



AGÊNCIA NACIONAL  
DE INOVAÇÃO

# ENERGY R&D OPPORTUNITIES AND INSTRUMENTS

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Solar Heating and Cooling Programme  
International Energy Agency  
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# SUMMARY

## R&D Co-financed Projects in Portugal 2007-2018

FITEC

INTERFACE

Horizon 2020

Conclusions



**R&D CO-FINANCED PROJECTS  
IN PORTUGAL  
2007-2018**

**ENERGY TECHNOLOGIES**

## R&D co-financed projects in national financial incentives

7 year period 2007-2013



Approved R&D projects: 1.440

Total Investment: 1.343 M€

<5 year period 2014-10/2018



Approved R&D projects: 881

Total Investment: 983 M€

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Collaborative and Individual R&D projects, Mobilizing R&D projects, Demonstration projects and pilot lines, Integration of R&D teams in companies and Investment Contract Scheme

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## Energy

Technological developments for the production, distribution or energy storage

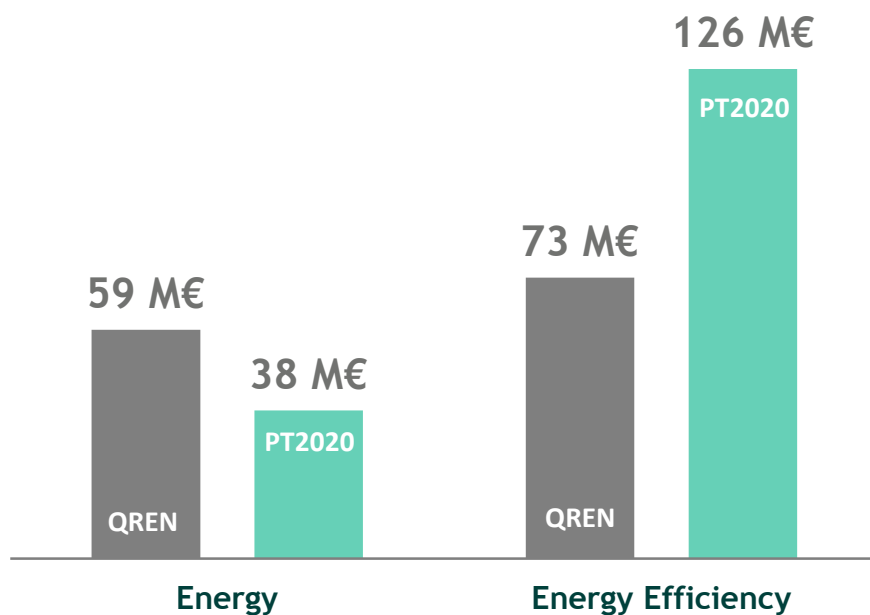
- **Reducing the costs** of power generated by renewable energy
- **Smart grids technologies** for the production, distribution or energy storage
- Technological innovations for the **transmission, distribution** or large **and** small scale **storage**
- **Advanced biofuels and alternative fuels** development

## Energy efficiency

Practices, technologies or procedures related to the efficient use of energy or with the goal of reducing energy consumption

- **Heating and cooling** efficient technologies
- Energy efficient solutions and energy systems technology for the **manufacturing and processes sectors**
- Energy performance in **manufacturing processes**
- Innovative solutions for **the transport sector**
- Energy systems for the **Information and Communication Technologies**
- **Energy consumption in** the buildings sector

## Total Investment



# 296 M€

invested in R&D over a  
12 year period

Source: ANI

PT2020 - 2014 to October 2018; QREN - 2007 to 2013  
Projects assigned to Energy Technologies by ANI

