

Horizon 2020 Energy

15th September 2014

EU Energy Focus

Overview

- Horizon 2020 Overview
- Simplification of financial and legal arrangements
- H2020 Experience and Key Messages
- Energy Challenge Work Programme and Calls for Proposals
- Horizon 2020 opportunities outside the Energy Challenge
- Engagement with the Programme
- EU Energy Focus Support services

EU Energy Focus

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

Horizon 2020 – What's new?

- Horizon 2020 is the EU's new Research and Innovation framework
- A single programme bringing together three separate programmes/initiatives*
- Coupling research to innovation – from research to retail, all forms of innovation
- Focus on societal challenges facing EU society, e.g. health, clean energy and transport
- Simplified access, for all companies, universities, institutes in all EU countries and beyond

* The 7th Research Framework Programme (FP7), Innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)

Key aspects of Horizon 2020

- Research, innovation and market transformation
- Collaborative in majority of cases
- Cost sharing (no profit)
- Commission defined priorities
- Innovative at European level
- European impact

Horizon 2020 - priorities

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

Proposed funding 2014-2020 (B€)

Societal challenges:

• Health, demographic change and wellbeing	8.0
• Food security, sustainable agriculture, marine and maritime research & the bioeconomy	4.2
• Secure, clean and efficient energy*	5.6 **
• Smart, green and integrated transport	6.8
• Climate action, resource efficiency and raw materials	3.2
• Inclusive, innovative and secure societies	3.8

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

** Figure to be finalised.

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 programme 2014-15 allows longer lead in time to 2015 calls

* from Energy Challenge and cross-cutting themes

Simplification in Horizon 2020

- Single set of simpler and more coherent participation rules
- New balance between trust and control
- Moving from several funding rates for different beneficiaries and activities to just two
- Replacing the four methods to calculate indirect costs with a single flat rate
- Major simplification under the forthcoming financial regulation
- Successful applicants to get working more quickly: reduction of average time to grant by 100 days (current average of around 350 days under FP7)

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 overhead rate – 25% of eligible direct costs excluding subcontracting and 3rd party resources
- Restructured Work Programme – covers research, innovation, demonstration and market uptake and transformation
- New participant portal – one access point. Will cover ongoing actions under FP7 and IEE and expert opportunities

H2020 Energy Experience

- Broader Call priorities 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

ERANET Co-fund

- Public-public partnerships only including joint programming initiatives between Member States
- Specific funding arrangements
- Opportunities in follow-up Joint Calls for Proposals

Funding Actions – eligibility and funding rates

SME Instrument

Phase 1 – feasibility study - €50,000 lump sum, 6 months duration

Aim to verify the technological/practical as well as economic viability of an innovation idea/concept with considerable novelty. Including new products, processes, services & technologies or new market applications of existing technologies. Output - elaborated business plan.

Phase 2 – bringing innovation to industrial readiness – 0.5M€ to 2.5M€, max 100% or 70%. Activities should focus on innovation activities eg demonstration, testing, prototyping, piloting, scaling-up, miniaturisation, design, market replication, aiming to bring an innovation idea (product, process, service etc) to industrial readiness and maturity for market introduction, but may also include some research. Proposals based on elaborated business plan produced through Phase 1 or another means. 12 to 24 months duration.

Phase 3 – mentoring, no funding

Eligibility: One "for-profit" SME from Member State or Associated Country. No concurrent submission or implementation with another phase 1 or phase 2 project

Costing

Direct Costs

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

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

Possible derogations where indirect costs declared in form of lump sum or unit costs where provided for in work programme or work plan

Energy Challenge WP 2014-2015

- 2014/2015 Work Programme covers both 2014 and 2015 Call topics/priorities
- 4 Call areas:
 - Energy Efficiency
 - Competitive Low Carbon Energy
 - Smart Cities and Communities
 - SME Instrument
- 2015 Call launch expected Autumn 2015

H2020 Key Messages

- Importance of technology being at the appropriate Technology Readiness Level
- Need to address 'Specific Challenge' and the 'Scope' of the Call topic
- Exploitation plan and link to impact must be clearly explained
- Vital to describe how the project will contribute to the 'Expected Impact' set out in the Call topic

Energy Efficiency Call (1)

A. Buildings and consumers

- **EE2 2015: Buildings design for new highly energy performing buildings (IA)**
- **EE5 2015: Increasing energy performance of existing buildings through process and organisation innovations and creating a market for deep renovation (CSA)**
- **EE6 2015: Demand response in blocks of buildings (IA)**
- **EE7 2015: Enhancing the capacity of public authorities to plan and implement sustainable energy policies and measures (CSA)**

