



## **Opportunities in Horizon 2020 Energy: Enabling decarbonisation of the use of fossil fuels during the transition to a low Carbon economy**

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## Overview

- Horizon 2020 Overview
- Energy Challenge Work Programme
- 2016 Calls for Proposals
- Indicative priorities for 2017
- Other H2020 opportunities
- Stakeholder involvement
- EU Energy Focus Support services





## EU Energy Focus

- Funded by the Department of Energy and Climate Change – the services are free and confidential
- Provide support for UK organisations on European energy programmes
- Part of European National Contact Point network



## Key aspects of Horizon 2020

Horizon 2020 – the biggest EU research and innovation programme – nearly €80bn funding

- Research, innovation and market transformation
- Priorities – usually defined in work programmes
- Collaborative in majority of cases
- European impact
- Innovative at European level
- Cost sharing (no profit)

## Horizon 2020 - priorities

1. Excellent science
2. Industrial leadership
3. Societal challenges

## Proposed funding 2014-2020 (B€)

### Societal challenges:

• Health, demographic change and wellbeing	7.9
• Food security, sustainable agriculture, marine and maritime research & the bioeconomy	3.9
• <b>Secure, clean and efficient energy*</b>	<b>5.9 **</b>
• Smart, green and integrated transport	6.3
• Climate action, resource efficiency and raw materials	3.1
• Inclusive, innovative and secure societies	3.0

\* Additional €1788m for nuclear safety and security from the Euratom Treaty activities (2014-2018). Does not include ITER.

\*\* Figure to be finalised.

## Societal challenge – Secure, clean and efficient energy

- 2020 Climate-energy package including EU commitment to lower GHG emissions by 20% with respect to 1990
- Competitive Low Carbon Energy Call includes “Enabling the decarbonisation of the use of fossil fuels during the transition to a low C economy”
- Decarbonisation budget: €27m plus possible €10m for applied geosciences ERA-NET Cofund in 2016; €30m in 2017. Funding from 2015 contributes to ERA-NET Cofund Call in 2016.
- Certain partner countries are specifically targeted

## Energy in H2020 – opportunities & challenges

- Increased energy budget – approx €6 bn over 7 years\*
- Challenge driven – increased emphasis on impact
- Integration of RDD, innovation and market transformation within restructured Work Programme – coherent picture for all market actors
- Energy Work Programme 2016-17 allows longer lead in time to 2017 Calls

\* from Energy Challenge and cross-cutting themes

## H2020 simplification: implications for Energy

- **Funding Actions:** Research and Innovation Actions, Innovation Actions, Coordination and Support Actions
- **Two basic funding rates:** 100% of total eligible costs and 70% of total eligible costs
- **One flat rate for overheads:** 25% of eligible direct costs excluding subcontracting and 3<sup>rd</sup> party resources
- **Broader Work Programme topics:** focus on Technology Readiness Levels (TRL)
- **Participant portal:** one access point
- **Three clear evaluation criteria:** Excellence, Impact, Implementation
- **Reduction of time to grant:** maximum of 8 months from deadline to contract signature

## H2020 Energy Feedback

- Broader Call priorities and restrictions on feedback from Commission Scientific Officers on draft ideas has resulted in more submissions and therefore lower success rates
- Drive to reduce 'average time to grant' means that there is little opportunity for negotiation so evaluators cannot request amendments to a proposal during negotiation – proposals have to be acceptable as submitted
- Larger projects are sought in many cases so coordinators need to have appropriate financial capacity to match

## Funding Actions – eligibility and funding rates

### Research and Innovation Actions (RIA):

- Includes basic and applied research, technology development and integration, testing and validation on a small scale prototype or simulated environment
- 3 independent legal entities from different Member States or Associated Countries
- Funding rate: maximum 100%

### Innovation Actions (IA):

- Includes demonstration or pilot to validate technical and economic viability of a new or improved technology, product, process, service or solution
- Also 'market replication' i.e. support for the first application or deployment in the market of an already demonstrated innovation
- 3 independent legal entities from different Member States or Associated Countries
- Funding rate: maximum 70% (except for non-profit legal entities where a maximum of 100% applies – check precise definition)

