



# ***Potential of financial instruments to support the transition to a low carbon economy***

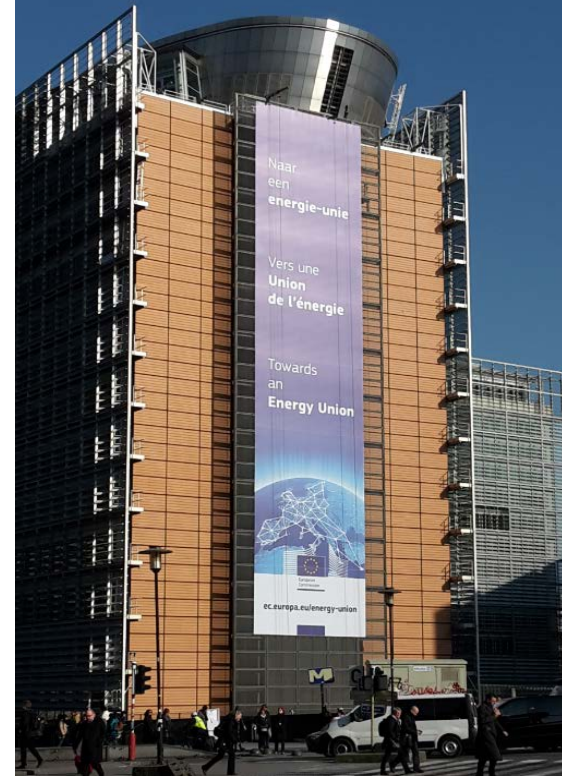
***Dimitrios Sofianopoulos***  
***European Commission – DG Energy***

***Transnational Peer to Peer Seminar, EMPOWERING***  
***October 3<sup>rd</sup> 2017, Iasi, Romania***

# Our ambition towards a low carbon economy needs to be supported by...

...a vision encompassing different levels:

- 🇪🇺 A global vision - Paris Agreement – COP 21
- 🇪🇺 A European vision - the Energy Union Strategy
- 🇪🇺 A Local/Regional Vision - Initiatives such as the Covenant of Mayors – SEAPs, Smart Specialisation Strategies, EIP on Smart Cities and Communities



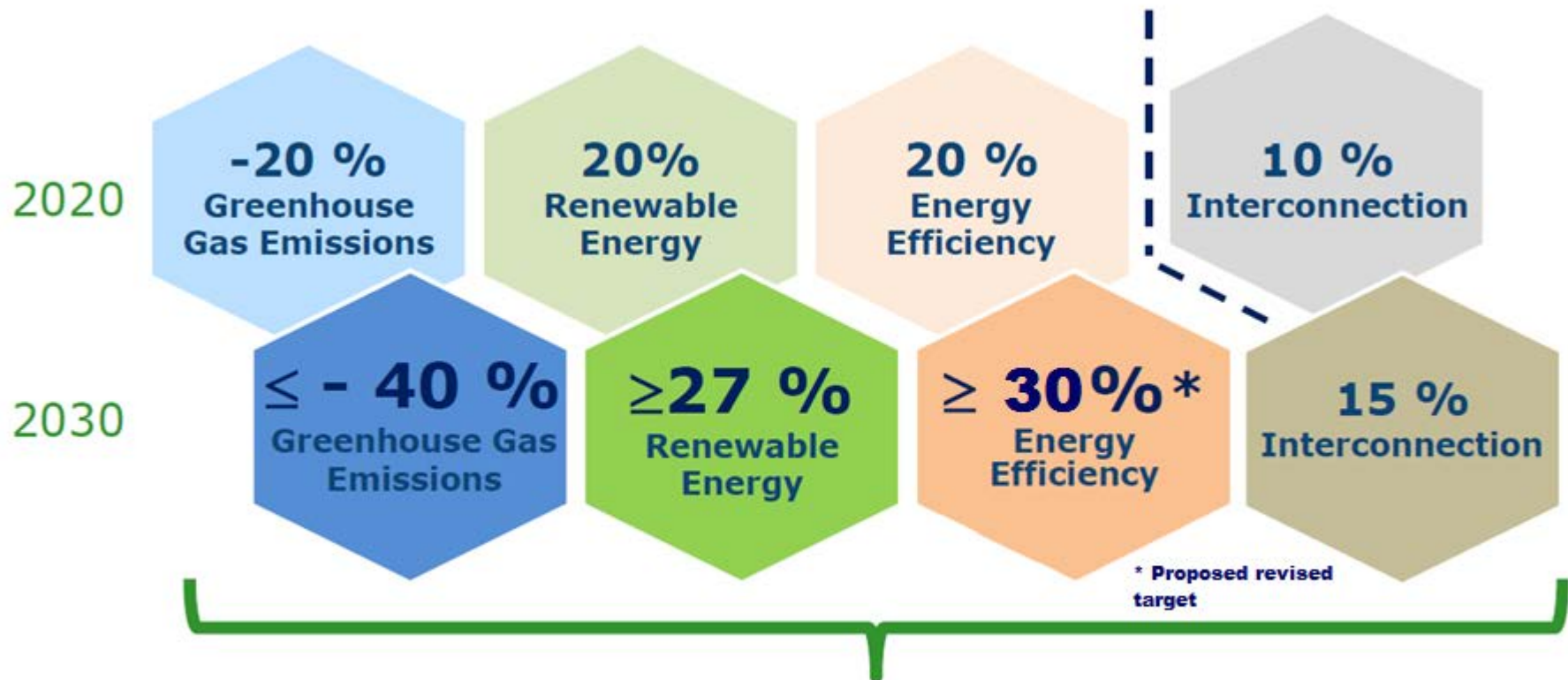
# Our ambition towards a low carbon economy needs to be supported by...



