Desafio Societal 3 – Energia segura, não poluente e eficiente

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H2020

GPPQ – Apoio dos Pontos de Contacto Nacionais

1º contacto
O que é o H2020
Como funciona?

Verificação da ideia
A minha ideia integra-se numa *call* do H2020?
Onde?

Preparação da proposta
Construção do consórcio, escrita da proposta, procura de parceiros, revisão da proposta

Avaliação da proposta
por peritos independentes

Assinatura do contrato
Procedimentos administrativos e legais

Gestão do projeto
Relatórios, alterações ao contrato,etc

Relatórios, Exploração dos resultados
Auditorias da CE, etc

H2020

GPPQ Gabinete de Promoção do Programa-Quadro

www.gppq.pt/h2020/

http://www.gppq.pt/h2020/contactos_ncp.php

H2020

GPPQ – Website

www.gppq.pt

Resultados
2014-2015-2016*

* Apenas os primeiros concursos com resultados divulgados até à data

Participação nacional

- **Propostas:**
  - **Energia: 368** **H2020: 5218**
- **Projetos aprovados:**
  - **Energia: 57** **H2020: 677**
- **Financiamento para PT:**
  - **Energia: 36,45M€** **H2020: 310,16M€**

Participação nacional: percentagens

- **Percentagem de financiamento PT:**
  - **Energia: 2,38%** **H2020: 1,66%**

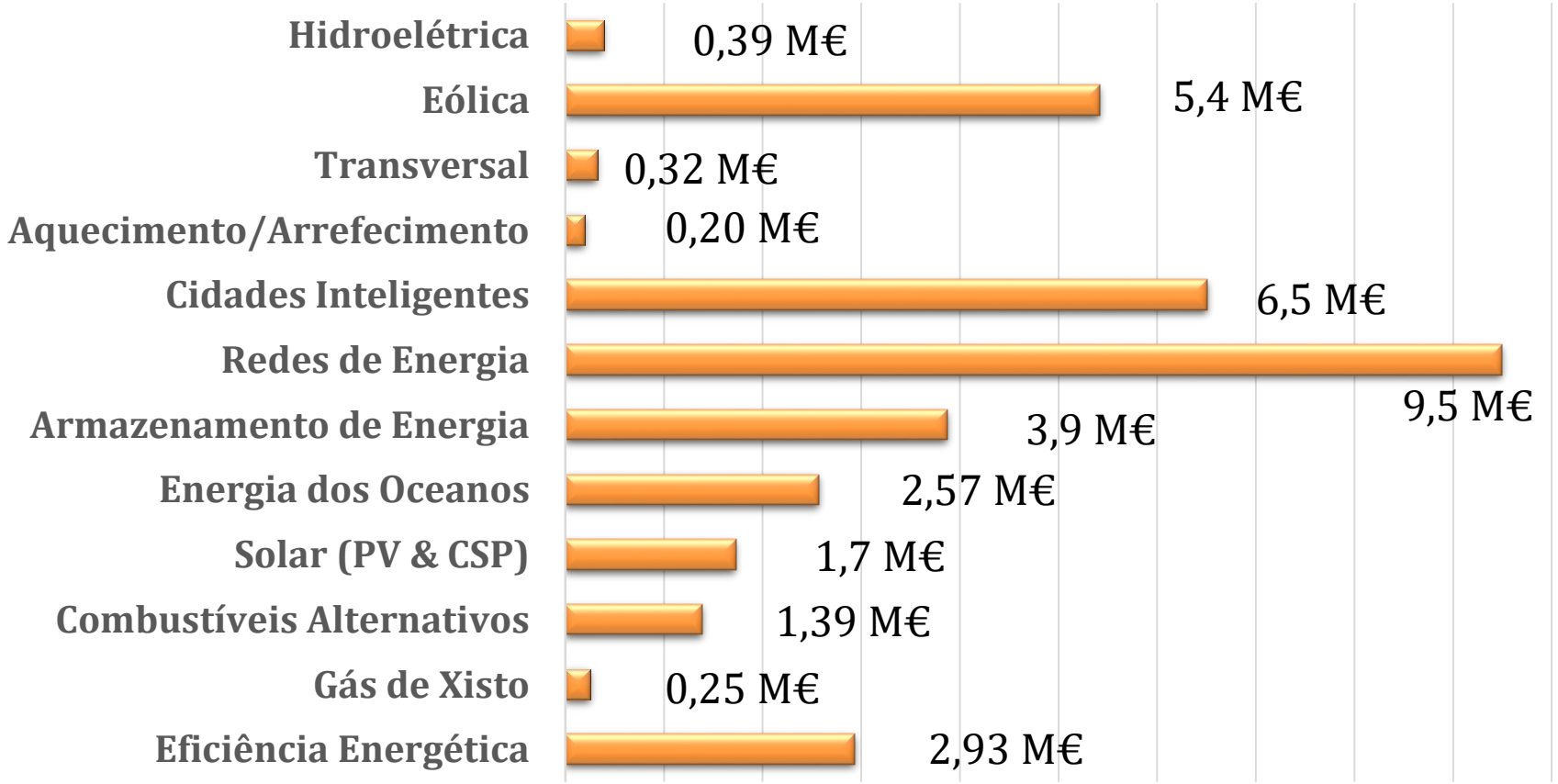
- **Taxa de sucesso (financ/subm):**
  - **Energia PT: 15,49%** **H2020 PT: 12,97%**
  - **Energia EU: 14,63%** **H2020 EU: 13,41%**

