of a micro-skills system associated with professional qualifications and units of skill — AP03

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Difficulties in implementing Dual Vocational Training Low attractiveness of the sector for women and youth Shortage of training centres

General description and elements of the measure

Design and use by training bodies of a sectoral map of micro-skills associated with professional qualifications to serve as a starting point for (a) the re-qualification of workers, (b) the design of continuous training, and (c) the identification of new skills not covered by the Catalogue of skill Standards.

Target groups	Public administration regulating and managing construction education and training; training centres

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Own resources of bodies coming from the General Administration. Direct subsidy from the Spanish Government, through the competent Ministry.
Cost of implementing the action	• Design and Development of the Microskill System: €32,000 • Teaching Material: € 20,000 • Validation by experts: 8.000 € • Dissemination: 40,000 **Total: €100,000**
Specific indicators to monitor the measure	**AP03.1** No. of qualifications analysed **AP03.2** No. of occupations analysed **AP03.3** No. of units of skill **AP03.4** No. of micro/skills Gaps **AP03.5** No. of micro/skills translated into ESCO **AP03.6** No. of micro/skills to be included in the corresponding vocational qualifications of the construction occupational category **AP03.7** No. of micro-credentials designed for the acquisition of micro-skills **AP03.8** No. of micro-credentials to be included in micro-credentials training in the Red Construye. According to AP03.5

Feasibility analysis

Relevance	Ease	Impact
3,67	**2,89**	**3,44**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 27: Measure AP03. Development and use of a system of micro-skills associated with professional qualifications and units of skill.

Advisory service for companies welcoming students for work and non-work placements — AP04

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Difficulties in implementing Dual Vocational Training Limited adaptation to the needs of foreigners Lack of vocational guidance networks

General description and elements of the measure

Development, by training centres, of a service to companies hosting trainees who:
- Information on the importance of involving companies in the reception of students from the vocational training system.
- Company participation options (dual vocational training, work-linked training contracts, mobilities, etc.).
- Establishment of minimum requirements, monitoring and evaluation for the participation of enterprises in training programmes.
- Development of agile systems for the design and management of in-company training.
- Development of awareness-raising resources in which the company is made aware of the process of developing apprenticeship programmes

Target groups	Training centres and companies

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Public: Subsidies from different European programmes and direct subsidies from the Spanish Government, through the relevant Ministry or the Autonomous Communities. Private: co-financing. The traineeship programme - work or non-work - must finance this support and accompaniment service.
Cost of implementing the action	• Design and Development of the Counselling Programme: €30,000 • Teaching Material and Documentation: €8,000 • Advisor Training and Capacity Building Pilot: €15,000 •Implementation Pilot and Initial Accompaniment: €20,000 **TOTAL: €73,000**
Specific indicators to monitor the measure	**AP04.1** Define the general objective and specifics of the procedure **AP04.2** Determining the existence of transferable good practices **AP04.3** Designing the procedure, phases and defining resources **AP04.4** Preparation and drafting of the practical guide for the reception process of students on work and non-work placements. **AP04.5** Implementation of pilot experience **AP04.6** Monitoring and evaluation **AP04.7** Transfer of Pilot Experience

Feasibility analysis

Relevance	Ease	Impact
3,44	**2,72**	**3,00**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 28: Measure AP04. Advice and accompaniment service for the company in the process of welcoming students for work and non-work placements

Development of agile tools and resources to support the role of business coaches — AP05

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Difficulties in implementing Dual Vocational Training Business atomisation

General description and elements of the measure

With the aim of making available to the company hosting students, it is proposed to develop a bank of resources aimed at making the company aware of the importance of its involvement in dual vocational training, facilitating its participation in this system, as well as supporting the people who act as tutors in the company.
Resources proposed include: a management system to record and link academic and in-company training, models for adapting the Dual VET system to the construction sector and dissemination resources.

Target groups	Companies in the sector, company tutors, training centres

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Public: Subsidies from different European programmes and direct subsidies from the Spanish Government, through the relevant Ministry.
Cost of implementing the action	• Designing Tools and Resources: €50,000 • Teaching Material and Documentation: €10,000 • Validation by experts: €10,000 • Designing a methodology to provide Dual VET in the construction sector: €20,000 **TOTAL: €90,000**
Specific indicators to monitor the measure	**AP05.1** No. of tools and resources to be designed **AP05.2** No. and list of elements required for the design of tools and resources **AP05.3** No. of agile tools and resources designed to facilitate the role of the business coach **AP05.4** Pilot experience in the use of tools and resources **AP05.5** List of indicators of the evaluation of the pilot experience and readjustments **AP05.6** No. of transfers and uses of tools and resources

Feasibility analysis

Relevance	Ease	Impact
3,35	**2,82**	**3,29**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Tabla 29. Measure AP05. Development of agile tools and resources to support the role of business coaches

Define the appropriate technical qualification to have the skills for the preparation of Energy Performance Certificates for Buildings (EPC) — AP06

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Limited access to training through public and private resources Difficulty in establishing a training offering anticipating market needs

General description and elements of the measure

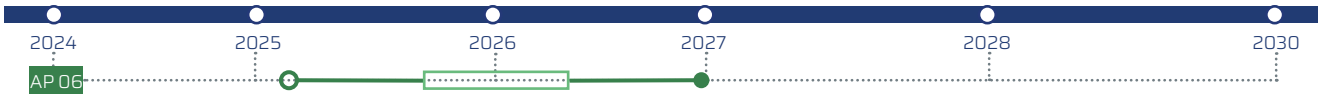
It is recommended that the competent authority defines the skills for the preparation of a Building Energy Performance Certificate through a corresponding qualification, as this is currently not stipulated.
This would establish the skill framework for professionals dedicated to assessing and improving the energy efficiency of buildings, complying with current regulations and promoting energy savings and sustainability.

Target groups	Training centres and companies Competent public administration

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN



Financing

Financial mechanisms	Public: budget of the competent Administration in the development of the requirements of the appropriate occupational profile for the preparation of Energy Performance Certificates for Buildings.
Cost of implementing the action	Working groups for the analysis and definition of skills: €50,000 **TOTAL: €50,000**
Specific indicators to monitor the measure	**AP06.1** No. of Reviews and Analyses of Applicable Regulations and Standards **AP06.2** No. of Consultations/Meetings with Relevant Experts and Entities **AP06.3** No. of skill standards of relevance for building level LCAs acquired through modular or other types of training and through work experience. **AP06.4** Set of skill standards with significance for EEC development procured

Feasibility analysis

Relevance	Ease	Impact
3,37	**2,72**	**2,92**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 30: Measure AP06. Defining the appropriate technical qualification to have the skills for the preparation of Energy Performance Certificates for Buildings (EPC)

Define the appropriate technical qualification to have the skills for the preparation of Life Cycle Assessments (LCA) at building level — AP07

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Limited access to training through public and private resources Difficulty in establishing a training offering anticipating market needs.

General description and elements of the measure

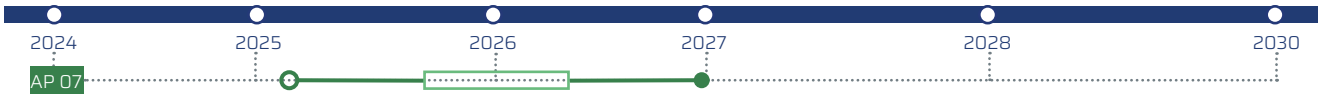
It is recommended that the competent authority defines the skill framework for those professionals who prepare a Life Cycle Assessment, through a corresponding qualification, as it is currently not stipulated.
This would establish the skill framework for professionals involved in assessing the environmental impact of buildings throughout their life cycle, from the extraction of materials to demolition and recycling.