**...a firm policy and a supportive financial framework**

-  **Forward looking legislative proposals, (Clean Energy for all Europeans package)**
-  **Adequate instruments for financial support (Projects of Common Interest, Connecting Europe Facility, H2020 and instruments supporting innovation etc.)**

# 2030 European framework for climate and energy policies



New governance system + indicators

# The way towards the Energy Union

## Where we want to go:

A secure, sustainable, competitive, affordable energy for every European

## What this means:

Energy security, solidarity and trust

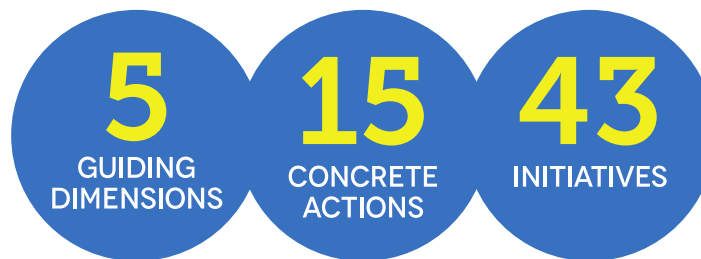
A fully integrated internal energy market

"Energy efficiency first" (including the transport sector)

Transition to a long-lasting low-carbon society

**An Energy Union for Research, Innovation and Competitiveness**

## How we want to reach it:



# Goals of the Clean Energy for All European Package

## LEADING THE ENERGY TRANSITION - CREATING VALUE FOR CITIZENS AND BUSINESSES



Putting  
energy  
efficiency  
first



Demonstrating  
global  
leadership in  
renewables



Delivering  
a fair deal  
for  
consumers

*"In essence the new package is about tapping our green growth potential across the board"*

Commissioner Miguel Arias Cañete (2016)



## Energy Union Governance



**Energy Efficiency**  
(Energy Efficiency Directive, European Performance of Buildings Directive)



**Renewables**  
(Revised Renewable Energy Directive)



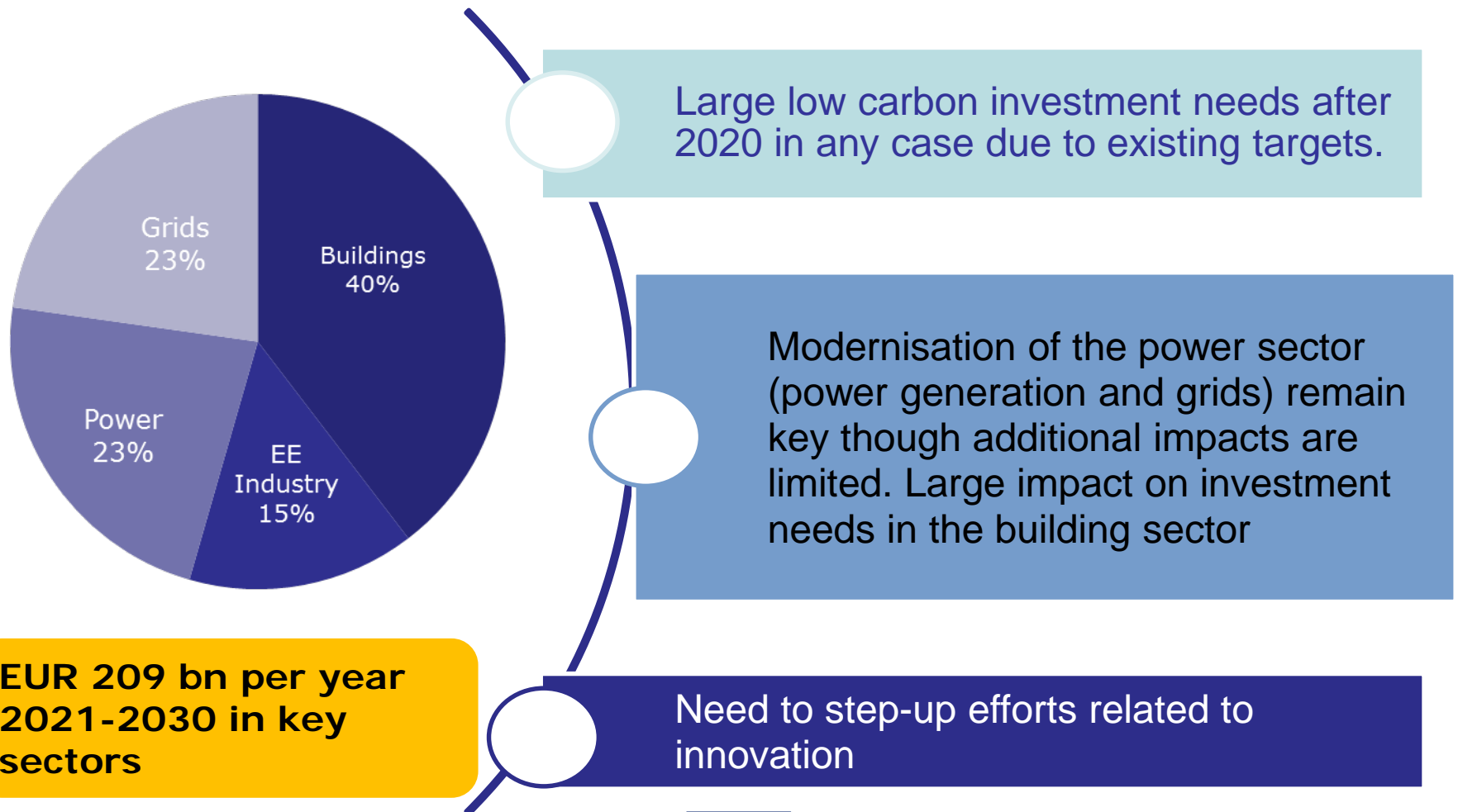
**New Electricity Market Design**  
(including Risk Preparedness)