IGEPQ | FCT Fundação para a Ciência e a Tecnologia | ANI AGÊNCIA NACIONAL DE INOVAÇÃO | H2020

Participação Nacional - Energia

Propostas PT: **368**
Projetos financiados com PT: **57**
Projetos coordenados: **4**
Participantes: **621**
Financiamento PT: **36,45 M€ → 2,38%**

Energia: Resultados por Área



WaveRoller

SURGE

SEVENTH FRAMEWORK PROGRAMME

2009-2012

Estaleiros navais de Peniche, S.A.
Eneolica Energias e Ambiente SA
Wave Energy Centre - Centro de Energia das Ondas
Instituto Hidrográfico
Município de Peniche
AW-ENERGY OY
BOSCH REXROTH AG

First-of-a-kind Demonstration Project in the field of Energy

10 M€

FCT Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

GPPQ

ANI AGÊNCIA NACIONAL DE INOVAÇÃO

InnovFin Energy Demonstration Project

InnovFin
Energy Demo Projects

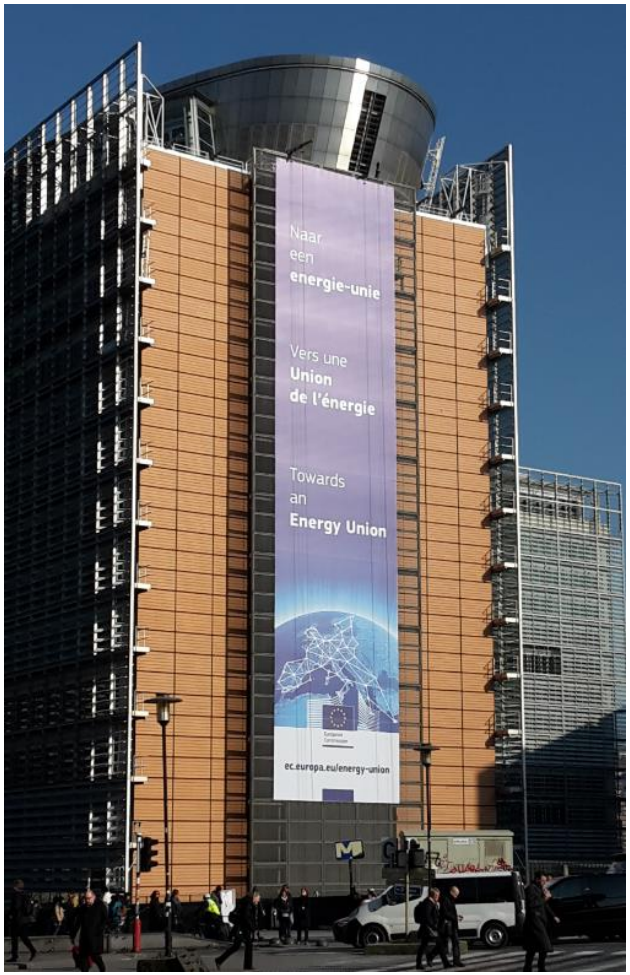
Projetos Elegíveis

Energias Renováveis

Células de Combustível, Hidrogénio

- Projetos "first-of-a-kind" (primeiros do género) de demonstração industriais à escala comercial
- Empréstimo: mínimo de 7,5 M€ e máximo de 75 M€
- Maturidade do empréstimo: máximo 15 anos
- Moeda: €

Energia – Enquadramento Político



"I want to reform and reorganise Europe's energy policy in a new ***European Energy Union.***"