Target groups	Competent public administration

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN



Financing

Financial mechanisms	Public: budget of the competent Administration in the development of the requirements of the appropriate occupational profile to prepare the Life Cycle Assessment.
Cost of implementing the action	Working groups for the analysis and defining skills: €50,000 **TOTAL: €50,000**
Specific indicators to monitor the measure	**AP07.1** No. of Reviews and Analysis of Applicable Regulations and Standards **AP07.2** No. of Consultations/Meetings with Experts and Relevant Entities **AP07.3** No. of skill standards of relevance for building level LCAs acquired through modular or other types of training and through work experience. **AP07.4** Set of skill standards with significance for EEC development procured

Feasibility analysis

Relevance	Ease	Impact
3,33	2,65	**3,12**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 31: Measure AP07. Defining the appropriate technical qualification to have the skills for the preparation of Life Cycle Assessments (LCA) at building level

Define the appropriate technical qualification for waste audit teams — AP08

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Limited access to training through public and private resources Difficulty in establishing a training offering anticipating market needs.s

General description and elements of the measure

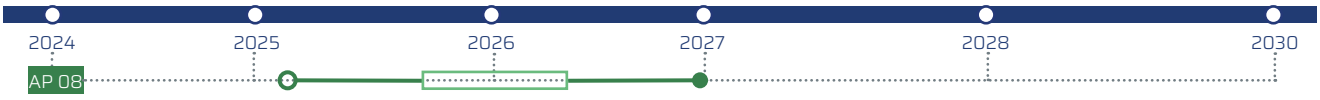
As it is not yet in place, it is recommended that the competent authority defines the skills of the audit teams, which are experts responsible for the waste audit. These professionals must be able to assess and improve waste management in various organisations and sectors, ensuring compliance with regulations and promoting sustainable practices.
According to the publications of the European Commission, the auditor must be a qualified expert with adequate knowledge of current and historical building materials (including hazardous materials) and current and historical construction history and techniques, and be familiar with demolition techniques, waste treatment and processing and (local) markets

Target groups	Competent public administration

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN



Financing

Financial mechanisms	Public: budget of the competent administration in the development of the appropriate occupational profile requirements for waste audit teams.
Cost of implementing the action	Working groups for the analysis and definition of skills: €50,000 **TOTAL: €50,000**
Specific indicators to monitor the measure	No. of regulations and standards reviewed No. of meetings and workshops held with relevant experts and organisations Level of agreement among experts and stakeholders on the skill and skills profile developed. Number and quality of documents produced detailing technical qualifications and skill profile.

Feasibility analysis

Relevance	Ease	Impact
3,40	**2,64**	**3,00**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 32: Measure AP08. Defining the appropriate technical qualification for waste audit teams

Creation of a coordination working group with the participation of the Autonomous Communities and the General State Administration to unify criteria on the provision of continuous training — AP09

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Limited access to training through public and private resources Need for flexibility in the framework for channelling funding and in the requirements of the training offer. Regulatory rigidity and insufficient trainers Shortage of training centres

General description and elements of the measure

Creation of a technical coordination working group, as an external advisory committee, made up of experts in training (white-collar, blue-collar, regulated and non-regulated), and technicians from the different public administrations, with the aim of advising and offering an efficient and feasible approach to unify criteria and training actions, which will serve for the exchange of information and the development of joint actions for the same purpose. Non-regulated training should also be unified in the autonomous community itself, so that all the training on offer can be accessed from a single point.
Six-monthly meetings and a report on reviews and updates are recommended.
This technical working group will be represented by at least one person from the Department of Education of each Autonomous Region, one person from the MEFP, one person from MITES, one person from MIVAU and one person from MITERD (as an inter-ministerial group focused on the promotion of training in the construction sector as a key sector for achieving climate goals), one person from SEPE and one person from FUNDAE.

Target groups	Public administrations (national and regional) related to the management of white-collar, blue-collar, formal and non-formal training.

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Public: Own resources from bodies of the General State Administration and direct subsidies from the Spanish Government, through the competent Ministry or the Autonomous Communities.
Cost of implementing the action	• Management and Coordination of the Working Group: €15,000 • Meetings and Travel: €10,000 • ICT tools: €5,000 • Incentives for Experts: €8,000 •Technical Dynamisers: €12,000 • Dissemination and communication: €10,000 **TOTAL: €60,000**
Specific indicators to monitor the measure	**AP09.1** Analysis of the resources required for the composition of the working group and the players involved **AP09.2** Defining objectives, regulation and procedure for the functioning of the working group **AP09.3** Establishing an Advisory Committee. **AP09.4** Adjustments/modifications of AP09.2 by group members **AP09.5** Implementing the technical working group to coordinate the unification of criteria for continuous training.

Feasibility analysis

Relevance	Ease	Impact
3,71	**2,50**	**3,71**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 33: Measure AP09. Creation of a coordination working group with the participation of the Autonomous Communities and the General State Administration to unify criteria on the provision of continuous training

Articulation of the prospecting and detection of continuing training needs — AP010

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs Lack of vocational guidance networks

General description and elements of the measure

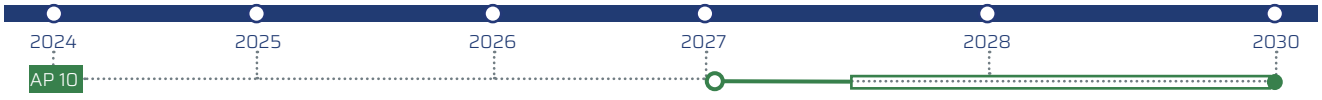
Once the National Qualification Platform has been designed and re-launched in the framework of the Construye 2030 project, under the name of Red Construye: training and skills, it is considered of special relevance to maintain this community of experts in the construction sector in order to be able to technically address the identification and anticipation of training needs.
The Red Construye, coordinated by Fundación Laboral de la Construcción, must be prepared to expand and continue to activate experts from the business world, training centres, guidance counsellors, administration and social players.
In this way, the provision of resources will support the continuation of the detection of training needs and the prospection of new skills required in the sector, linking all the players in the sector with the public administrations responsible for training.

Target groups	Construye 2030 Consortium, community of experts of Red Construye: training and skills.

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN



Financing

Financial mechanisms	Subsidies from different European programmes, direct subsidies from the Spanish Government, through the competent Ministry or the Autonomous Communities and/or own resources from bodies of the General State Administration. Public-private financing of players in the new building and renovation sector.
Cost of implementing the action	• Maintenance and updating of the digital platform Red Construye: €5,000 • Holding of working groups for the purpose of the Network: €20,000 • Development of reports: €5,000 • Dynamisation of the Network: €10,000 **TOTAL: €40,000**

Feasibility analysis

Relevance	Ease	Impact
3,64	**2,71**	**3,50**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 34: Measure AP10. Articulation of the prospecting and detection of continuing training needs

Support for the inclusion of "building renovation" as a strategic sector in the training on demand and the calls for training on offer launched by the State Public Employment Service and the Ministry of Education and Vocational Training — AP011

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Difficulty in establishing a training offering anticipating market needs. Difficulties of the education system in responding to market needs Lack of vocational guidance networks

General description and elements of the measure

In line with the Recommendations of the working groups for the implementation of the measures of the ERESEE 2020, the Construye 2030 project supports the proposal of this measure, which requires the involvement of all occupational profiles in the training on demand and the calls for training on offer launched by the State Public Employment Service (SEPE) and the Ministry of Education and Vocational Training (MEFP).
In this sense, it is recommended that the bodies responsible for implementing this measure, in addition to relying on experts in sustainable construction and taking into account the life cycle of the entire building, take into account the results of the Construye 2030 project.

Target groups	Servicio Público de Empleo Estatal (SEPE) and the Ministry of Education and Vocational Training (MEFP).