**Energy prices and costs report**

# What are the financial needs related to market conditions

## Scale of the investment challenge until 2030



**Key challenge:** stabilise the financial and economic system while taking measures to create economic opportunities

## 1. Smart & inclusive growth\* (€451 billion)



## 2. Sustainable growth, natural resources (€373 billion)

## 3. Security and citizenship (€16 billion)

## 4. Global Europe (€58 billion)

## 5. Administration (€61.6 billion)



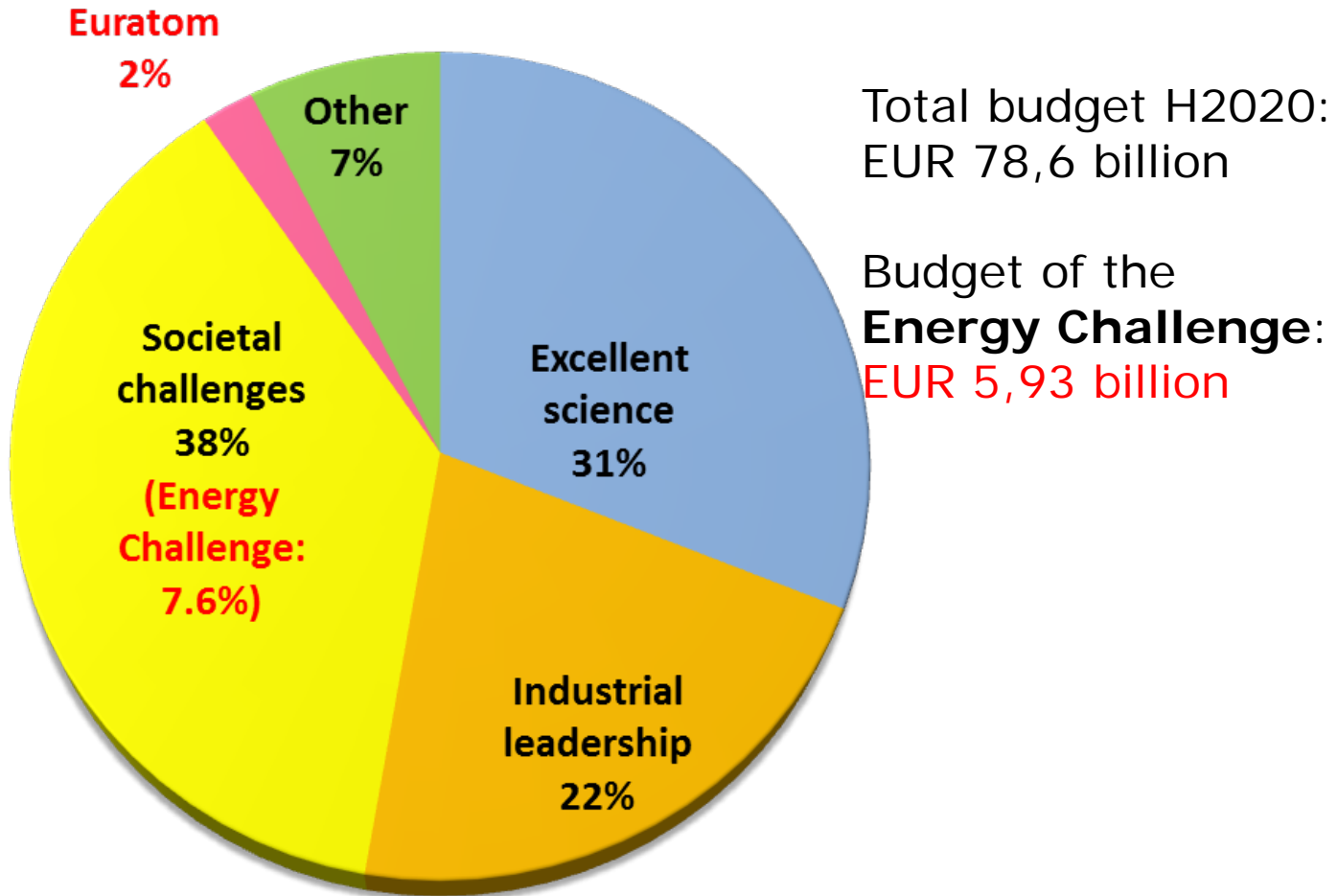
(figures are given in constant prices)

- **Cohesion Policy:** EUR 69 bn for investments related to all 5 dimensions of the Energy Union (energy and low carbon transport , including 18 bn for EE outside transport)
- **Other European Structural and Investment (ESI) Funds:** EUR 7 bn from European Agricultural Fund for Rural Development and European Maritime and Fisheries Fund for low-carbon
- **Horizon 2020:** EUR 5.93 bn for research and innovation in "Secure, clean and efficient energy"
- **Connecting Europe Facility (CEF):** EUR 4.7 bn for investments in TEN-E infrastructure of highest European added value
- **European Fund for Strategic Investments (EFSI)**
- **European Energy Efficiency Fund (EEEF):** EUR 265 mln
- Project Development Assistance (ELENA and PDA EASME)
- LIFE+ and COSME also relevant for certain aspects (e.g. PF4EE)
- **EIB financing to the energy sector is almost EUR 10bn p.a.**



- **Address market failures minimising market distortions**
- **Provide financial leverage (attracting private and public funds)**
- **Ensure policy leverage (alignment of interest with EIB and financial intermediaries)**
- **Support institutional leverage (benefiting from the expertise of the EIB and intermediaries)**