## Funding Actions – eligibility and funding rates

### Coordination and Support Actions (CSA):

- Including improving market conditions and aiding market transformation e.g. standardisation, fostering dialogue, capacity building (similar to FP7 CSA and IEE activities)
- 1 legal entity from different Member States or Associated Countries \*
- Funding rate: maximum 100%

\* however EU collaboration may be favoured for some topics

## Costing

### Direct Costs -

Eligible direct costs are funded at 70% or 100% depending on type of action and type of organisation

- **RIA, CSA:** 100% funding for all applicants
- **IA:** 70% funding, but non-profit legal entities funded at 100%

### Indirect Costs -

**Flat rate** – 25% of total direct eligible costs excluding direct eligible costs for subcontracting and the costs of resources made available by third parties which are not used on the premises of the beneficiaries, as well as financial support to third parties

## Energy Challenge WP 2016-2017: Opportunities for decarbonisation

- 2016/2017 Work Programme, published 15<sup>th</sup> October  
[http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016\\_2017/main/h2020-wp1617-energy\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-energy_en.pdf)
- 2016 Call for Proposals, including decarbonisation topics, to be launched 27<sup>th</sup> October 2015, deadline for submission 16<sup>th</sup> February 2016
- 2016 - Two topics with total budget €27M:
  - LCE- 24-2016 International Cooperation with South Korea on new generation high-efficiency capture processes
  - LCE-25-2016: Utilisation of captured CO<sub>2</sub> as feedstock for the process industry

## Low Carbon Energy

Enabling the Decarbonisation of the use of fossil fuels during the transition to a low-carbon economy	EU contribution (M€) per project
<p><b>LCE24 2016: International Cooperation with South Korea on new generation high-efficiency capture processes (RIA)</b></p> <p>Scope – the objective is to support the development of high-potential novel technologies or processes for post- and/or pre-combustion CO<sub>2</sub> capture. Research should follow new paths leading to highly innovative technologies and materials for CO<sub>2</sub> capture applications with the potential for real breakthroughs.</p> <p>Proposals should bring the proposed technology solutions from TRL 2-3 to 4-5.</p> <p>Impacts to include – significant reduction of the energy penalty of the whole capture process for power plants or other energy-intensive industries, and thus a considerable decrease of the fuel-dependant cost of capture; substantial reduction of the capital cost and of the operational and maintenance costs compared to existing technologies.</p>	2 to 5

## Low Carbon Energy

Enabling the Decarbonisation of the use of fossil fuels during the transition to a low-carbon economy	EU contribution (M€) per project
<p><b>LCE25 2016: Utilisation of captured CO<sub>2</sub> as feedstock for the process industry (RIA)</b></p> <p>Scope – proposals should address innovative processes to produce high-volume added value products from CO<sub>2</sub> and demonstrate the technical and economic feasibility in an industrially relevant environment through demonstration of a system prototype.</p> <p>The use of CO<sub>2</sub> for enhanced oil recovery is out of scope of this topic.</p> <p>Proposals should bring the proposed technology solutions from TRL 5-6 to 6-7.</p> <p>Impacts to include – Demonstration in the relevant environment and scale of the technical and economic feasibility of novel and environmentally friendly processes for CO<sub>2</sub> conversion to high volume added value products such as chemicals and/or fuels. Significant decrease of the cost of CCU vs CCS. Improved energy and resource intensity with respect to conventional manufacturing of the same product.</p>	6 to 10

## ERA-NET Cofund opportunities

### What is an ERA-NET Cofund?

Common funding pot from national authority programmes, administered by national authorities to operate a joint transnational Call for Proposals

### CCS ERA-NET Cofund – 2016 Call for Proposals

Call for Proposals for CCS projects expected under the CCS ERA-NET Cofund (run by selected national authorities) in spring/summer 2016

### Cross-thematic ERA-NET Cofund on Applied Geosciences

Possibility for national authorities to submit a proposal to run an Applied Geosciences ERA-NET Cofund in 2016