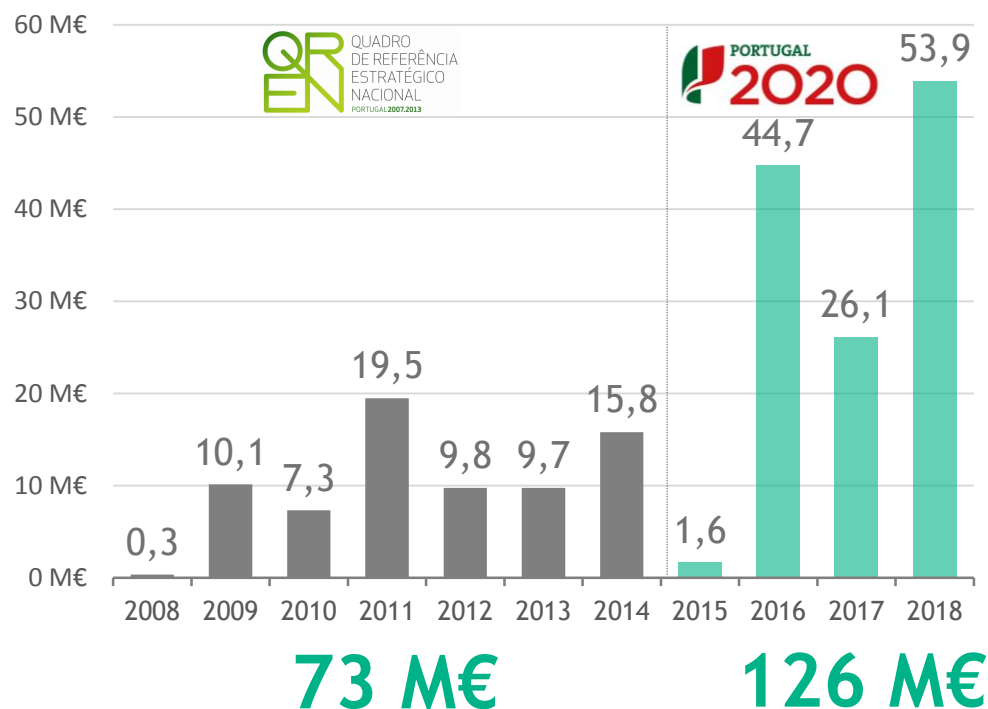


Significant increase over the last 3 years.

2 Investment Contract Scheme projects account for 32% of PT2020 investment

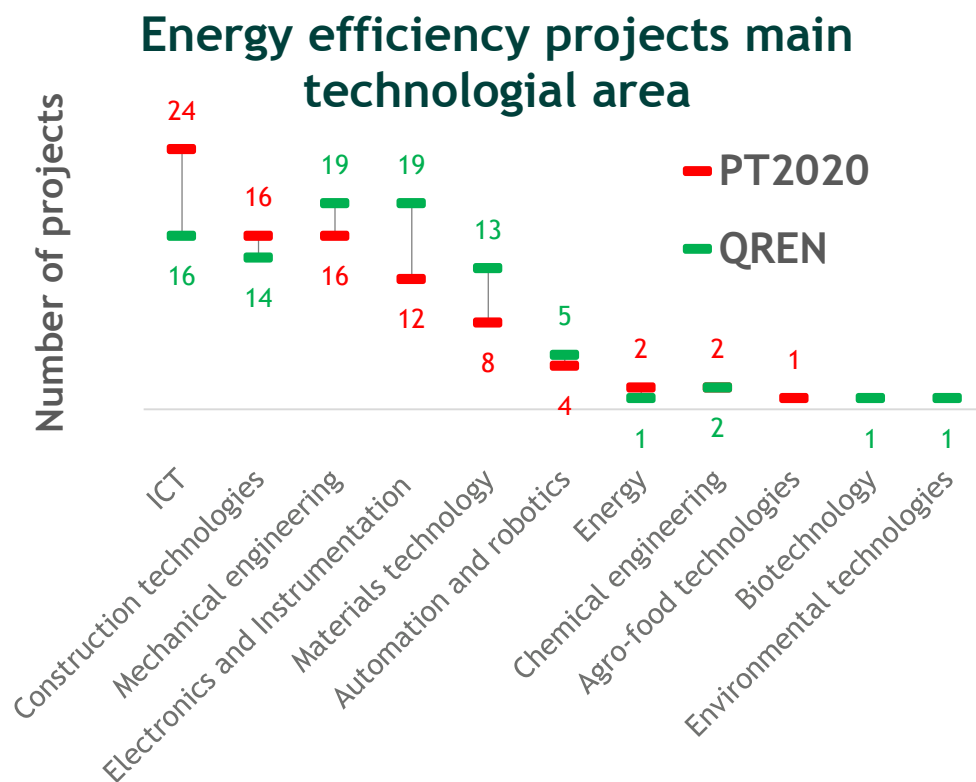
Source: ANI  
PT2020 - 2015 to 2018; QREN - 2008 to 2014  
Year of contract signature

