

Come leggere un Work Programme

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10. Secure, clean and efficient energy

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*Horizon 2020
Secure, clean and efficient energy*

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Introduction

Accelerating the transition to a low-carbon economy is a central challenge of our time and a key political priority of the EU. Taking forward the renewed momentum from the COP21 Paris Agreement, the Commission has underpinned its ambitious energy and climate policy, embodied in the Energy Union, with the "Clean Energy for all Europeans" package, adopted in November 2016. This comprehensive set of legislative proposals pursues three overarching goals: (i) energy efficiency first, (ii) Europe as a leader in renewables, and (iii) a fair deal to consumers. Research and Innovation plays an important role in accelerating the transition to a low-carbon economy by enlarging the portfolio of available options and bringing down costs. At the same time, it is an important element for boosting the EU's competitiveness in clean energy technologies, opening up an enormous potential for growth and jobs.

This work programme supports research, demonstration, innovation and market-uptake actions across different low-carbon energy sectors, notably in the core priorities identified in the Energy Union Strategy¹: renewable energy; smart energy systems; energy efficiency; and, as an additional priority, Carbon Capture Utilization and Storage (CCUS). Within these areas, a special focus is put on the three strategic priorities highlighted in the Communication "Accelerated Clean Energy Innovation"² which are primarily addressed by the Secure, Clean and Efficient Societal Challenge of Horizon 2020 – decarbonising the EU building stock; strengthening EU leadership on renewables; and developing affordable and integrated energy storage solutions. The context for operationalising and implementing these priorities, as well as other relevant issues addressed in this work programme, is the EU Strategic Energy Technology Plan (SET Plan). It seeks to maximise synergies between EU and national public R&I support for clean energy, and to leverage private funding, for priorities across 10 key actions which have been identified jointly by the stakeholder community, national authorities and the Commission.

At the international level, the Commission pushes the acceleration of energy innovation through the Mission Innovation Initiative³ which was launched at COP21 and currently comprises 23 members which together account for the largest part of the global CO₂ emissions and clean energy R&I efforts. This work programme includes a number of specific actions⁴ which directly target an increased international cooperation of EU Member States and Associated Countries in the context of Mission Innovation. This also includes, in line with the spirit of the Paris Agreement which emphasises the need for global cooperation on technology development and transfer, cooperation with African countries on renewable energies⁵.

Call - BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: SECURE, CLEAN AND EFFICIENT ENERGY

H2020-LC-SC3-2018-2019-2020

Introduction

This call includes the contribution of the Horizon 2020 Societal Challenge "Secure, clean and efficient energy" to the focus area "Building a low-carbon, climate resilient future" which underpins the goals of the COP21 Paris Agreement and the "Clean Energy for all European" package, including the Communication "Accelerating Clean Energy Innovation" (COM (2016) 736), with concrete R&I actions focussing on the accelerated transformation of the energy system, and other sectors, towards carbon neutrality.

Achieving carbon neutrality in the energy sector – while ensuring at the same time a more efficient energy use, a secure supply of energy, affordable prices and low environmental impact – is a complex endeavour which requires R&I activities on multiple fronts. Activities supported in this call should deliver:

- on the supply side, cheaper and more performant generation technologies which are better integrated in various levels of the energy system;
- a smarter, more flexible and resilient energy system;
- on the demand side, increased overall energy efficiency and provision of means to enable consumers to play a more active role in the energy transition;
- a better understanding of the specific socio-economic contexts in which the energy transition takes place which will allow to address obstacles in a more effective way;
- increased market-uptake of innovations, including the implementation of energy policy, the preparation for rolling-out investments, and the support for capacity-building.

ENERGY EFFICIENCY

Mission statement

Energy efficiency needs to be considered as a source of energy in its own right. It is one of the most cost effective ways to support the transition to a low carbon economy, to prompt further investment opportunities and to create growth and employment. The Paris Agreement gives a clear and ambitious direction of travel for investment into low carbon solutions. Being ambitious and putting energy efficiency first will bring down costs for consumers, reduce our import dependency and redirect investments towards the kind of infrastructure that are smart and sustainable.

TOPIC: example

LC-SC3-EE-1-2018-2019-2020: Decarbonisation of the EU building stock: innovative approaches and affordable solutions changing the market for buildings renovation

Specific Challenge: The market for deep renovation of buildings needs to be transformed in terms of technologies, processes and business models. The multiple benefits of improved energy efficiency are well known, but more action is needed for Europe to achieve the higher rates of renovation that would reduce energy use and decarbonize the building stock and meet long-term climate and energy targets. In particular, deep renovations need to become more attractive to all relevant stakeholders, more reliable in terms of performance, less disruptive for occupants, less time-consuming, less energy-intensive from a life cycle perspective and more cost-effective. There is a need to demonstrate and roll out holistic consumer-centred solutions that involve the whole value chain, ensuring high levels of comfort and a high quality of the indoor environment. It is expected that this topic will continue in 2020.