# H2020 overall budget



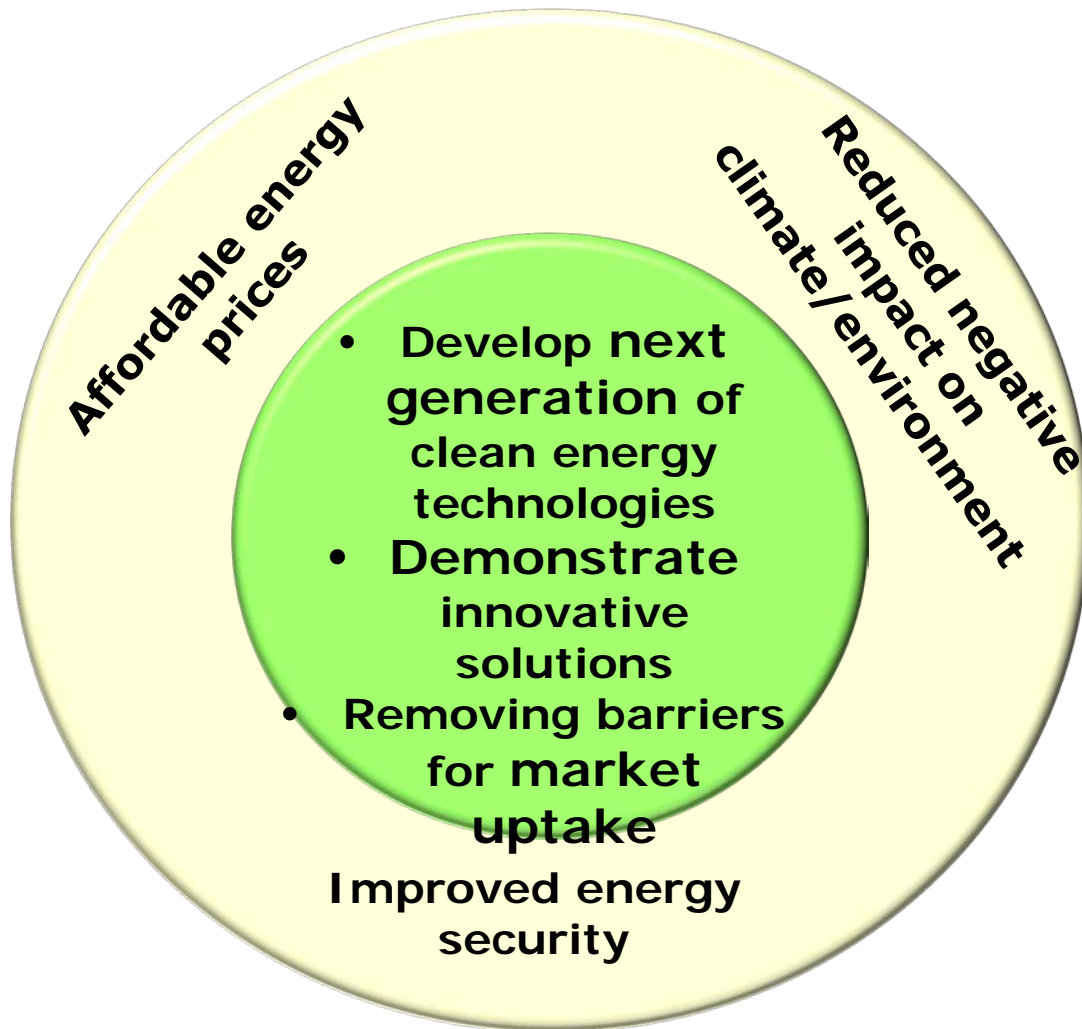
# Proposed funding related to clean energy and transport

**€ 30.1  
billion**

## Proposed funding (extract, million €, 2014-2020)

<b>Societal challenges</b>	Health, demographic change and wellbeing	7.472
	Food security, sustainable agriculture, marine and maritime research & the bioeconomy	3.851
	<b>Secure, clean and efficient energy</b>	<b>5.931</b>
	Smart, green and integrated transport	6.339
	Climate action, resource efficiency and raw materials	3.081
	Inclusive and reflective societies	1.309
	Secure societies	1.695
Science with and for society		462
Spreading excellence and widening participation		816