## Energy Efficiency (Total Investment)



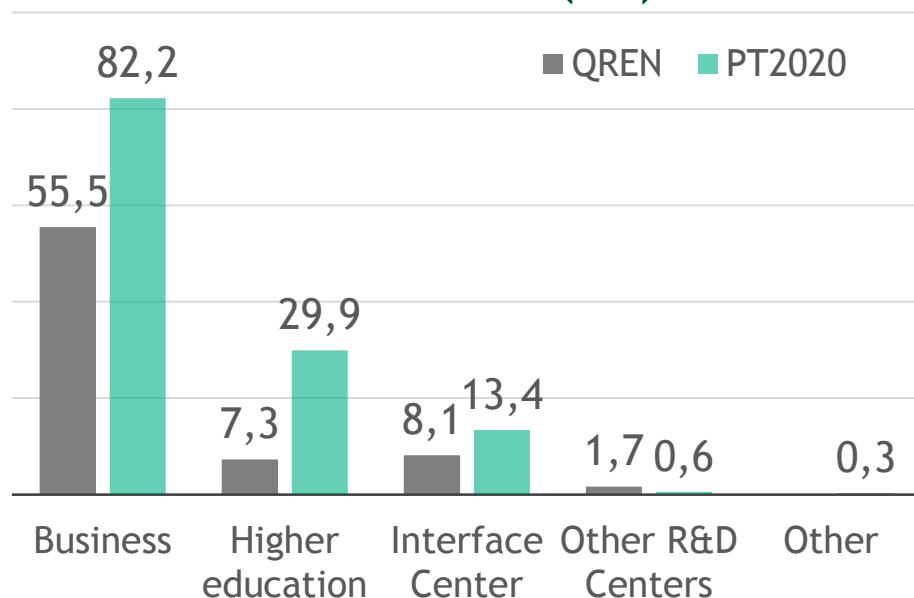


ICT, Construction technologies,  
Mechanical engineering,  
Electronics and Instrumentation  
are the main technological skills



Source: ANI  
PT2020 - 2014 to October 2018; QREN - 2007 to 2013  
Technological areas indicated in the application form

## Energy efficiency projects - Total Investment (M€)



Increasing investment among all types of participants.

Source: ANI  
PT2020 - 2014 to October 2018; QREN - 2007 to 2013

## Development of Constructive Solutions based on the NZEB concept



Cofinanciado por:



UNIÃO EUROPEIA  
Fundos Europeus  
Estruturais e de Investimento

### (Nearly Zero Energy Buildings)

- high environmental sustainability
- bioclimatic architecture concepts,
- new systems of production, accumulation and energy management

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**Coordinator:** Dreamdomus

**Partners:** Faculty of Engineering of the University of Porto and Magnum Cap

**Total Investment:** 899 M€

**Public support:** 584 M€

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# **FITEC INTERFACE**

## **FINANCIAL INSTRUMENTS**

Calls to be open in 3 areas:



