THE GLOBAL ESCO NETWORK

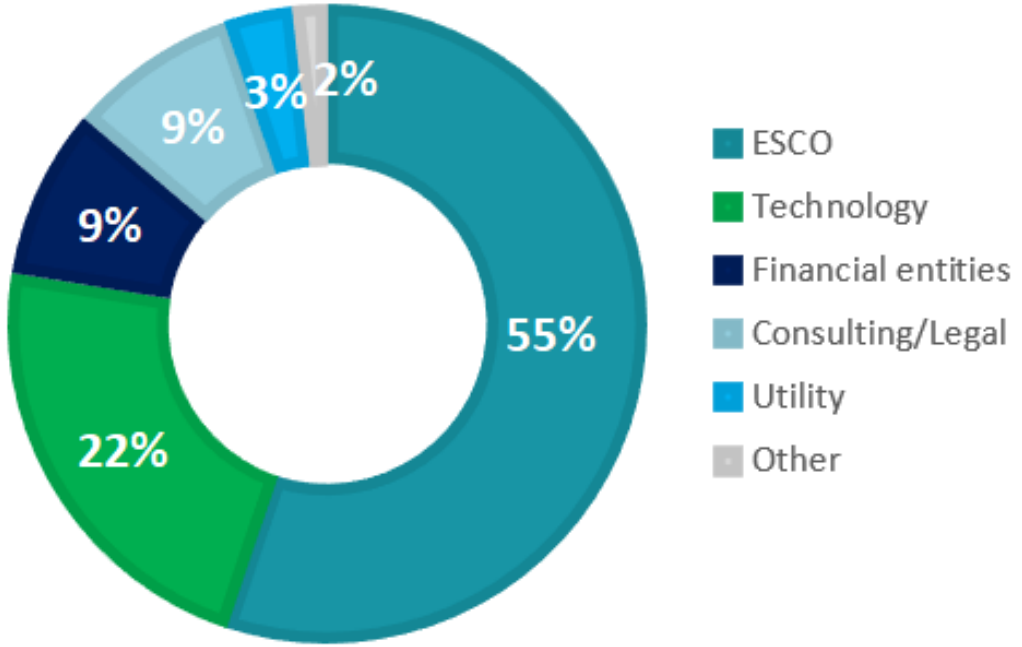
Spanish ESCO Market – trends and barriers

Layout

- About ANESE
- Energy targets - Context
- Spanish ESCO Market.
- Spanish ESCO Market - Opportunities and barriers.
- ESCOs Fields of interest.
- ESCOs Types of contracts.

Who is ANESE?

ANESE is the National Association of Energy Services Companies in Spain, we have more tan 10 years of experience since our creation and currently we are more than 120 memberships.
It is a non-profit business that aims to structure the ESCO market.



Our Memberships

- Business hub (Foster synergy)
- Working groups
- European and Nationals projects
- Publications and organization of events
- Job Board
- Internal and external communication
- Training courses
- Projects offers

Gold

BBVA, Deutsche Bank, nedgia Grupo Naturgy

Silver

acciona energía, EDISON NEXT, DISA

Bronze

ABB, ACV, YGNIS, artesolar, BOSCH Innovación para tu vida, CaixaBank, CBRE, Circutor, energisme, GRENKE FAST // FORWARD // FINANCE, GRUPO BC, METRON, REPSOL, Schneider Electric, smarkia, soriguē, STARFIRE RENEWABLE ENERGY, Suma Capital, SYLVANIA, TÜVRheinland®, uponor, wilo, ZUMTOBEL THORN

Corporate Partner

endesa

Number

Services for our partners – Working Groups

ANESE works step by step with its partners to find common interests and to promote the development of the Efficiency and Sustainability bringing solutions and services to the market.

WG Financing

Identify, coordinate and facilitate access to financing lines for our partners.

WG Contracting

Define a procedure and key clauses to promote the contracting of energy services at both public and private levels.

WG Technology

Technology Guide for Energy Saving and Efficiency. Energy Saving Certificates

WG Classification

First certified classification of energy services companies (ESCOs) : ESCO and ESCO + seals.

WG Energy Transition

Promotes work in key sectors related to the energy transition market (self consumption, sustainable mobility, etc)

WG Renovation

Development and analysis of initiatives, solutions and technologies related to the energy rehabilitation of the residential sector.

WG Energy Communities

Understand the business opportunities that arise from energy communities to promote the implementation of projects..

WG Funding and Grants

Inform and analyze the different grant programs related to the activities of our associates. Special focus on NextGenerationEU funds.

Services for our partners - Projects

ANESE is committed to participating in different projects (European and National), aligned with energy efficiency and sustainability, and business model offered by ESCOs.

Project of the Spanish Climate Change Office for the reduction of CO2 emissions.

Promote and accelerate the development of private investments.

Building rehabilitation project to reduce energy consumption (Extremadura)

Promote the use of heat pumps and their combination with renewable energy sources.

European project that will lead to the implementation of the energy efficiency servitization.

Enhance energy efficiency and demand flexibility using Vehicle-to-Grid (V2G) and Vehicle-to-Building (V2B) technologies

In addition, ANESE has obtained a new project related to the LIFE 2021 Program (expected kick off: December 2022).

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Energy targets - Context

	2030 Objectives			2050 Objectives
	GHGs reduction (Compared to 1990)	**Renewable Energy Consume**	**Energy Efficiency (Compared to 2007)**	**GHGs reduction (Compared to 1990)**
Clean Energy Package	40 %	32 %	32,5 %	40 - 90%
Green Deal	50 %	32 %	32,5 %	90%
Fit For 55	55 %	40 %	36 %	
RePowerEU	55 %	55 %	39 %	
PNIEC ELP	23 %	42 %	39,5 %	90 %

Extraordinary Council of Energy Ministers - political agreement to voluntarily reduce natural gas demand by 15% between 1 August 2022 and 31 March 2023 compared to the average of the same period over the last five years. In the case of Spain, binding gas demand reduction target below 7%.