Jean Claude Juncker

5 GUIDING DIMENSIONS

15 CONCRETE ACTIONS

43 INITIATIVES

FCT Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

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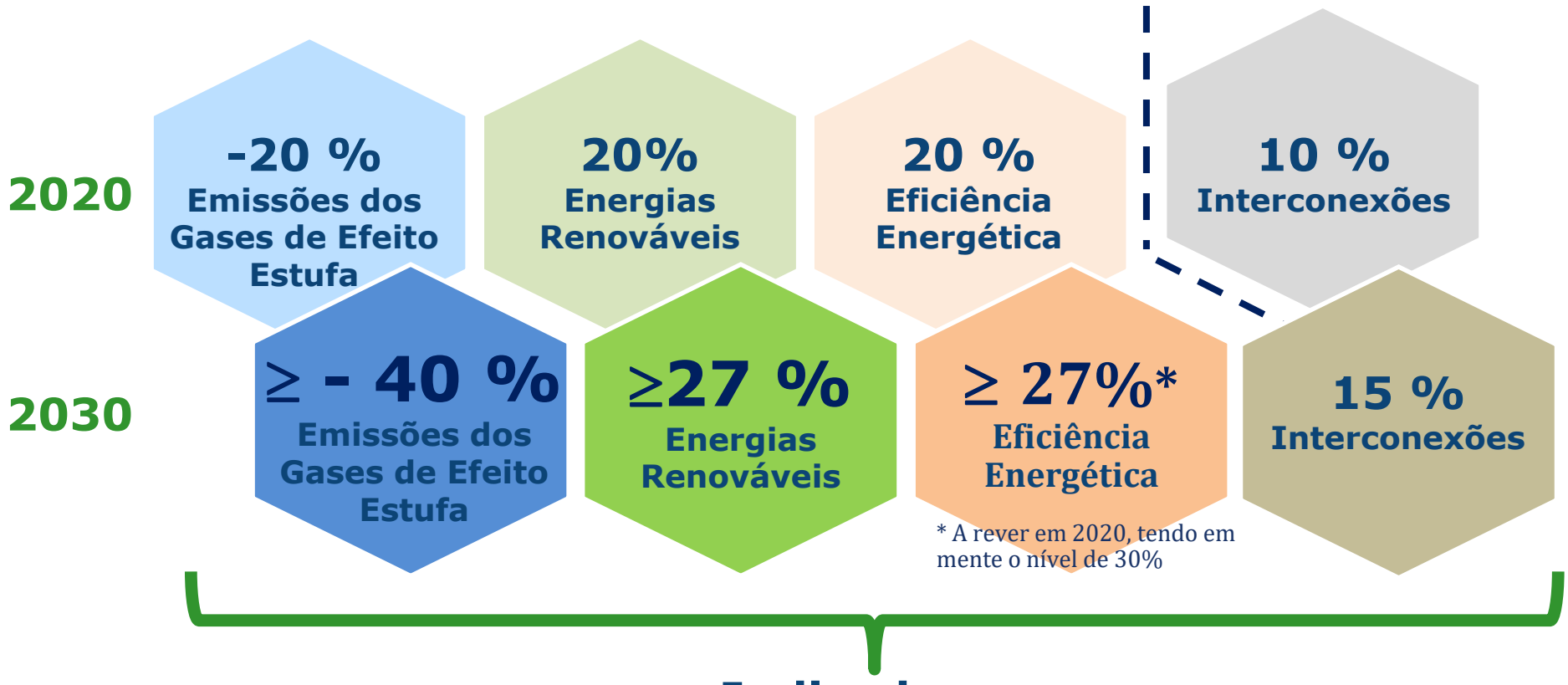
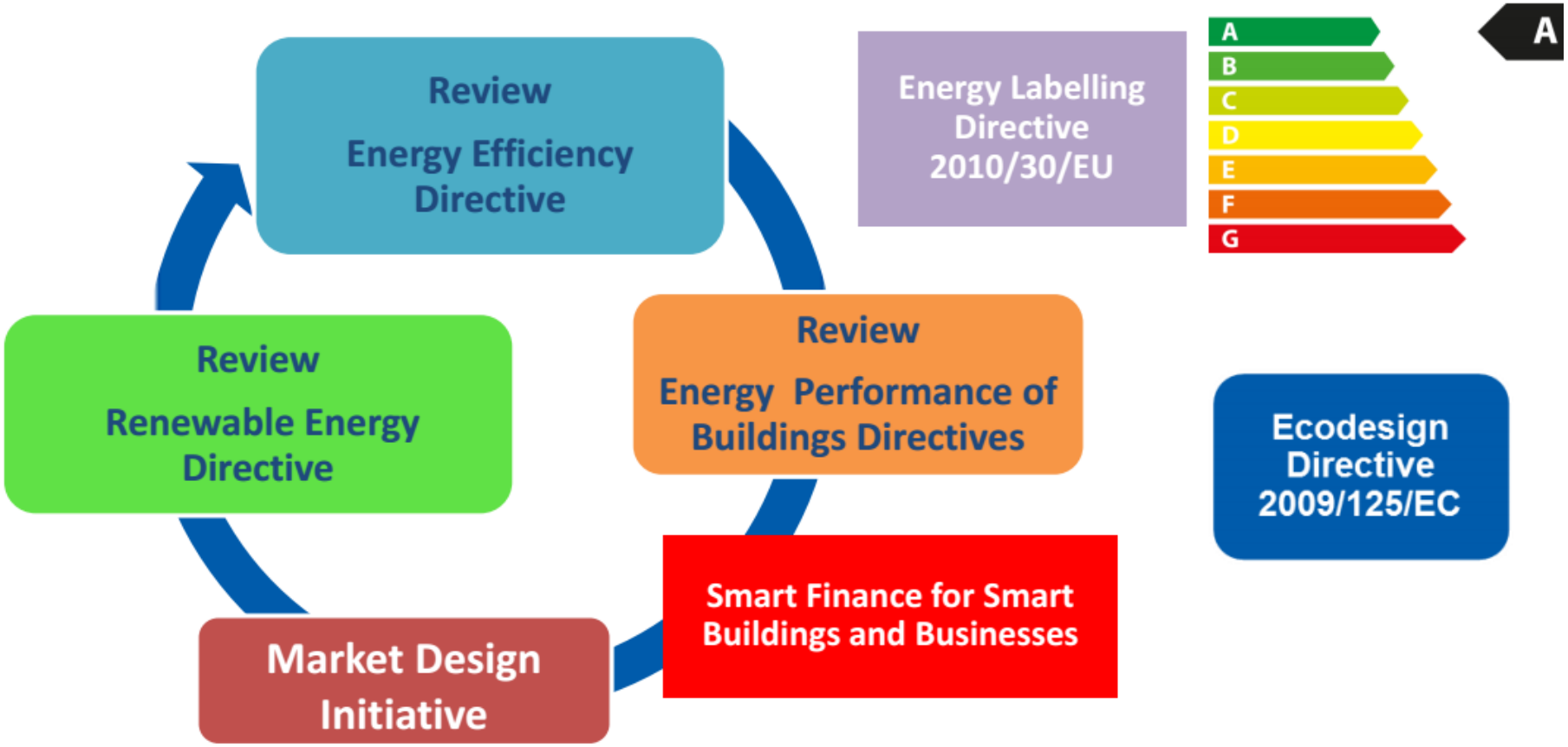
Energia – Metas a alcançar

