



#InvestEUresearch

# Horizon 2020 Work Programme for Research & Innovation 2018-2020

## Topics 2018 – 2019

- Renewable Energy
- Near Zero Emission...
- Joint Actions
- Cross-Cutting Prizes

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Research and  
Innovation

## Deadlines in 2018 – 28 topics – 481M€

### Contracts to be awarded in 2018 – 254M€

- 31/01/2018 – 3 topics – 58,5M€ - Open for submission from 31/10/2017
- 13/02/2018 – 6 topics – 155M€ - Open for submission from 31/10/2017
- 05/04/2018 – 1 topics – 20M€ - Open for submission from 05/12/2017
- 19/04/2018 – 2 topics – 20,5M€ - Open for submission from 05/12/2017

### Contracts to be awarded in 2019 – 227M€

- 06/09/2018 – 7 topics – 56M€ - Open for submission from 15/05/2018
- 11/09/2018 – 2 topics – 16M€ - Open for submission from 15/05/2018
- 16/10/2018 – 2 topics – 40M€ - Open for submission from 01/08/2018
- 11/12/2018 – 5 topics – 115M€ - Open for submission from 05/09/2018

# Deadline 31/01/2018

## Single stage

LC-SC3-JA-4-2018 (CSA) – 1M€



- ***Support action in preparation of a Joint Programming activity***
- The proposal will be the preparatory step towards the European Joint Programme, topic LC-SC3-JA-5-2019. The consortium has to bring together the core relevant European funding agencies and African partners already involved research and innovation cooperation actions.

**International Cooperation / EU – Africa**

# Deadline 31/01/2018

Stage 1 of a two-stage (stage 2 in August 2018) [Consumers & System scale]

## LC-SC3-RES-4-2018 (RIA) – 27,5M€



- **Renewable energy system integrated at the building scale**
- The proposal will provide a combination of different renewable energy technologies to cover the highest possible share of electricity, heating and cooling needs of a multi-family residential or commercial or public or industrial building .

## LC-SC3-RES-11-2018 (RIA) – 30M€



- **Developing solutions to reduce the cost and increase performance of renewable technologies**
- Achieving or maintaining global leadership in renewable energy technology requires that the innovative solutions are also affordable. Therefore cost reductions remain a crucial necessity for existing or new technologies.

# Deadline 13/02/2018 – 1/3

Single stage - Implementation at consumer scale

## LC-SC3-RES-5-2018 (IA) – 10M€



- **Increased performance of technologies for local heating and cooling solutions**
- The proposed systems will harness renewable local energy sources to supply heating and cooling in residential and small and larger commercial buildings as they have different heat/cold needs.

## LC-SC3-RES-6-2018 (IA) – 30M€



- **Demonstrate significant cost reduction for Building Integrated PV (BIPV) solutions**
- a) new BIPV product concepts to meet these requirements and cost-efficient production techniques reducing their additional cost by 75% by 2030 compared to 2015 and; b) demonstration of these concepts into a BIPV energy system that guarantees the building functionalities and energy needs on a life-cycle basis.

# Deadline 13/02/2018 – 2/3

Single stage - Energy system level implementation

## LC-SC3-RES-12-2018 (IA) – 30M€

- ***Demonstrate highly performant renewable technologies for combined heat and power (CHP) generation and their integration in the EU's energy system***
- Progressive replacement of fossil fuels used in the heat and power sectors by means of renewable energy sources can increase energy security, energy price stability as well as independence from imported sources. → Biomass CHP, Geothermal

## LC-SC3-RES-13-2018 (IA) – 45M€

SET-  
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- ***Demonstrate solutions that significantly reduce the cost of renewable power generation***
- additional efforts are needed to bring the costs of electricity generation from other renewable sources to a competitive level and allow their broader penetration in the EU energy mix. → Offshore Wind, Deep Geothermal, CSP

# Deadline 13/02/2018 – 3/3

Single stage – Transport & Market Uptake Measures

## LC-SC3-RES-21-2018 (RIA) – 25M€

- ***Development of next generation biofuels and alternative renewable fuel technologies for road transport***
- Next generation non-food/feed drop-in biofuel and alternative renewable fuel technologies for energy and transport, which improve substantially beyond the state-of-the-art the performance as regards conversion efficiency, cost and feedstock supply, as well as end use compatibility.