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	It is included within the own resources of bodies from the General State Administration in the field of other actions within the framework of State Training in which the public administration and business and trade union organisations participate.
Cost of implementing the action	• Study and analysis of training needs: €20,000 • Designing training programmes: €20,000 • Promotion and dissemination of calls for proposals: €10,000 **TOTAL: €50,000**

Feasibility analysis

Relevance	Ease	Impact
3,50	**2,79**	**3,29**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 35: Measure AP11. Inclusion of "construction with energy efficiency and renewable energy criteria" as a strategic sector in the training on demand and the calls for training on offer launched by the State Public Employment Service (SEPE) and the Ministry of Education and Vocational Training

Design a programme to provide advisory support for workers in skills recognition procedures — AP012

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	High turnover and lack of generational replacement Limited adaptation to the needs of foreigners

General description and elements of the measure

In order to make the current procedure for the recognition of skills through experience more efficient, it is proposed to design a counselling programme in which the training centre can accompany the worker in this procedure.
It is also necessary to improve the process of homologation of foreign qualifications, the system of recognition of professional qualifications in the sector and to review the catalogue of occupations that are difficult to cover

Target groups	Training centres

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Subsidies from different European programmes, direct subsidies from the Spanish Government, through the competent Ministry or the Autonomous Communities and/or own resources from bodies of the General State Administration.
Cost of implementing the action	• Working meetings with the relevant administration to define appropriate advisory processes: €20,000 • Development of templates and other support material: €20,000 • Training pilots for people accompanying workers in the validation of skills: €20,000 **TOTAL: €80,000**

Feasibility analysis

Relevance	Ease	Impact
3,64	**2,64**	**3,71**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 36: Measure AP12. Designing a programme of advice and support for workers in the process of recognising skills through experience

Upgrading of skills from traditional construction site profiles to new positions in industrialised construction sites and reformulation of trades for construction with bio-based materials with a low carbon footprint — AP013

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Support for training and employment systems	Difficulties of the education system in responding to market needs

General description and elements of the measure

This measure aims to identify and develop training pathways to fill the skill gaps between traditional on-site profiles and the new occupational profiles of industrialised construction and construction with low carbon footprint bio-based materials.

Target groups	Training centres

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

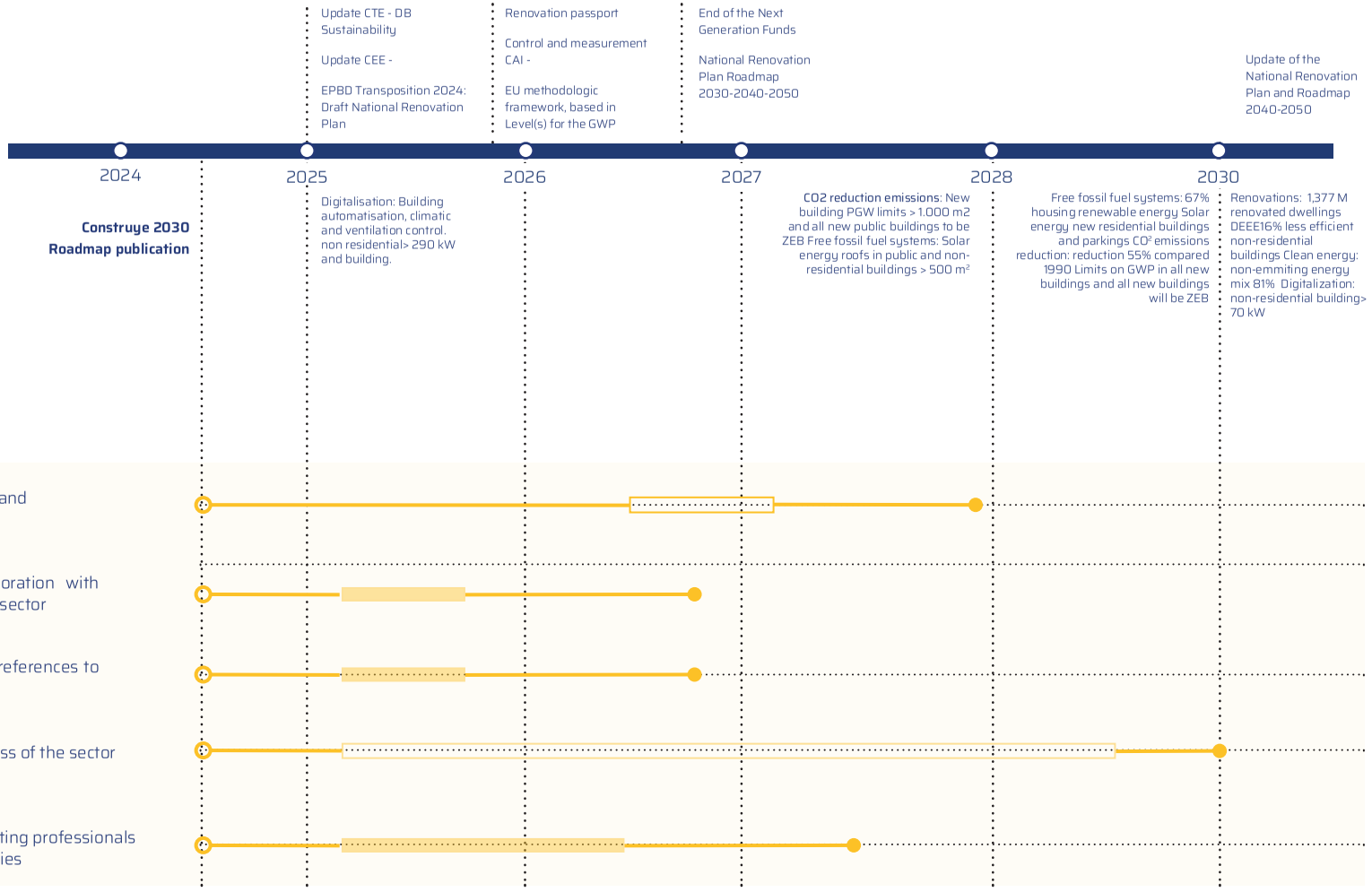
Financial mechanisms	Subsidies from different European programmes, direct subsidies from the Spanish Government, through the competent Ministry or the Autonomous Communities and/or own resources from bodies of the General State Administration.
Cost of implementing the action	• Study and Analysis of Required Competencies: €12,000 • Designing Training and Refresher Programmes: €15,000 • Material and Teaching Resources: €13,000 • Dissemination and communication: €10,000 **TOTAL: €50,000**

Feasibility analysis

Relevance	Ease	Impact
3,69	**2,85**	**3,46**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 37: Measure AP13. Upgrading of skills from traditional construction site profiles to new positions in industrialised construction sites and reformulation of trades for construction with bio-based materials with a low carbon footprint.

Support measures to bring women, youth and other professionals into the sector


Update CTE - DB Sustainability
Update CEE -
EPBD Transposition 2024: Draft National Renovation Plan
Renovation passport
Control and measurement CAI -
EU methodologic framework, based in Level(s) for the GWP
End of the Next Generation Funds
National Renovation Plan Roadmap 2030-2040-2050
Update of the National Renovation Plan and Roadmap 2040-2050
2024
2025
2026
2027
2028
2030
Construye 2030 Roadmap publication
Digitalisation: Building automatisation, climatic and ventilation control. non residential> 290 kW and building.
CO2 reduction emissions: New building PGW limits > 1.000 m2 and all new public buildings to be ZEB Free fossil fuel systems: Solar energy roofs in public and non-residential buildings > 500 m²
Free fossil fuel systems: 67% housing renewable energy Solar energy new residential buildings and parkings CO² emissions reduction: reduction 55% compared 1990 Limits on GWP in all new buildings and all new buildings will be ZEB
Renovations: 1,377 M renovated dwellings DEEE16% less efficient non-residential buildings Clean energy: non-emmiting energy mix 81% Digitalization: non-residential building> 70 kW
Support measures to bring women, youth and other professionals into the sector
Design incentives for businesses to hire youth, women and vulnerable groups
Creation of a sectoral network of support and collaboration with networks of guidance counsellors to attract youth into the sector
Expand and maintain a network of positive professional references to transmit the values of the sector
Development of awareness campaigns on the attractiveness of the sector
Develop and implement training pathways aimed at attracting professionals from other sectors, especially form highly polluting industries

Design incentives for businesses to hire women, youth and vulnerable population groups in the sector as an economic lever — AT01

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Attracting women, youth and professionals from high-polluting industries to the sector	Low attractiveness of the sector for women and youth Business atomisation High turnover and lack of generational replacement

General description and elements of the measure

Extending incentives towards broader inclusive recruitment, including youth, women, people with disabilities and people at risk of exclusion. Incentives can be articulated through active employment policies such as social security bonuses, direct subsidies for hiring, training and retraining programmes. These can be complemented by labour intermediation services, personalised counselling and networking and cooperation between companies, educational centres and public bodies to improve labour market integration.