**Digitalization:** transition towards Industry 4.0



**Circular Economy:** Efficiency in resources usage and valorization



**Energy Efficiency:** in companies and in the economic system

## Energy Efficiency FUND



**Who can apply:** Interface Centres; Companies;  
Higher Education Institutions



**Lenght:** 6-year programme



**Amount:** 100 M€ (available through calls)

## PI PROGRAMA INTERFACE

- **Competitiveness Clusters: 20**

*(ICT, Smart Cities, Sea Technologies, Textiles, Automotive, Space/Aeronautics, AgroFood, etc.)*

- **Interface Centers (IC): 28**

*(Technological Centres, R&D Institutions, etc.)*

- **Collaborative Laboratories: 21**

- **“Suppliers Clubs”**



## Cluster Policy

- Stimulate **collaborative innovation**
- Launched in 2009 by the Portuguese Government; recognized **18 innovative Clusters** in the country, with thematic and sectorial orientation
- The Portuguese Government launched a new phase of the Cluster program in 2017

**2017: recognition of 20 Clusters** in advanced technological sectors (Space and Aeronautics; Production Technologies) + “traditional”/ “emergent” sectors (Agrofood; Footwear industry; Smart Cities)



## PROGRAMA INTERFACE

	2005	2015
Associates	2.900	3.350
Clients	12.040	17.300
Turnover	92 M€	128 M€
Exports	29 M€	32 M€
Employees	1.370	3.800
PhDs	260	965

Digital Technologies: 6

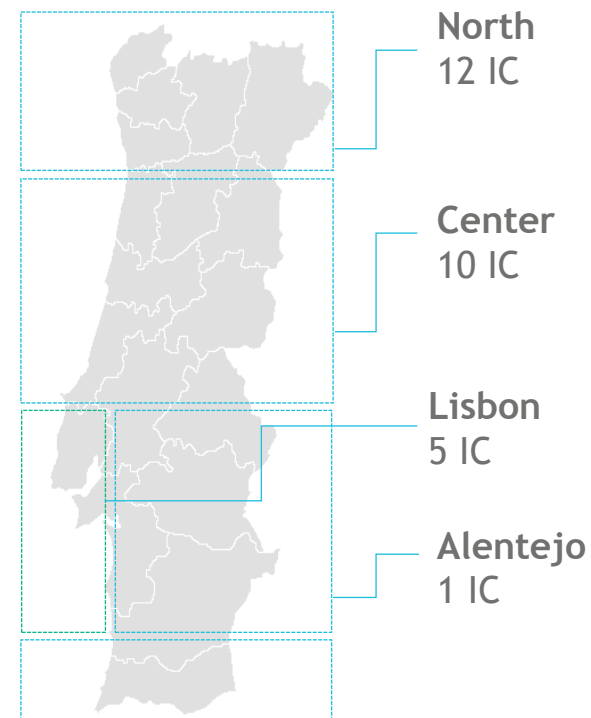
Materials and Nanotechnologies: 10

Production Technologies: 7

**Energy and Sustainability: 12**

Biotechnologies and Life Sciences: 2

Transports and Mobility: 1





## Collaborative Laboratories (CoLABs)

- Eliminate the **gap** between research and innovation activities
- Reinforce the **collaboration** between different institutions
- Interinstitutional co-responsibility of **knowledge based strategies**
- Densifying the territory in **activities based on knowledge**
- **Financing** = 1/3 public base funding + 1/3 competitive funding + 1/3 private funding



## Suppliers Clubs

Promote the integration of Portuguese SMEs in international supply chains

- **1st Phase** - Presentation of proposals for the consolidation of Supplier Clubs and the selection of the respective Nuclear Companies. An application was presented and selected, the Suppliers Club Bosch
- **2nd Phase** - Launch of calls (In 2018) dedicated to the qualification of the companies that integrate the network of suppliers Bosch