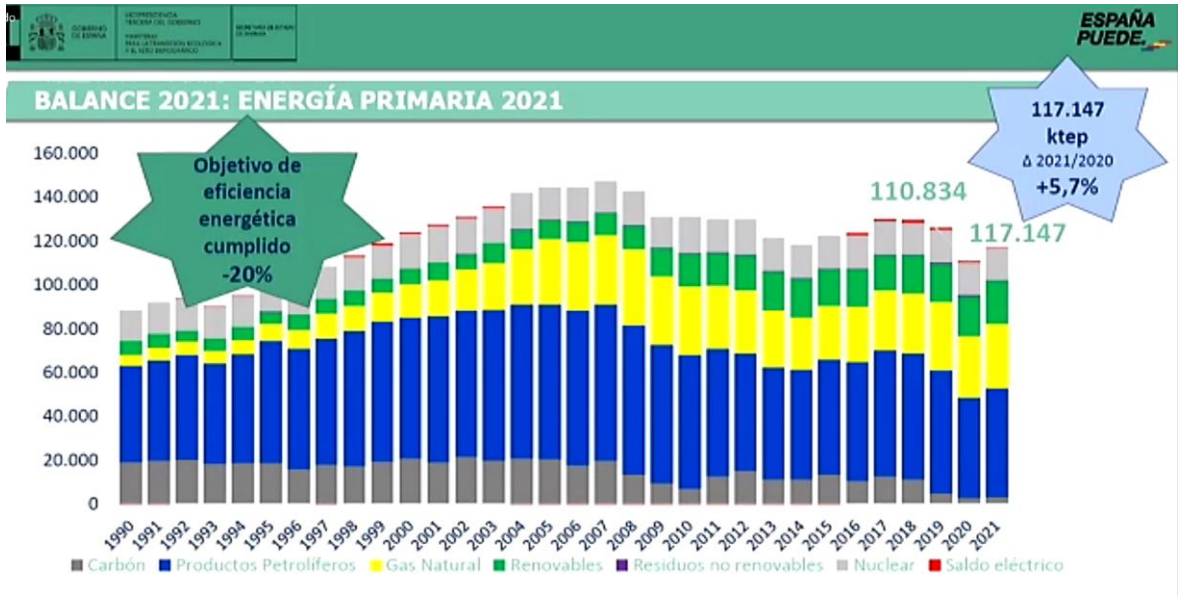
Energy targets - Context

Clean Energy Package - Environment as the main policy (Pre-Covid19)	• The EU Clean Energy Package, proposed by the European Commission in November 2016, includes eight legislative texts on the electricity market and consumers, Energy Efficiency and Energy Efficiency of buildings, Renewables & bioenergy sustainability as well as governance of the Energy Union that set the key energy transition targets.
Green deal – Speed up the energy transition (Pre-Covid19)	• Increased the EU's climate ambition for 2030 and 2050: 50% GHGs reductions for 2030 (compared to 1990 levels) • Renovation of buildings and accelerated the shift to sustainable and smart mobility. • Prioritised the use of clean, renewable energy by modernising infrastructure and promoting EE. • Encouraged the circular economy.
Next Generation	• **800 € billion** (€390 billion in grants €360 billion inloans). Capital raised on financial markets.
FIT FOR 55 Economic recovery leveraged on the Energy Transition	• Set of proposals to revise and update EU legislation and to put in place new initiatives with the aim of ensuring that EU policies are in line with the climate goals agreed by the Council and the European Parliament. • Fit for 55 refers to the EU's target of reducing net greenhouse gas emissions by at least 55% by 2030 compared to 1990. The proposed package aims to bring EU legislation in line with the 2030 goal.
REPowerEU- Reduce dependence on Russian fossil fuels and fast forward the green transition	• Deployment of renewable energy and EE: Obligation to install SPV on new public,commercial and residential buildings; increase production (10 Mtons) and import (10 Mtons) of green hydrogen and biomethane production (35 bcm) by 2030; streamlining the processing of large renewable energy projects and doubling of the rate of deployment of heat pumps. • REPowerEU requires an additional investment of **€210 billion between now and 2027.**

Energy targets - Context

Spanish Strategic Energy and Climate Framework

- Different governance tools were developed to achieved the decarbonisation targets:
  - ✓ PNIEC 2021-2030: short- and medium-term roadmap and targets reviewed every 5 years.
  - ✓ ELP 2050: long-term roadmap and targets reviewed every 5 years (on the basis of the PNIEC update).
  - ✓ Energy and Climate Act - stable long-term policy framework.
- Setting new goals and policies:
  - ➢ Development of the Contingency Plan + RDL 14/22 (urgent measures).
  - ➢ PNIEC update.



Energy targets - Context

Spain's recovery and resilience plan

4 transversal axes

- **Ecological Transition**, a Green Spain (37% BDGT)
- **Digital Transformation**, a Digital Spain (33% BDGT)
- **Gender equality**, Spain, a country without gender gaps.
- **Social and Territorial Cohesion**, a cohesive and inclusive Spain

- **140 €Bn Budget allocation**
  - **72 €Bn** in grants.
  - **68 €Bn** in loans.

- **Regional Administrations** (Autonomous Communities and Local Authorities) managed +50% of recovery funds.