Target groups	Construction companies, women, youth and other specific groups.

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Resources of the General State Administration, through the competent Ministry or the Autonomous Communities. It is proposed that these should be social security bonuses for companies that hire this type of group.
Cost of implementing the action	• Designing the Incentive Programme: €20,000 • Feasibility Study and Impact Analysis: €30,000 **TOTAL: €50,000**
Specific indicators to monitor the measure	**AT01.1** No. of incentives to be used **AT01.2** No. of general requirements established **AT01.2** Established amount

Feasibility analysis

Relevance	Ease	Impact
3,61	**2,61**	**3,17**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 38: Measure AT01. Designing incentives for companies to hire youth, women and vulnerable population groups in the sector as an economic lever.

Creation of a sectoral network of support and collaboration with networks of guidance counsellors to attract youth to the sector — AT02

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Attracting women, youth and professionals from high-polluting industries to the sector	Lack of vocational guidance networks Low attractiveness for women and youth. High turnover and lack of generational replacement

General description and elements of the measure

This measure aims to increase the presence of the construction sector in existing guidance and employment networks. To this end, a network will be created to bring together companies in the sector (traditional and pioneering companies, start-ups, etc.), career guidance counsellors and academics in events to promote guidance and involve companies in the educational guidance process: practical workshops, Olympiads, open days. It is proposed to collaborate with *Red Construye: training and skills* (Roadmap Action AP10) and with the network of professional referents (Roadmap Action AT03) in the organisation of these activities.

Target groups	Construction companies, women, youth and other specific groups.

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Subsidies from different European programmes, direct subsidies from the Spanish Government, through the competent Ministry or the Autonomous Communities and/or own resources from bodies of the General State Administration.
Cost of implementing the action	• Strategy Development and Planning: €20,000 • Technology Platform: €20,000 • Events and Workshops: €20,000 **TOTAL: €60,000**
Specific indicators to monitor the measure	**AT02.1** Defining the type of network to be created. **AT02.2** No. of identified mentor networks **AT02.3** Determining who is to make up the network **AT03.4** Defining and designing network tools

Feasibility analysis

Relevance	Ease	Impact
3,89	**3,06**	**3,65**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 39: Measure AT02. Creation of a sectoral network of support and collaboration with networks of guidance counsellors to attract youth to the sector.

Expand and maintain a network of positive professional references to transmit the values of the sector — AT03

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Attracting women, youth and professionals from high-polluting industries to the sector	Low attractiveness for women and youth. Lack of vocational guidance networks

General description and elements of the measure

It aims to expand and maintain a network of leaders in the sector, with the objective of awakening vocations in youth, favouring generational change. To this end, it is suggested to make use of sectoral networks to detect people whose professional career is an inspirational reference for the young public and whose story can be communicable and transmit the values of the sector. These professionals will be able to collaborate with networks of guidance counsellors (measure AT02) and be part of communication campaigns to spread the attractiveness of the sector (measure AT04). It is also recommended to collaborate with psychologists to work on attraction messages.

Target groups	Sectoral organisations

Level of impact

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Subsidy from different European programmes, direct subsidies from the Spanish Government, through the competent Ministry or from the Autonomous Communities and/or own resources from bodies of the General State Administration. Public-private partnerships.
Cost of implementing the action	• Identification and selection of professional references: €5,000 • Development of Promotional Materials: €12,000 • Events and Presentations: €10,000 • Communication and Management Platform: €10,000 • Training and support for professional references: €7,000 **TOTAL: €44,000**
Specific indicators to monitor the measure	**AT03.1** Defining values **AT03.2** No. of identified driving mechanisms **AT03.3** No. of identified potential professional referrals **AT03.4** Starting up the measure

Feasibility analysis

Relevance	Ease	Impact
3,36	**2,43**	**3,29**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 40: Measure AT03. Expand and maintain a network of positive professional references to transmit the values of the sector.

Development of awareness campaigns on the attractiveness of the sector — AT04

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Attracting women, youth and professionals from high-polluting industries to the sector	Low attractiveness to women and youth High turnover and lack of generational replacement

General description and elements of the measure

Development of dissemination campaigns aimed at women and youth to attract these profiles by communicating the training offer available and the history of leading professionals. These campaigns should be designed by a multidisciplinary team that brings together different sensitivities and objectives.

Target groups	Sectoral communication agencies and other mass media

LEVEL OF IMPACT

Household members	Women, youth and professionals in polluting industries	Construction workers	Social partners	Companies	Regulating partners

ACTION PLAN

Financing

Financial mechanisms	Subsidy from different European programmes, direct subsidies from the Spanish Government, through the competent Ministry or from the Autonomous Communities and/or own resources from bodies of the General State Administration
Cost of implementing the action	**Designing a campaign to attract the general public to the sector: €50,000** **Total: €50,000**
Specific indicators to monitor the measure	**AT04.1** List the objectives of the campaign and the target groups. **AT04.2** No. and list of dissemination channels **AT04.3** No. and list of dissemination media **AT04.4** No. and list of players involved in the campaign(s) **AT03.5** No. and list of media of the campaign(s) **AT03.6** No. of campaign(s) designed **AT03.7** No. of dissemination campaign(s) conducted **AT03.8** Scope and impact of the dissemination campaign(s) conducted.

Feasibility analysis

Relevance	Ease	Impact
3,71	**2,87**	**3,43**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 41: Measure AT04. Development of awareness campaigns on the attractiveness of the sector.

Develop and implement training pathways aimed at attracting professionals from other sectors, especially from highly polluting industries — AT05

CHARACTERISATION OF THE MEASURE

Type of measure	Barrier
Attracting women, youth and professionals from high-polluting industries to the sector	High turnover and lack of generational replacement Low attractiveness of the sector for women and youth

General description and elements of the measure

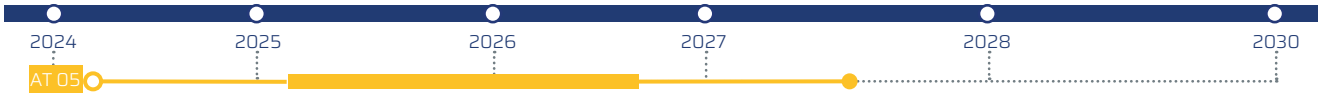
The measure includes training programmes in skills related to energy efficiency and renewable energy, offering retraining and new job opportunities. Collaboration with local companies will be encouraged, ensuring a just transition to green jobs. The pathways will integrate modules on technical skills in energy renovation and construction of nearly zero-energy buildings and cross-sectional skills. In addition, incentives and support for professional relocation will be provided, facilitating the adaptation of these professionals to the construction sector.

Target groups	Professionals from other sectors, especially those from highly polluting industries.

Level of impact

Household members	**Women, youth and professionals in polluting industries**	Construction workers	**Social partners**	**Companies**	Regulating partners

ACTION PLAN



Financing

Financial mechanisms	Subsidy from different European programmes, direct subsidies from the Spanish Government, through the competent Ministry or from the Autonomous Communities and/or own resources from bodies of the General State Administration.
Cost of implementing the action	• Pathway design and material: €25,000 • Implementation of Pilot Courses (including teacher training): €20,000 • Validation by experts: €5,000 **TOTAL: €50,000**
Specific indicators to monitor the measure	Those listed in the monitoring and follow-up section of the FP5 section on Training Pathways. The proposed impact indicators can be seen in Table 17 (Chapter 5).

Feasibility analysis

Relevance	Ease	Impact
3,57	**2,80**	**3,67**
Average score: 3,53	Average score: 2,84	Average score: 3,32

Table 42: Measure AT05. Develop and implement training pathways aimed at attracting professionals from other sectors, especially from highly polluting industries.