Objetivos Energéticos e Climáticos



Atualização da Legislação



SET Plan

Key Actions: priorities
1&2 – Renewables: Wind
1&2 – Renewables: PV
1&2 – Renewables: CSP/STE
1&2 – Renewables: Geothermal and Ocean
3.1 – Consumers at the centre
3.2 – Smart cities and communities
4 – Energy systems
5 – Energy Efficiency in buildings
6 – Energy efficiency in Industry
7 – Transport: e-mobility (batteries)
8 – Transport: renewable fuels
9 – CCS/CCU
10 – Nuclear

https://setis.ec.europa.eu/towards-an-integrated-SET-Plan

COP21 – Nações Unidas

SUSTAINABLE DEVELOPMENT GOALS

Ensure access to affordable, reliable, sustainable and modern energy for all

Take urgent action to combat climate change and its impacts*

https://sustainabledevelopment.un.org/

Objetivos estratégicos na área da Energia no Horizonte 2020

Redução do consumo

Eletricidade hipocarbónica

Combustíveis alternativos

Uma rede europeia única e inteligente

Programa de Trabalhos do Desafio Societal 3 (2016-2017) – Concursos Abertos 2016 & 2017

CALL ENERGY EFFICIENCY

2016 - 9 TÓPICOS → até 15/09/ 2016

2017 - 14 TÓPICOS → até 05/01/2017 & 07/09/2017

136M €

CALL LOW CARBON ENERGY

2016 - 12 TÓPICOS → até 07 /06/2017

2017 - 22 TÓPICOS → até 07 /06/ 2017

487M €

CALL SMART AND SUSTAINABLE CITIES

Lighthouse projects (SCC1)

2016 – 1 TÓPICO → até 5/04/2016

2017 - 1 TÓPICO → até 14 /02/2017

131M €

Concurso Eficiência Energética

Áreas de financiamento

Sistemas de Aquecimento e Arrefecimento

Edíficios e Consumidores

Indústria e Produtos

Investimento

Aquecimento e arrefecimento

Heating and Coolings	TOPIC	Type of scheme	€/project
EE 1 – 2017	**Waste heat recovery from urban facilities and re-use to increase energy efficiency of district or individual heating and cooling systems**	IA (TRL 6-8)	3-4M€
Keywords: Waste heat and waste water heat recovery in urban areas in services sector and transport system facilities *Important aspects: replicability scalability, modularity; build on previous projects supported in FP7 and H2020*			
EE 2 – 2017	**Improving the performance of inefficient district heating networks**	CSA	1-2M€
Keywords: concrete regional or national action plans for the retrofitting of inefficient district heating networks			
EE 4 – 2016/2017	**New heating and cooling solutions using low grade sources of thermal energy**	**IA (TRL5-6 to 7-8)** NEW	3-4M€
*Keywords: technologies to use low grade energy sources (residual and RES sources of thermal energy) and/or technologies that are able to take advantage of **very low and low** (moderate) temperature resources by upgrading them*			