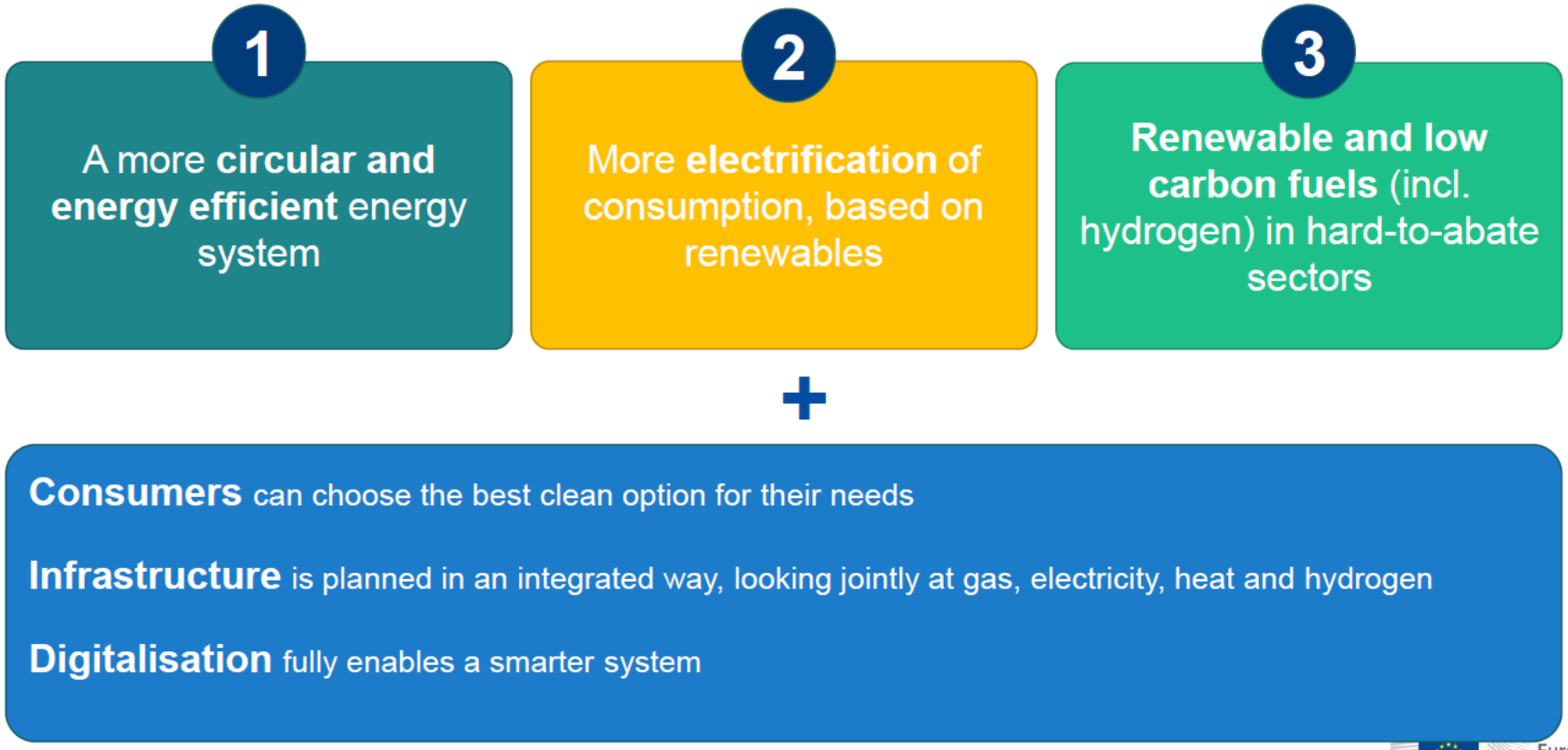
- Focus on public-private partnerships, through various financial instruments.
- Implementation through an inclusive governance structure.

Leverage policies (b€)

Spain	1 Urban and Rural Agenda	*22*
	2 Resilient infrastructures and ecosystems	*17*
	3 A just and inclusive energy transition	*12*
	4 An administration for the 21st century	*7*
	5 Modernisation and digitisation of the industry	*24*
	6 Pledge for science and innovation	*23*
	7 Education and knowledge	*25*
	8 The new care economy and employment policies	*8*
	9 Promotion of the culture and sports industries	*2*
	10 Modernisation of the tax system	-
	Total EU Funds 2021-2026 to Spain	***140***

Energy targets - Context

The Energy System Integration Strategy



European Commission

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ESCOs market - Spain

2021 Observatorio de Eficiencia Energética
El mercado de las Empresas de Servicios Energéticos

3rd edition (2017, 2019, 2021)

Market data from 2015 to 2020 has been analyzed.

The last edition had the participation of 44 ESCOs from Spain and Portugal.

ESCOs market - Spain

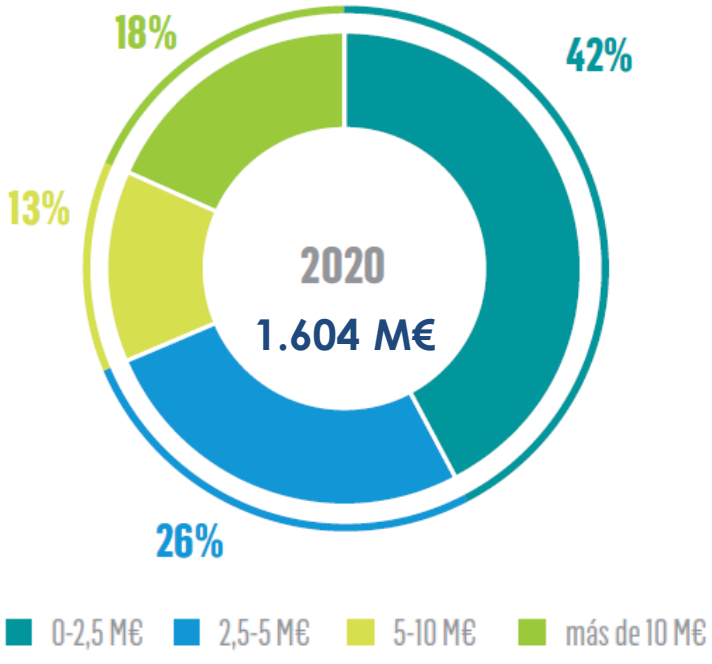
General information

Energy Savings
37%
average per project

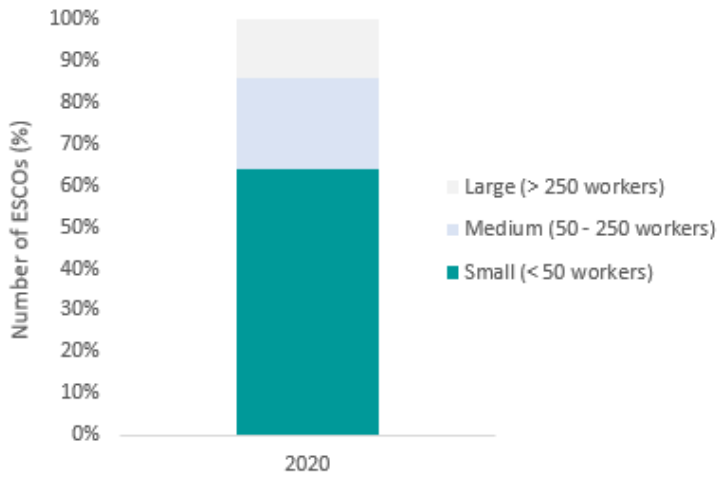
Emissions Reduction
45,4 Tn CO2
average per project