5. Roadmap monitoring and follow-up

To monitor the implementation of the Roadmap measures, a series of specific indicators have been defined for each measure, depending on the activities to carry them out and the expected results. These are included in each above-mentioned measure.

Additionally, the common indicators for all training measures are::

1. SCOPE

Indicator name	ID	Calculation of the indicator
Scope of the training provided: training actions	F1.1	No. of training actions delivered
	F1.2	Percentage distribution of training actions by mode of delivery.
Scope of training provided: training hours	F1.3	No. of hours of training completed by all participants trained
Scope of the training provided: duration of the training	F1.4	Average hours of training per participant
Population reach: trained participants	F1.5	No. of trained participants (who have completed training)
	F1.6	No. of participants by gender
	F1.7	Number of participants by age
	F1.8	No. of participants by level of education
	F1.9	Number of participants by nationality (foreign/non-foreign).
	F1.10	Number of participants by Autonomous Communities
	F1.11	Number of participants according to mode of delivery.
Call efficiency: average cost per participant	F1.12	Average cost per subscribed participant per training action

Table 43. Indicators of the scope and efficiency of the measures of the National Training Roadmap 2030

2. EFFECTIVENESS: SKILLS ACQUISITION

Indicator name	ID	Calculation of the indicator
Acquisition of skills and knowledge with significance in professional performance (technical-productive or cross-sectional skill improvement).	F2.1	Percentage of participants who consider that the training has enabled them to acquire sufficient practical skills and professional knowledge necessary to perform a profession or to improve in their job
Usefulness of training	F2.2	Percentage of the main perceived usefulness of the training according to participants

Table 44. Indicators of effectiveness of National Training Roadmap 2030 measures

3. QUALITY: APPROPRIATENESS OF THE TRAINING TO THE NEEDS OF WORKERS

Indicator name	ID	Calculation of the indicator
Adequacy of the guidance process	F3.1	Percentage of participants who say they have received appropriate guidance on the suitability of training for career enhancement
Training recommendation rate	F3.2	Proportion of participants who would recommend the training

Table 45. Quality indicators for National Training Roadmap 2030 measures

4. IMPACT ON WORKERS: OCCUPATIONAL PERFORMANCE AND EMPLOYABILITY

Denominación del indicador	ID	Cálculo del indicador
Impact on on-the-job application of training	F4.1	Percentage of participants who have applied the skills and knowledge acquired in the training in their workplace.
Impact on the performance of job duties	F4.2	Percentage of participants reporting an improvement in the performance of their duties after training
Impact on professional development	F4.3	Percentage of participants who consider that their company values the training they have undertaken
	F4.4	Percentage of employed participants who consider that, in the short and medium term, training will be effective for career development
Impact on labour market integration	F4.5	Percentage of participants who consider that the training has had an impact on the development of their labour market insertion process.
	F4.6	Percentage of causes of low impact on the labour market insertion process, according to participants.
Impact on occupational skills	F4.7	Percentage of participants who consider that they have improved their skills in the specific contents of the training action (digitalisation, energy efficiency, integration of renewable energy technologies, circular economy...).

Table46. Impact indicators of the National Training Roadmap 2030 measures

In a complementary manner, it is proposed that a series of activities linked to the exhaustive review of the catalogues of training specialities be set in motion, as a cross-sectional follow-up to make progress in all the training actions proposed in the Roadmap.

For all training actions

A 1.1	Number of existing actions in the Catalogue of Training Specialities (CEF in its Spanish acronym) that do not need to be revised or updated and that are in line with the objectives of the Construye 2030 actions.
A 1.2	Number of existing actions in the CEF that need to be revised, updated, and/or adapted to meet the objectives.
A 1.3	No. of non-existing actions in the CEF that need to be designed
A 2.1	No. of updated specialities
A 2.2	No. of appropriate specialities
A 3.1	No. of new specialities, to be included in the CEF, resulting from energy efficiency of indicator A 1.3
A.4.1	No. of new specialities to be reviewed (except those conducted by Servicio Público de Empleo Estatal - SEPE-)

Table 47. Indicators of cross-cutting training review activities, for all training activities

For the updating of training pathway.

FP 1.1	Number of existing pathways in the Catalogue of Training Specialities that do not need to be revised, and that are in line with the Construye 2030 roadmap.
FP 1.2	No. of non-existing actions in the Catalogue that need to be designed
FP 2.1	Number of updated specialities in the Catalogue to be included in the training pathway.
FP 2.2	No. of specialities to update/adapt found in the Catalogue
FP 2.3	No. of new specialities not listed in the Catalogue
FP 2.4	No. of new specialities to be designed according to procedure A1 to A5
FP3.1	No. of new specialities designed according to procedure A1 to A5
FP 4.1	No. of new pathways, to be included in the Catalogue, resulting from energy efficiency of indicator A 1.3
FP.5.1	No. of new pathways except those designed by SEPE
FP.6.1	No. of pathways included in the Catalogue except those designed by SEPE
FPR. 1	No. of specialities included in the Sectoral Reference Plans (SRP) referring to EE/ Total number of training specialities in the Sectoral Reference Plans (SRP)
FPR. 2	No. of participants of existing training specialities of EE IN THE CATALOGUE/ No. of total participants Sectoral Reference Plans (PRS)
FPR. 3	No. of participants of existing appropriate or updated training specialisations from EE IN THE CATALOGUE/ No. of total participants in Sectoral Reference Plans (PRS)
FPR. 4	No. of participants of new specialities included in the Catalogue/No. of total Sectoral Reference Plans (PRS) participants

Table 48. Indicators of the activities for updating training pathways

The complete review and monitoring plan can be found in Annex I.

6. Conclusions

The National Training Roadmap 2030 developed in the framework of the Construye 2030 project has been a collective exercise, from and for the construction sector, which highlights the urgency of engaging people and increasing capacity building efforts to ensure that climate goals are met.

As a result of the participatory consultation exercise to develop the National Training Roadmap 2030, the following conclusions are formulated:

When, in the working sessions held with experts from the sector to develop the Roadmap 2030, the skills with the greatest need for training highlighted in the report 'Status Quo. Study on the Current Overview of the Construction Sector in Spain' were presented, it was pointed out that currently, in general terms, there is a training offer that addresses these shortcomings.

However, it is recommended to update this offer in terms of new sustainable construction requirements, which will be discussed below. Given that one of the current challenges is the low demand for training, the Roadmap proposes to resource the existing training to make it attractive to potential students. For example, to develop teaching resources, to disseminate on appropriate communication channels or to organise training itineraries around different training organisation.

In this sense, three cross-sectoral training measures are proposed for the sector and the proposal to extend training in energy renovations.

The development of new training goes hand in hand with the inclusion of the full life cycle of the building, aiming to focus on those skills that influence the embedded and operational emissions of the building, whereas in previous BUILD UP Skills training was focused on the use phase of the building (operational emissions).

The new training aims to address emerging skills and occupational profiles such as **circular economy** (specifically on waste and industrialised systems) and **decarbonisation** (specifically on integrated renovations and life cycle analysis), which stem directly from the requirements of new European initiatives: EPBD 2024 and Taxonomy. Regarding the Construye 2020 Roadmap, the number of measures linked to the **waste management** of buildings has also increased, as a consequence of the provisions of the law 7/2022 on Waste and Contaminated Land for a Circular Economy.

In this way, five new training actions are proposed for blue-collar profiles and eight for university students. Several of these measures rely on training on the same aspect from both perspectives and thus reflect the complementarity and need for both profiles in the face of climate challenges.

However, the most urgent challenge already mentioned above is the ageing of the sector (30% of the workforce will retire by 2030). More than half of the measures in the National Training Roadmap 2030 aim to facilitate and support youth, women and professionals from the sector and beyond to become qualified and become part of the construction sector.

On the one hand, it is proposed to update teachers, employment counsellors, and to provide resources to enable training centres, companies and public administration to speed up their processes of identifying training needs, accreditation of skills or their collaboration processes among themselves. On the other hand, there are five specific measures to promote referrals, networks of mentors or incentives to companies, which specifically support the attraction to the sector of women, youth and professionals from other sectors, especially those coming from highly polluting industries.

