



ALCUE NET – Energy Workshop. Seville, November, 13th 2014.

HORIZON 2020

Other R&D Energy opportunities



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NCP Energy Challenge H2020



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HORIZON 2020

- **Horizon 2020 is the biggest EU Research and Innovation programme**
- **Nearly €80 billion of funding available over 7 years (2014 to 2020)**
- **Horizon 2020 is the financial instrument implementing the Innovation Union**
- **Goal: securing Europe's global competitiveness**
- **From research to retail. From the lab to the market**



HORIZON 2020

- H2020 A single programme bringing together three separate programmes/initiatives: FP7 + CIP + EIT
- Coupling research to innovation
- Focus on societal challenges facing EU society
- Simplified access, for all companies, universities, institutes in all EU countries and beyond



HORIZON 2020

7th Framework Programme



Horizon 2020



HORIZON 2020 - Structure

Excellent Science

European Research
Council (ERC)

Future and Emerging
Technologies (FET)

Marie Skłodowska
Curie Actions (MSCA)

Research
Infrastructures

Industrial Leadership

Leadership in Enabling &
Industrial Technologies (LEIT)

Information and Communication
Technologies (ICT)

Nanotechnologies

Advanced Materials

Biotechnology

Advanced Manufacturing and
Processing

Space

Access to Risk Finance

Innovation in SME

Societal Challenges

1. Health, demographic change and
wellbeing

2. Food security, sustainable agriculture
and forestry, marine maritime and inland
water research and the Bioeconomy

3. Secure, clean and efficient energy

4. Smart, green and integrated transport

5. Climate action, environment resource
efficiency and raw materials

6. Europe in a changing world – Inclusive
innovative and reflective societies

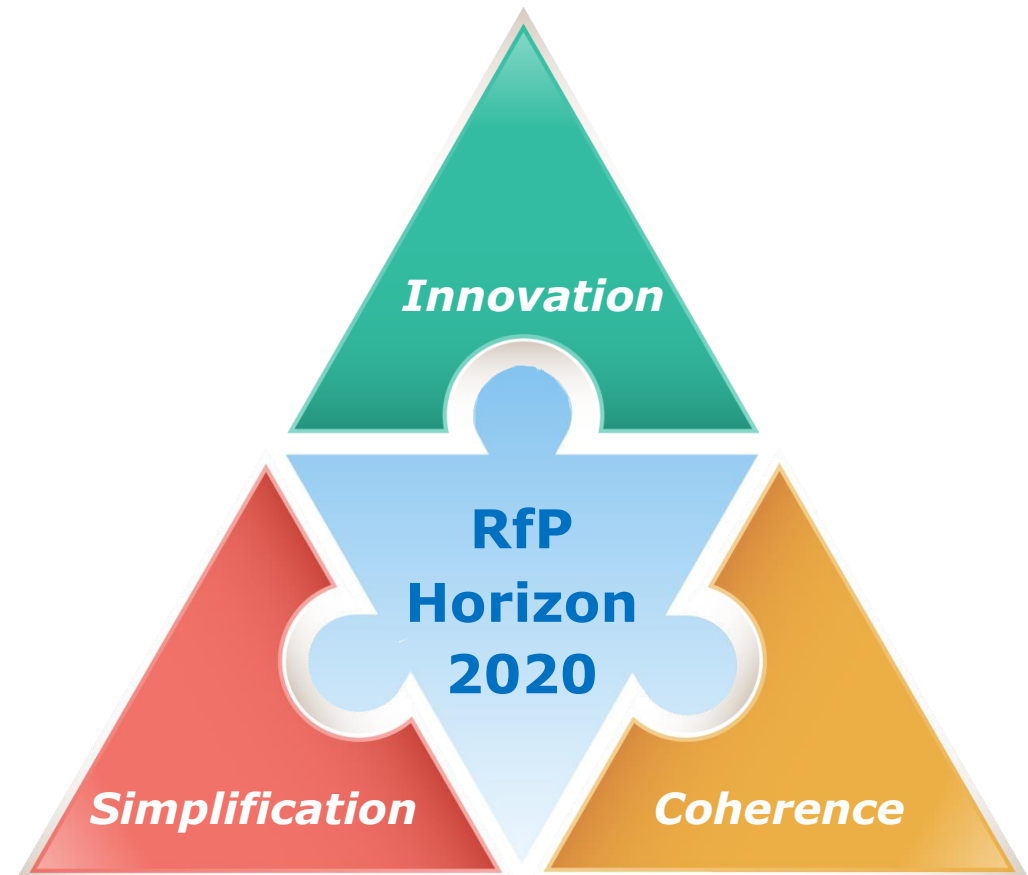
7. Secure societies – Protecting freedom
and security of Europe and its citizens

