

Horizon 2020 Work Programme for Research & Innovation 2018 - 2020

Activities of Societal Challenge 3: "Secure, clean and efficient energy"

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NCP Secure, clean and efficient energy

Content

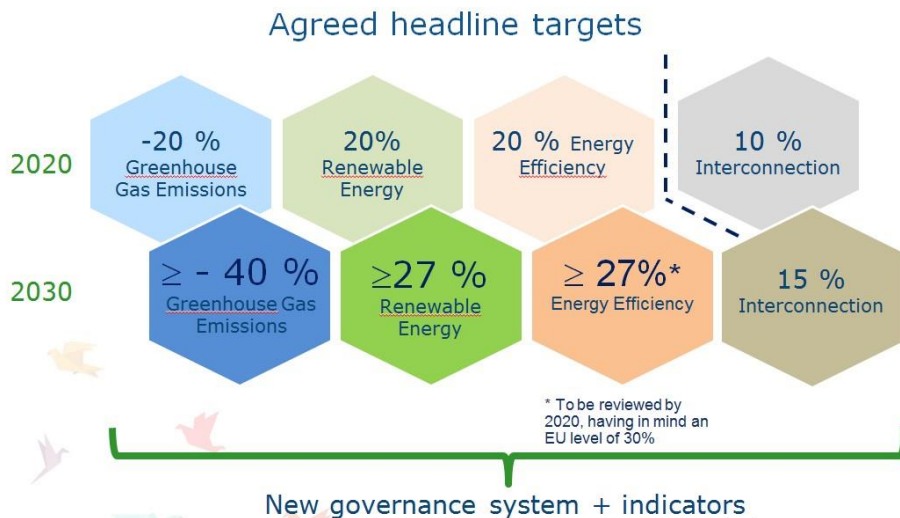
- **Policy framework**
- **New features of the Work Programme 2018-2020**
- **Horizon 2020 work programme 2018-2020**
- **Frequent mishaps**
- **Resources for help**

Policy Framework



"Clean Energy for all Europeans"

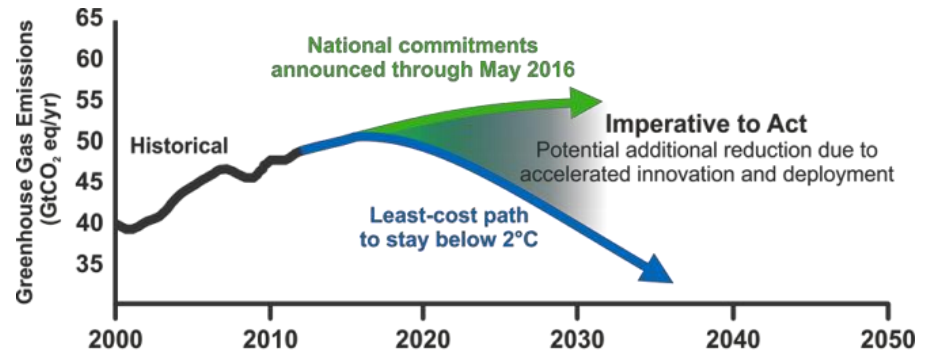
- Putting energy efficiency first
- Demonstrating global leadership in renewables
- Delivering a fair deal for consumers



Paris Agreement

Holding the increase in the global average temperature to **well below 2°C** above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels

Accelerating, encouraging and enabling **innovation** is crucial...



Adapted from UNFCCC, Synthesis report of INDCs, May 2016

Other EU policy priorities

- Digital Single Market
- Jobs, Growth and Investments
- EU as a strong global actor
- ...

Policy Framework

Accelerating Clean Energy Innovation

- Mission Innovation
EU-Africa cooperation

**EU's
global role**

**Policy
Signals**

- Subsidies
- Innovation-principle
- Public Procurement Standards

***"Accelerating
Clean Energy
Innovation"***
(COM(2016)763)

**Funding
Energy
Science and
Technology**

**Financial
Instruments**

- InnovFin EDP
- EFSI



> EUR 2.2 billion in H2020 (2018-2020) on:

- Decarbonising EU building stock by 2050
- Strengthening EU leadership in renewables
- Affordable and Integrated energy storage
- E-mobility and more integrated urban transport systems

Policy Framework

The Strategic Energy Technology Plan (SET-Plan)



Overall objective: Accelerating the development and deployment of low-carbon technologies through cooperation among EU countries, companies, research institutions, and the EU itself, based on **common priorities, targets and actions**.

Priority Actions:

- 1+2. Improving performance and reducing cost of renewable energy
3. Smart solutions for consumers
4. Smart Resilient and Secure Energy System
5. Energy Efficiency in Buildings
6. Energy Efficiency in Industry
7. Batteries and e-Mobility
8. Renewable Fuels and Bioenergy
9. Carbon Capture Utilisation and Storage
10. Nuclear Safety

Defining priorities

- SET-Plan Communication 2015

Setting targets

- Declaration of Intents

Implementation Plans (IP)

- Temporary Working Groups

Execution of IPs

New features of the Work Programme

Political priorities

- Focus Areas

1. a low-carbon, climate resilient future;
2. circular economy;
3. digitising and transforming European industry and services;
4. security union.

Focus areas are expected to create an **exceptional impact**

What else is new

Pilots on:

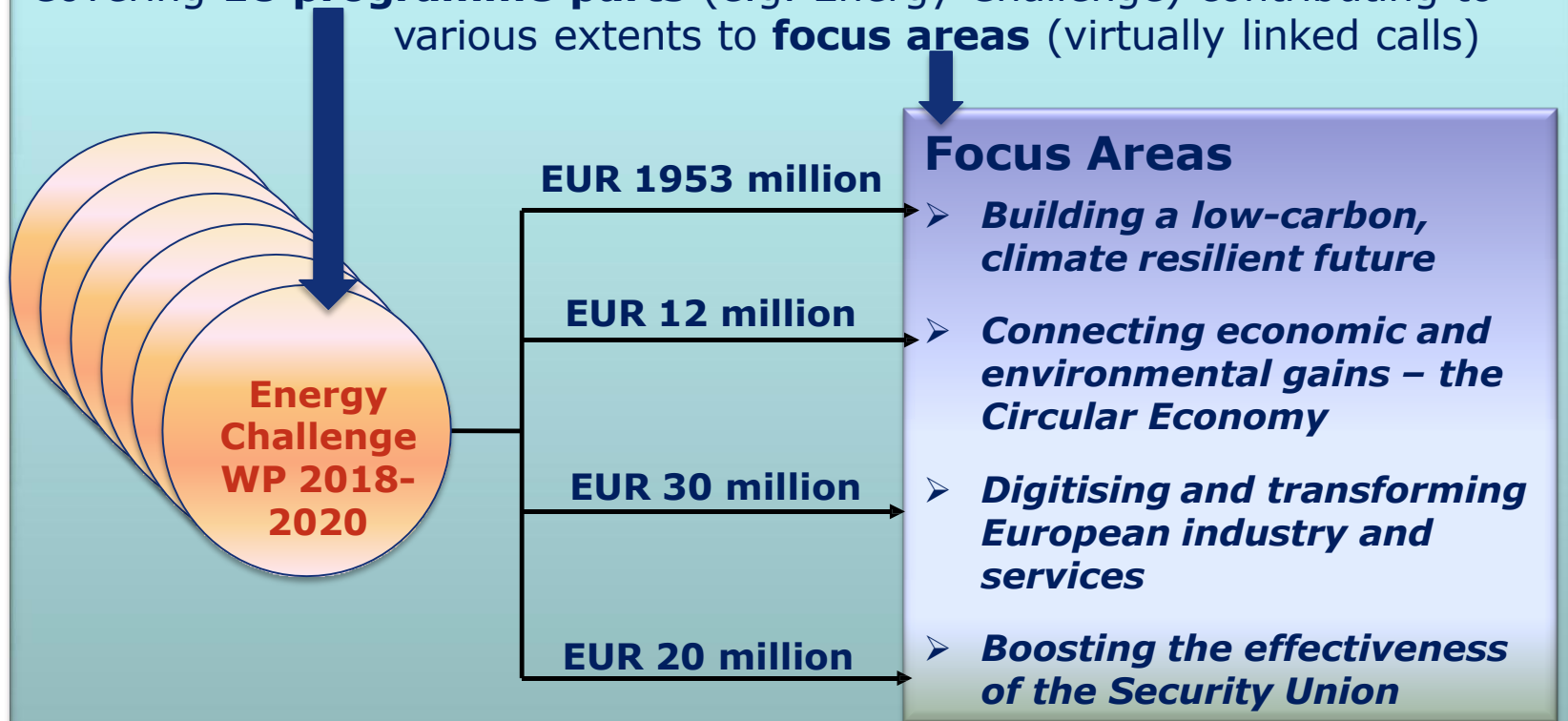
- **Lump-sum contribution**
- **ICT pilot using the mechanism of ERASMUS+**
- **New 50% funding rate for some actions**
- **Dedicated support to high impact clean energy technologies**
- **Widening fellowships**