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Energy Efficiency Call (2)

A. Buildings and consumers continued

- EE9 2015: Empowering stakeholders to assist public authorities in the definition and implementation of sustainable energy policies and measures (CSA)
- EE10 2015: Consumer engagement for sustainable energy (CSA)
- EE11 2015: New ICT-based solutions for energy efficiency (RIA)

B. Heating and Cooling

- EE13 2015: Technology for district heating and cooling (RIA)
- EE14 2015: Removing market barriers to the uptake of efficient heating and cooling solutions (CSA)

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Energy Efficiency Call (3)

C. Industry and products

- EE15 2015: Ensuring effective implementation of EU product efficiency legislation (CSA)
- EE16 2015: Organisational innovation to increase energy efficiency in industry (CSA)
- EE17 2015: Driving energy innovation through large buyer groups (CSA)
- EE18 2015: New technologies for utilisation of heat recovery in large industrial systems, considering the whole energy cycle from the heat production to the delivery and end use (IA)

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Energy Efficiency Call (4)

D. Finance for sustainable energy

- EE19 2015: Improving the financeability and attractiveness of sustainable energy investments (CSA)
- EE20 2015: Project development assistance for innovative bankable and aggregate sustainable energy investment schemes and projects (CSA)
- EE21 2015: Development and market roll-out of innovative energy services and financial schemes for sustainable energy (CSA)

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Competitive Low Carbon Energy call (1)

Renewable electricity and heating/cooling

- LCE2 2015: Developing the next generation technologies of renewable electricity and heating/cooling (RIA) – now closed
- LCE3 2015: Demonstration of renewable electricity and heating/cooling technologies (IA)
- LCE4 2015: Market uptake of existing and emerging renewable electricity, heating and cooling technologies (CSA)

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Competitive Low Carbon Energy call (2)

Modernising the European Electricity Grid

- LCE5 2015 Innovation and technologies for the deployment of meshed offshore grids (IA)
- LCE6 2015: Transmission grid and wholesale market (IA and RIA)
- LCE23 2015: Supporting the community in deploying a common framework for measuring the energy and environmental efficiency of the ICT-sector (CSA)

Providing the energy system with flexibility through enhanced energy storage technologies

- LCE9 2015: Large scale storage (IA)

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Competitive Low Carbon Energy call (3)

Sustainable Biofuels and Alternative Fuels for the European Transport Fuel Mix

- LCE11 2015: Developing next generation technologies for biofuels and sustainable alternative fuels (RIA) – now closed
- LCE12 2015: Demonstrating advanced biofuel technologies (IA)
- LCE14 2015: Market uptake of existing and emerging sustainable bioenergy (CSA)

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Competitive Low Carbon Energy call (4)

Enabling the sustainable use of fossil fuels in the transition to a low-carbon economy

- LCE15 2015: Enabling decarbonisation of the fossil fuel-based power sector and energy intensive industry through CCS (RIA) – now closed
- LCE17 2015: Highly flexible and efficient fossil fuel power plants (RIA) – now closed

Competitive Low Carbon Energy call (5)

Supporting the Development of a European Research Area in the field of Energy

- LCE18 2015: Supporting Joint Actions on demonstration and validation of innovative energy solutions (ERA-NET Cofund)
- LCE19 2015: Supporting coordination of national R&D activities (CSA)

Social, Environmental and Economic Aspects of the Energy System

- LCE21 2015: Modelling and analysing the energy system, its transformation and impacts (RIA)

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Smart cities and Communities (1)

SCC 1 2015: SCC solutions integrating energy, transport, ICT sectors through lighthouse (large scale demonstration – first of the kind) projects (IA)

- Context – “EU action for SCC will focus on providing support to partnerships created by municipalities and industries which propose solutions answering to the complexity of projects in the intersection of the three sectors of energy, transport and ICT and which take actions for large scale deployment of those solutions in other cities across Europe.”
- To address Nearly Zero or low energy districts, integrated infrastructures & sustainable urban mobility
- Consortia to include industry and city planning authorities 2-3 cities
- Lighthouses cities must submit completed ambitious urban plans with proposal
- Funding for entire programme to be secured
- Co-involvement of 2-3 follower cities necessary

Smart cities and Communities (2)

Enhancing the roll out of SCC solutions by stimulating market demand

- SCC3 2015: Development of system standards for SCC solutions (CSA)

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Indicative Timeline – 2015 calls