Rules for participation – General objectives

I. Simplification

II. Innovation

III. Coherence





I. Simplification & Coherence – General Principles

A) A single set of rules

B) One project – one funding rate

C) A single indirect cost model

D) Further simplification efforts

A) A single set of rules



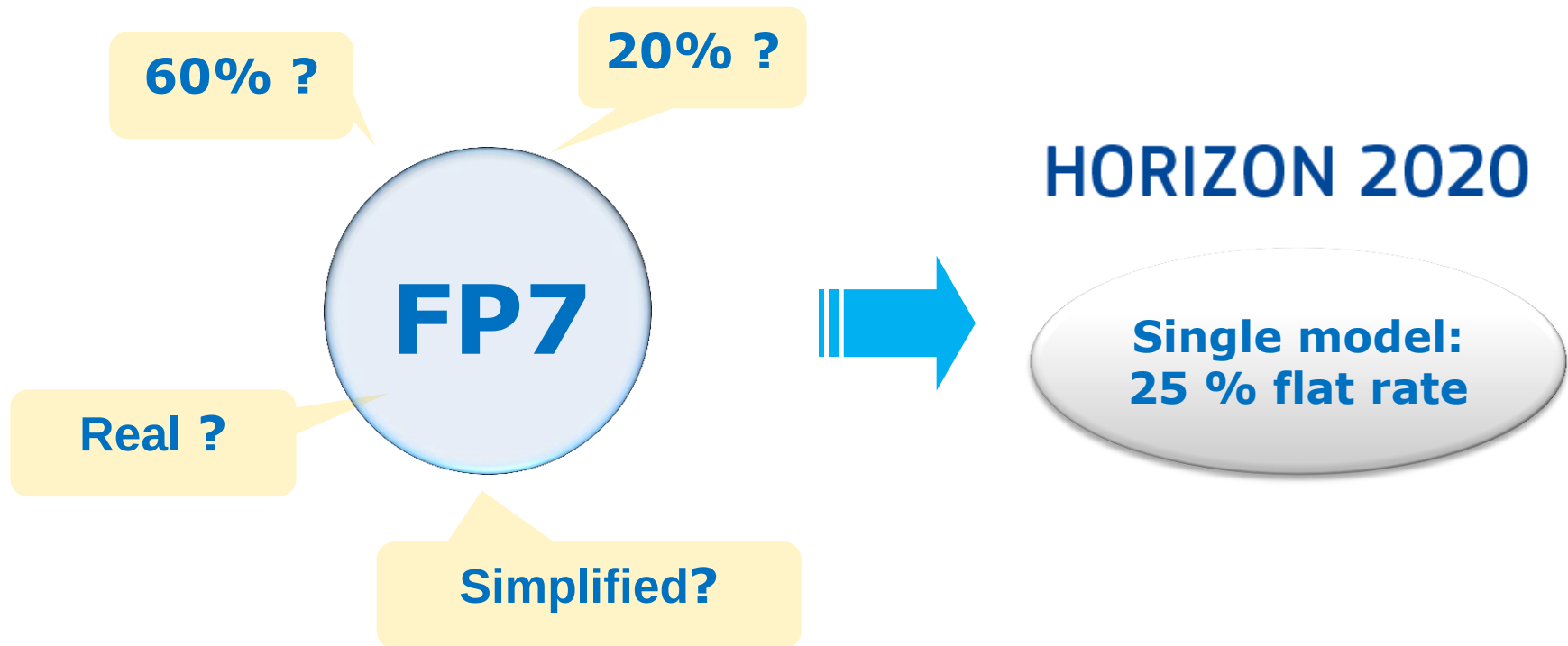
**EU Financial
Regulation**
**Specific rules
for participation**

- Covering all H2020 research and innovation actions
- Keeping flexibility when needed

B) One project – one funding rate

Entity	Action		
	RIA	IA	CSA
Non-Profit	100 %	100 %	100 %
Profit		70 %	

C) A single indirect cost model



Indirect eligible costs: a flat rate of 25% of direct eligible costs, excluding subcontracting costs. They have not to be justified.