Horizon 2020 work programme 2018-2020

Horizon 2020 work programme 2018-2020

Total budget envelope: ~ EUR 30 billion

Covering **18 programme parts** (e.g. Energy Challenge) contributing to various extents to **focus areas** (virtually linked calls)



Energy across Horizon 2020

Energy is also addressed in many Horizon 2020 parts

Bottom-up activities

- European Research Council (ERC)
- European Innovation Council (SME instrument, FTI pilot, FET, Prizes)
- Marie-Sklodowska Curie Actions

Industrial Leadership

- Materials
- PPPs on Energy-efficient Buildings and SPIRE
- Information and Communication Technologies
- Space (Galileo)

Societal Challenges (SC)

- SC2: Bioeconomy, Blue Growth
- SC4: Electric vehicles, Batteries, Energy-efficient transport
- SC5: Cities, Earth observation, raw materials, climate change mitigation strategies
- SC7: Cybersecurity, Critical energy infrastructure

-> Please check also calls of other Horizon 2020 parts!

Cross-cutting issues

Fuel Cells and Hydrogen

- Activities specifically targeting Fuel Cells and Hydrogen are **not** supported in the Energy Challenge work programme 2018-2020, but through calls for proposals of the **Fuel Cells and Hydrogen JU**(<http://www.fch.europa.eu/>)
- **But**, for topics included under the areas "Energy Efficiency", "Smart citizen-centred energy" and "Smart Cities and Communities", **system costs related to the integration of mature hydrogen based technologies for the purpose of integrated demonstration in a topic are eligible.**

Contribution to EU policies and cross-cutting issues

- **Sustainable development:** all topics
- **Climate Actions:** all topics
- **International cooperation**, including **Mission Innovation:** RES-1, RES-3, RES-4, RES-5, RES-25, ES-3, NZE-2, NZE-5, JA-4, JA-5
- **Social Sciences and Humanities (SSH):** EC-1, EC-2, EE-2, EE-4, EE-8, EE-16, EE-14, RES-1, RES-4, RES-11, RES-22, RES-28, ES-3, ES-4, ES-7, NZE-1, NZE-2, NZE-3, NZE-4, NZE-5, CC-1, CC-2, CC-4, CC-5, CC-6, SCC-1
- **Digital Agenda:** EC-1, EE-13, ES-3, ES-4, ES-5, ES-6, RES-17, SCC-1, CC-5
- **Contractual PPPs:**
 - **Energy-efficient Buildings:** EE-1, EE-4, EE-5, RES-4, RES-5
 - **SPIRE:** EE-6, RES-7
- **Blue Growth:** RES-1, RES-11, RES-13, RES-14, JA-3
- **Responsible Research & Innovation (RRI):** EC-1, EE-4, EE-5, EE-9, EE-15, EE-16, RES-28, RES-8, ES-3, ES-5, ES-8, NZE-1, NZE-2, NZE-3, NZE-5
- **Open Innovation:** EC-1, EE-3, EE-4, EE-5, EE-6, EE-9, EE-15, RES-2, RES-4, RES-6, RES-8, RES-13, RES-28, ES-3, ES-5, ES-8, NZE-1, NZE-2, NZE-3, NZE-5, SCC-1
- **Open Science:** CC-3

Calls for proposals LC-SC3-2018-2019-2020

Calls for proposals LC-SC3-2018-2019-2020

Energy efficiency	Global leadership in renewables	Smart and clean energy for consumers	Smart citizen-centred energy system	Smart Cities and Communities	Enabling near-zero CO2 emissions from fossil fuel power plants and carbon intensive industries	Joint Actions	Cross-cutting issues
192 M€*	445 M€*	20 M€*	176 M€*	110 M€*	88 M€*	52 M€*	42 M€*

*** Budget figures for 2018-2019 only (2020 to be confirmed at a later stage)**

Energy Efficiency



Buildings



Consumers
& Services



Industry



Financing
Energy
Efficiency



Public
Authorities
& Policy Support



Digitisation

**Innovation
Actions**
EU Support: 70%
3 to 30 M€ / project

EE1/*EE1*
EE4
EE5

EE6

DT-ICT-10

**Coordination
& Support
Actions****
EU support: 100%
0.5 to 2 M€ / project

EE2/*EE2*
EE3
EE5

EC1/*EC1*
EC2/*EC2*
EE13/*EE13*

EE6
EE8/*EE8*

EE2/*EE2**
EE9/*EE9*
EE10/*EE10*
EE11/*EE11*
EE13/*EE13**
EE17

EE16/*EE16*
EE15
*EE17**

**Research &
Innovation
Actions**
EU Support: 100%
1 to 2 M€ / project

EE14/*EE14*

Standard text: 2018 topics
Italic text: 2019 topics

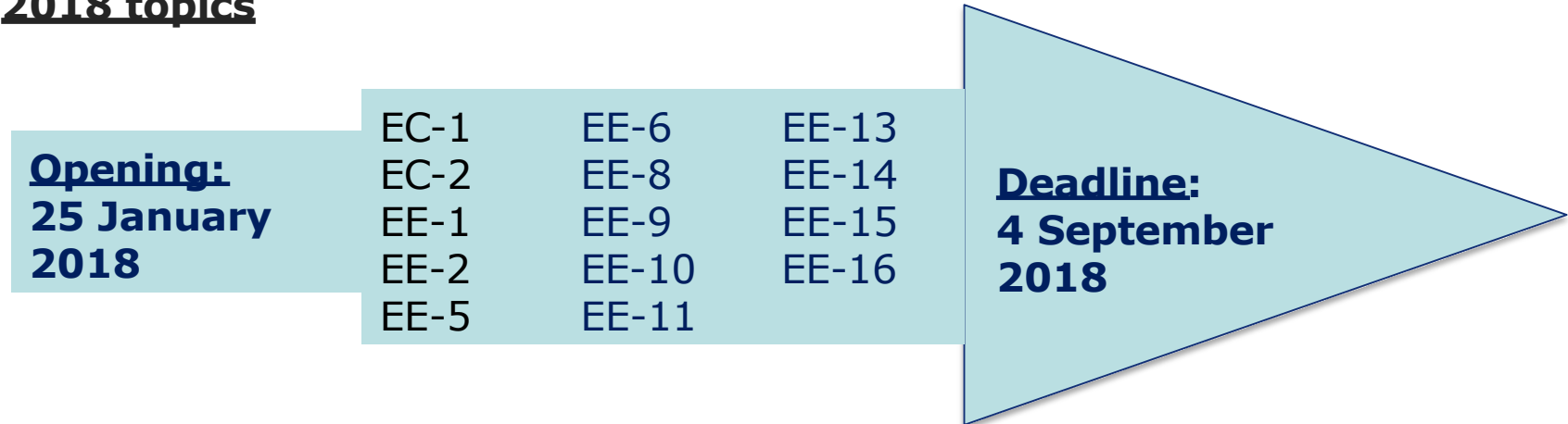
* The topic also addresses this thematic area where indicated

