



Eesti Teadusagentuur  
Estonian Research Council

# Horizont 2020 – Secure, clean and efficient energy

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Minsk

September 21, 2015

**Smart cities and communities**

**Energy efficiency**

**Low carbon energy**

**Smart grid**

**Renewable energy sources**

**Alternative fuels**

**Security of supply**

**Energy storage**

**New generation technologies**

**Biofuels**

➤ **Objective:**

- ✓ **to contribute to reliable, sustainable and competitive energy system in the conditions of decreasing resources, increasing energy consumption and in the context of climate change.**
- ✓ **To respond to the economic crisis by investing in future jobs and growth and strengthening the EU's global position in research, innovation and technology**

## Important topics:

- **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 next generation technologies;**
- **Robust decision making and public engagement;**
- **Market uptake of energy innovation**
- **Recovery, reuse, recycling**

# Technology readiness level - TRL

**Levels 1 – 4 characterize early stage R&D activities**

- **1: basic research**
- **2: technology formulation**
- **3: applied research**
- **4: small scale prototype development**

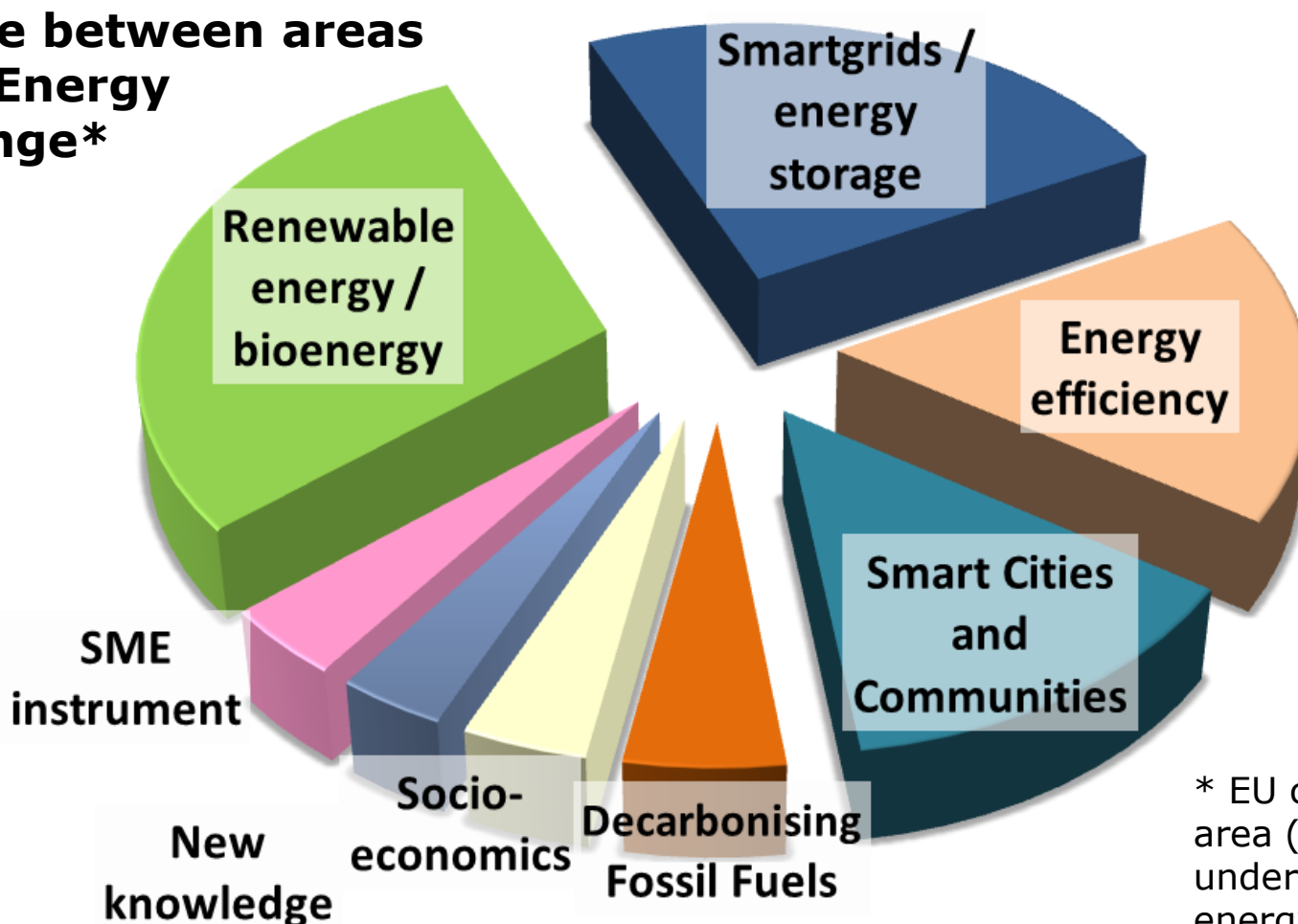
**Levels 5 – 8 mean prototyping and validation of the developed system in real working conditions**