D) Further simplification efforts: speeding up the process to sign the grant (1/4)

A maximum time to grant of 8 months

5 months
for informing all applicants on
scientific evaluation

3 months
for signature of GA

Some exceptions apply, including complex actions or where requested by applicants

D) Further simplification efforts: speeding up the process (2/4)

How to speed up the process

- Preparation rather than negotiation:
 - Each proposal evaluated 'as it is', not as 'what could be'
 - Final GA based to maximum extent possible on Part B of the proposal
- Legal entity validated in parallel
- No more paper: e-communication & e-signature of grants.



D) Further simplification efforts: Controls and Audits (3/4)

- **Financial viability:** Restricted to coordinators for projects $\geq$ €500 k€
- **Audit certificates:**
 - CFS only if total amount of the grant for the beneficiary as reimbursement of actual costs or average personnel costs is $\geq$ EUR 325.000 at the time of the payment of the balance
 - Optional Certificates on average personnel costs
- **Ex-post audits**
 - Provisions in Horizon 2020 Regulations
 - Commission's audits up to two years after payment of the balance
 - Audit strategy focused on risk and fraud prevention
- **Guarantee Fund:** Continuity with FP7
- **Time-recording requirements:** No time-sheets for personnel working full time on a single project

D) Further simplification efforts: Evaluation Criteria (4/4)

1) Excellence

- Clarity and pertinence of the objectives;
- Credibility of the proposed approach;
- Soundness of the concept;
- Extent that proposed work is ambitious, has innovation potential, and is beyond the state of the art.

3) Quality and efficiency of the action

- Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources;
- Complementarity of the participants within the consortium (when relevant);
- Appropriateness of the management structures and procedures, including risk and innovation management

2) Impact

- Expected impacts listed in the work programme;
- Innovation capacity and integration of new knowledge;
- Strengthening the competitiveness and growth of companies by developing innovations meeting the needs of European and global markets, and where relevant, by delivering such innovations to the markets;
- Any other environmental and socially important impacts;
- Effectiveness of the proposed measures to exploit and disseminate the project results (including management of IPR), to communicate the project, and to manage research data where relevant.

The Work Programme could include additional criteria:

- Weighting coefficients
- Thresholds

II. Innovation = What is new?

A) Basic principles remain

B) Types of actions and forms of funding

C) Importance of Work Programme

D) International Cooperation

E) Financial Aspects

F) Technology Readiness Levels (TRL)

A) Basic principles remain

Minimum conditions

- **Standard collaborative actions:** At least three legal entities each established in a different Member State or an Associated Country
- **ERC, SME instrument, programme co-fund, coordination and support, training and mobility actions:** One legal entity established in a Member State or in an Associated Country

Additional Conditions

- **In the work programme:** Number of participants, nature of participants (e.g. ERA-NET, EJP), ...

B) Types of actions and forms of funding (1/3)

- Research and innovation actions (RIA)
- Innovation actions (IA)
- Coordination & Support actions (CSA)
- Programme Co-Fund Actions:
 - ERA-NET
 - PCP-PPI (not in the Energy WP 2014-2015, only a preparatory CSA)
 - Marie Skłodowska-Curie (separate Work Programme)
 - European Joint Programme (only in the Euratom Programme)
- Other types of actions:
 - SME Instrument
 - Prizes
 - Financial Instruments
 - Procurement (studies, conferences, specific services)

B) Types of actions and forms of funding (2/3)

- Research and innovation actions (RIA): activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment. Projects may contain closely connected but limited demonstration or pilot activities aiming to show technical feasibility in a near to operational environment. Funding rate: 100%.
- Innovation actions (IA): Activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. They may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication. Projects may include limited research and development activities. Funding rate: 70% (except for non-profit legal entities, where a rate of 100% applies)

B) Types of actions and forms of funding (3/3)

- Coordination & Support actions (CSA): Actions consisting primarily of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of strategic planning, networking and coordination between programmes in different countries. Funding rate: 100%
- SME instrument: The SME instrument is targeted at all types of innovative SMEs showing a strong ambition to develop, grow and internationalise. It provides staged support covering the whole innovation cycle in three phases complemented by a mentoring and coaching service.