Budgetary project
706.971 €
average per project

ESCOs Turnover



ESCOs size



ESCOs market - Spain

Implemented technologies

Energy Monitoring & Management	68%
Indoor lighting	55%
Heating and cooling	55%
Outdoor lighting	42%
Self consumption	47%
Industrial Processes	34%
Engines	13%
Sustainable Mobility	26%
Building Envelope	13%

Scope of activity

Public 13%

Private 34%

Public + Private 53%

2020

Savings

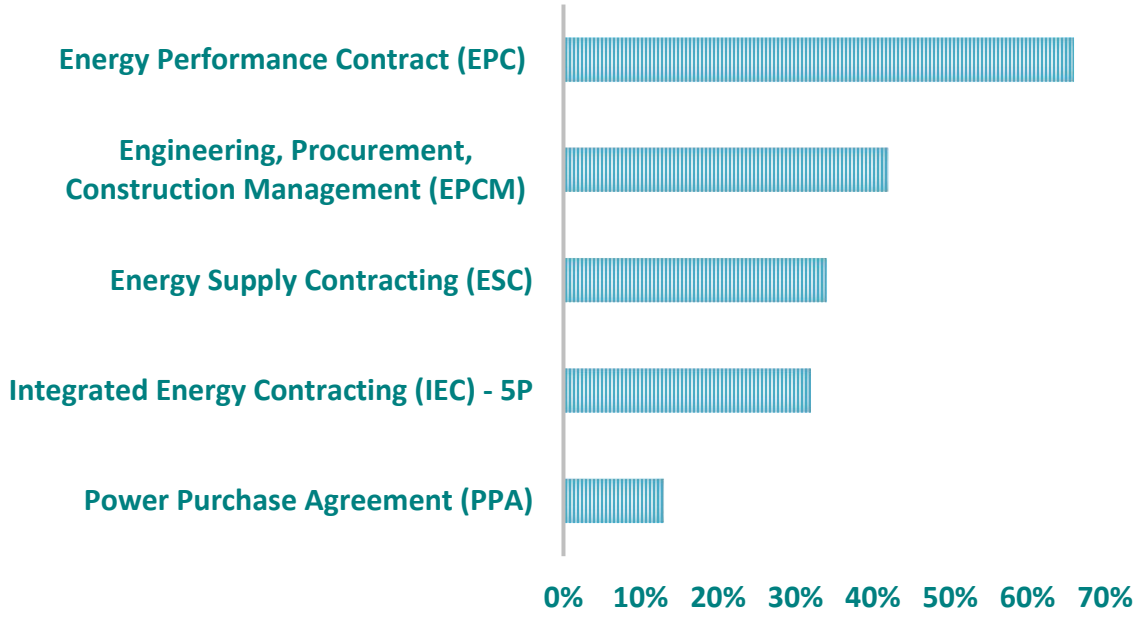
(per Technology Application)

53%	45%	20%	20%	19%
Outdoor Lighting	Indoor Lighting	Heating and Cooling	Compressed Air Production	Energy Monitoring & Management

18%	17%	17%	16%	15%
Building envelope	Heat production	Individualized energy demand	Engines	Cooling production

ESCOs market - Spain

Type of contracts



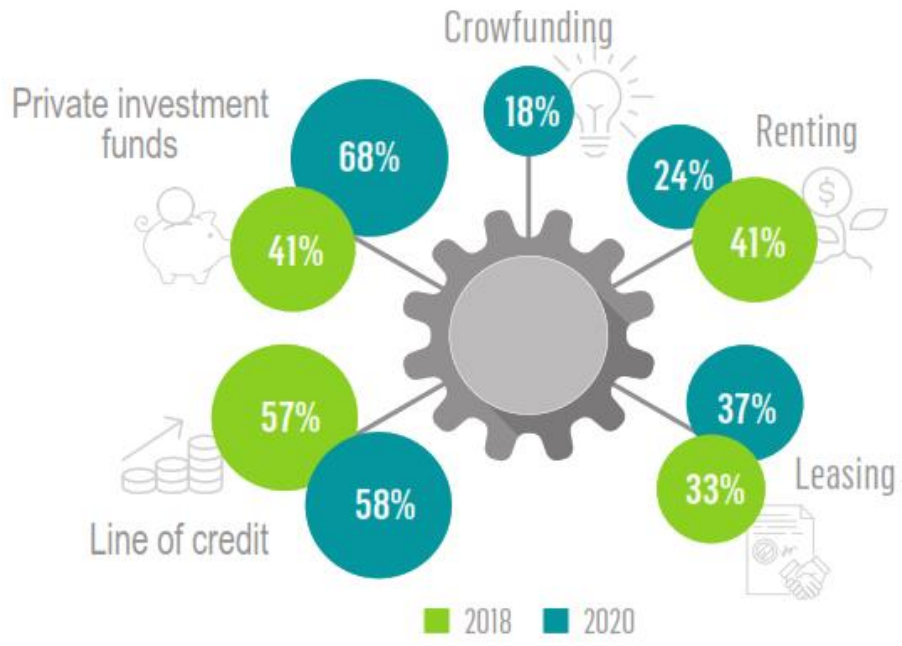
- The **Energy Performance contract (EPC)** are the **dominant form** of ESCOs contracts. Specifically those in which ESCO make the investment and guarantee savings.
- Contract maturity period (months)

- Duration of the energy services contract: **The total average is 8 years** (7 years private sector/10 years public sector)