** Mostly minimum 3 beneficiaries (check the Work Programme 2018-2020)

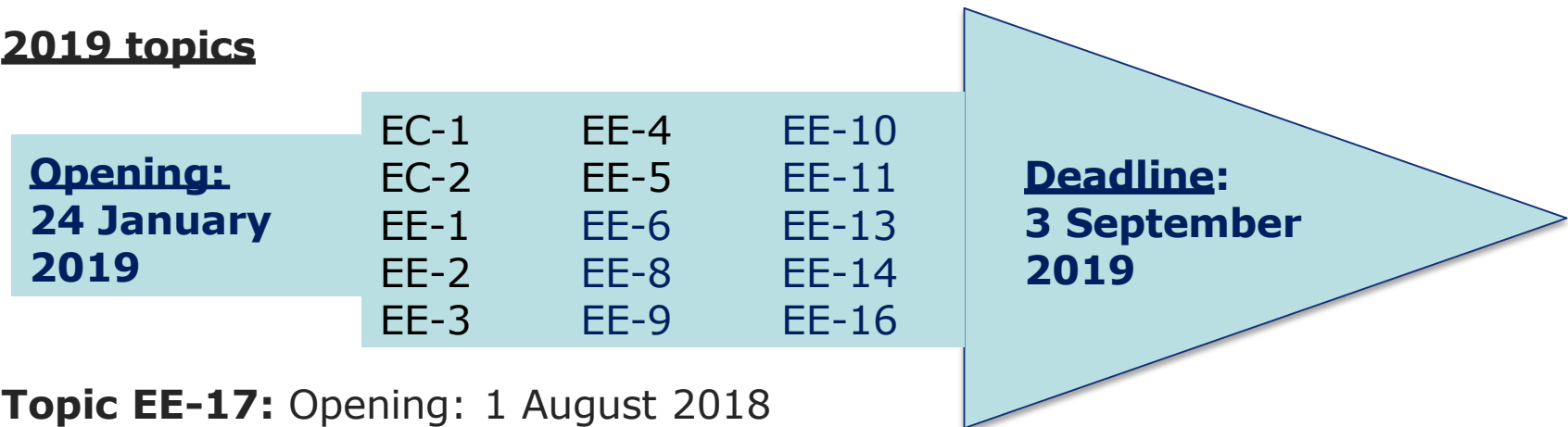
Energy Efficiency

Deadlines

2018 topics



2019 topics



Topic EE-17: Opening: 1 August 2018
Deadline: 5 February 2019

Global leadership in renewables

	2018	2019	2020
Next renewable energy solutions	RES-2	RES-1	RES-3
Renewable energy solutions at consumer scale	<i>Energy generation at building scale</i> RES-4, RES-5, RES-6	<i>Renewable energy solutions at district level and for industrial processes</i> RES-7, RES-8	RES-9, RES-10
Renewable energy solutions for energy system implementation	<i>Reduce costs of key technologies for renewable energy conversion</i> RES-11, RES-12, RES-13	<i>Optimize processes and manufacturing</i> RES-14, RES-15 <i>Provide flexibility to the energy system</i> RES-16, RES-17	RES-18, RES-19, RES-20
Renewable fuels for transport	<i>Drop-in fuel solutions for fossil-fuel substitution</i> RES-21, RES-22	<i>Upscaling renewable fuels production</i> RES-23 RES-24	RES-25, RES-26, RES-27
Market Uptake Support	RES-28	RES-28	RES-28

Global leadership in renewables

Technology area	Research activities (RIA)	Innovation activities (IA)
Solar energy (PV, CSP)	RES-1-2019 , RES-2-2018 , RES-4-2018 , RES-7-2019 , RES-11-2018 , RES-14-2019	RES-6-2018 , RES-8-2019 , RES-13-2018 , RES-15-2019 , RES-17-2019
Wind energy	RES-1-2019 , RES-4-2018 , RES-11-2018	RES-13-2018
Ocean energy	RES-1-2019 , RES-11-2018 , RES-14-2019	
Biofuels / alternative fuels	RES-1-2019 , RES-2-2018 , RES-16-2019 , RES-21-2018 , RES-23-2019	RES-17-2019 , RES-22-2018 , RES-24-2019
Geothermal energy	RES-1-2019 , RES-4-2018 , RES-11-2018 , RES-14-2019	RES-8-2019 , RES-13-2018
Heating / cooling, CHP	RES-1-2019 , RES-4-2018 , RES-11-2018	RES-5-2018 , RES-8-2019 , RES-12-2018
Hydro energy	RES-1-2019 , RES-11-2018 , RES-16-2019 ,	RES-17-2019
Virtual Power Plant	RES-16-2019	

- Topics for 2018 in black font; for 2019 in purple font; topics for 2020 not included (added as of mid-2018)
- Market-uptake activities (CSA, RES-28) cover all areas

Renewable energy

Deadlines – 2019 topics

Opening	Topics	Deadline
1 August 2018	RES-1 RES-14	1 st stage: 16 October 2018 2 nd stage: 25 April 2019
5 September 2018	RES-8 RES-15 RES-17 RES-24 RES-28	11 December 2018
7 May 2019	RES-7 RES-16 RES-23	27 August 2019

Smart and clean energy for consumers

EC-1-2018-2019: The role of consumers in changing the market through informed decision and collective actions

- **2018:** develop activities informing and motivating consumers to **change old and inefficient installed appliances** with the highest energy saving potential to more efficient and clean energy heating and/or cooling solutions; consider financial and other aspects; address 'rebound effect'; involve all relevant stakeholder
- **2019:** set up and/or support consumer cooperatives/collective purchase groups, and/or other **consumer-driven collective actions** to **increase energy efficiency** and/or optimise energy management within the community; address regulatory barriers and contractual conditions; address split incentives

EC-2-2018-2019: Mitigating household energy poverty

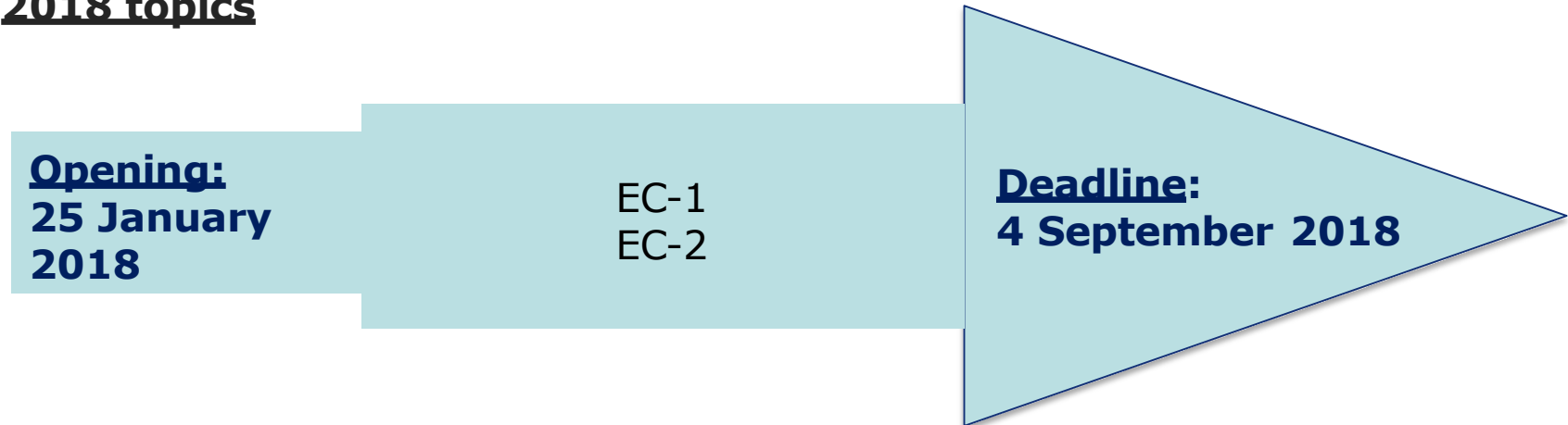
- Contribute to actively alleviating energy poverty and developing a better understanding of the types and needs of energy poor households and how to identify them
- Facilitate **behaviour change** and implementation of **low-cost energy efficiency measures** tailored for energy poor households
- Support the set-up of financial and non-financial **support schemes** for energy efficiency and/or small-scale renewable energy **investments** for energy poor households
- Develop, test and disseminate **innovative schemes for energy efficiency/RES investments** established by utilities or other obligated parties under Article 7