# OPPORTUNITIES FOR NET ZERO- ENERGY BUILDINGS (NZEB)

HORIZON 2020 PROGRAMME





Horizon 2020  
European Union Funding  
for Research & Innovation

The largest EU Research and  
Innovation programme

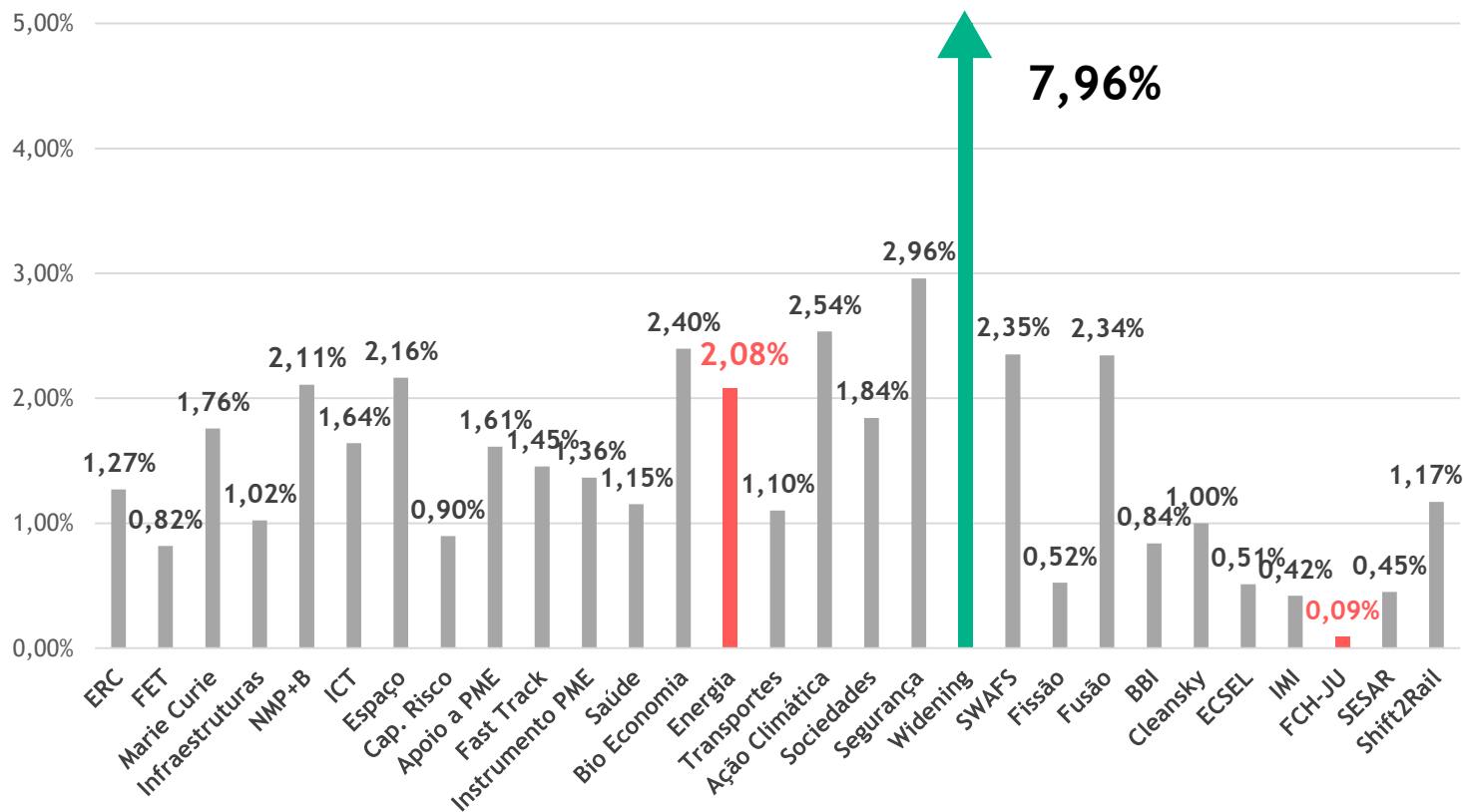
€80 billion of funding available over  
7 years (2014 to 2020)