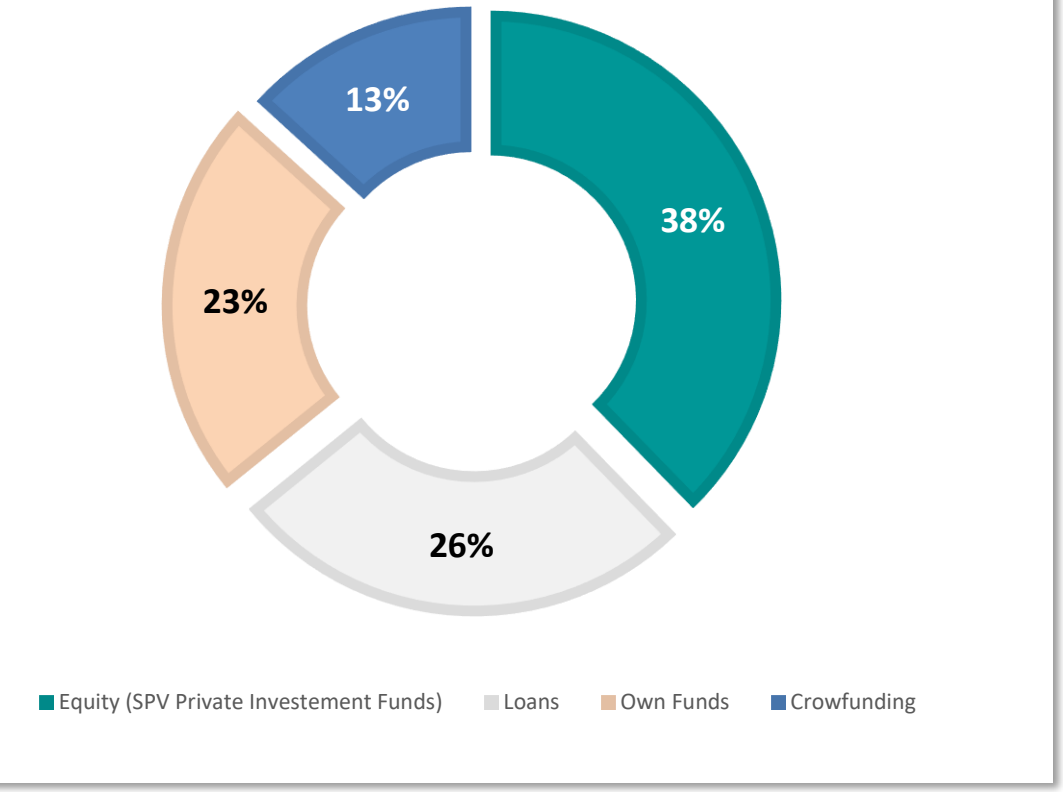
Financial Mechanisms

- 80% of ESCOs used their own funds and 58% used external financial mechanisms to finance projects.
- 80% of the projects are carried out without grants.

Financial Mechanism
(Energy Efficiency observatory)



Financing Energy Efficiency using Private Invesment (H2020)

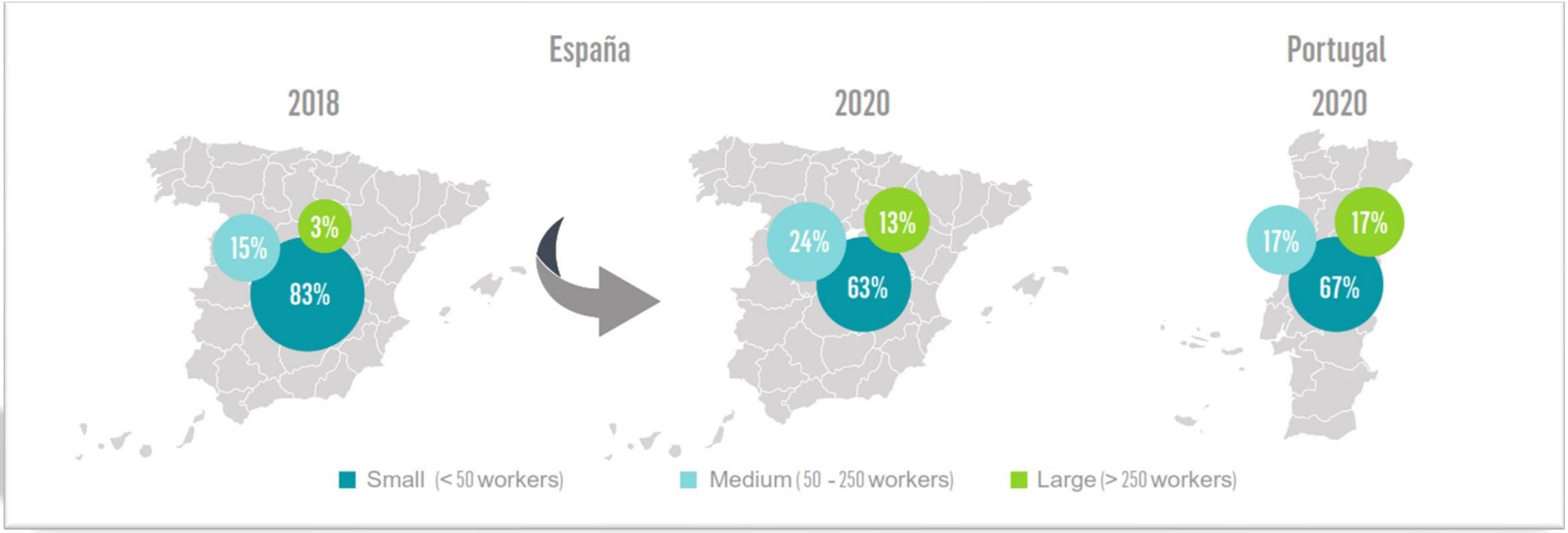


ESCOs market - Spain

- **Madrid, Barcelona and Vizcaya concentrate the largest number of ESCOs (Headquarters)**
- **79% of companies carry out projects in more than one Autonomous Community.**