EC-3-2020 Consumer engagement and demand response

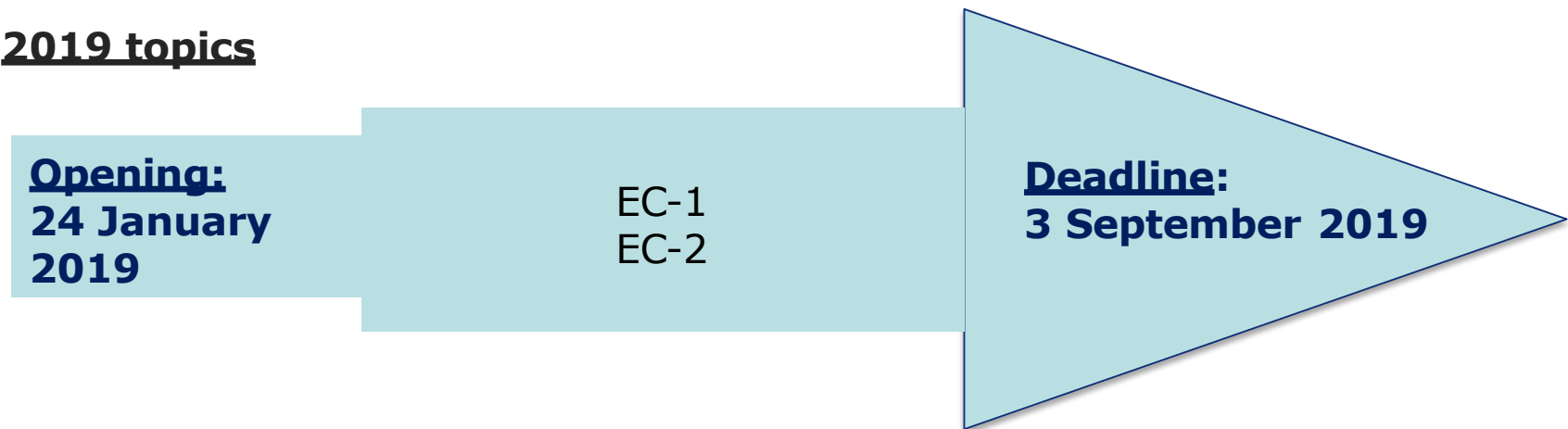
Smart Citizen-Centred Energy System

Deadlines

2018 topics



2019 topics



Smart Citizen-Centred Energy System

Smart citizen-centred energy system

Grid

- **ES-1-2019:** Flexibility and retail market options for the distribution grid (IA)
- **ES-2-2019:** Solutions for increased regional cross-border cooperation in the transmission grid (IA)
- **ES-5-2018-2020:** TSO – DSO – Consumer: Large-scale demonstrations of innovative grid services through demand response, storage and small-scale (RES) generation (IA)
- **ES-6-2019:** Research on advanced tools and technological development (RIA)

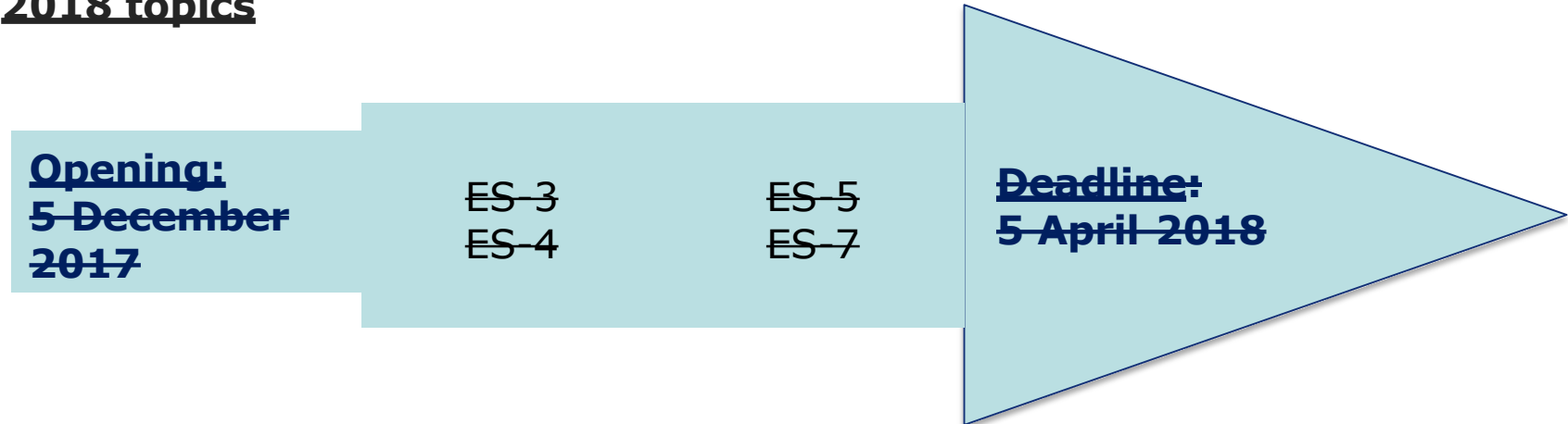
Local systems & island

- **LC-SC3-ES-3-2018-2020:** Integrated local energy systems (Energy islands) (IA)
- **LC-SC3-ES-4-2018-2020:** Decarbonising energy systems of geographical Islands (IA)
- **LC-SC3-ES-8-2019:** European Islands Facility - Unlock financing for energy transitions and supporting islands to develop investment concepts (CSA)

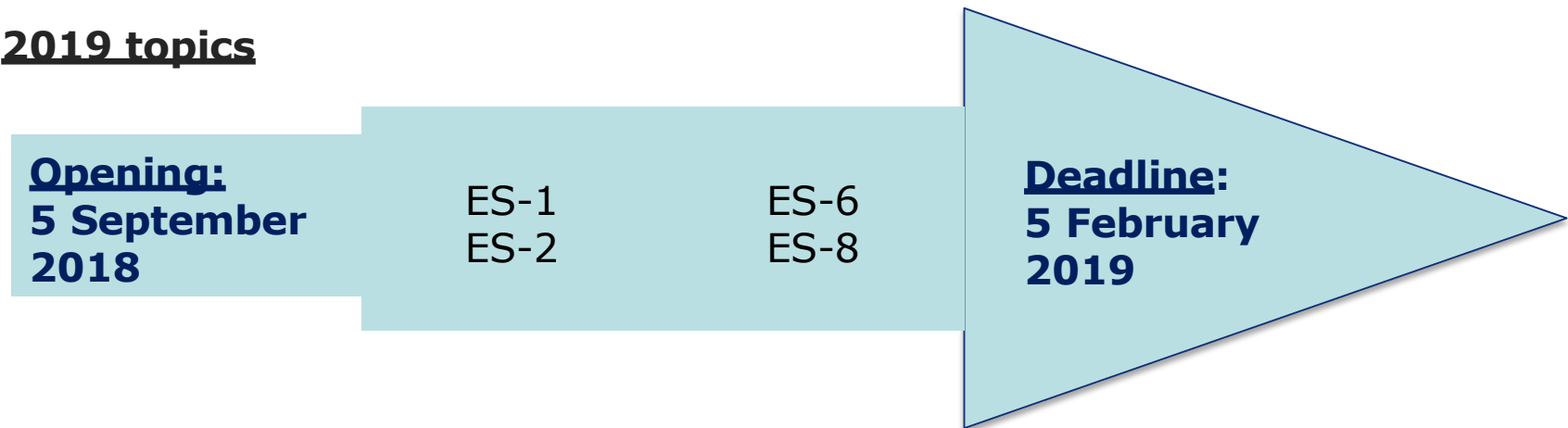
Smart Citizen-Centred Energy System

Deadlines

2018 topics



2019 topics



Smart Cities and Communities

2014

GROWSMARTER

Köln, Barcelona, Stockholm
& Graz, Cork, Valletta, Porto, Suceava

REMOURBAN

Valladolid, Tepebasi, Nottingham
& Seraing, Miskolc

TRIANGULUM

Eindhoven, Stavanger, Manchester
& Prague, Leipzig, Sabadell

2015

REPLICATE

San Sebastián/Donostia, Firenze, Bristol
& Lausanne, Essen, Nilufer

SHAR-LLM

Milano, Lisboa, London (Greenwich)
& Burgas, Bordeaux, Warsaw

SMARTENCITY

Sønderborg, Tartu, Vitoria/Gasteiz
& Asenovgrad, Lecce

SMARTER TOGETHER

Wien, München, Lyon
& Sofia, Santiago de Compostela, Venezia, Yokohama,
Kiev

2016

mySMARTlife

Hamburg, Helsinki, Nantes
& Varna, Palencia, Rijeka, Bydgoszcz

RUGGEDISED

Rotterdam, Umea, Glasgow
& Brno, Parma, Gdansk

2017

STARDUST

Pamplona, Tampere, Trento
& Cluj-Napoca, Derry, Kozani, Litoměřice

IRIS

Utrecht, Göteborg, Nice Côte d'Azur
& Vaasa, Alexandroupolis, Santa Cruz de Tenerife, Focsani