# H2020 Energy Challenge - objectives



FP7 Energy  
(2007-2013)  
EUR 3.25 bn

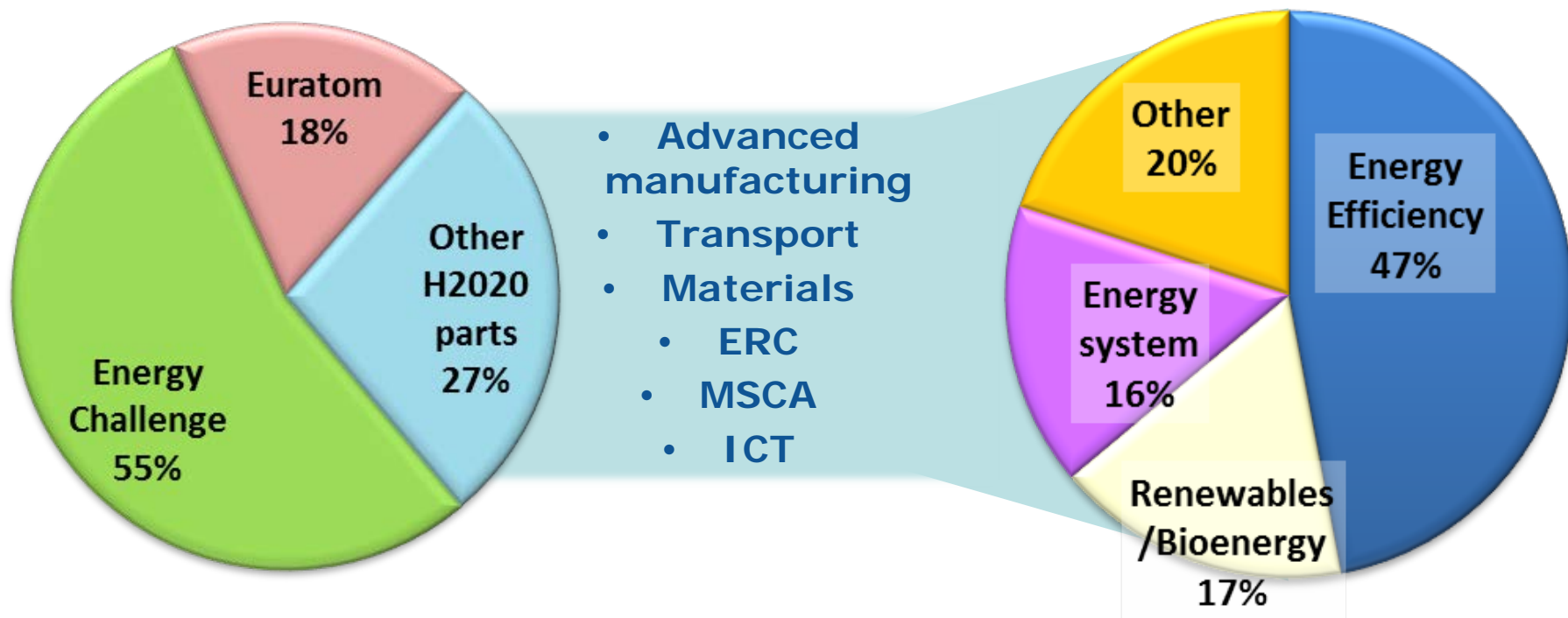
Intelligent  
Energy for  
Europe (IEE)  
(2007-2013)  
EUR 0.73 bn

H2020 – Energy  
Challenge  
Budget (2014-2020):  
EUR 5.93 billion



# Energy in other parts of H2020

**Additional energy-related spending in H2020, but outside the Energy Challenge: ca. 50% of the Energy Challenge budget**



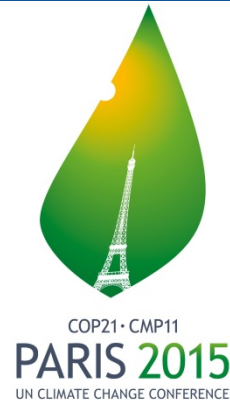
**Total budget for energy in H2020: ~ EUR 8.5 billion  
(11.4% of the total H2020 budget)**



**Energy Union (Strategy on Research, Innovation and Competitiveness; Strategic Energy Technology Plan – SET-Plan)**



**COP21  
(Mission  
Innovation)**



**Supporting further major priorities (Digital Single Market; Jobs, Growth and Investments; EU as a strong global actor)**



# The 2016-2017 calls of the Energy Challenge

## Energy Efficiency (EE)

- Heating and Cooling
- Engaging consumers
- Buildings
- Industry, services and Products
- Innovative financing

## Competitive low-carbon energy Technologies (LCE)

- Energy system (grids, storage)
- Renewable energies
- Decarbonising fossil fuels
- Socio-economic research
- European Research Area in energy