The Roadmap action plan sets out the measures from the publication of this document in July 2024 to 2030. It is therefore a short- and medium-term plan, linked to national and European objectives, and takes into account measures whose coordination and implementation involves several administrations and public bodies.

For the Roadmap timeline, quantitative national and European targets have been identified at building level (emission reductions, renovations, installations, digitisation, etc.). However, neither national strategies or plans, nor recent employment and training legislation present disaggregated quantitative targets for the construction sector (workforce needed in terms of number of professionals, number of new qualifications, number of new skills, number of accredited professionals, etc.). This is why this exercise, along with the report 'Status Quo. Study on the Current Overview of the Construction Sector in Spain' is a differential contribution to the preparation of future national policies and plans, such as the next National Rehabilitation Plan.

It is essential to have a collaborative network to monitor such implementation and to create links with other platforms that produce reports and specific work related to capacity building in the sector.

This is why the meetings for the development and support of this work have generated a community of professional experts made up of vocational training centres, companies in the sector, social players, technology centres, Public Administration, etc., which have formed the Red Construye to involve these professionals and expand internal capacity as a guarantee of quality for the implementation of the National Training Roadmap 2030.

In conclusion, the following recommendations are made:

Focus on training and its updating

- Achieving the climate goals by 2030 will necessarily require the decarbonisation of the building stock. The decarbonisation of the building stock, in turn, **requires a trained and qualified workforce**. The entire value chain of players in the sector considers the training of professionals to be essential, and this has been expressed in the Construye 2030 working groups and events.

- Both national and European quantitative targets have been identified at building level (emission reductions, renovations, installations, etc.). This demand, however, is not aligned with university or vocational training provision. No targets have been set in the rules and/or regulations regarding the number of new professionals needed, nor the need for specific training in key sectors for the energy transition to enable such actions to be conducted.

- Updating and designing new training programmes is important, although there is already a lot of training available that does not reach the workers who need it. Institutions update training programmes, but this process is too slow to keep pace with the rapid changes in the industry.

- Training is essential. Having qualified personnel is essential for companies to be able to develop their activity in an increasingly demanding environment, conditioned by the environmental and climate challenges that the EU and Spain have set themselves and the derived regulations, which in many cases will entail the need to update or acquire new skills. Proof of this is the ambitious content of the new Energy Performance of Buildings Directive, which will be a **great challenge for Spain as a country** and for the construction sector, its companies and its professionals. It should be noted that there is currently a shortage of workforce in the sector, and these new skills represent an opportunity to make it more attractive.

Assessment and strategic planning of training

- It is of great value to have an up-to-date national report on the position of the sector and serves as a starting point for future action.

- In order to adjust according to standard, objective and transparent criteria the measures and aid allocated to each country to tackle the decarbonisation of the sector, the existence and use of common indicators provided by the EC in initiatives such as BUILD UP would be advisable. This would also allow the establishment of baselines for monitoring and evaluation of results, which should therefore be comparable and measurable over time.

- In order to draw up a Roadmap, prior work is needed to review the state of implementation of the measures included in the previous Roadmaps, as well as the objectives of the policies in force at national and European level (climate, training and employment in the construction sector). In addition, for training measures, a review of existing training content is helpful in order to propose the necessary updates or other actions to boost demand for existing provision.

- Mandatory regulations are often issued but are not accompanied by the training or qualification measures that should also be in place so that these regulations can be implemented or complied with.

Collaboration and diversification of areas of study

- It is important to involve and consolidate a **varied group of experts** in training, in education and construction, and in other supporting fields (communication, etc.) for the co-creation of the roadmap. The aim of the Red Construye is to make a positive contribution in this respect.

- The internal capacity of the project consortium for the implementation of some of the Roadmap measures is a guarantee that many of them will be conducted. In addition, the backing of different entities and professionals through the signing of a letter of support will, within their respective areas of action, facilitate the implementation of the various actions proposed by the National Training Roadmap 2030.

- As a recommendation for the future, the collective participatory sessions could be combined with bilateral meetings for the detailed development of specific measures proposed by each working group.

- Despite the varied territorial representation in the Roadmap working group, a **territorial assessment** of the different training needs and occupational profiles according to the **local industry** existing in each territory and the type of construction, is still pending.

- It would be positive in the future to broaden the scope of the topics to work on to include other fields that are less worked on, but also key in the construction sector, such as **water or biodiversity**, in order to have a complete approach to climate change and avoid the so-called carbon tunnel.

Government support and influence on national strategies and plans

- It is necessary to identify possible ways of influencing the project results in future national building strategies and plans incorporating training measures (PNIEC, National Renovation Plan, etc.), and to establish direct contacts in order to transfer the project results.

- There has been a collaboration between the members of the Construye 2030 project and the revision of the national strategy in the sector, **ERESEE** (Long-term strategy for energy renovations in the building sector in Spain), through the participation in the "Technical working group with sector players", which has concluded with the introduction of two specific recommendations related to the improvement of training and the increase of trained workers.

- It is necessary to establish **linkages with other roadmaps** in the construction and related sectors in order to detect emerging occupational profiles. The Roadmap for decarbonising heating, presented in June 2024, includes among its conclusions the need for mixed occupational profiles with skills both in electricity and plumbing in order to conduct the necessary works by 2050.

- The Spanish Administration, as well as the EU, should foresee in their budgets resources to support adaptation-training in companies and, likewise, the provision of investment to be able to perform the renovation work of dwelling and buildings required to achieve the established goals.

Continuity of the Roadmap

- The continuity of the Roadmap is foreseen during its creation through different elements, including the sustainability report (after-life), through the explicit support of key players for the Roadmap and the various supporting events. Notably, the Construye 2030+ project is scheduled to be launched in October 2024. This will implement many of the measures set out in the Roadmap.

7. Sectoral outlook

"Thanks to EU funding, Construye 2030 has made it possible to conduct an accurate diagnosis of the training and employment needs related to the energy efficiency of buildings and the energy transition of the sector. The National Training Roadmap 2030 identifies a detailed set of relevant training and employment measures. For Fundación Laboral de la Construcción, I would highlight, essentially, the importance that everything related to micro-credentials will have in the future of the construction industry, as a way of accrediting the professional skill of construction workers, in this case closely related to issues of energy efficiency and renewable energy".

Fundación Laboral de la Construcción

"For the National Construction Confederation, it has been really interesting to work to contribute to the improvement of training in the field of energy efficiency in buildings, sharing discussions, work and conclusions with the other project partners. All the measures that are part of the Roadmap are very relevant and have their purpose. They were the result of an exercise of synthesis and prioritisation. From our point of view, we would highlight all those that have to do with how to attract more people into construction work. In particular, how to attract more youth and more women. We are at a time when companies are finding it very difficult to find labour and the workforce in the construction sector is ageing. Therefore, all these measures aimed at how to bring more people and more workers into the construction sector are essential at this time.

Confederación Nacional de la Construcción

"From Comisiones Obreras del Hábitat we highlight in the Roadmap the new preventive measures oriented towards the energy transition that will generate the development of new training in this sense and avoid accidents in the workplace, because the new installations oriented towards green energy generate new risks that we have not yet assessed. It is essential because we want to be a safe sector and we want a well-trained sector. Another essential measure is micro-skills within the green transition, we understand that it is essential to professionalise the sector and that a young worker, woman or adult who comes from another sector can already have full partial accreditation of their work and that recognition, that is what will drive us, to have a dignified professional career and make the sector much healthier".

Comisiones Obreras del Hábitat

"Construye 2030 has been an opportunity to bring our social vision to this just and digital transition we are in, and to contribute to a more sustainable Europe and jobs with better and safer working conditions. The Roadmap is a document that we highly recommend reading in its entirety. From our point of view, construction has to be a safe sector, so measures aimed at increasing occupational risk prevention in these new tasks related to energy efficiency seem very relevant to us. Likewise, the measures referring to micro-credentials and micro-competences seem to us to be very interesting to favour the acquisition and accreditation of competences and skills necessary to perform their tasks in this new context".