**Excellent science, industrial  
leadership and tackling societal  
challenges**

# PT PARTICIPATION IN H2020 (%)



## Horizon 2020 European Union Funding for Research & Innovation



**AVERAGE PT  
1,6%**

Data: Calls 2014 - 2018  
\* Available results up to date



Horizon 2020  
European Union Funding  
for Research & Innovation

**561** Proposals

**98** Projects

**7** Coordinations

**162** Participations

**53 M€** Total PT funding

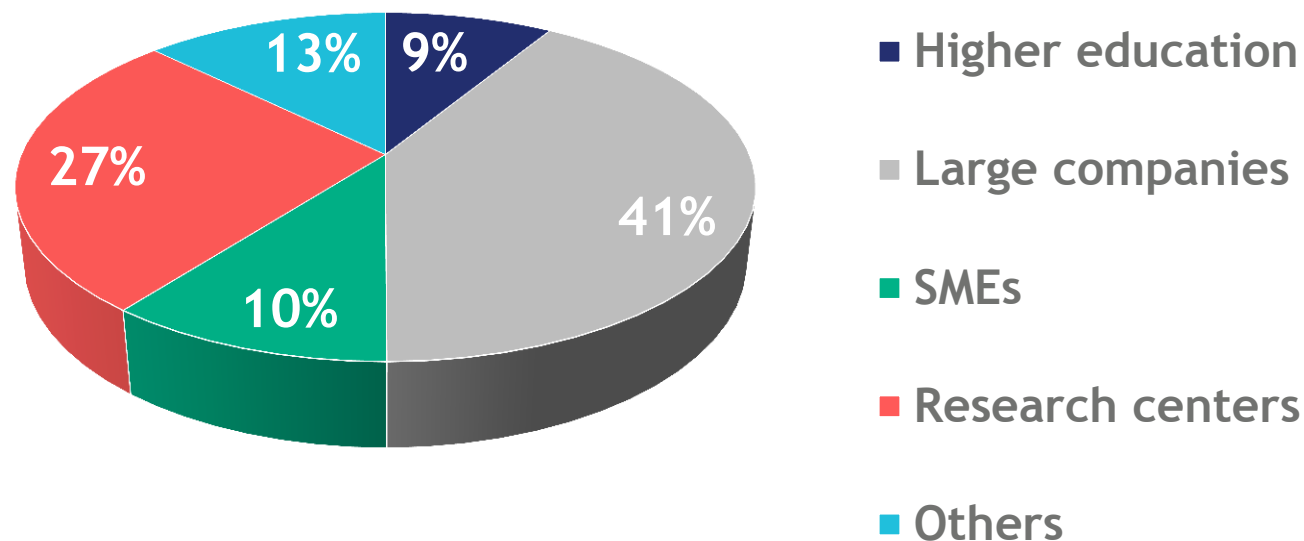
Data: Calls 2014 - 2018

\* Available results up to date



Horizon 2020  
European Union Funding  
for Research & Innovation

## Distribution of H2020 SC3 grants to PT participants by type of entity



Data: Calls 2014 - 2018

\* Available results up to date





Horizon 2020  
European Union Funding  
for Research & Innovation

## SUCCESS RATE

UE  
16,5 %

PT  
17,5 %

Data: Calls 2014 - 2018

\* Available results up to date



**(2016-2020)**

The Sharing Cities ‘lighthouse’ programme is a proving ground for a better, common approach to making smart cities a reality

Urban mobility improvement, increasing the energy efficiency of buildings and reducing carbon emissions

- **COORDINATOR: GREATER LONDON AUTHORITY**
- **'LIGHTHOUSE' CITIES: LISBON - LONDON - MILAN**
- **FELLOW' CITIES: BORDEAUX - BURGAS - WARSAW**

- Portugal has a vibrant energy efficiency research community
- We use a mix of national and european funding
- 300 M€ in energy efficiency projects (2014-2018)
- We prioritise international cooperation for state-of-the-art Research and Innovation
- I welcome our friends from the International Energy Agency TCP network!



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