Consumidores

Engaging consumers	TOPIC	Type of scheme	EC Contribution
EE 6 – 2016/2017	**Engaging private consumers towards sustainable energy**	CSA	1-2M€

Keywords: awareness of the collective consumer action, actions to motivate changes, prosumers, vulnerable consumers, ict-solutions, understading energy bills

EE 7 – 2016/2017	**Behavioural change toward energy efficiency through ICT**	IA	1-2M€

Keywords: ICT-based solutions (smart meters, smart plugs, smart appliances), energy savings, factors influencing consumer choices and behaviour

EE 9 – 2016/2017	**Engaging and activating public authorities**	CSA	1-1,5M€

Keywords: a) develop, finance and implement sustainable energy plans and measures
b) peer to peer learning for pub. Authorities – capacity to help deliver the energy transition

Edifícios

Buildings	TOPIC	Type of scheme	EC Contribution
EE 11 – 2016/2017	**Overcoming market barriers and promoting deep renovation of buildings**	IA (TRL 6-8)	1-2M€
Keywords: remove regulatory barriers and non-regulatory barriers, at least 60% of energy savings, finantial mechanisms, instruments and business models			
EE 12 –2017	**Integration of Demand Response in Energy Management Systems while ensuring interoperability through PPP (EeB PPP)**	CSA	3-4M€
Keywords: Solutions to optimize the interaction between buildings and Intelligent Energy Management Systems towards optimizing, at building level, energy consumption, renewable energies production and local storage			
EE 14 – 2016/2017	**Construction skills**	CSA	1-2M€
*Keywords: upgrading or setting upqualification and trainning schemes to increase the number of skilled building professionals/blue collar workers/**installers*** NEW			

Indústria, Serviços e Produtos

Industry, Services, products	TOPIC	Type of scheme	EC Contribution
EE 15 –2017	**Increasing capacities for actual implementation of energy efficiency measures in industry and services**	CSA	1-2M€
Keywords: Capacity building programmes for qualified experts carrying out energy audits OR to enhance corporate policy towards energy efficiency			
EE 16 – 2016/2017	**Effective implementation of EU product efficiency legislation**	CSA	1-2M€
Keywords: Energy efficient products regulations: market "push" and market "pull"			
EE 17 – 2016/2017	**Valorisation of waste heat in industrial systems (SPIRE PPP)**	RIA (TRL5-7)	4-5M€ 5-6 M€
Keywords: Energy Intensive Industries, design, build and test & demonstrate new processes/components or innovative adaptation of existing solutions for waste energy recovery in large industrial systems NEW			

Indústria, Serviços e Produtos

Industry, Services, products	TOPIC	Type of scheme	EC Contribution
EE 18 – 2017	**Energy efficiency of industrial parks through energy cooperation and mutualised energy services**	CSA	1-2M€

Keywords: Improve energy efficiency of industry parks: energy cooperation between businesses OR joint energy services

EE 19 – 2017	**Public Procurement of Innovative Solutions for Energy Efficiency**	PPI NEW	1-2M€

Keywords: Procurement of innovative solutions for buildings, products or services not available on a commercial basis and with a higher energy performance level

EE 20 –2017	**Bringing to market more energy efficient and integrated data centres**	IA	2-3M€

Keywords: innovative and energy efficient cooling solutions, waste heat reuse, geographical and temporal workload balance, integration of local and remote renewable energy sources, integration in smart grids, integration with district heating/cooling networks, integration of power backup system in the grid and use of heat pumps for efficient use of waste heat

Investimento

Financing for Energy Efficiency	TOPIC	Type of scheme	EC Contribution
EE 22– 2016/2017	**Project Development Assistance**	CSA	0,5-1,5M€
Keywords: sustainable energy investments (7.5M€-50M€); financial engineering,			
EE 23 –2017	**Innovative Financing Schemes**	CSA	1-2M€
Keywords: Development or replication of innovative financing schemes: energy efficiency financing support, impact analysis, capacity building, training schemes			
EE 24 – 2016/2017	**Making the energy efficiency market investible**	CSA	1-1,5M€
Keywords: standardization and benchmarking of EE investments, financial performance of EE investments, institutional investors			