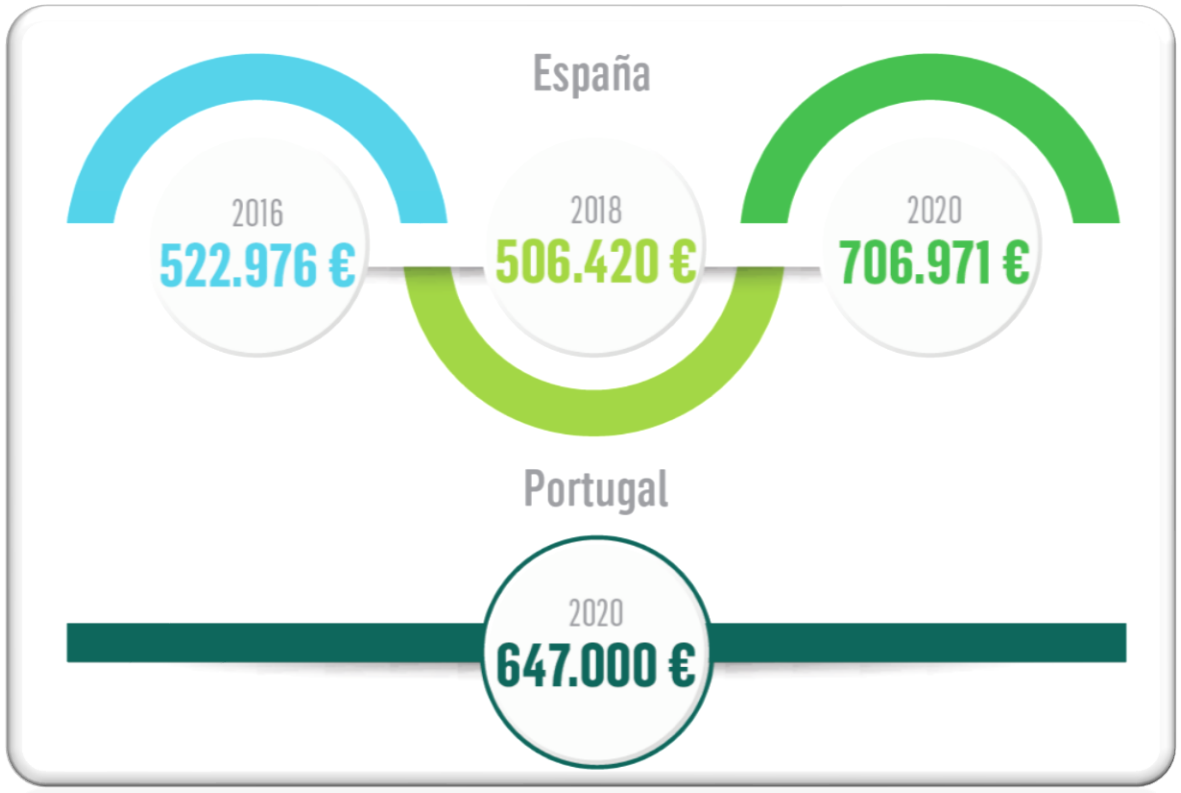
Comparative Spain/Portugal – ESCOs size

- **The ESCO market is dominated by SMEs in both Spain and Portugal.**
- **In Spain, 74% are ESCO divisions belonging to a company with more lines of business, while in Portugal it is 17%.**



Comparative Spain/Portugal – Project budget

- **The average Project Budget in Spain increases year by year.**
- **Portuguese ESCOs present an average project budget similar to Spain.**



€

Lighting 1.727.000 €

Industry 615.000 €

Residential 278.000 €

€

Lighting 1.425.000 €

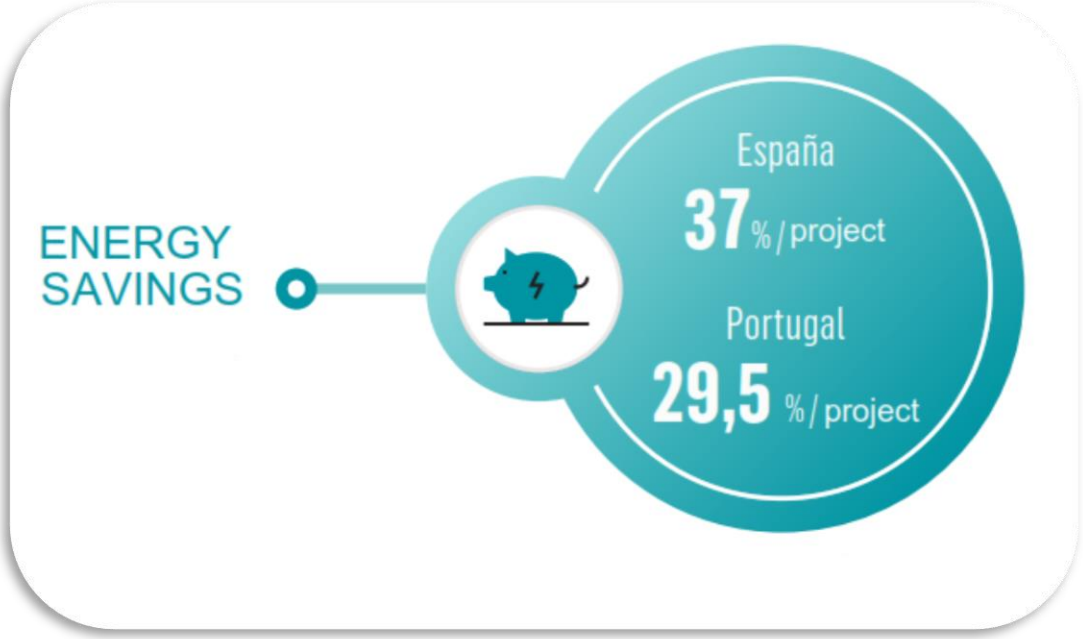
Industry 547.920 €

Residential 278.330 €

Comparative Spain/Portugal – Annual Savings

- Annual electricity savings:
  - ✓ **225.000 kWh/project - España**
  - ✓ **250.010 kWh/project - Portugal**

- Annual thermal energy savings
  - ✓ **72.000 kWh/project - España**
  - ✓ **343.753 kWh/Project - Portugal**



Comparative Spain/Portugal – ESCOs size

anese

2021 Observatorio de Eficiencia Energética

El mercado de las Empresas de Servicios Energéticos

Download the Observatory!

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2020 – Opportunities and barriers

	Opportunities for ESCO	Opportunities for the client	Barriers
1^{st}	Costumer portfolio loyalty	Energy savings	Lack of knowledge of the ESCO model – client side.
2^{nd}	Economic stability with recurring income	The customer does not make the final investment	Lack of governmental support
3^{rd}	Technological advances	Renovation of facilities	Lack of citizen awareness
4^{th}	Catalyst for new projects	Technology confidence	Low trend towards outsourcing energy management
5^{th}	Governmental support	Raising of social awareness of the enviroment	Duration and complexity of the energy services contracts (lack of knowledge)

2020 – Opportunities and barriers

	Opportunities for ESCO	Opportunities for client
1^{st}	**Costumer portfolio loyalty**	**Energy savings**
	✓ Long-term contracts. ✓ Technical and operational risk taken by the ESCO. ✓ Energy efficiency projects companion.	✓ Energy consumption reduction. ✓ Improvement of competitivity. ✓ Cost reduction. ✓ Lower volatility of energy related costs.
2^{nd}	**Economic stability with recurring income**	**The customer does not make the final investment**
	✓ Income predictability. ✓ Better stance vis-a-vis financial entities. ✓ Access to cost-effective capital and financing because of viable business cases.	✓ Financial risk is taken on by the ESCO (on some contracts) ✓ Increased simplicity, by offering turn-key products with included financing.
3^{rd}	**Technological advances**	**Renovation of facilities**
	✓ Cutting-Edge technology promote higher savings, translating into added revenue for ESCOs ✓ Focus on technology neutrality (best solution for each project.)	✓ ESCO intervention often implies renovation of clients facilities. At project maturity the client has the extra benefit of owning a renovated asset.