MatchUP

Valencia, Dresden, Antalya
& Ostend, Herzliya, Skopje, Kerava



➤ Collaboration in the **Lighthouse Collaboration Network** - specific task groups on common topics (e.g. replication, business models, dissemination)

Smart Cities and Communities

LC-SC3-SCC-1-2018-2019-2020: Smart Cities and Communities

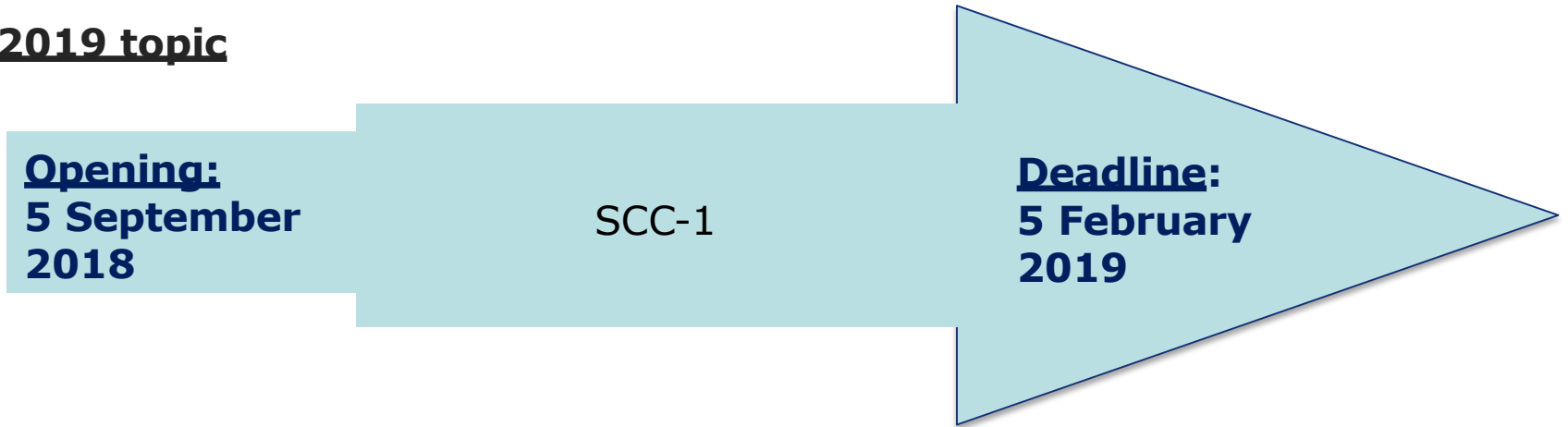
Deadlines

2019 topic

Opening:
**5 September
2018**

SCC-1

Deadline:
**5 February
2019**



Enabling near-zero CO2 emissions from fossil fuel

NZE-1: Pilots for advanced capture technologies (2018)

- *RIA; Deadline: 6.9.2018; indicative budget: EUR 20 million*

NZE-2: Pilots on CO2 conversion to fuels (2018)

- *RIA; Deadline: 6.9.2018; indicative budget: EUR 12 million*

NZE-3: Strategic planning for CCUS deployment(2018)

- *CSA; Deadline: 6.9.2018; indicative budget: EUR 2 million*

NZE-4: Integrated solutions for flexible power plants using power-to-X and energy storage (2019)

- *IA; Deadline: 27.8.2019; indicative budget: EUR 20 million*

NZE-5: CCS in industry (2019, 2020)

- *IA; Deadline (2019): 27.8.2019; indicative budget: EUR 33 million*

NZE-6: Geological storage pilots in different settings(2020)

Enabling near-zero CO2 emissions from fossil fuel

Deadlines

2018 topics

Opening:
15 May 2018

NZE-1
NZE-2
NZE-3

Deadline:
**6 September
2018**

2019 topics

Opening:
7 May 2019

NZE-4
NZE-5

Deadline:
**27 August
2019**

Joint Actions - overview

Support to the SET-Plan

- JA-1-2018 (ERA-NETs)
- JA-2-2018 (CSA for Implementation Plans)

Pre-commercial procurement for wave energy

JA-3-2019

EU-Africa cooperation on renewables

JA-5-2019 (European Joint Programme)