Scope: Proposals should demonstrate solutions of building fabric and/or systems that ensure faster and more cost-effective deep renovations that result in high energy performance. Proposals should include innovations in technology and in design and construction methods with low embodied energy and on-site works organisation, industrialization and lowering cost of energy retrofitting. They should also include innovations in business models and the holistic integration of disciplines across the value chain. Proposals should also consider energy efficient and low carbon solutions to retrofit building-level heating and cooling systems and the integration of on-site renewable energy generation. They could also consider further development and improvement of hybrid energy systems using fossil fuel based heating systems coupled with RES based heating systems.

Solutions should include quick and simple installation of components and systems, minimizing disruption for building occupants and the time spent on site. Proposals should include monitoring and displaying of real time energy performance and other relevant data and consider the ways in which consumers and others could access and make use of such information. Solutions should ensure high levels of occupant comfort and indoor environmental quality (e.g. air quality, humidity) and should address the multiple benefits of energy efficiency. Proposals should demonstrate solutions that aim for large scale roll-out according to defined business models.

Projects are expected to bring the technology to TRL level 8-9 (please see part G of the General Annexes).

This topic will contribute to the PPP on Energy-efficient Buildings.

The Commission considers that proposals requesting a contribution from the EU of **between EUR 3 and 4 million** would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: Proposals are expected to demonstrate the impacts listed below using quantified indicators and targets wherever possible:

- Primary energy savings triggered by the project (in GWh/year);
- Investments in sustainable energy triggered by the project (in million Euro);
- Energy performance in the renovated buildings that equate to nearly Zero Energy Buildings;
- Measurable cost reduction compared with a typical renovation (i.e. a renovation that meets current minimum requirements of existing building regulations) or major energy performance improvement at comparable cost;
- Reduction of time needed on site for renovation works by 20% compared to current national standard practice;
- Demonstration of the effectiveness and replicability of the proposed solutions to lead to an increased rate of renovation for defined building typologies in several districts/cities/regions.

Type of Action: Innovation action, Coordination and support action

Conditions for the Call - BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: SECURE, CLEAN AND EFFICIENT ENERGY

Opening date(s), deadline(s), indicative budget(s):

Topics (Type of Action)	Budgets (EUR million)			Deadlines
	2018	2019	2020	
Opening: To be defined				
Topic(s) for 2020				
Opening: To be defined				
LC-SC3-EE-9-2018-2019 (CSA)		4.00		
LC-SC3-EE-10-2018-2019-2020 (CSA)		6.00		
LC-SC3-EE-11-2018-2019-2020 (CSA)		8.00		
LC-SC3-EE-12-2019-2020 (PPI)		4.00		
LC-SC3-EE-14-2018-2019-2020 (RIA)		4.00		
LC-SC3-EE-16-2018-2019-2020 (CSA)		14.00		
LC-SC3-EC-1-2018-2019-2020 (CSA)		15.00		
LC-SC3-EC-2-2018-2019-2020 (CSA)				
LC-SC3-EE-6-2018-2019-2020 (CSA)		10.00		
LC-SC3-EE-5-2018-2019-2020 (IA)		10.00		
LC-SC3-EE-4-2019-2020 (IA)		10.00		
LC-SC3-EE-3-2019-2020 (CSA)		6.00		
LC-SC3-EE-2-2018-2019 (CSA)		10.00		
LC-SC3-EE-1-2018-2019-2020 (CSA)		12.00		

Indicative timetable for evaluation and grant agreement signature:

For single stage procedure:

- Information on the outcome of the evaluation: Maximum 5 months from the final date for submission; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission.

For two stage procedure:

- Information on the outcome of the evaluation: Maximum 4 months from the final date for submission for the first stage and maximum 5 months from the final date for submission for the second stage; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission of the second stage.

Exceptional funding rates:



LC-SC3-JA-3-2019	In line with the nature of the instrument and the need to leverage national funding, as an exception from General Annex H for grants, the funding rate for eligible costs in this PCP action is 50%.
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Eligibility and admissibility conditions: The conditions are described in General Annexes B and C of the work programme. The following exceptions apply:

LC-SC3-EC-2-2018-2019-2020, LC-SC3-EE-16-2018-2019-2020, LC-SC3-EE-3-2019-2020, LC-SC3-EE-6-2018-2019-2020, LC-SC3-EE-8-2018-2019, LC-SC3-EE-10-2018-2019-2020, LC-SC3-EE-15-2018, LC-SC3-EE-1-2018-2019-2020, LC-SC3-EE-13-2018-2019-2020, LC-SC3-EC-1-2018-2019-2020, LC-SC3-EE-5-2018-2019-2020	<p>Taking into account the nature of the activity and with the objective to maximize the European Added Value and European market uptake through transnational collaboration ¹¹⁷, the following additional eligibility criteria apply:</p> <ol style="list-style-type: none">1. at least three legal entities shall participate in an action;2. each of the three legal entities shall be established in a different Member State or Associated Country <p><u>all</u> three legal entities shall be independent of each other within the meaning of Article 8 of the Rules for Participation.</p>
LC-SC3-RES-12-2018	In order to ensure that a balanced portfolio of activities covering different renewable energy technology areas will be supported, the available budget will be firstly allocated to the highest-ranked proposal in each of the a) biomass-based CHP and b) geothermal sub-topics. In a second round, proposals will be selected for funding regardless of the sub-topic and only according to the ranking list.
LC-SC3-RES-13-2018	In order to ensure that a balanced portfolio of activities covering