2020 – Opportunities and barriers

Barriers

1st Lack of knowledge of the ESCO model – client side.

Uncertainty of whether investment will generate sufficient revenues to payback the financing

Mitigation

- Standardized Measurement and Verification Protocols.
- Need for further ESCO model dissemination

2nd Lack of governmental support

Many help and subsidy programs do not include ESCOs as direct beneficiary.

Mitigation

- ANESE is lobbying to reverse this situation.
- The ANESE seal is a tool in helping establish the difference between ESCOs and energy services providers

3rd Lack of citizen awareness

Citizens are not aware of the ESCO model and its advantages.
There is a fragmented market where ESCOs present their models and contracts as ownership instead of focusing on the ESCO model itself.

Mitigation

- Workshops and dissemination actions on the ESCO model applied to individual clients.

2020 – Opportunities and barriers

4^{th}

Opportunities for ESCO

Catalyst for new projects

- ✓ Emerging technologies in energy efficiency give ESCOs the opportunity to act as catalysts in their early adoption.

Opportunities for the client

Technology confidence

- ✓ Having an ESCO share the risk of a project greatly simplifies the decision to take on new and emerging technologies for the client.
- ✓ Avoided risks related to technology performance over the lifetime of the project.

Barriers

Low trend towards outsourcing energy management

Many companies are not open to outsourcing their energy management preferring the status quo.

Mitigation

- ESCOs need to demonstrate solid experience and knowledge to overcome the doubts about the terciarization of energy management, becoming effective partners and taking on their share of the risks.

2020 – Opportunities and barriers

Opportunities for ESCO

5^{th}

Governmental support

- ✓ Opportunity for the state to clarify the legal definition of ESCOs and incorporate them in the regulatory framework (as demand aggregators, within energy communities, within the CAE system)

Opportunities for the client

Raising of social awareness on the enviroment

- ✓ Taking an active part on the energy transition.
- ✓ Establish and execute decarbonization projects.

Barriers

Duration and complexity of the energy services contracts (lack of knowledge)

Client's risk perception is heightened by lack of knowledge and duration of commitment.

Mitigation

- Dissemination of information on contract models.
- Contract simplification (standardized clauses). EU EPC standard.
- New simpler contract models (servitization).

Proposals for action - ANESE

- Dissemination of information to potential customers
- Financial and tax assistance
- Sectorial campaigns in rural media
- Dissemination events
- Disclosure of success business cases.

ANESE's evaluation of ESCOs survey participants

7,8

Main fields of ESCOs interest

- ✓ **81%** → Renewable energy Communities
- ✓ **46%** → Energy Savings Certificates
- ✓ **46%** → Demand-independent aggregators
- ✓ **35%** → Energy as a service contract

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Main Fields of ESCOs interest – Energy Communities

- Only the legal form of **Renewable Energy Communities has been partially transposed** (only its definition, not the whole aspects of the figure). The transposition of the Citizens' Energy Communities remains to be done.
- Even without being transposed, the policy makers **uses the figure to give access to grants, aids or exemptions from requirements.**

Paradigmatic example of government support

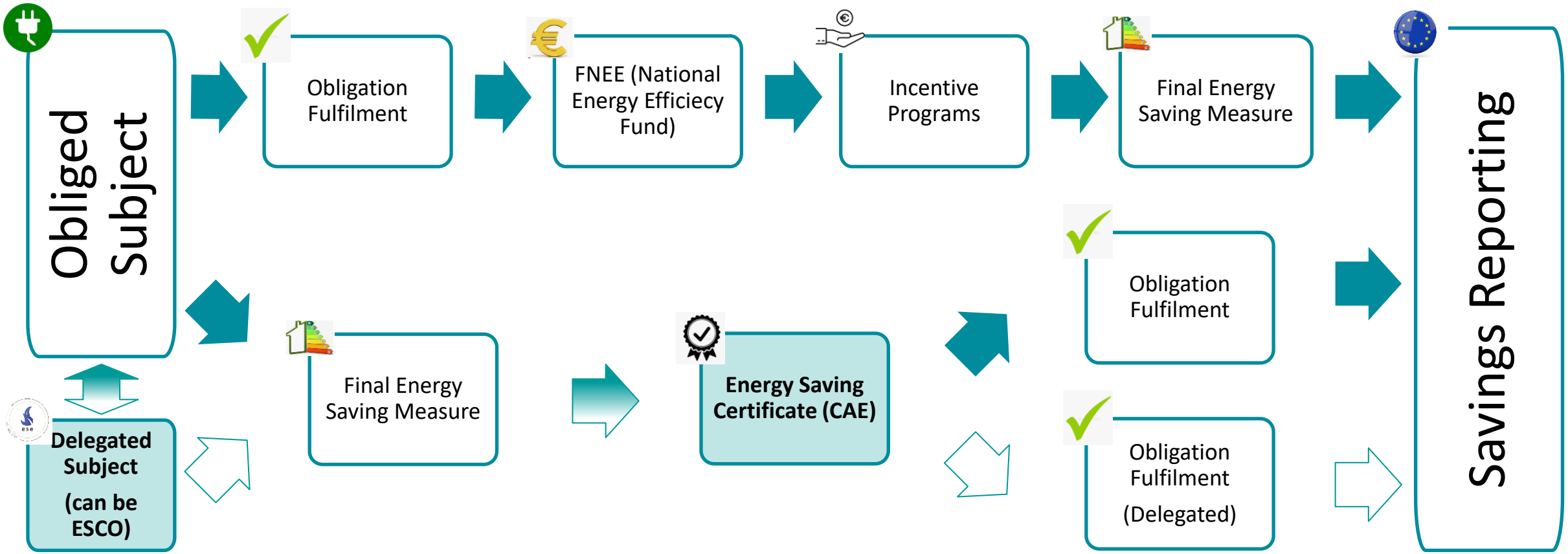
C7.R3 - PRTR . Energy Communities (100 M€): *the component is divided into 4 action plans. The lines will support all phases of the creation of an energy community.*