Prazos de submissão – Concurso Eficiência Energética

Concurso	Tópico	Prazo de Submissão
H2020-EE-2016-CSA	EE-06, 09, 11, 13, 14, 22, 24, 25	15/09/2016
H2020-EE-2017	EE-01, 04, 07, 12, 17, 20	19/01/2017
H2020-EE-2017-CSA	EE-02, 06, 09, 11, 14, 15, 16, 18, 19, 23, 24	07/06/2017

COMPETITIVE LOW-CARBON ENERGY – Áreas

1. Towards an **integrated EU energy system**
2. **Renewable energy technologies**
3. Enabling the **decarbonisation of the use of fossil fuels** during the transition to a low-carbon economy
4. **Social, economic and human aspects** of the energy system
5. Supporting the development of a **European research** in the field of energy

COMPETITIVE LOW-CARBON ENERGY

Towards an Integrated Energy System	TOPIC	Type of scheme	TRL	EC Contribution
LCE 1	Next generation innovative technologies enabling smart grids, storage and energy system integration with increasing share of renewables: distribution network	RIA NEW	3-6	2-4 M€
Keywords: *solutions beyond the state of the art; Areas for 2017: demand response/intelligent electricity distributioongrid*				
LCE 4	Demonstration of system integration with smart transmission grid and storage technologies with increasing share of renewables	IA NEW	5-8	15-20 M€
Keywords: *Power transmission technologies and management of large scale generation to increase share of renewables; large scale storage relevant to the transmission network; flexibility and integration of storage in transmission grid; wholesale market facilitating the participation of variable renewables.*				
LCE 5	Tools and technologies for coordination and integration of the European energy system	RIA	3-6	2-4 M€
Keywords: *Planning tools, TSO/DSO collaboration tools, neutral data access points, synergies between electricity, gas and heat networks, socio-economic and environmental aspects*				

Renewable Energies Technologies

Contexto

- Energy Union
- Desafios das alterações climáticas
- SET-Plan
- Acelerar a transição energética

Investigação Básica

Investigação Avançada

Demonstração

Mercado

Portfolio Supported	Basic Research	Advanced Research	Demonstration	Market uptake
Photovoltaics	LCE-6-2017	LCE-7-2016/2017	LCE-9-2016 LCE-10-2017	LCE-21-2017
Concentrated Solar Power			LCE-11-2017	LCE-21-2017
Solar Heating and Cooling			LCE-12-2017	
Wind Energy			LCE-13-2016 LCE-14-2017	
Ocean Energy			LCE-15-2016 LCE-16-2017	
Hydropower				
Geothermal Energy			LCE-17-2016 LCE-23-2016 LCE-18-2017	LCE-21-2017
Combined Heat and Power				
RES integration in the system				
Bio and Renewable Alternative Fuels		LCE-8-2016/2017 LCE-22-2016	LCE-19 -2016/2017 LCE-20-2016/2017	LCE-21-2017

COMPETITIVE LOW-CARBON ENERGY

Developing the next generation of renewable energy technologies (research activities)

Renewable Energy Technologies	TOPIC	Type of scheme	TRL	EC Contribution
LCE 6	New knowledge and technologies	RIA	4	2-4 M€

Keywords: *scale up energy technologies, better understanding of the physics of wind to improve simulation and current technologies, novel conversion routes and novel fuels,*

LCE 7	Developing the next generation technologies of renewable electricity and heating/cooling	RIA	4-5	2-5 M€

Keywords: *Perovskite PV cells, CSP – new cycles and power blocks, Solar Heating & Cooling – residential single-family solar active houses, environmental impact of wind energy, ocean energy – power take-off systems and control strategies, hydropower – increase flexibility, materials for deep geothermal installations (medium-high temperature), combined heat & power, RES integration*

COMPETITIVE LOW-CARBON ENERGY

Developing the next generation of renewable energy technologies (research activities)

Renewable Energy Technologies	TOPIC	Type of scheme	TRL	EC Contribution
LCE 8	Development of next generation biofuel technologies	RIA	3-4 (final:4-5)	3-6 M€

Keywords: *Biofuels from CO2 in industrial waste flue gases through biochemical conversion by autotrophic micro-organisms; biofuels from organic fraction of municipal and industrial wastes through thermochemical, biochemical or chemical pathways; biofuels from phototrophic algae & bacteria.*

LCE 11	Near-to-market solutions for reducing the water consumption of CSP plants	RIA	7 (final)	10-12 M€

Keywords: *Solutions that significantly reduce or replace water consumption of CSP plants in regions with very good solar resource values (Direct Normal Irradiation > 2000 kWh/m² year*