## LC-SC3-RES-28-2018 (CSA) – 15M€



- ***Market Uptake support***
- The proposal will develop solutions which can be easily implemented for overcoming barriers to the broad deployment of renewable energy solutions.



# Deadline 05/04/2018

## Single stage - Transport

LC-SC3-RES-22-2018 (IA) – 22M€



- ***Demonstration of cost effective advanced biofuel pathways in retrofitted existing industrial installations***
- To overcome the high cost and high risk of the installation of industrial plants for advanced biofuels.
- To demonstrate cost-efficient advanced biofuel pathways which improve the economic viability and reduce capital expenditure (CAPEX) and operating expenses (OPEX)
- To be done through retrofitting of existing industrial installations with necessary innovation specific to the proposed advanced biofuel pathway



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# Deadline 19/04/2018 - 1/2

## Single stage – Cross Cutting

LC-SC3-CC-4-2018 (CSA) – 8,5M€



- ***Support to sectorial fora***
- Support the coordination of stakeholders' activities in the context of the SET-Plan European Technology Innovation Platforms (*PV, wind, ocean, RE fuel & bioenergy, RHC, NZE*)
- Support to the hydropower stakeholders
- Support to energy-related SSH research stakeholders
- Support the coordination of the industrial participation in the SET Plan



# Deadline 05/04/2018 - 2/2

## Single stage - Transport



LC-SC3-RES-2-2018 (RIA) – 12M€

- ***Disruptive innovation in clean energy technologies***
- Proposals are expected to bring the technologies from TRL 3 to at least 5. They need to demonstrate a clear technology development roadmap for their solutions, including a strong exploitation plan presenting their business opportunities and impact potential.
- Projects selected under this pilot will follow a stage-gate approach based on milestones and periodic reviews.
- Two areas opened for the pilot:
  - Photovoltaic windows ('transparent' solar cells)
  - Bionic leaf technology

# Deadline 06/09/2018 – 1/4

Single stage – Cross-cutting

## LC-SC3-CC-1-2018 (RIA) – 10M€

SET-Plan

- ***Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition***
- *Social innovation in the energy sector*: The energy transition has given rise to various forms of social innovation, such as the emergence of energy cooperatives or that of energy "prosumers" consuming but also producing energy.

## LC-SC3-CC-2-2018 (RIA) – 5M€

SET-Plan

- ***Modelling in support to the transition to a Low-Carbon Energy System in Europe***
- To develop new knowledge on energy system modelling with an open space for researchers at national and European levels to collaboratively innovate and progress in using modelling tools to understand and predict the requirements of the transition towards a low-carbon energy system.

# Deadline 06/09/2018 – 2/4

Single stage – Cross-cutting

## LC-SC3-CC-5-2018 (CSA) – 4M€



- ***Research, innovation and educational capacities for energy transition***
- To support European universities to contribute fully to the objectives of the Energy Union and to the SET Plan through cooperation with innovative businesses and appropriate curricula/programmes . Silos need to be broken between energy technologies and interdisciplinarity that is conducive to addressing the challenges of the whole energy system needs to be fostered

## LC-SC3-CC-6-2018 (CSA) – 2M€

- ***Transition in coal intensive regions***
- To support European coal-intensive regions to design research and innovation strategies to facilitate their transition towards a sustainable energy system.

# Deadline 06/09/2018 – 3/4

Single stage – Enabling near-zero CO<sub>2</sub> emissions from fossil fuel power plants and carbon intensive industries

## LC-SC3-NZE-1-2018 (RIA) – 20M€

- **Advanced CO<sub>2</sub> capture technologies**
- The objective is the validation and pilot demonstration of advanced CO<sub>2</sub> capture technologies that have shown a high potential for reduction of the energy penalty and a significant overall improvement of cost-efficiency of the whole capture process, but that are not yet commercial

## CE-SC3-NZE-2-2018 (RIA) – 12M€

- **Conversion of captured CO<sub>2</sub>**
- Development of energy-efficient and economically and environmentally viable CO<sub>2</sub> conversion technologies for chemical energy storage or displacement of fossil fuels that allow for upscaling in the short to medium term.