- **CE- OFICINAS***:* implementation and operation of Community Transformation Offices (CTOs) aims to promote and dynamicaly develop EECC
- **CE- APRENDE** *(in the pipeline):* grants for individuals or organisations interested in creating an EECC .
- **CE- PLANIFICA** *(in the pipeline):* planning and constitution of the EECC. This programme covers the financing of studies and contracts model or specialised technical assistance and legal advice.
- **CE- IMPLEMENTA** *(finished): grants* for integral and cross-cutting projects in the field of renewable electrical and thermal energy, energy efficiency or electric mobility.

Target T4 2023: implementation of at least 37 projects.

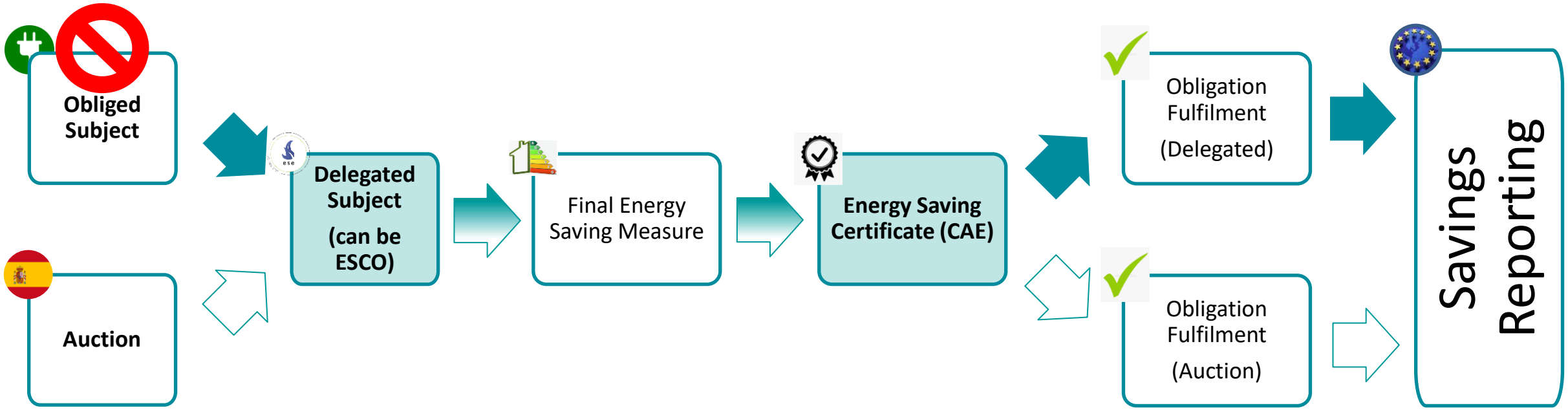
Main Fields of ESCOs interest – CAEs

The Ministry for Ecologic Transition and Demographic Challenge is preparing a system for the attribution and redemption of energy efficiency certificates, that can be easily obtained through a catalog of standard measures. ANESE is participating in the definition of some of the standard measures for this catalog.



Main Fields of ESCOs interest – CAEs

Additionally to the standard mechanism, an auction mechanism is also foreseen, to ease the starting of the system



Main Fields of ESCOs interest –Independent Aggregators

- Different aspects to understand the figure of the aggregator were set out in the EU Directive 2019/944:
  - Aggregation: a function performed by a natural or legal person who combines multiple customer loads or generated electricity for sale, purchase or auction in any electricity market.
  - Independent aggregator: market participant engaged in aggregation who is not affiliated to the customer's supplier.
- Access to energy markets for market players providing flexibility services is not uniform across the EU.
- Direct access to the Wholesale Market (WM), Balancing Market (BM) and Capacity Market (CM), is sometimes restricted to either some market participants (Balancing Responsible Parties and also aggregators) or is totally absent.

The participation of the figure needs to be regulated and extended to all energy markets. Some regulatory developments:

→ **Transposition of the figure of the independent aggregator - RDL 23/20** (only its definition, not the whole aspects of the figure)

→ **D 18423 CNMC – Tests for independent aggregators to participate as balancing service providers:** Minimum offer capacity: 1 MW.

Main Fields of ESCOs interest – EaaS

The servitisation is a model where energy is offered on a "pay-as-you-go" basis. According to previously agreed conditions, the customer pays only for the energy used.

Pay per use model.

The installation and maintenance of equipments is assumed by Technology providers.

Periodic payment from the customer based on the agreed service (lighting hours, cooling tons, heat consume, etc.).

No capital expenditure (end clients)

Technology Risk minimisation.

Motivated energy reduction

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ESCOs Type of contracts

Depending on customer needs, different types of contracts can be established between ESCOs and clients.

Energy Performance Contract (EPC)	Savings in kWh The investment is assumed entirely by the ESCO or the client (depends on savings model)
Energy Supply Contracting (ESC)	Savings in €/kWh ESCO is only remunerated for the useful energy output (electricity, heat, etc). The payment is not based on the energy efficiency achieved.
Power Purchase Agreement (PPA)	Often refers to a long-term electricity supply agreement (5-15 years) between two parties, usually between a power producer and a customer (an electricity consumer or trader).
Engineering, Procurement, Construction Management (EPCM)	A turnkey contract is an agreement in which the ESCO designs and implements an energy efficiency project, committing to quality levels in the commissioning of the installation, but in this case, the client-ESCO relationship ends once the installation ends.
Intgrated Energy Contracting (IEC) - 5P	Business model developed by IDAE (public sector). Services including: Energy supply, Maintenance, Full warranty, Improvement works and Improving energy efficiency.
Energy as a service	Business model where end customers pay for the energy service they receive (cooling, lighting, etc) without having to make any upfront capital investment.

Thank you
for your attention

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