## Smart Cities and Communities (SCC)

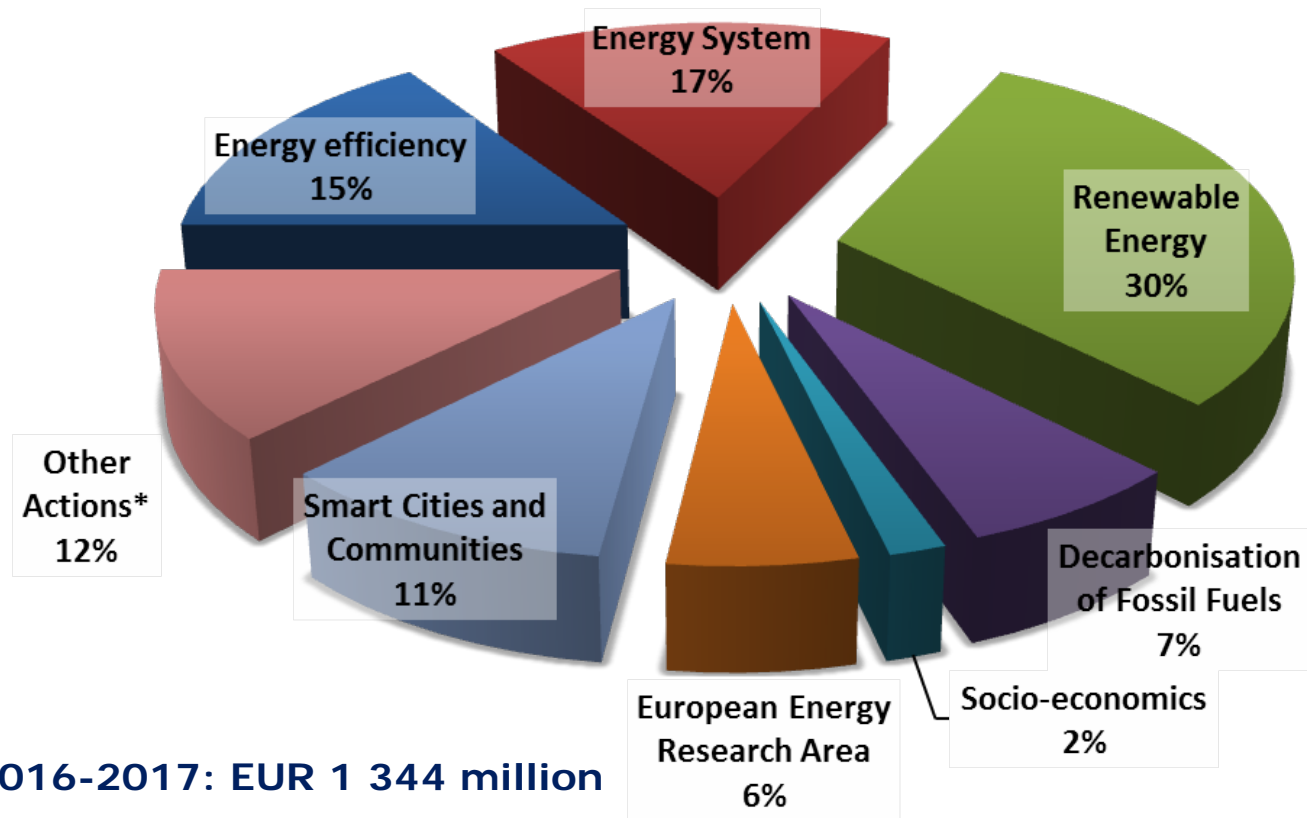
- Light-house demonstration projects

## SME instrument (SIE)

Call budgets (in Mio €)

Call	2016	2017
EE	93	101
LCE	352,66	367,62
SCC	60	71,50
SME	46	50

# Indicative budget distribution per area for Energy calls 2016-2017



**Total budget 2016-2017: EUR 1 344 million**

\* **Other Actions** = actions not implemented through calls for proposals (e.g. Risk Finance, procurements, subscriptions, contributions, grant to identified beneficiaries)

## Joint Programmes with Member States (Art. 185)

fully integrating national programmes at three levels

- Scientific
- Financial between Member States and Union
- Management: **single implementation structure**

## ERA-NET cofund:

- Support of public-public partnerships in preparation, implementation and coordination of joint activities
- Union topping-up of a transnational call for proposals (EU contribution proportional to total public funding for the call)

## Joint Programming Initiative (JPI)

- Member States engage voluntarily and on a variable geometry basis in definition, development and implementation of common strategic research agenda
- May involve collaboration between existing national programmes or setting up of entirely new ones
- Possible Horizon2020 support through CSA or ERA-NET

## Joint Technology Initiative (JTI – Art. 185)

- Commitments (including financial) of Union and industry partners over seven year period
- Strategic research and innovation agenda & funding through open calls
- Implemented through **Joint Undertakings**

## Contractual Public-Private Partnerships (cPPP)

- Memorandum signed between respective industry grouping and Commission
- Commission obligations implemented through open calls under Horizon 2020
- Complemented with private investment by industry