Federación de Industria, Construcción y Agro de la Unión General de Trabajadoras y Trabajadores

"Construye 2030 has allowed Fundae to have information about the sector, very useful for anticipating decision-making when designing and offering appropriate training to the construction sector in terms of sustainability and energy efficiency, which requires us to adjust to the climate and energy objectives proposed by the European Union for the year 2030. The measures in the Roadmap are mutually supportive, so all the measures that have been included are important to us. However, at Fundae, we believe that those related to the field of training, and those linked to training and employment policies, are essential. We must work to bring training to workers in the sector. Finally, we consider very relevant the measures to attract people to the sector and thus respond to the demands of companies for workers".

Fundación Estatal para la Formación en el Empleo

"Construye 2030 brings a lot of knowledge to the reality of the sector, which can be applied tomorrow and can have a real impact. In particular, GBCe has given us an insight into the complexity of the Spanish training system, especially the vocational training system, and has allowed us to connect and dialogue with the key entities and organisations in the training system. On the Roadmap, we would like to highlight the cross-cutting aspect of the measures, which recognises that all players in the value chain are needed. The urgency of measures to attract youth and women, who are key to achieving transformation, should also be stressed.

Green Building Council España

"IETcc-CSIC has shared, together with the other partners, its sensitivity to all issues related to science and innovation. In addition to generating knowledge, our organisation has to transfer it. One way of transferring this is through such projects where what we know and what can be positive for the construction sector can be applied. All the measures in the National Training Roadmap 2030 are important and come from different players with different interests. From our organisation's point of view, we highlight measures related to digitalisation and industrialisation. The future of construction implies industrialisation and digitalisation, data must be obtained and buildings must be rendered modern and sustainable, and this will be achieved through industrialisation and digitalisation."

Institute of Building Science Eduardo Torroja - Higher Council of Scientific Research - Ministry of Science, Innovation and Universities

"The most important thing is to achieve a meeting point to discuss a common problem we have, which is to get people in the sector, youth. Sustainable construction implies new challenges, new ways of building, it is important to qualify the people who install the products, and that they do so in conditions not only to improve energy efficiency, but also other aspects of sustainability such as acoustic insulation or comfort, which are very important in achieving these efficient buildings and homes".

Asociación Técnica y Empresarial del Yeso (ATEDY)

"For our public employment service, projects such as Construye 2030 are essential in order to address, to give visibility to sustainability and also to make the sector more attractive to youth".

Alcalá de Henares Employment Office

"At Aqualia we work on digitalisation and artificial intelligence. Construye 2030 is very interesting to take up very important issues of employability, innovation and technology. I believe that today the 2030 Agenda must go in that direction. Sustainability requires innovation and innovation requires technology. I see them as the 3 essential pillars.

Qaleón

The Construye 2030 project is really quite interesting. It is an innovative project in which we have collaborated with companies such as Saint-Gobain, social players, the administration and, of course, Fundación Laboral de la Construcción. It is a project in which we personally believe because training people is very important to achieve the transition of the sector towards sustainability and circular economy.

Saint-Gobain Placo

The most important thing is to really emphasise the education and training of people in sustainability because it will be a very important aspect that buildings will have to comply with in order to meet European requirements, both those of the new Energy Performance of Buildings Directive and other requirements to achieve climate neutrality.

Asociación Ibérica de Poliestireno Extruído (AIPEX)

Projects aimed at sustainability are very important, and participating to see what we can contribute and add to these projects is very important.

Lumon España

Construye 2030 is key to be able to identify the needs of the sector, especially with the climate goals that we have in sight and that are increasingly necessary and therefore, I think it is a project that is not only relevant at national level, but at European level can have a great weight and a great relevance that every day is more necessary.

Consultancy

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  - PNIEC - DRAFT NATIONAL INTEGRATED ENERGY AND CLIMATE PLAN UPDATE 2023-2030

  - EPBD 2024 - DIRECTIVE (EU) 2024/1275 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 April 2024 on the energy performance of buildings

  - Heating Decarbonisation Roadmap

  - INDICATE SPAIN project - building-level LCA data

Glossary

Life Cycle Assessment (LCA) Methodology for assessing the environmental impact of materials and processes used in construction.

Attraction to the sector Strategies to attract women, youth and other professionals to the construction sector.

National Catalogue of Professional Qualifications. The current National Catalogue of Professional Qualifications is expected to be replaced by a National Catalogue of Standards of occupational skills, as indicated in Law 3/2022 (pending publication in RD).

Building Energy Performance Certificate (EPC). A document that assesses the energy performance of a building, a key part of energy renovation.

Soft skills. Non-technical skills needed for sustainable construction.

Energy consumption in the residential sector. Growth in energy consumption in the sector between 2000 and 2020, with changes in the use of different energy sources.

Sustainable construction. Construction that integrates energy efficiency criteria and the use of renewable energies.

Construye 2020 and Construye 2030. Projects providing measures and recommendations for the development of the Roadmap in the construction sector.

Annual employment growth. Increase in the employed population in Spain of 15.6% between 2012 and 2022.

Environmental Product Declarations (EPD). Certifications that report on the environmental impact of construction products.

Digitisation in construction. Integration of digital technologies in the design, construction and management of buildings.

Energy Efficiency Directive. European legislation obliging Member States to achieve final energy savings targets in two periods: 2014-2020 and 2021-2030.

Circular Economy. Economic model that seeks to reduce waste production and promote the reuse and recycling of materials.

Energy Efficiency and Renewables. Priority areas for training and certification of skills in the construction sector.

Long-term strategy for energy renovations in the building sector in Spain (ERESEE 2020). Reference framework for energy renovations in Spain.

Spanish Circular Economy Strategy (EEEC in its Spanish acronym). Launched in 2020 under the name "Spain Circular 2030" to promote the circular economy in Spain.

Vocational Education and Training (VET). Education system that has undergone significant reforms to improve training and accreditation of skills in the workplace.

Greenhouse Gas (GHG). Gases that contribute to global warming, the reduction of which is a key objective of the PNIEC.

Instituto para la Diversificación y Ahorro de la Energía (Institute for the Diversification and Saving of Energy) (IDAE) Source of data on energy consumption in Spain.

Training pathways. Specialised educational programmes in energy renovations and other emerging areas in the sector.

Climate Change and Energy Transition Law. Legislation enacted in 2021 to address climate change and promote the transition to sustainable energy sources.

Public Sector Contracts Law. Legislation enacted in 2018 regulating procurement in the public sector.

Architecture Quality Law. Enacted in 2022, this law focuses on digitisation and quality in the architectural field.

Waste and Contaminated Soil Law for a Circular Economy Enacted in 2022 to regulate waste management and soil decontamination.

Organic Law 2/2023. Third reform of the university system since 1978, introducing "lifelong learning degrees" and micro-credentials.

Organic Law 3/2022. Reform of the Vocational Training system, with a new structure for the acquisition and accreditation of skills.

Spanish Qualifications Framework for Lifelong Learning (MECU). Spanish General Qualifications Framework, which aims to guide the classification, comparability and transparency of officially accredited qualifications, aligned with the European Qualification Framework (EQF).

Micro-credentials. Forms of certification of specific skills, introduced in the 2023 university reform.

Quintuple Helix Methodology. Approach that includes political, economic, social, training and environmental perspectives for the preparation of the Roadmap.

Action plan. Part of the National Training Roadmap 2030 strategy, based on the Quintuple Helix methodology.

Green Public Procurement Plan. Implemented between 2018 and 2025 to incorporate green criteria in public procurement and promote sustainability.

National Climate Change Adaptation Plan (PNACC). Planning instrument to promote coordinated action against the effects of climate change in Spain (2021-2030).

National Integrated Energy and Climate Plan (PNIEC) Plan of the Ministry for Ecological Transition and the Demographic Challenge to reduce greenhouse gas emissions by 23% compared to 1990.

PAREER Programme. Initiative since 2013 that channels funds towards improving the energy efficiency of the thermal envelope of buildings.