# Deadline 06/09/2018 – 4/4

Single stage – Enabling near-zero CO2 emissions from fossil fuel power plants and carbon intensive industries

## LC-SC3-NZE-3-2018 (CSA) – 3M€

- ***Strategic planning for CCUS development***
- Elaboration of detailed plans for comprehensive European CO2 gathering networks and industrial clusters linked to CO2 storage sites via hubs, pipeline networks and shipping routes, with due attention to national and border-crossing permitting and regulatory issues
- Projects should pave the way for the development of operational storage sites as from the early 2020's, in particular linked to carbon-intensive industry.
- Proposals should clearly demonstrate how their outputs will contribute to achieving these expected impacts in the short term (up to 3 years), medium term (3-10 years) and long term (more than 10 years).

# Deadline 11/09/2018

## Single stage – Joint Actions

### LC-SC3-JA-1-2018 (ERA-NET-Cofund) – 10M€



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- ***Joint programming actions to foster innovative energy solutions***
- Actions should aim at coordinating the efforts of participating Member States, Associated Countries and Regions towards achieving SET Plan objectives and, where they exist, executing the Implementation Plans jointly developed by SET Plan countries' representatives, industry and research organisations within the SET Plan priority areas numbers 1 to 9

### LC-SC3-JA-2-2018 (CSA) – 6M€



SET-  
Plan

- ***Support to the realisation of the Implementation Plans of the SET Plan***
- Proposals will support, when appropriate, the execution/realisation of a SET Plan Implementation Plan prepared by one of the following SET Plan Temporary Working Groups.

# Deadline 16/10/2018 – 1/2

Stage 1 of a two-stage (stage 2 in April 2019) [New Technologies & System scale]



## LC-SC3-RES-1-2019 (RIA) – 20M€

- ***Developing the next generation of renewable energy technologies***
- Proposals are expected to bring to TRL 3 or TRL 4 (please see part G of the General Annexes) renewable energy technologies that will answer the challenge described:
  - New, more efficient, and cost-competitive energy generation and conversion technologies,
  - Innovative materials for geothermal heat exchangers
  - Innovative testing methods and design tools for acceleration of wind energy
  - Sustainable fuels other than hydrogen for energy and transport application
  - Innovative very high efficiency thin-film photovoltaics concepts





# Deadline 16/10/2018 – 2/2

Stage 1 of a two-stage (stage 2 in April 2019) [New Technologies & System scale]

**LC-SC3-RES-14-2018 (RIA) – 20M€**



- ***Optimising manufacturing and system operation***
- Renewable electricity technologies still require optimisation in several key processes of the respective value chains in order to achieve a more efficient conversion of their primary energy source into electricity
  - Monitoring system for marine energy (ocean and offshore wind)
  - Geothermal fluids
  - Photovoltaics

# Deadline 11/12/2018 – 1/3

Single stage - Implementation at consumer scale

**LC-SC3-RES-8-2019 (IA) – 15M€**



- ***Combining Renewable Technologies for a Renewable District Heating and/or Cooling System***
- Support will be given to cost-effective solutions for district heating and/or cooling systems which allow satisfying at least 50% of the energy demand of the system by the use in the district of one or more renewable energy technologies. The integration of sources of otherwise wasted excess heat is in the scope
- The consortium is expected to engage operators and final users (in particular if the users need different supply temperatures) so that they can contribute for an optimal and cost-effective design. The requirements of the final users (e.g., in terms of metering) for the day-to-day operation shall be taken into account.

# Deadline 11/12/2018 – 2/3

Single stage - Energy system level implementation

## LC-SC3-RES-15-2019 (IA) – 25M€



- ***Increase the competitiveness of the EU PV manufacturing industry***
- Demonstrating manufacturing innovation as well as product innovation for highly performing PV technologies (e.g. crystalline-silicon, thin-film and concentration PV).