Joint Actions

Deadlines

2018 topics

Opening:
~~31 October 2017~~

JA-4

Deadline:
~~31 January~~
~~2018~~

Opening:
15 May 2018

JA-1
JA-2

Deadline:
11 September
2018

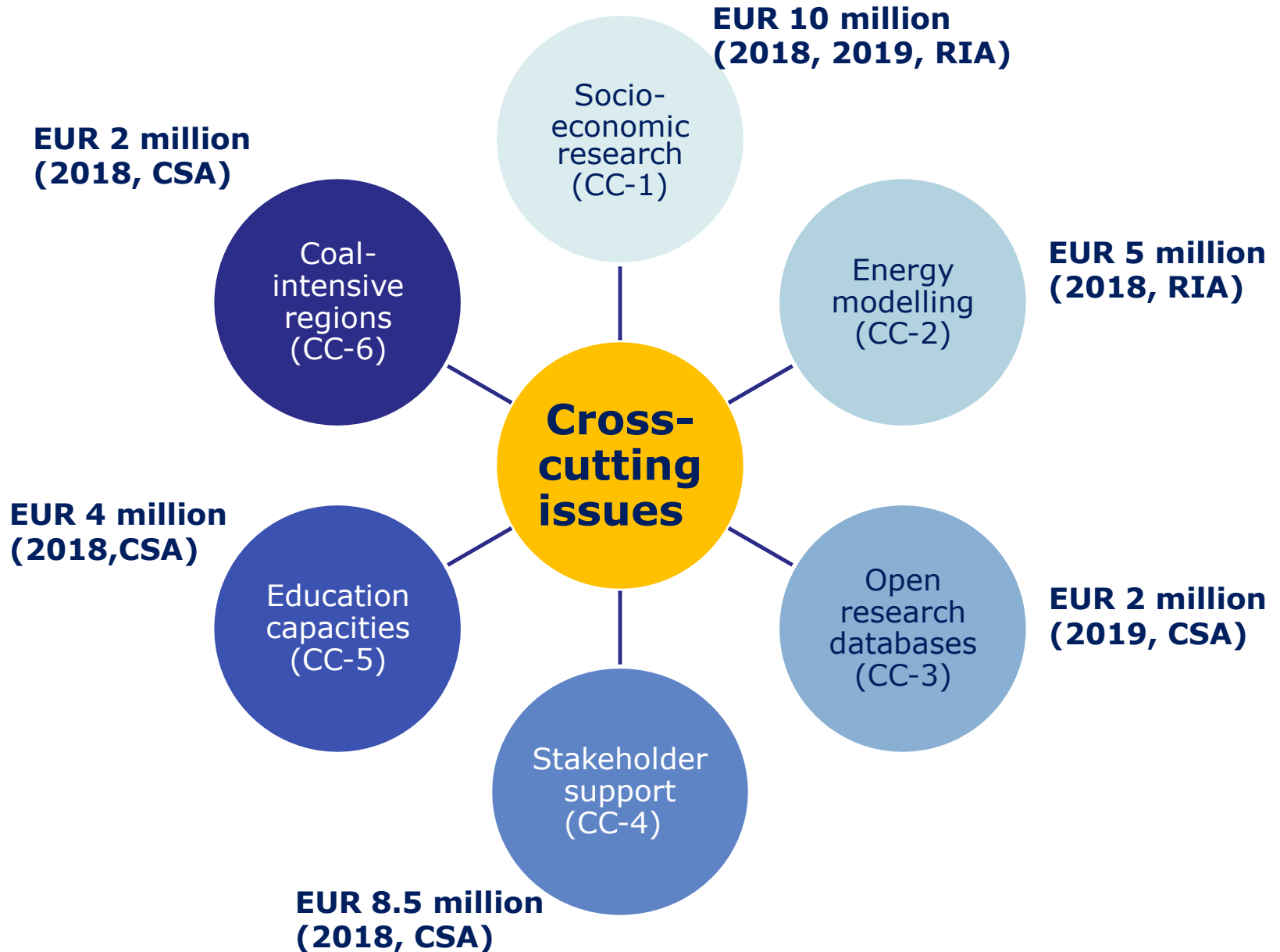
2019 topics

Opening:
14 November
2018

JA-3
JA-5

Deadline:
27 August
2019

Cross-cutting issues - overview



Cross-cutting issues

2018 topics

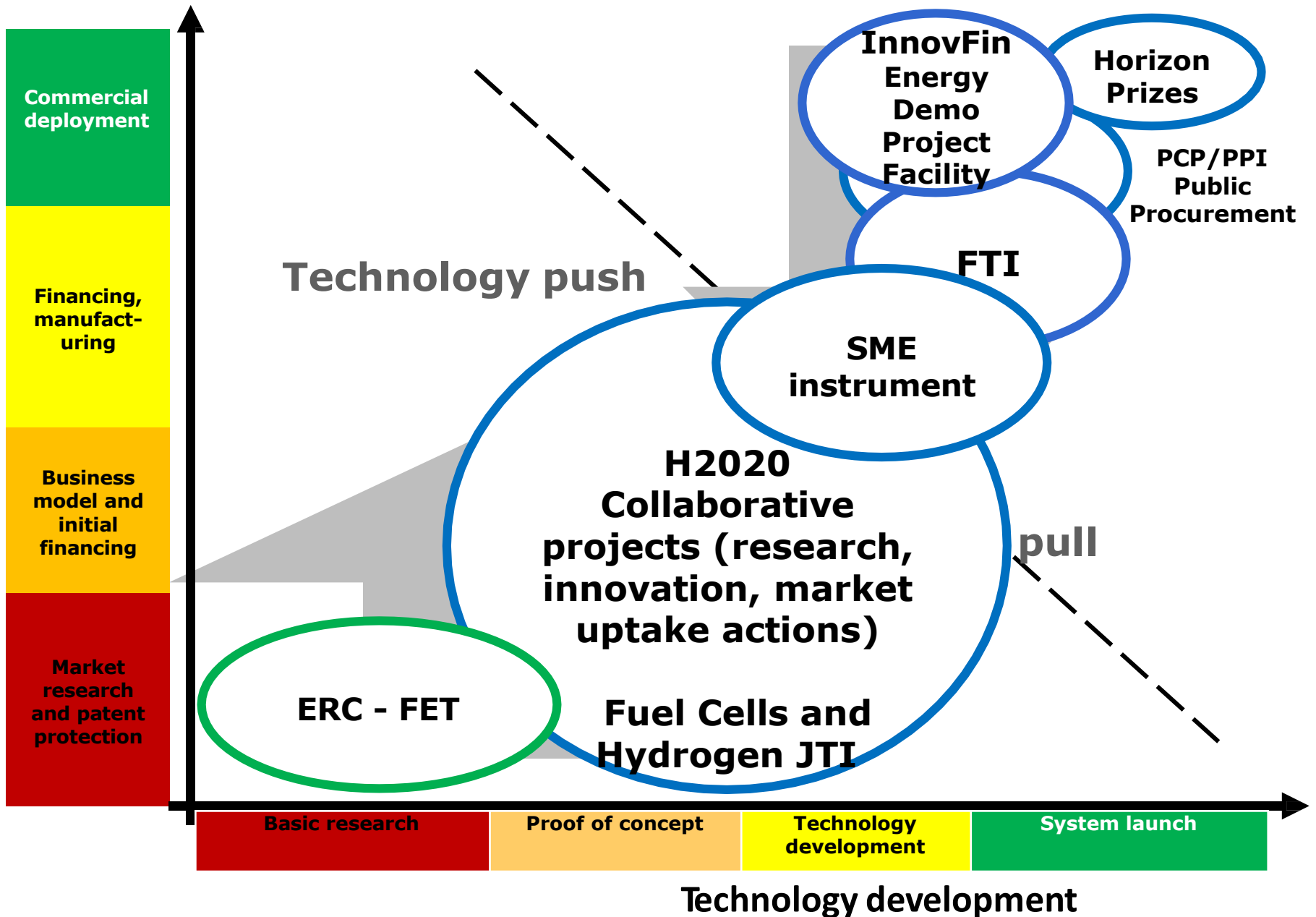
Opening	Topics	Deadline
5 December 2017	CC-4	19 April 2018
15 May 2018	CC-1 CC-2 CC-5 CC-6	6 September 2018

2019 topics




Opening	Topics	Deadline
14 November 2018	CC-3	27 August 2019
7 May 2019	CC-1	

Commercial development

Toolbox



Running energy prizes - overview

	Title	Budget	Submission by
	<u>CO2 reuse in innovative products</u> EC-CO2REUSE-PRIZE@ec.europa.eu	€1.5 EUR million	3 April 2019
	<u>Low carbon hospital</u> Combined Heat and Power installation in a hospital using 100% renewable energy sources EC-LOWCARBON-PRIZE@ec.europa.eu	€ 1.0 EUR million	3 April 2019
	<u>Photovoltaics meets history</u> Integrated Photovoltaic Energy System in a European protected historic urban district EC-PHOTOVOLTAICS-PRIZE@ec.europa.eu	€ 0.75 EUR million	26 September 2018

New prizes

European Innovation Council (EIC)

EIC Horizon Prizes call for breakthrough solutions from innovators, aiming to demonstrate the feasibility or potential of particular technologies and promote uptake.

- **Innovative Batteries for eVehicles (€ 10 M)**
- **Fuel from the Sun: Artificial Photosynthesis (€ 5 M)**
- **Blockchain for Social Good (€ 5 M)**



EIC Horizon Prizes set an ambitious goal, without saying how that goal should be achieved or who should achieve it.