- **5: large-scale prototype development**
- **6: prototype system**
- **7: demonstration system**
- **8: first of the kind commercial system**

**9. Full commercial application**

# The Horizon 2020 Societal Challenge "Secure, clean and Efficient Energy"

**Balance between areas  
of the Energy  
Challenge\***



\* EU contribution per area (projects funded under the 2014 energy calls)

## Five Calls

- 1. Energy efficiency**
- 2. Competitive low-carbon energy**
- 3. Smart cities & communities**
- 4. SME's and Fast Track to Innovation for Energy**
- 5. Other actions**

## Indicative Call budgets (M€)

Calls	2014	2015	2016	2017
Energy Efficiency	97,5	98,15	93	102
Competitive Low-Carbon Energy	359,1	372,33	351,54	369,22
Smart Cities and Communities	92,32	108,18	60,5	71,5
SMEs instrument	33,95	37,26	46	50
<b>Total budget for calls</b>	<b>582,87</b>	<b>615,92</b>	<b>564,74*</b>	<b>592,72</b>
* Incl contributions to Blue Growth and fast track to innovation calls				
<i>Part B – other actions</i>	<i>75</i>	<i>61</i>	<i>107,91</i>	<i>79,13</i>



# Call 'Energy Efficiency' - EE

- **Heating and cooling EE1 – EE5**
  - ✓ Lower demand, more energy efficient supply, local sustainable and renewable energy sources, affordable cost
- **Engaging consumers towards sustainable energy EE6 – EE9**
  - ✓ Understanding and influencing consumer behaviour, activation of consumers
- **Buildings EE10 – EE14**
  - ✓ Elimination of barriers towards energy efficiency in buildings
- **Industry, services and products EE15 – EE21**
  - ✓ Technological and non-technological barriers in large companies and SMEs in the way to higher energy efficiency
- **Innovative financing for energy efficient investments EE22 – EE25**
  - ✓ Bridging the gap between funders and energy efficiency project developers

<b>Code</b>	<b>EE Call 2016 Topics</b>	<b>Type</b>	<b>Budget (M€)</b>	<b>Deadline</b>
	<b>Opening October 15, 2015</b>			
<b>EE-03</b>	<b>Standardised installation packages integrating renewable and energy efficiency solutions for heating, cooling and/or hot water preparation</b>	<b>IA</b>	<b>34</b>	<b>21 Jan</b>
<b>EE-04</b>	<b>New H/C solutions using low grade sources of thermal energy</b>	<b>RIA</b>		
<b>EE-05</b>	<b>Models &amp; tools for heating and cooling mapping and planning</b>	<b>RIA</b>		
<b>EE-07</b>	<b>Behavioural change toward energy efficiency through ICT</b>	<b>RIA</b>		
<b>EE-08</b>	<b>Socio-economic research on consumer's behaviour related to energy efficiency</b>	<b>RIA</b>		
<b>EE-10</b>	<b>Supporting accelerated and cost-effective deep renovation of buildings (EeB-PPP)</b>	<b>IA</b>	<b>16</b>	<b>21 Jan</b>
<b>EE-17</b>	<b>Valorisation of waste heat in industrial systems (SPIRE-PPP)</b>	<b>IA</b>		