## LC-SC3-RES-17-2019 (IA) – 40M€

- ***Demonstration of solutions based on renewable sources that provide flexibility to the energy system***
- to increase the potential of renewable dispatchable technologies in providing flexibility to the energy system
  - *Intermediate bioenergy carriers*
  - *Hydropower*
  - *Thermal energy storage in Concentrated Solar Power (CSP) plants*

# Deadline 11/12/2018 – 3/3

Single stage – Transport & Market Uptake Measures

## LC-SC3-RES-24-2018 (RIA) – 20M€

SET-Plan

- **Boosting pre-commercial production of advanced aviation biofuels**
- Proposal will demonstrate pre-commercial production of sustainable and cost-competitive advanced biofuels for aviation for boosting their market up-take.
- 30 to 50 thousand tonnes of aviation biofuel and continuous plant operation of 1000 hr within the project will be included

## LC-SC3-RES-28-2019 (CSA) – 15M€



- **Market Uptake support**
- The proposal will develop solutions which can be easily implemented for overcoming barriers to the broad deployment of renewable energy solutions.



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## Deadlines in 2019 – 9 topics – 145M€

### Contracts to be awarded in 2020 – 145M€

- 27/08/2019 – 3 topics – 37M€ - Open for submission from 14/11/2018
- 27/08/2019 – 6 topics – 108M€ - Open for submission from 07/05/2018



# Deadline 27/08/2019 – 1/5

Single stage – Joint Actions & Cross-cutting

## LC-SC3-CC-3-2019 (CSA) – 2M€

- ***Support for the opening of low-carbon energy research databases in Europe***
- The challenge is to promote the opening of research databases for low-carbon energy in Europe, and to support a European-level approach to defining the development of future research data bases; this action focuses on the area of low-carbon energy.



## LC-SC3-JA-3-2019 (PCP)– 20M€

- ***European Pre-Commercial Procurement Programme for Wave Energy Research & Development***
- In this European PCP action it is the aim to elevate experience with national public procurement approaches at a European level to bring European Wave Energy Research and Development more efficiently into the direction of commercialization.

# Deadline 27/08/2019 – 2/5

Single stage – Joint Actions



## LC-SC3-JA-5-2019 (COFUND-EJP) – 15M€

- ***Joint Programming with EU and African partners for a R&I actions in the area of renewable energy***
- Building local capacities and promoting research, including applied research, are recognized to be essential pillars in the development of sustainable energy in Africa. Africa-EU research cooperation in this area can contribute substantially to further technology take-up in the region
- The proposal will implement the common strategic joint research and innovation programme on renewable energy technology developed in the preparatory phase, topic LC-SC3-JA-2-2018, to adapt renewable energy technologies to the African environmental, social and economic conditions through joint research efforts.

**International Cooperation / EU – Africa**



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# Deadline 27/08/2019 – 3/5

Single stage – Cross-cutting & Consumer scale

## LC-SC3-CC-1-2019 (RIA) – 10M€

- ***Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition***
- *Challenges facing carbon-intensive regions:* The transition to a low-carbon energy system and economy poses particular challenges for regions that are still heavily dependent on fossil-fuel-based industries or the extraction of fossil fuels themselves ("coal and carbon-intensive regions").

## LC-SC3-RES-7-2019 (RIA) – 10M€

- ***Solar Energy in Industrial Processes***
- Support will be given to solutions that cover by means of solar thermal energy the highest possible share of the heating and/or cooling demand of one or more industrial processes.



# Deadline 27/08/2019 – 4/5

Single stage – Transport & System scale

## LC-SC3-RES-16-2019 (RIA) – 15M€

- ***Development of solutions based on renewable sources that provide flexibility to the energy system***
- To increase the potential and performance of dispatchable technologies to provide flexibility services to the energy system by improving their technological characteristics.
  - *Bioenergy carriers*
  - *Hydropower*
  - *Virtual Power Plant*

## LC-SC3-RES-23-2019 (RIA) – 20M€

- ***Development of next generation biofuel and alternative renewable fuel technologies for aviation and shipping***
- To increase the competitiveness of next generation biofuel and renewable fuel technologies in aviation and shipping, compared to fossil fuel alternatives.