Phase 1: Feasibility study. Funding Rate: lump sum up to EUR 50,000 €

Phase 2: Innovation projects. Funding Rate: up to 70% (exceptionally, 100% where the research component is strongly present).

Phase 3: Support to commercialisation.

C) Importance of Work Programme

Work Programme may:

- Restrict eligibility of participants from third countries (e.g. security concerns, reciprocity)
- Introduce additional eligibility criteria
- Number of participants, type of participant and place of establishment
- Lay down further details for the application of the award criteria, and specify weighting and thresholds – see general annexes
- Specify third countries that are eligible for funding
- Specify the funding rate for an action
- Specify that lump sums or scale of unit costs can be used for an action (subject to prior separate Commission Decision)
- Identify beneficiaries for grants without a call for proposals

D) International Cooperation

- Considered as crucial to address many Horizon 2020 objectives
- Open for all legal entities established in Member states, Associated countries or Third countries and for international organisations
- Restrictions only possible if introduced in the work programme
 - For reciprocity reasons;
 - For security reasons

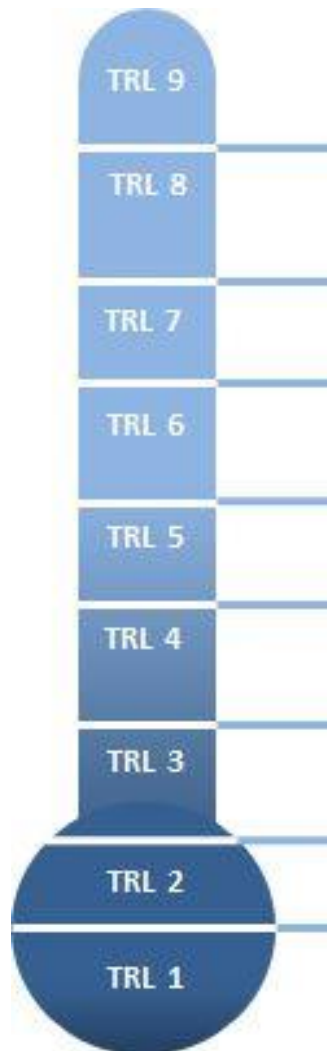


http://ec.europa.eu/research/participan/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm

E) Financial Aspects

- VAT is eligible if it is unrecoverable
- Broader acceptance of participants' accounting practices
- No time-sheets for personnel working full time on a single project
- CFS only at the time of the payment of the balance and if total amount of the grant for the beneficiary as reimbursement of actual costs or average personnel costs is $\geq$ €325,000
- Financial viability restricted to coordinators for projects $\geq$ €500,000
- Maximum time to contract: 8 months
- Other beneficart could act as guarantor in relation to our financial capacity

F) Technology Readiness Levels (TRL)



TRL 9: actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

TRL 8: system complete and qualified

TRL 7: system prototype demonstration in operational environment

TRL 6: technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 5: technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 4: technology validated in lab