Code	<b>EE Call 2016 Topics</b>	Type	Budget (M€)	Deadline
	<b>Opening March 15, 2016</b>			
<b>EE-06</b>	<b>Engaging private consumers towards sustainable energy</b>	<b>CSA</b>	<b>30</b>	<b>15 Sep</b>
<b>EE-09</b>	<b>Engaging and activating public authorities</b>	<b>CSA</b>		
<b>EE-11</b>	<b>Overcoming market barriers and promoting deep renovation of buildings</b>	<b>CSA</b>		
<b>EE-13</b>	<b>Cost reduction of new Nearly Zero-Energy buildings</b>	<b>CSA</b>		
<b>EE-14</b>	<b>Construction skills</b>	<b>CSA</b>		
<b>EE-16</b>	<b>Effective implementation of EU product efficiency legislation</b>	<b>CSA</b>		
<b>EE-24</b>	<b>Making the energy efficiency market investible</b>	<b>CSA</b>		
<b>EE-25</b>	<b>Development and roll-out of innovative energy efficiency services</b>	<b>CSA</b>		
<b>EE-21</b>	<b>ERA-NET Cofund actions supporting Joint Actions towards increasing energy efficiency in industry and services</b>	<b>ERA - NET</b>	<b>5</b>	<b>15 Sep</b>
<b>EE-22</b>	<b>Project Development Assistance</b>	<b>CSA</b>	<b>8</b>	<b>15 Sep</b>

<b>Code</b>	<b>EE Call 2017 Topics</b>	<b>Type</b>	<b>Budget (M€)</b>	<b>Deadline</b>
	<b>Opening June 15, 2016</b>			
<b>EE-01</b>	<b>Waste heat recovery from urban facilities and re-use to increase energy efficiency of district or individual heating and cooling systems</b>	<b>IA</b>	<b>30</b>	<b>19 Jan</b>
<b>EE-04</b>	<b>New H/C solutions using low grade sources of thermal energy</b>	<b>RIA</b>		
<b>EE-07</b>	<b>Behavioural change toward energy efficiency through ICT</b>	<b>RIA</b>		
<b>EE-20</b>	<b>Bringing to market more energy efficient and integrated data centres</b>	<b>IA</b>		
<b>EE-17</b>	<b>Valorisation of waste heat in industrial systems (SPIRE PPP)</b>	<b>IA</b>	<b>16</b>	<b>19 Jan</b>
<b>EE-12</b>	<b>Integration of Demand Response in Energy Management Systems while ensuring interoperability (EeB PPP)</b>	<b>IA</b>		

<b>Code</b>	<b>EE Call 2017 Topics</b>	<b>Type</b>	<b>Budget (M€)</b>	<b>Deadline</b>
	<b>Opening January 19, 2017</b>			
<b>EE-02</b>	<b>Improving the performance of inefficient district heating networks</b>	<b>CSA</b>	<b>47</b>	<b>07 June</b>
<b>EE-06</b>	<b>Engaging private consumers towards sustainable energy</b>	<b>CSA</b>		
<b>EE-09</b>	<b>Engaging and activating public authorities</b>	<b>CSA</b>		
<b>EE-11</b>	<b>Overcoming market barriers and promoting deep renovation of buildings</b>	<b>CSA</b>		
<b>EE-14</b>	<b>Construction skills</b>	<b>CSA</b>		
<b>EE-15</b>	<b>Increasing capacities for actual implementation of energy efficiency measures in industry and services</b>	<b>CSA</b>		
<b>EE-16</b>	<b>Effective implementation of EU product efficiency legislation</b>	<b>CSA</b>		
<b>EE-18</b>	<b>Energy efficiency of industrial parks through energy cooperation and mutualised energy services</b>	<b>CSA</b>		
<b>EE-19</b>	<b>Public Procurement of Innovative Solutions for energy efficiency</b>	<b>PPI</b>		
<b>EE-23</b>	<b>Innovative financing schemes</b>	<b>CSA</b>		
<b>EE-24</b>	<b>Making the energy efficiency market investible</b>	<b>CSA</b>		
<b>EE-22</b>	<b>Project Development Assistance</b>	<b>CSA</b>	<b>8</b>	<b>07 June</b>