save the date

**23-25 OCTOBER 2017**

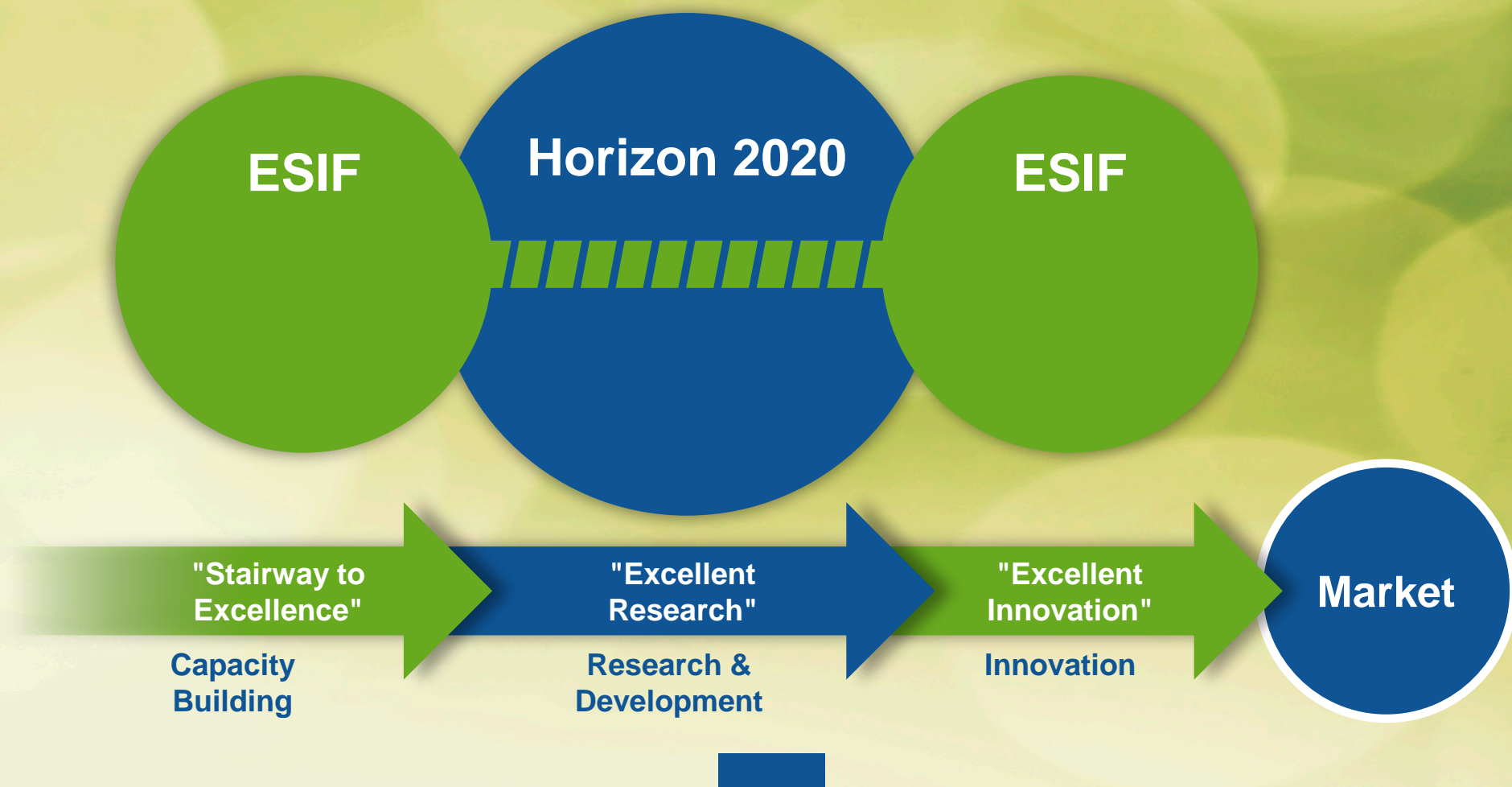
**ENERGY INFO DAYS 2017**

Horizon 2020 Work Programme 2018-2019

Brussels, Charlemagne Building

#H2020ENERGY

## Synergies through sequential or parallel projects



## Smart specialisation

The Eye@RIS3 tool provides a mapping of regions' and Member States' intentions in terms of smart specialisation fields allowing to detect possible partners: <http://s3platform.jrc.ec.europa.eu/map>

The emerging fields of specialisation are related to:

- Energy (= top priority: 2/3 of all regions)
- Life science
- ICT
- Environment
- Agro-food
- Tourism
- New materials

Scope on cooperation and fine-tuning!

**Thank You for Your Attention!**

**[Dimitrios.sofianopoulos@ec.europa.eu](mailto:Dimitrios.sofianopoulos@ec.europa.eu)**





# Innovative Energy First-Of-A-Kind (FOAK) demonstration projects



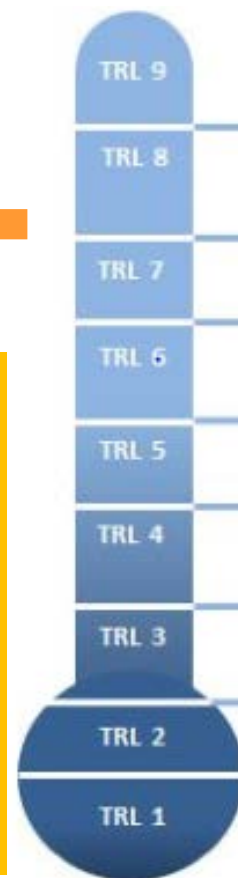
- Crucial to keep or regain EU's technological leadership in clean energy
- Foreseen in Implementation Plans to achieve the targets

## ■ But...

- Suffer from a market failure in accessing finance ("valley of death")
- Large investment needs (could reach up to 28 billion by 2020 in SET Plan areas except nuclear and energy efficiency)