- Launch Autumn 2014
- EU Energy Focus support - ongoing
 - Webinar programme
 - Support services – on going basis
 - Factsheets e.g. call summary, partner searching, impact
 - Draft proposal review
- Deadlines for 2015 Calls (provisional)
 - Energy efficiency Calls – Feb and June 2015
 - Two stage Low Carbon Call - Stage 1, 3 September 2014; Stage 2, 5 May 2015
 - All other 2015 Low Carbon Calls – 5 May 2015
 - Smart Cities – 5 May 2015
 - SME Instrument – open Call with several deadlines from 18 March 2015 to 16 December 2015

Opportunities in other Societal Challenges

Cross-cutting themes in many Societal Challenges

- Food security, sustainable agriculture, marine and maritime research & the bioeconomy
- Climate action, resource efficiency and raw materials
- Smart, green and integrated transport
- Inclusive, innovative and secure societies

Other opportunities: Industrial Leadership priority

Leadership in enabling and industrial technologies (LEIT)

- Nanotechnologies, Advanced Materials and Advanced Manufacturing and Processing (NIMP)
 - Nanotechnology and Advanced Materials for low carbon energy technologies and Energy Efficiency
 - Energy-efficient Buildings
 - Factories of The Future
 - Sustainable Process Industries (SPIRE)
- Information and Communication Technologies
 - Possible opportunities related to:
 - Energy Efficiency
 - Low Carbon
 - Factories of The Future

Other funding opportunities: FCH JU

Fuel Cells and Hydrogen 2 Joint Undertaking

Programme objectives:

- Reduce the production cost of fuel cell systems to be used in transport applications
- Increase the electrical efficiency and the durability of the different fuel cells
- Increase the energy efficiency of production of hydrogen from water electrolysis while reducing capital costs
- Demonstrate on a large scale the feasibility of using hydrogen as a competitive energy storage medium for electricity produced from renewable energy sources.

Call launched – 9 July 2014, deadline 6 November 2014

<http://www.fch-ju.eu/page/call-2014-under-horizon-2020>

Webinar on 2014 Call for Proposals - <http://tinyurl.com/krfnvnv>

Other energy funding programmes

ERA-NET

- BESTF – Bioenergy Sustaining the Future - <http://eranelbestf.net/two/>
- SOLAR-ERA.NET - <http://www.solar-era.net/>
- OCEANERA-NET - <http://www.oceaneranet.eu/>

Other

- KIC Innoenergy <http://cip2014.kic-innoenergy.com/>
- Research Programme for Coal and Steel – annual deadline in September http://cordis.europa.eu/coal-steel-rttd/home_en.html

Engagement with the programme

DECC representation on Energy Programme Committee – draft Work Programme consultation

European Industrial Initiatives (EIs)

- EIs in wind energy, solar energy (CSP & PV), electricity grids, bio-energy, carbon capture and storage, smart cities and nuclear
- EIs have strong influence on future activities funded by European energy programmes, priorities identified by EIs have already been reflected in FP7 and H2020
- UK Stakeholder Groups established to help UK benefit from EII work – current SGs in wind, solar, grids, bio-energy, CCS, smart cities with ocean and energy efficiency in development

UK EII Stakeholder Groups - objectives

- To ensure that the UK positions itself to maximise its influence on research, development and demonstration (R,D&D) sector developments in Europe.
- To help facilitate the allocation of EU level funding for R,D&D to planned and potential UK projects and for UK participants.
- To ensure that UK industry players and researchers benefit as much as possible from being part of this EU level activity, in terms of funding; knowledge sharing; and the building of strategic partnerships for the future.
- To align as far as is sensible UK public and private sector plans and programmes to facilitate this.

UK EII Stakeholder Groups - activities

- Bring together interested parties to share information on developments in, and opportunities from, European funding, in particular H2020.
- Create a forum where stakeholders' views can be taken into account and UK interests fed into the process of agreeing future EU funded Work Programmes and activities, in particular through the relevant EII.
- Create a forum where interested parties can form consortia for funding opportunities.
- Create a forum to allow opportunities to communicate UK issue and opportunities.



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
- Webinar sessions on H2020, Work Programme and proposal development
- Proposal clinics in person or conference call
- Proposal review service



EU Energy Focus

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Proposal structure – key sections for early development

1.1 – Objectives - Describe the specific objectives for the project, which should be clear, measurable, realistic and achievable within the duration of the project. Objectives should be consistent with the expected exploitation and impact of the project

1.2 – Relation to the Work Programme - Indicate the work programme topic to which your proposal relates, and explain how your proposal addresses the specific challenge and scope of that topic, as set out in the work programme.

2.1 – Expected Impacts - Describe how your project will contribute to the expected impacts set out in the work programme, under the relevant topic