COMPETITIVE LOW-CARBON ENERGY

Demonstrating innovative renewable energy technologies (demonstration activities)

Renewable Energy Technologies	TOPIC	Type of scheme	TRL	EC Contribution
LCE 12	Near-to-market solutions for the use of solar heat in industrial processes	IA	Final: 7	5-8 M€

Keywords: *less complex, cost effective, significantly increase the share of solar heat in industrial processes*

LCE 14	Demonstration of large >10MW wind turbine	IA	Final: 7	20-25 M€

Keywords: *Improved handling (storage, loading, transport, etc.) on land, in the harbours and/or at sea, as well as improved logistics around operations and maintenance*

LCE 16	2nd generation of design tools for ocean energy devices and arrays development and deployment	IA	Final: 6	5-7 M€

Keywords: *Tools for ocean energy generators which will facilitate a significant increase in reliability, survivability, performance improvement and cost reduction of devices and arrays.*

COMPETITIVE LOW-CARBON ENERGY

Demonstrating innovative renewable energy technologies (demonstration activities)

Renewable Energy Technologies	TOPIC	Type of scheme	TRL	EC Contribution
LCE 17	Easier to install and more efficient geothermal systems for retrofitting buildings	IA	Final: 7	5-8 M€
Keywords: *make geothermal energy a standard source of heat and cold in building renovation*				
LCE 18	Enhanced Geothermal Systems in different geological conditions	IA	Final: 7	6-10 M€
Keywords: *ensure reservoir productivity in different geological settings and energy production at competitive costs*				

COMPETITIVE LOW-CARBON ENERGY

Demonstrating innovative renewable energy technologies (demonstration activities)

Renewable Energy Technologies	TOPIC	Type of scheme	TRL	EC Contribution
LCE 19	Demonstration of the most promising advanced biofuel pathways	IA	5-6 (to 6-7)	10-15 M€
Keywords: *liquid biofuel production pathways; Biomass gasification to synthesis gas; Biomass pyrolysis and torrefaction to intermediate bioenergy carriers; Biochemical conversion of lignocellulosic biomass sugars to diesel*				
LCE 20	Enabling pre-commercial production of advanced aviation biofuel	IA	5-6 (to 6-7)	5-15 M€
Keywords:*EU Biofuel FlightPath targets, industrial demonstration projects, production target: several tens of thousand tonnes per year*				

COMPETITIVE LOW-CARBON ENERGY

Demonstrating innovative renewable energy technologies (demonstration activities)

Renewable Energy Technologies	TOPIC	Type of scheme	TRL	EC Contribution
LCE 21	Market uptake of renewable energy technologies	CSA	3-4 (to 4-5)	3-5 M€

Keywords: *PV grid penetration; Heat Pumps; Market share of wind energy systems; Geothermal energy grid penetration; market roll-out of liquid advanced biofuels and liquid renewable alternative fuels*

Social, economic and human aspects of the energy system

Social, economic and human aspects	TOPIC	Type of scheme	TRL	EC Contribution
LCE 31	Social Sciences and Humanities Support for the Energy Union	RIA		2-4 M€

Keywords: *Socioeconomic incentive structures that encourage or discourage energy-responsible behaviour; political, institutional, and organizational frameworks that condition and structure citizen participation, including questions of inclusiveness, gender, democracy, organizational formats and business models.*

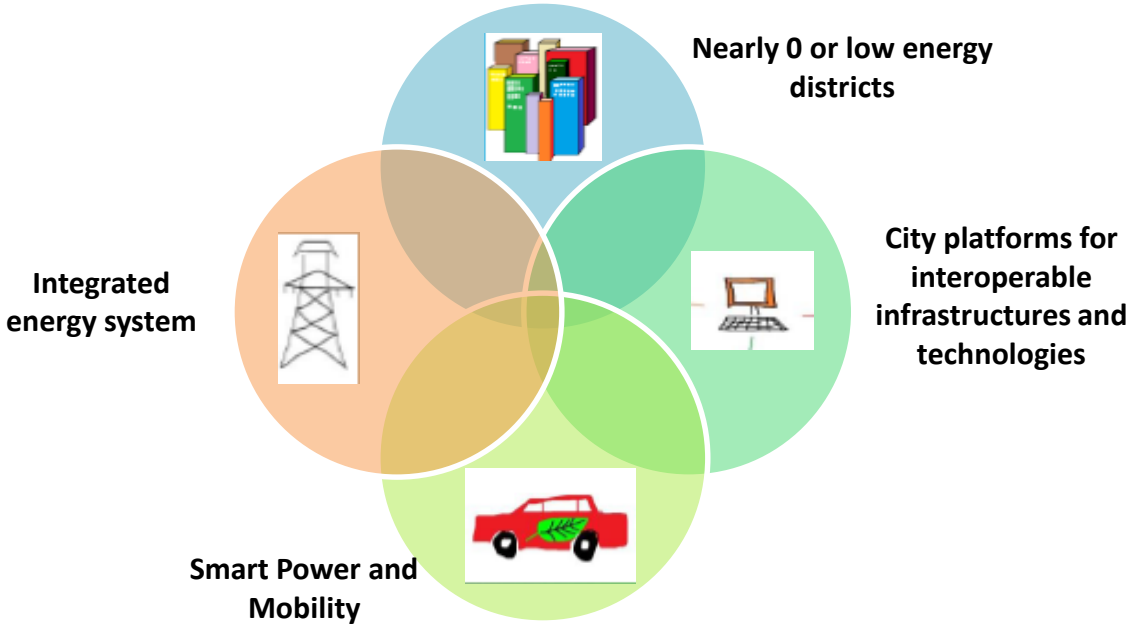
Prazos de submissão – Concurso Eficiência Energética 2016