**InnovFin**  
Energy Demo Projects

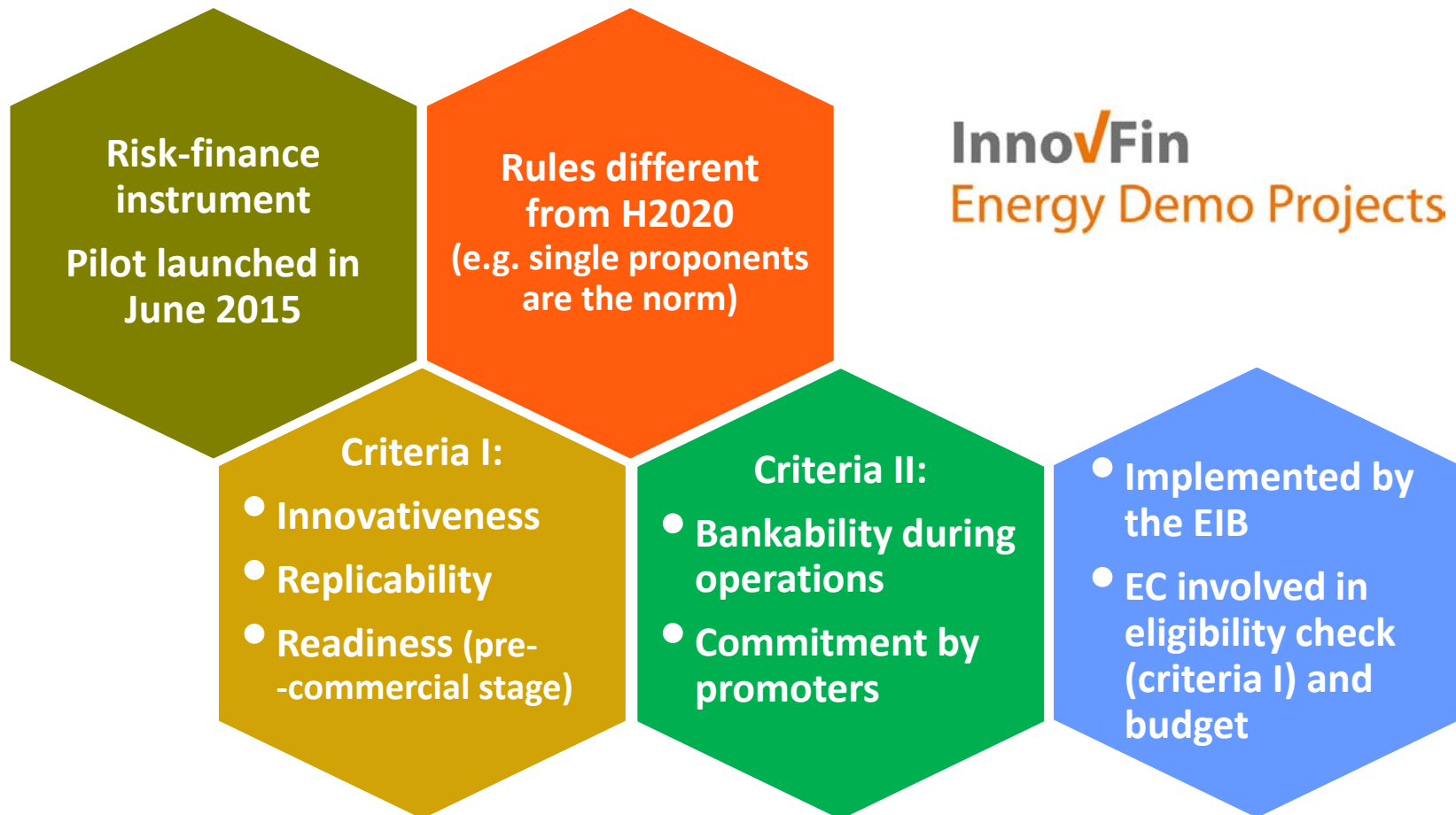
Market



Typical Grant  
Funding

TRL: Technological  
Readiness Level

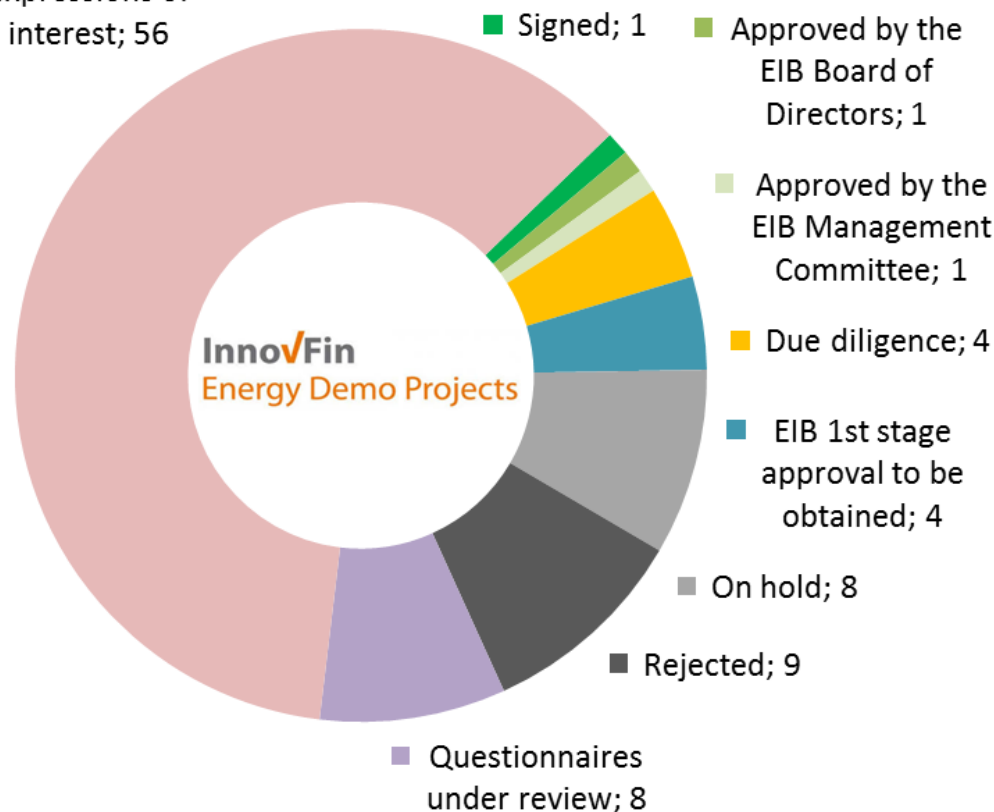
# InnovFin EDP: basic characteristics





# Pilot InnovFin EDP faced high demand

Informal expressions of interest; 56



- Wave Energy Device (signed July 2016)  
Portugal, using Finish technology  
350 kW  
Loan: €10 m  
Project cost: €19 m
- Windfloat  
(approved by the EIB December 2016)  
Portugal  
25 MW  
Loan: €25 m  
Project cost: €125 m

**InnovFin**  
Energy Demo Projects

**Total: 92 projects**

## Lessons learned

### ■ Experience since the pilot launch in June 2015 has shown:

- The level of risk is high for the standard "EIB culture"
- Busy pipeline but only two signatures because projects often:
  - Are insufficiently mature (from a technical, regulatory or financial perspectives)
  - Have not reached a pre-commercial stage
  - Cannot offer enough bankability prospects



- EC and EIB are strengthening cooperation, learning how to respond to these circumstances, and revised their Delegation Agreement

# InnovFin EDP: from pilot to full-scale

## ■ Scope

### Pilot facility

- Renewable energy

### Full-scale facility

- Renewable energy
- Smart energy systems
- Energy storage
- CCUS

***Projects,  
manufacturing  
processes and  
services***

# InnovFin EDP: from pilot to full-scale

## ■ Budget

### **Pilot-scale facility**

From June 2015

- €150m in loans from H2020 (<50% project costs)

# InnovFin EDP: from pilot to full-scale

## ■ Budget

### Intermediate-scale facility

From June 2017  
*Budget doubled*

- €300m in loans from H2020 (<50% project costs)



***Delivered on  
Action 6 of the  
Accelerating  
Clean Energy  
Innovation  
Communication***