Energy renovations of buildings. Energy efficiency improvements in existing residential buildings to contribute to climate goals.

Urban regeneration. Process of revitalising urban areas using nature-based solutions.

Reskilling y upskilling. Training to acquire new skills (reskilling) or improve existing skills (upskilling) in the work context.

Tables and figures

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Annex I. Training review and monitoring activities of the Roadmap

Activities to be conducted to implement the roadmap	HOW	WHO (All or possible)	WHEN	ID	INDICATOR LITERAL
Activity 1. Contrasting the training actions included in the roadmap with those existing in the Catalogue of Training Specialities of SEPE *(from this activity onwards the actions will be called "specialities").	Analysis of the existing specialities in the Catalogue of Training Specialities, paying special attention to the contents and duration.	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC	At the start of the implementation of the roadmap with regard to the measures concerning training actions	A 1.1	Number of existing actions in the Catalogue of Training Specialities that neither need to be revised nor updated and that are in line with the objectives of the actions of Construye 2030 (those included in the roadmap and that meet this requirement will be called "specialities" from that moment onwards).
				A 1.2	Number of existing actions in the Catalogue that need to be revised, updated, and/or adapted to meet the objectives.
				A 1.3	No. of non-existing actions in the Catalogue that need to be designed
Activity 2. Review of existing specialities that need to be updated and/or adapted to the objectives of Construye 2030 (energy efficiency).	Updating and/or adaptation of existing specialities*(*most of the specialities in the Catalogue have been updated*).	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC	At the end of Activity 1	A 2.1	No. of updated specialities
				A 2.2	No. of appropriate specialities
Activity 3. Designing new specialities according to the needs detected in the Construye 2030 project.	Taking as a reference the technical prescriptions for the design of training specialities of the SEPE, the objectives, contents, target groups, number of hours, modality, etc... will be indicated.	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC SEPE Autonomous Communities External consultant hired	In parallel with A 2 or after completion of Activity 1 and 2	A 3.1	No. of new specialities, to be included in the Catalogue, resulting from energy efficiency of indicator A 1.3
Activity 4. Review by the Management Unit (Fundae) of new specialities (only for those specialities not designed by SEPE itself)	Following the procedure for the revision of training specialities	Fundae	As new specialisations are designed in A.3.1	A.4.1	No. of new specialities to be reviewed (except those conducted by SEPE)

Activities to be conducted to implement the roadmap	HOW	WHO (All or possible)	WHEN	ID	INDICATOR LITERAL
Activity 5. Proposal for inclusion in the Catalogue of new training specialisations resulting from A 3.1 (only for those specialisations not designed by SEPE itself)	Transferring to SEPE the specialisations conducted by other players	Fundae	According to Fundae procedure	A.5.1.	No. of new specialities included in the Catalogue (except those conducted by SEPE)
Activity 6. Contrast of training actions related to ORP included in the roadmap with those existing in the SEPE Catalogue of Training Specialities *(from this activity onwards the actions will be called "specialities").	Analysis of the existing specialities in the Catalogue of Training Specialities, paying special attention to the specific ORP contents and duration.	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC	At the beginning of the implementation of the roadmap with regard to the measures related to the training actions on ORP updating (can be implemented at the same time as the review of the rest of the roadmap activities related to training actions).	A 6.1	Number of existing actions in the Catalogue of Training Specialities that do not need to be revised, updated and that are in line with the objectives of the actions (those included in the roadmap and that comply with this requirement are now called "specialities").
				A 6.2	Number of existing actions in the Catalogue that need to be revised, updated, and/or adapted to meet the objectives.
				A 6.3	No. of non-existing actions in the Catalogue that need to be designed
Activity 7. Review of existing specialities referring to ORP Construction that need to be updated and/or adapted to the objectives of Construye 2030 (energy efficiency).	Updating and/or adaptation of existing specialities*(*most of the specialities in the Catalogue have been updated*).	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC	At the end of Activity 6	A 7.1	No. of updated specialities
				A 7.2	No. of appropriate specialities
Activity 8. Designing new ORP specialities according to the needs detected in the Construye 2030 project.	Taking as a reference the technical prescriptions for the design of training specialities of SEPE, the objectives, contents, target groups, number of hours, modality, etc... will be indicated.	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC SEPE Autonomous Communities External consultant hired	In parallel with A.6 or after completion of Activity 6 and 7	A 8.1	No. of new specialities, to be included in the Catalogue, resulting from energy efficiency of indicator A 1.3
Activity 9. Review by the Management Unit (Fundae) of new specialities (only for specialities not designed by SEPE itself).	Following the procedure for the revision of training specialities	Fundae	As new specialisations are designed in A.8.1	A.9.1	No. of new specialities (except those conducted by SEPE)

Activities to be conducted to implement the roadmap	HOW	WHO (All or possible)	WHEN	ID	INDICATOR LITERAL
Activity 10. Proposal for inclusion in the Catalogue of new training specialisations resulting from A 3.1 (only for those specialisations not designed by the SEPE itself)	Transferring to SEPE the specialisations conducted by other players	Fundae	According to Fundae procedure	A.10.1.	No. of new specialities included in the Catalogue (except those conducted by SEPE)
Activity FP5.1. Contrasting the training pathways included in the roadmap with those existing in the Catalogue of Training Specialities (the pathways in the catalogue include the training specialities that are also in the catalogue).	Analysing the existing pathways in the SEPE Catalogue, paying special attention to the specialities included in them.	Fundae and FLC	At the start of the implementation of the roadmap with regard to the measures related to Training Pathways	FP 1.1	Number of existing Itineraries in the Catalogue of Training Specialities that do not need to be revised, and that are in line with the Construye 2030 roadmap.
				FP 1.2	No. of non-existing actions in the Catalogue that need to be designed
Activity FP5.2. Definition, revision and selection of specialities that require the training pathways set out in the Construye 2030 roadmap.	Analysing the existing specialities in the SEPE catalogue	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC	At the end of A. 6.	FP 2.1	Number of updated specialities in the Catalogue to be included in the training pathway.
				FP 2.2	No. of specialities to update/adapt found in the Catalogue
				FP 2.3	No. of new specialities not listed in the Catalogue
				FP 2.4	No. of new specialities to be designed according to procedure A1 to A5
Activity FP5. 3. Designing new training specialities according to the needs detected for the design of the pathways in the Construye 2030 project.	Returning to the process from A.1 to A.5 corresponding to the training actions section of the National Training Roadmap 2030	Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...) Fundae and FLC	At the end of A.7	FP3.1	No. of new specialities designed according to procedure A1 to A5
Activity FP5. 4. Designing new pathways according to the needs detected in the Construye 2030 project.	Taking as a reference the technical prescriptions for the design of SEPE training pathways (indicating the objectives, contents, target groups, number of hours, modality, etc...).	"Social players of the Joint Committees included in the scope of the study (Construction, Gypsum, Engineering...). Fundae and FLC SEPE Autonomous Communities External consultant hired"	At the end of A.7 or A.13 depending on existing specialisations	FP 4.1	No. of new pathways, to be included in the Catalogue, resulting from energy efficiency of indicator A 1.3

Activities to be conducted to implement the roadmap	HOW	WHO (All or possible)	WHEN	ID	INDICATOR LITERAL
Activity FP.5.5. Review of new pathways by the Planning Unit (Fundae) (only for the Pathways not designed by SEPE itself)	Following the same procedure for the review of training pathways as was used for the review of specialisations (A1 to A5)	Fundae	As new pathways are designed in A.7 or A.13	FP.5.1	No. of new pathways except those designed by SEPE
Activity FP 6. Proposal for inclusion in the Catalogue of new Training Specialities resulting from A 9.1 (only for the Pathways not designed by SEPE itself).	Transferring to SEPE the pathways conducted by other players.	Fundae	Según procedimiento Fundae	FP.6.1	Nº de itinerarios incluidos en el Catálogo excepto los diseñados por SEPE

Table 54. List of indicators for monitoring the measures of the National Training Roadmap 2030