TRL 3: experimental proof of concept

TRL 2: technology concept formulated

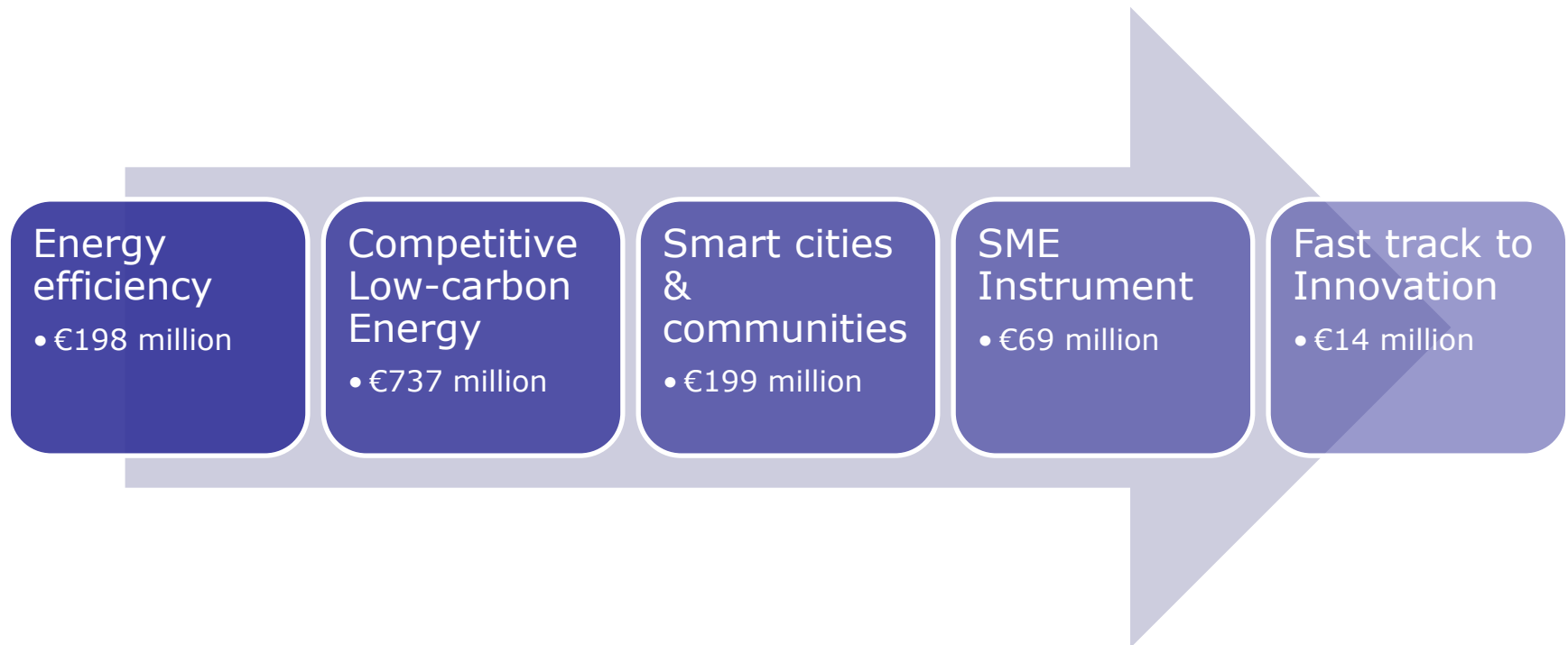
TRL 1: basic principles observed

R&D Energy Opportunities - Thematic scope of the Energy Challenge in H2020. Call 2015

- Reducing energy consumption and carbon footprint by smart and sustainable use
- Low-cost, low-carbon electricity supply
- Alternative fuels and mobile energy sources
- A single, smart European electricity grid
- New knowledge and technologies
- Robust decision making and public engagement
- Market uptake of energy innovation



R&D Energy Opportunities – Budget per area for the Energy Challenge in H2020





Energy efficiency – WP addresses 4 main areas

- Buildings and consumers
- Heating and cooling
- Industry and products
- Finance for sustainable energy



Call 2015 - topics

Topics		€/Project	Action/TRL
Buildings and consumers			
EE2*	Building design for new highly energy performing buildings	€3-5 m	IA/5-7
EE5	Increasing energy performance of existing buildings through process and organisation innovations and creating a market for deep renovation	€1,5-2 m	CSA
EE6	Demand response in blocks of buildings	€3-5 m	IA/ 6-7
EE7	Enhancing the capacity of public authorities to plan and implement sustainable energy policies	€1,5-2 m	CSA
EE9	Empowering stakeholders to assist public authorities in the definition and implementation of sustainable energy policies and measures	€1,5-2 m	CSA
EE10	Consumer engagement for sustainable energy	€1-1,5 m	CSA
EE11	New ICT-based solutions for EE	€1,5-2 m	RIA

(*) The threshold for the criteria Excellence and Impact will be 4. The overall threshold, applying to the sum of the three individual scores, will be 12