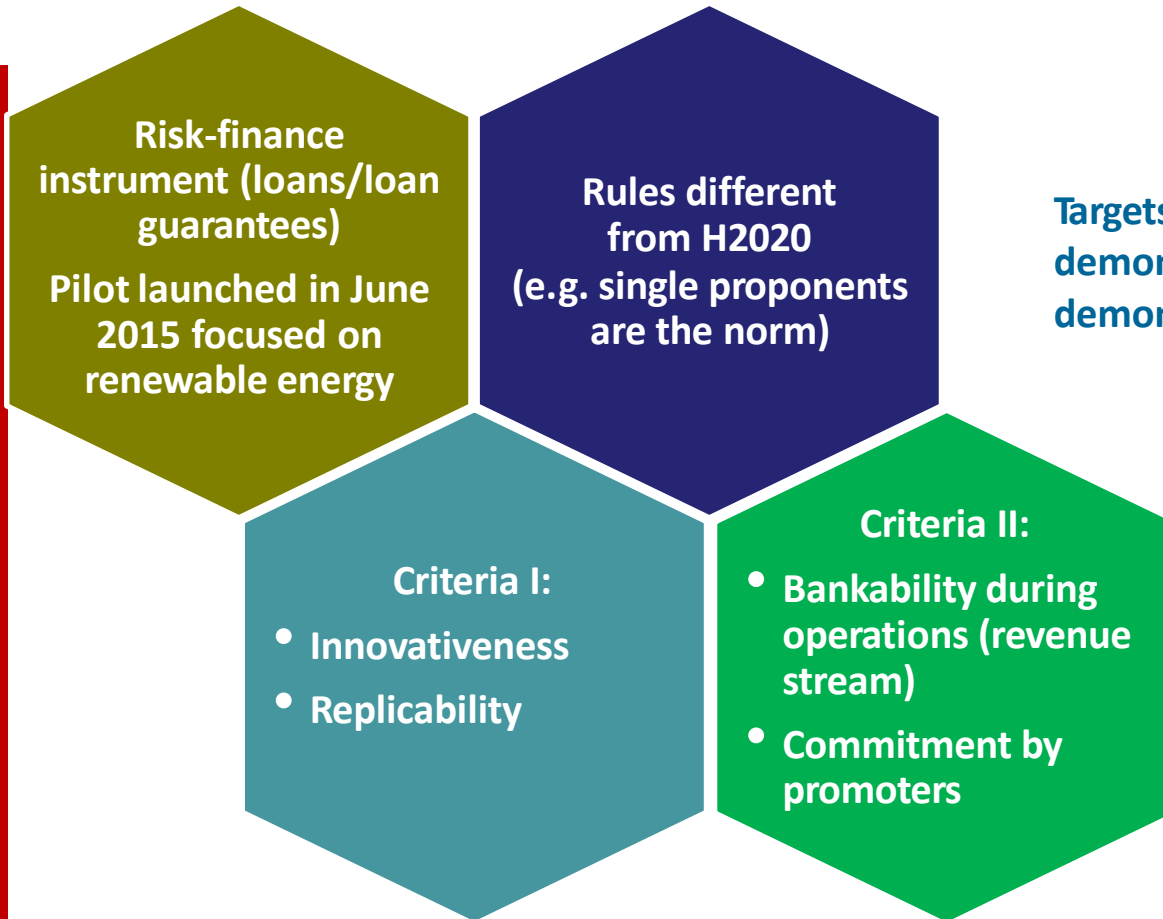
The prize is awarded to whoever can most effectively meet a defined challenge.

InnovFin EDP

What? EDP: Basic features

InnovFin
Energy Demo Projects

www.ekt.gr

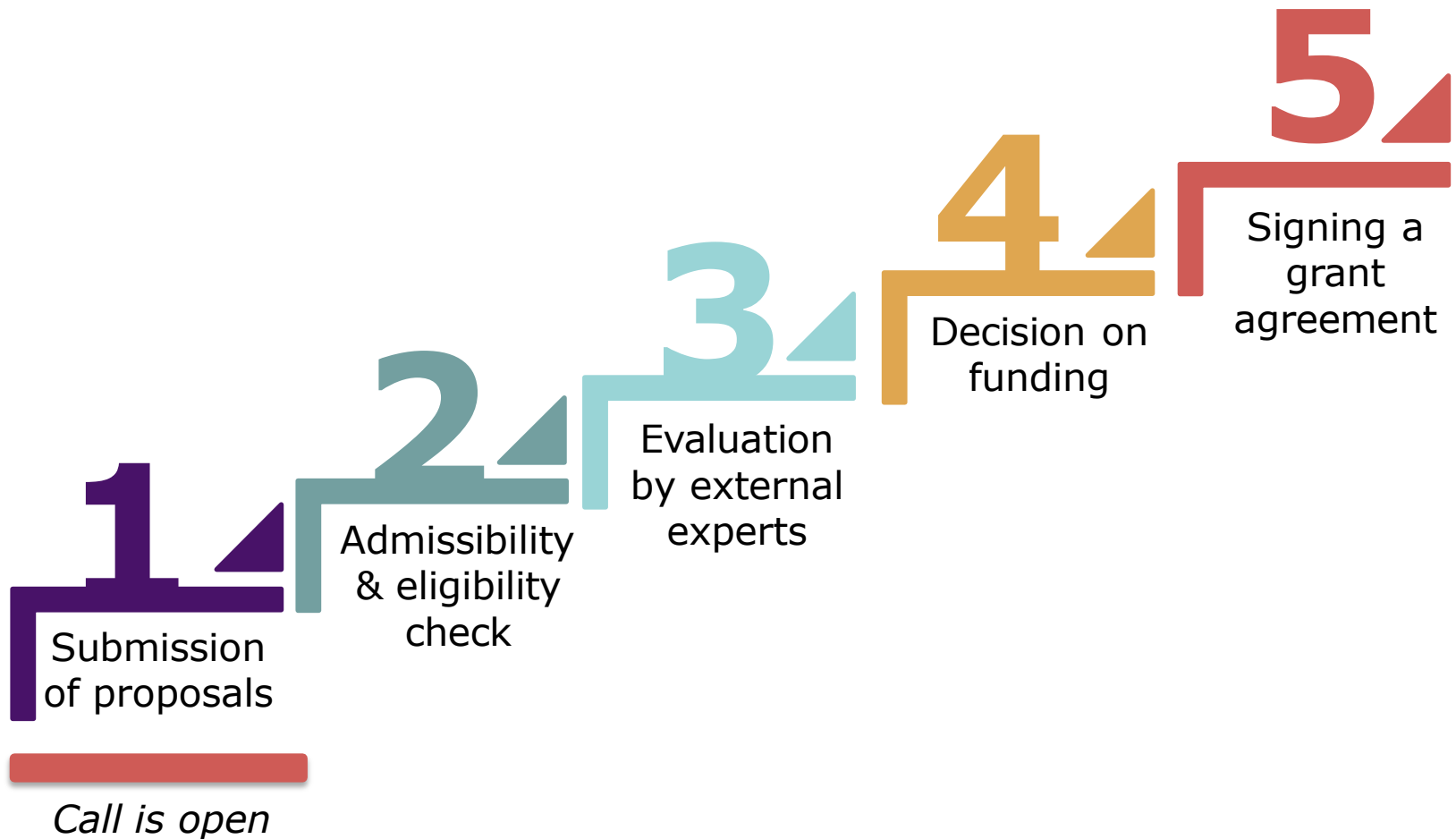


Targets innovative First-of-a-Kind demonstration projects ready to be demonstrated at commercial scale

Designed for a higher level of risk than any other EU financial instrument

Submitting a proposal

5 steps of the selection process



H2020 evaluation process

www.ekt.gr

Deadline

Informing Applicants

Grant Agreement Signature

Admissible Eligible

Award

Grant Preparation

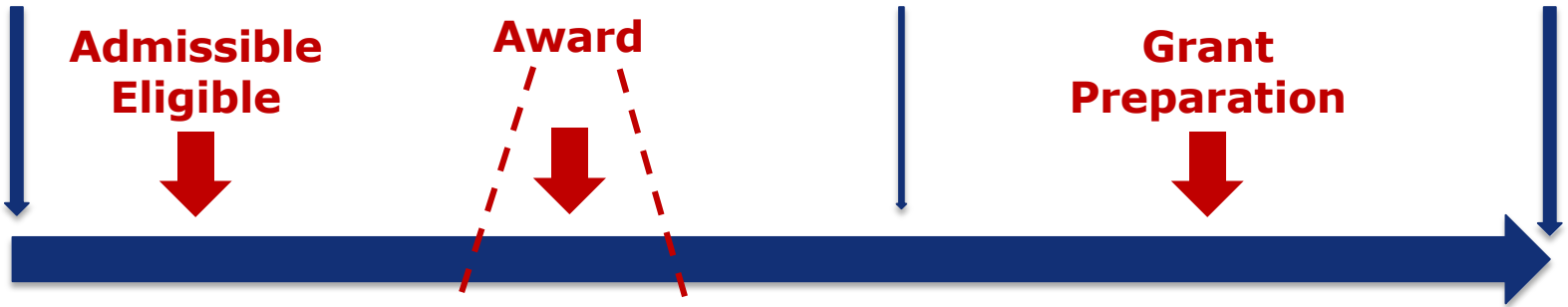
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External Experts

5

8

Months



Statistical data

Data for the 2014-2017 energy calls

	Research project (RIA)	Demonstration project (IA)	Coordination & Support Action (CSA)	Total
Success rate	14.5%	13%	16.5%	15%
Average number of participants per project	10.8	15.8	9.6	11.4
Average EU contribution per project	4.6 M€	11 M€	1.7 M€	4.7 M€

B. ∴ Values vary significantly between topics

- **Projects must be appropriate for addressing the topic**
- **Pay attention to admission & eligibility criteria**

A typical Call for Proposals in numbers

308

Proposals

2900
organisations

50

Projects
retained

>500
organisations

37 countries

Evaluation – Award Criteria

- **Excellence**
- **Impact**
- **Quality & efficiency of implementation**
- **Self-evaluation** form available
- **No negotiation** takes place → only the very best are retained for funding



Know the structure of your proposal

Section 1-3 'Technical Annex'

Your Proposal description

- Excellence
- Impact
- Implementation

Section 4-5

- Description of your partnership & CV's
- Ethics

Online Forms

- Admin. data

Optional Annexes

- Where relevant

Ask some questions, make some choices ...