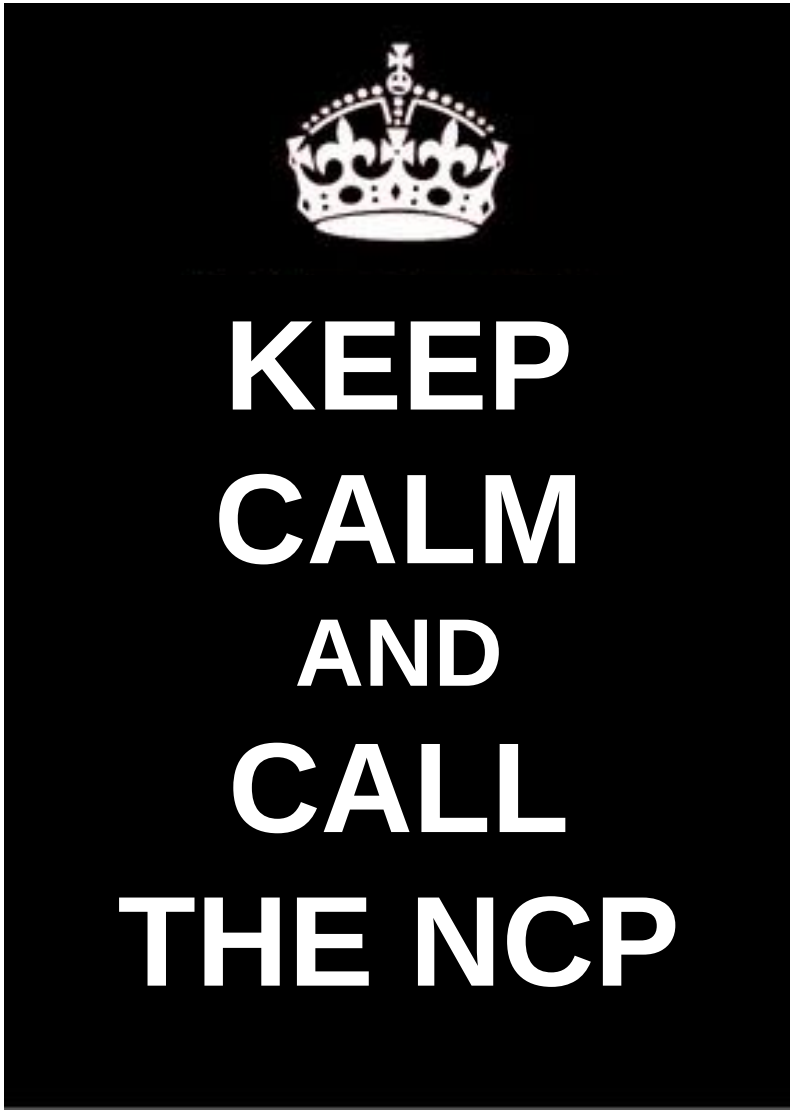
Concurso	Tópico	Prazo de Submissão
H2020-LCE-2017	LCE 9, 13, 15, 19, 20, 22, 35	08/09/2016
	LCE 6, 7, 8, 21, 27, 28, 29, 30, 31	05/01/2017
	LCE 1, 4, 5, 9, 13, 15, 19, 20, 22, 35	14/02/2017
	LCE 10, 11, 12, 14, 16, 17, 18, 19, 20	07/09/2017

Smart Cities and Communities

Smart Cities and Communities	TOPIC	Type of scheme	EC Contribution
SCC 1 – 2016/2017	**Smart Cities and Communities lighthouse projects**	IA (> TRL 7)	12-18 M€

Keywords: smart homes, smart energy, ICT systems and electric vehicles, integration, replication of solutions





Dúvidas?

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