# Call 'Competitive low-carbon energy' - LCE

- **Towards an integrated EU energy system LCE1 – LCE5**
- **Renewable energy technologies LCE6 – LCE23**
- **Enabling decarbonisation of the use of fossil fuels during transition to a low-carbon economy LCE24 – LCE30**
- **Social, economic and human aspects of the energy system LCE31 – LCE32**
- **Supporting the development of a European research area in the field of energy LCE33 – LCE35**
- **Cross-cutting issues LCE36**

	Instrument	budget	
		2016	2017
<b>Towards an integrated EU energy system</b>			
<b>LCE 1 – 2016-2017: Next generation innovative technologies enabling smart grids, storage and energy system integration with increasing share of renewables: distribution network</b>	<b>RIA</b>	<b>20</b>	<b>18</b>
<b>LCE 2 – 2016/2017: Demonstration of smart grid, storage and system integration technologies with increasing share of renewables: distribution system</b>	<b>IA</b>	<b>73.46</b>	<b>28</b>
<b>LCE 3 -2016: Support to R&amp;I strategy for smart grid and storage</b>	<b>CSA</b>	<b>4</b>	
<b>LCE 4 – 2017: Demonstration of smart transmission grid, storage and system integration technologies with increasing share of renewables</b>	<b>IA</b>		<b>65.12</b>
<b>LCE 5 – 2017: Tools and technologies for coordination and integration of the European energy system</b>	<b>RIA</b>		<b>28</b>

	Instrument	budget	
		2016	2017
<b>Renewable energy technologies</b>			
<i>Developing the next generation of renewable energy technologies (research activities)</i>			
<b>LCE 6 -2017- New knowledge and technologies</b>	RIA		20
<b>LCE 7 -2016 /2017: Developing the next generation technologies of renewable electricity and heating/cooling</b>	RIA	61.30	66.50
<b>LCE 8 – 2016/2017 Development of next generation biofuel technologies</b>	RIA	10	10
<i>Demonstrating innovative renewable energy technologies (demonstration activities)</i>			
<b>LCE 9 – 2016: Increasing the competitiveness of the EU PV manufacturing industry</b>	IA	25	
<b>LCE 10 – 2017: Reducing the cost of PV electricity</b>	IA		10
<b>LCE 11 – 2017: Near-to-market solutions for reducing the water consumption of CSP Plants</b>	IA		12
<b>LCE 12 – 2017: Near-to-market solutions for the use of solar heat in industrial processes</b>	IA		8
<b>LCE 13 – 2016: Solutions for reduced maintenance, increased reliability and extended life-time of wind turbines/farms</b>	IA	10	
<b>LCE 14 – 2017: Demonstration of large &gt;10MW wind turbines</b>	IA		25



	Instrument	budget	
		2016	2017
LCE 15 – 2016: Scaling up in the ocean energy sector to arrays	IA	15	
LCE 16 – 2017: 2nd Generation of design tools for array development and deployment	IA		7
LCE 17 – 2017: Easier to install and more efficient geothermal systems for retrofitting buildings	IA		8
LCE 18 – 2017: EGS in different geological conditions	IA		10
LCE 19 – 2016/2017: Demonstration of the most promising advanced biofuel pathways	IA	15	15
LCE 20 – 2016: [place holder: Biofuels in aviation]	IA	15	10
<i>Supporting the market uptake of renewable energy technologies</i>			
LCE 21 – 2017: Market uptake of renewable energy technologies	CSA		15
<i>Fostering international cooperation in the area of renewable energy</i>			
LCE 22 – 2016: International Cooperation with Brazil on advanced lignocellulosic biofuels	RIA	5	
LCE 23 – 2016: International Cooperation with Mexico on geothermal energy	RIA	10	