# Deadline 27/08/2019 – 5/5

Single stage – Enabling near-zero CO2 emissions from fossil fuel power plants and carbon intensive industries

## LC-SC3-NZE-4-2019 (IA) – 20M€

- ***Integrated solutions for flexible operation of fossil fuel power plants through power-to-X-to-power and/or energy storage***
- Validation and pilot demonstration of the integration of energy storage and/or use of excess energy (including via power-to-X-to-power) in fossil fuel power plants

## LC-SC3-NZE-5-2019 (IA) – 33M€

- ***Low carbon industrial production using CCUS***
- Projects will focus on integrating CO2 capture in industrial installations, whilst addressing the full CCUS chain





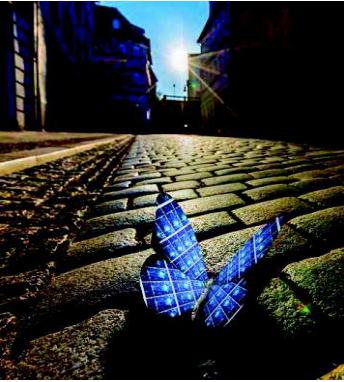
# Inducement Prizes

**In 2018/2019 – 3 energy prizes to be awarded**

**In 2017 – 6 prizes to be launched through the European Innovation Council (EIC)**



# H2020 – Energy Inducement Prizes – 2018/2019

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

## Last remarks

Work-Programme 2018-2020 has been pre-published

Work-Programme 2018-2020 will be launched on 31/10/2017

First deadline is 31/01/2018

Brussels information day is on 23/10/2017



# Sign up as an expert/reviewer

The image shows a screenshot of the H2020 Participant Portal website. The page is titled "Experts" and includes a "H2020 ONLINE MANUAL" link. The main content area is divided into two columns. The left column, marked with a blue box containing the number "2", contains a "New experts" section with the heading "Who can be an expert?". Below this heading, it states: "You have a chance of being selected as an expert if you:" followed by a bullet point: "• have high-level of expertise in the relevant fields of research and innovation (see call for details on types of expertise)." Below the text, there is a blue button labeled "REGISTER AS EXPERT" which is circled in red. The right column, marked with a blue box containing the number "1", shows the top navigation bar of the portal. The navigation bar includes the European Commission logo, the text "RESEARCH & INNOVATION Participant Portal", and a breadcrumb trail: "European Commission > Research & Innovation > Participant Portal > Experts". Below the breadcrumb trail is a menu with items: "HOME", "FUNDING OPPORTUNITIES", "HOW TO PARTICIPATE", "EXPERTS" (circled in red), and "SUPPORT". A search bar labeled "Search PP" is also present. Below the navigation bar, the text reads: "In addition, experts assist in the :". This is followed by a bullet point: "• **preparation, implementation or evaluation of programmes and design of policies.** This includes the Horizon 2020 Advisory Groups." Below this, it says: "Assignments mainly concern research and innovation, falling within the Horizon 2020 programme designed to address the challenges Europe is facing through funding excellent science, technology and innovation." At the bottom of the right column, it says: "Take a look at the most recently".

**1**

Experts [H2020 ONLINE MANUAL](#)

Join the database of independent experts for European research and innovation.

The European Commission appoints independent experts to assist with research and innovation assignments, projects, and evaluation of projects.

New experts

**Who can be an expert?**

You have a chance of being selected as an expert if you:

- have high-level of expertise in the relevant fields of research and innovation (see call for details on types of expertise).

Experts can be available for occasional, short-term assignments

[REGISTER AS EXPERT](#)

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In addition, experts assist in the :

- **preparation, implementation or evaluation of programmes and design of policies.** This includes the Horizon 2020 Advisory Groups.

Assignments mainly concern research and innovation, falling within the Horizon 2020 programme designed to address the challenges Europe is facing through funding excellent science, technology and innovation.

Take a look at the most recently

**H2020 Participant Portal:  
ec.europa.eu/research/participants/portal**

In order to access the expert registration form, you are first asked to login with a valid Participant Portal (ECAS) account. If you do not have it yet, it is easy to [create your Portal \(ECAS\) account](#).



Thank you!

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