## 2017 Call topics - indicative

- **LCE-27-2017:** Measuring, monitoring and controlling the risks of CCS, EGS and unconventional hydrocarbons in the subsurface (RIA)
- **LCE-28-2017:** Highly flexible and efficient fossil fuel power plants (RIA)
- **LCE-29-2017:** CCS in industry, including Bio-CCS (RIA)
- **LCE-30-2017:** Geological storage pilots (RIA)

NB. The final content of the area 'Enabling the decarbonisation of the use of fossil fuels during the transition to a low-carbon economy' for 2017 will be decided at a later stage, depending on the developments with on-going European industrial CCS demonstration. There are discussion about an industrial-scale demonstration. If this is agreed the topics on 'CCS in industry' (LCE 29 – 2017) and 'Geological storage pilots' (LCE 30 – 2017) will be withdrawn due to budgetary constraints.

## Other opportunities

- **Other actions** – see section starting on page 135 of the Work Programme e.g.
  1. Industry prize for CO<sub>2</sub> reuse – this concerns utilising CO<sub>2</sub> that could significantly reduce the atmospheric emissions of CO<sub>2</sub> when deployed at commercial scale, indicative prize value of €1.5m, expected to open in quarter 3 2016
  32. CCS knowledge sharing and European CCS Demonstration Project Network
  43. Support to research and innovation policy in renewable energy, CCS and More Efficient Coal Combustion

## H2020 Key Messages on submissions to date

- Importance of technology being at the appropriate Technology Readiness Level (TRL) and providing evidence of that  
[http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014\\_2015/annexes/h2020-wp1415-annex-g-trl\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf)
- Need to address ‘Specific Challenge’ and the ‘Scope’ of the Call topic
- Exploitation plan and link to impact must be convincing
- Vital to describe how the project will contribute to the ‘Expected Impact’ set out in the Call topic

## Examples of stakeholder involvement in European energy related activity

### Strategic Energy Technology Plan

- EU's response to the challenge of **accelerating** the development of low carbon technologies
- Guides the content of H2020 Energy
- Developed in consultation with Member States and representative bodies

### European Industrial Initiatives (EII)

- Aim to strengthen industrial participation in energy research and demonstration and boost innovation
- EIIs bring together industry, the research community, Member States and the European Commission in risk-sharing, public-private partnerships
- Priorities identified by EIIs have been reflected in H2020 Energy
- UK Stakeholder Groups established to help link UK organisations to EII activity

## UK EII Stakeholder groups

### Aims include

- to ensure that UK industry players and researchers benefit as much as possible from being part of EU level activity, in terms of funding; knowledge sharing; and the building of strategic partnerships for the future.
- to ensure that the UK positions itself to maximise its influence on research, development and demonstration (R,D&D) sector developments in Europe.

### Activities include

- bringing together parties to share information on developments in, and opportunities from European funding, in particular H2020
- creating a forum where stakeholders' views can be taken into account and UK interests fed into the process of agreeing future EU funded Work Programmes

## CCS Stakeholder group activity

Dissemination of information and requests for feedback by CCSRC, CCSA and APGTF:

- Draft Work Programmes disseminated for feedback, allowing early sight of draft Call topics
- Distribution of targeted Call information related to CCS opportunities
- Targeted invitations to webinars/events linked to CCS opportunities

## Indicative Timeline 2016 and further information

- Launch of 2016 decarbonisation topics on Participant Portal – 27<sup>th</sup> October 2015
- Low Carbon Energy Calls deadline – 16<sup>th</sup> February 2016
- EU Energy Focus support – ongoing
- EUEF webinar series: “LCE opportunities including decarbonisation” <http://tinyurl.com/on6vctc>
- European Information Day 14<sup>th</sup> and 15<sup>th</sup> September 2015 webstreamed and recorded  
<http://ec.europa.eu/research/index.cfm?pg=events&eventcode=0B56FA95-AFE0-D63B-DD0527FE301EC2>



## EU Energy Focus Support Services

- Telephone and email helpline 9am to 5.30pm
- Monthly email bulletins and alerts to new information
- Website [www.euenergyfocus.co.uk](http://www.euenergyfocus.co.uk)
- Factsheets
- Webinar sessions on H2020, Work Programme and proposal development
- Proposal clinics in person or conference call
- Proposal review service
- Call results analysis



## EU Energy Focus

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