Ask yourself if you have:

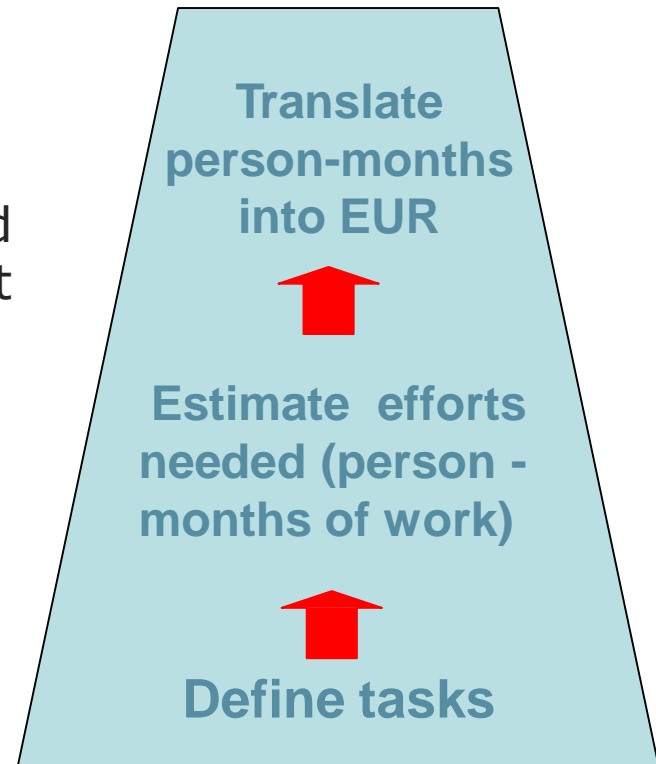
- a clear project **objective**?
- a clear **understanding** of the current (research or market) situation and your starting point
- a clear (set of) **target group(s)**?
- a clear **set of partners** – are they *the* voice of the market?
- a clear path to **make a difference** – what impact do you want to have?

Your consortium

- **Be consistent** – remain relevant to your objective & target group
- **Be adaptable** - be ready to renounce a country if you do not secure the right partner
- **Involve partners in the preparation** – avoid surprises after submission
- **Keep consortium motivated** - agree a working method for the proposal phase, make a plan for their contributions
- **Do not cover the EU map artificially**

Create the budget

- Define your budget 'bottom-up'
- Wait until the tasks are sufficiently specified and agreed – then design define the budget
- Check consistency regularly while advancing on with your Work Plan - share of resources, appropriate levels between partners, appropriate weight of person-months between major work steps



Last check: consistency / language

- Ask an 'informed outsider' for critical reading and feedback
- Check consistency of your description of activities and budget
- If you have the chance, have a native speaker check the English



Frequent mishaps – Eligibility / Admissibility

- **Call deadline is unchangeable:** use all advantages of the electronic submission system to meet the deadline!
- **Completeness:** one section missing makes your proposal inadmissible
- **Partnerships:** remember the principle of 3 participants from Member States or Associated Countries (always check the Work Programme 2018/20 for exceptions)
- **Page limit:** 50 pages for Coordination SA / 70 pages for IA+RIA: applied strictly during evaluation

Resources for help

National Contact Points (NCPs)

NCPs are in the front line for providing specialist advice and on-the-ground guidance to potential applicants



Main services:

- Guidance on choosing relevant H2020 topics and types of action;
- Advice on administrative procedures and contractual issues;
- Training and assistance on proposal writing;
- Assistance in partner search.

Find your national NCP:

http://ec.europa.eu/research/participants/portal/desktop/en/support/national_contact_points.html

Network of Energy NCPs: www.C-energy2020.eu

Resources for help

More Information



Participants Portal:

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

Research Enquiry Service:

<http://ec.europa.eu/research/index.cfm?pg=enquiries>

Presentations of the Horizon 2020 Energy Info Days 2017: <https://ec.europa.eu/easme/en/horizon-2020-secure-clean-and-efficient-energy-info-day>

Horizon 2020 Homepage:

<http://ec.europa.eu/programmes/horizon2020/>

the F.A.Q. page on H2020:

<https://ec.europa.eu/research/participants/portal/desktop/en/support/faq.html>

*Thank you for your
attention*

**Thank you to Alexandros Kotronaros
Directorate General for Energy
European Commission**

#H2020Energy

www.ec.europa.eu/research

Energy efficiency (EE)

Upgrading buildings' energy performance and smartness

- LC-SC3-EE-1-2018-2019-2020: Decarbonisation of the EU building stock: innovative approaches and affordable solutions changing the market for buildings renovation
- LC-SC3-EE-2-2018-2019: Integrated home renovation services
- LC-SC3-EE-3-2019-2020: Stimulating demand for sustainable energy skills in the construction sector
- LC-SC3-EE-4-2019-2020: Upgrading smartness of existing buildings through innovations for legacy equipment
- LC-SC3-EE-5-2018-2019-2020: Next-generation of Energy Performance Assessment and Certification

Energy efficient industry and services

- LC-SC3-EE-6-2018-2019-2020: Business case for industrial waste heat/cold recovery
- LC-SC3-EE-8-2018-2019: Capacity building programmes to support implementation of energy audits

Energy efficiency (EE)

Energy efficiency is an investment

- LC-SC3-EE-9-2018-2019: Innovative financing for energy efficiency investments
- LC-SC3-EE-10-2018-2019-2020: Mainstreaming energy efficiency finance
- LC-SC3-EE-11-2018-2019-2020: Aggregation - Project Development Assistance

Energy efficiency is an energy source

- LC-SC3-EE-13-2018-2019-2020: Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side as energy resource
- LC-SC3-EE-14-2018-2019-2020: Socio-economic research conceptualising and modelling energy efficiency and energy demand

Support for policy-driven innovations

- LC-SC3-EE-15-2018: New energy label driving and boosting innovation in products energy efficiency
- LC-SC3-EE-16-2018-2019-2020: Supporting public authorities to implement the Energy Union
- LC-SC3-EE-17-2019: European City facility - European Cities as key innovation hubs to unlock finance for energy efficiency

Global leadership in renewables (RES)

Next Renewable energy solutions

- LC-SC3-RES-1-2019-2020: Developing the next generation of renewable energy technologies

Renewable energy solutions for implementation at consumer scale

- LC-SC3-RES-7-2019: Solar Energy in Industrial Processes
- LC-SC3-RES-8-2019: Combining Renewable Technologies for a Renewable District Heating and/or Cooling System

Renewable energy solutions for energy system level implementation

- LC-SC3-RES-14-2019: Optimising manufacturing and system operation
- LC-SC3-RES-15-2019: Increase the competitiveness of the EU PV manufacturing industry
- LC-SC3-RES-16-2019: Development of solutions based on renewable sources that provide flexibility to the energy system
- LC-SC3-RES-17-2019: Demonstration of solutions based on renewable sources that provide flexibility to the energy system

Renewable Fuels for transport

- LC-SC3-RES-23-2019: Development of next generation biofuel and alternative renewable fuel technologies for aviation and shipping
- LC-SC3-RES-24-2019: Boosting pre-commercial production of advanced aviation biofuels

Market Uptake Support

- LC-SC3-RES-28-2018-2019-2020: Market Uptake support