Call 2015 - topics

Topics		€/Project	Action/TRL
Heating and cooling			
EE13	Technology for district heating and cooling	€1,5-2 m	RIA/4-6
EE14	Removing market barriers to the uptake of efficient heating and cooling solutions	€1,5-2 m	CSA
Industry & products			
EE15	Ensuring effective implementation of EU product efficiency legislation	€1,5-2 m	CSA
EE16	Organisational innovation to increase energy efficiency in the industry	€1,5-2 m	CSA
EE17	Driving energy innovation through large buyer groups	€1,5-2 m	CSA
EE18*	New technologies for utilization of heat recovery in large industrial systems, considering the whole energy cycle from the heat production to the delivery and end use	€3-4 m	RIA/4-7

(*) The threshold for the criteria Excellence and Impact will be 4. The overall threshold, applying to the sum of the three individual scores, will be 12



Call 2015 - topics

Topics		€/Project	Action/TRL
Finance for sustainable energy			
EE19	Improving the financeability and attractiveness of sustainable energy investments	€0,5-2 m	CSA
EE20	Project development assistance for innovative, bankable and aggregated sustainable energy investment schemes and projects	€0,5-2 m	CSA
EE21	Development and market roll-out of innovative energy services and financial schemes for sustainable energy	€1-1,5 m	CSA



Call 2015 - Deadlines

Topics	Deadlines
EE2 ⁽¹⁾	04/02/2015
EE18 ⁽²⁾	04/02/2015
EE5-7, EE9-11, EE13-17, EE19-21	04/06/2014

(1) Topic implemented under the PPP on Energy-efficient Buildings (EeB)

(2) Topic implemented under the PPP on Sustainable Process Industry through Resource and Energy Efficiency (SPIRE)

Competitive Low-carbon Energy – WP addresses

7 main areas

- Renewable electricity and heating/cooling
- Modernising the European electricity grid
- Providing the energy system with flexibility through enhanced energy storage technologies
- Sustainable biofuels and alternative fuels for the European transport fuel mix
- Enabling the decarbonisation of the use of fossil fuels during the transition to a low-carbon economy
- Supporting the development of a European research area in the field of energy
- Social, environmental and economic aspects of the energy system



Call 2015 - topics

Topics		€/Project	Action/TRL
Renewable electricity and heating/cooling			
LCE2	Developing the next generation technologies of renewable electricity and heating/cooling	€3-6 m	RIA/3-4 to 4-5
LCE3	Demonstration of renewable electricity and heating/cooling technologies	€5-20 m	IA/5-6 to 6-7
LCE4	Market uptake of existing and emerging renewable electricity, heating and cooling technologies	€1-2 m	CSA
Modernising the European electricity grid			
LCE5	Innovation and technologies for the deployment of meshed off-shore grids	€30-40 m	IA/ 6-7 to 8
LCE6	Transmission grid and wholesale market	€12-15 m	IA, RIA
LCE23 (*)	Supporting the community in deploying a common framework for measuring the energy and environmental efficiency of the ICT-sector	€0,4 m	CSA

(*) New topic added in the revised version of the WP



Call 2015 - topics

Topics		€/Project	Action/TRL
Providing the energy system with flexibility through enhanced energy storage technologies			
LCE9	Large scale energy storage	€16-20 m	IA/5 to 6-7
Sustainable biofuels and alternative fuels for the European transport fuel mix			
LCE11	Developing next generation technologies for biofuels and sustainable alternative fuels	€3-6 m	IA/ 3-4 to 4-5
LCE12	Demonstrating advanced biofuel technologies	€5-20 m	IA/7-9
LCE14	Market uptake of existing and emerging sustainable bioenergy	€1-2 m	CSA
Enabling the decarbonisation of the use of fossil fuels during the transition to a low-carbon economy			
LCE15	Enabling decarbonisation of the fossil fuel-based power sector and energy intensive industry through CCS	€9-16 m ⁽¹⁾ €4-9 m ⁽²⁾	RIA/4-5 to 6
LCE17	Highly flexible and efficient fossil fuel power plants	€3-6 m	RIA/3 to 4-6

(1) For Geological store proposals

(2) For Industrial applications proposals



Call 2015 - topics

Topics		€/Project	Action/TRL
Supporting the development of a European research area in the field of energy			
LCE18	Supporting Joint Actions on demonstration and validation of innovative energy solutions	€10-20 m	ERA-NET (1)
LCE19	Supporting coordination of national R&D activities	€0,1-0,5 m	CSA
Social, environmental and economic aspects of the energy system			
LCE21	Modelling and analysing the energy system, its transformation and impacts	€2-4 m	RIA

(1) cooperation with emerging countries (e.g. China) is encouraged



Call 2015 - Deadlines

Topics	Deadlines	
LCE2, LCE11	03/09/2014 (stage 1)	05/05/2015 (stage 2)
LCE3-6, LCE9, LCE12, LCE14, LCE19, LCE21	05/05/2015	
LCE15, LCE17	03/09/2014 (stage 1)	05/05/2015 (stage 2)
LCE18 ERA-NET	05/05/2015	

- (1) Topic implemented under the PPP on Energy-efficient Buildings (EeB)
- (2) Topic implemented under the PPP on Sustainable Process Industry through Resource and Energy Efficiency (SPIRE)

Smart Cities and Communities

- Inputs from the Strategic Implementation Plan of the European Innovation Partnership Smart Cities and Communities
- Integration of three sectors (Energy, Transport and ICT) in the same location

Topics		€/Project	Action/TRL
SCC1	Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse (large scale demonstration - first of the kind) projects	€18-25 m	IA/>=7
Enhancing the roll-out of Smart Cities and Communities solutions by stimulating the market demand			
SCC3	Development of system standards for smart cities and communities solutions	€0,5-1 m	CSA



Call 2015 - Deadlines

Topics	Deadlines
SCC1	05/05/2015
SCC3	05/05/2015

Practical advise:



1st step: To have an excellent idea

Motivation: To solve a problem, To bridge a “gap” between what exists and what is needed



2nd step: To look for funding

Which is the most suitable topic in the Work programme?

NCPs could help us by reviewing our idea



3th step: To make up the consortium

Complementary partners: Interdisciplinary, intersectorial and International

To define each partner's role, budget, IPR issues, ...

Practical advise:



3th step: To make up the consortium

How to find partners

- Our contact network
- European or National Technology Platforms
- CORDIS Partner Service
- Idealist Partner Search (developed by the ICT NCPs network)
- Enterprise Europe Network Cooperation Opportunities Database

Practical advise:



4th step: To prepare an excellent proposal

Writing EU proposals is a tough and expensive task. Take your time.

The Abstract of your proposal is the first impression for the evaluator. Clarify your ideas.

Cross-cutting issues are important too: gender dimension, ethics, open access, ...



5th step: To check and revise the proposal

The coordinator should make the text of proposal uniform

NCPs could help us by reviewing our proposal for free

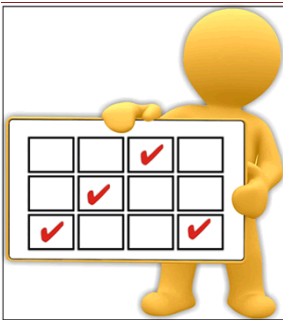
Practical advise:



6th step: To submit the proposal

The proposal can be submitted several times before the call deadline, e.g. to make updates or changes

Do not wait to close to the deadline because of System failure



7th step: The evaluation of the proposal



8th step: To prepare and sign the Grant Agreement

National support structure for H2020:

- Secure, efficient and clean Energy NCPs:
 - M^a Luisa Revilla (NCP CDTI): luisa.revilla@cdti.es
 - Virginia Vivanco (NCP IDAE): vvivanco@idae.es
 - Cristina Quintana (NCP CIEMAT): cristina.quintana@ciemat.es

- Legal and financial issues NCPs:
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 - Andrés Martínez (andres.martinez@sost.be)
 - Anxo Moreira (anxomoreira@uvigo.es)
 - Carmen Hormigo (carmen.hormigo@d-bruselas.es)

- Spanish committee representative:
 - Guillermo Álvarez: guillermo.alvarez@cdti.es





**Thank you very
much for your
attention!**