	Instrument	budget	
		2016	2017
<b>Enabling the decarbonisation of the use of fossil fuels during the transition to a low-carbon economy</b>			
<b>LCE 24 - 2016: International Cooperation with South Korea on new generation high-efficiency capture processes</b>	RIA	17	
<b>LCE 25 - 2016: Utilisation of captured CO2 as feedstock for the process industry</b>	RIA	10	
<b>LCE 26 - 2016: Cross-thematic ERA-NET on Applied Geosciences</b>	COFUND	10	
<b>LCE 27 – 2017: Measuring, monitoring and controlling the subsurface containment of CO2 and volatile hydrocarbons</b>	RIA		15
<b>LCE 28 - 2017: Highly flexible and efficient fossil fuel power plants</b>	RIA		15
<b>LCE 29 - 2017: CCS in industry, including Bio-CCS</b>	RIA		
<b>LCE 30 - 2017: Geological storage pilots</b>	RIA		

	Instrument	budget	
		2016	2017
<b>Social, economic and human aspects of the energy system</b>			
<b>LCE 31 – 2016/2017: Social Sciences and Humanities Support for the Energy Union</b>	RIA	10	10
<b>LCE 32 – 2016: European Platform for energy-related Social Sciences and Humanities research</b>	CSA	1,7	
<b>Supporting the development of a European research area in the field of energy</b>			
<b>LCE 33 – 2016: European Common Research Agendas (ECRAs) in support of the implementation of the SET Action Plan</b>	RIA	10	
<b>LCE 34 – 2016: Joint actions towards the demonstration and validation on innovative energy solutions</b>	ERA-NET cofund	30.80	
<b>LCE 35 – 2016/2017: Framework Partnership Agreement supporting Joint Actions towards the demonstration and validation of innovative energy solutions</b>	FPA	n.a.	n.a.
<b>Cross-cutting issues</b>			
<b>LCE 36 – 2016: Support to the energy stakeholders to contribute to the SET-Plan</b>	CSA	2.40	

Topic	Publication	Deadline	
		2016	2017
LCE07, LCE08, LCE23 – 25, LCE31, LCE36	October 27, 2015	Feb 16	
LCE01 – 03, LCE26, LCE32 - 34	December 8, 2015	Apr 05	
LCE35	April 14, 2016	Sept 08	
LCE09, LCE13, LCE15, LCE19, LCE20, LCE22	May 10, 2016	Sept 08	
LCE06 – LCE08, LCE21, LCE27 – LCE31	September 20, 2016		Jan 05
LCE1, LCE4, LCE5			Feb 14
LCE10 – LCE12, LCE14, LCE16 – LCE20	May 09, 2017		Sept 07

# Call 'Smart cities and communities' - SCC

- **Smart and Sustainable Cities**
- **Sustainable, cost-effective and replicable district-scale solutions at the intersection of **energy** and **transport** enabled by **ICT****
- **intelligent, user-driven and demand- oriented city infrastructure and services**
- **'Lighthouse project' approach continued**

## Each project must:

- Be realised in **3 new lighthouse cities** that are situated in different EU Member states or associated countries.
- Involve at least **3 follower cities** from at least 3 different EU Member states or associated countries (that are different also from the countries of the lighthouse cities of the project).

# Specific challenge

- **Integrating**
  - smart **buildings**,
  - smart **grids**,
  - **energy storage**,
  - **electric vehicles** and smart charging infrastructures,
  - latest generation **ICT platforms** based on open specifications

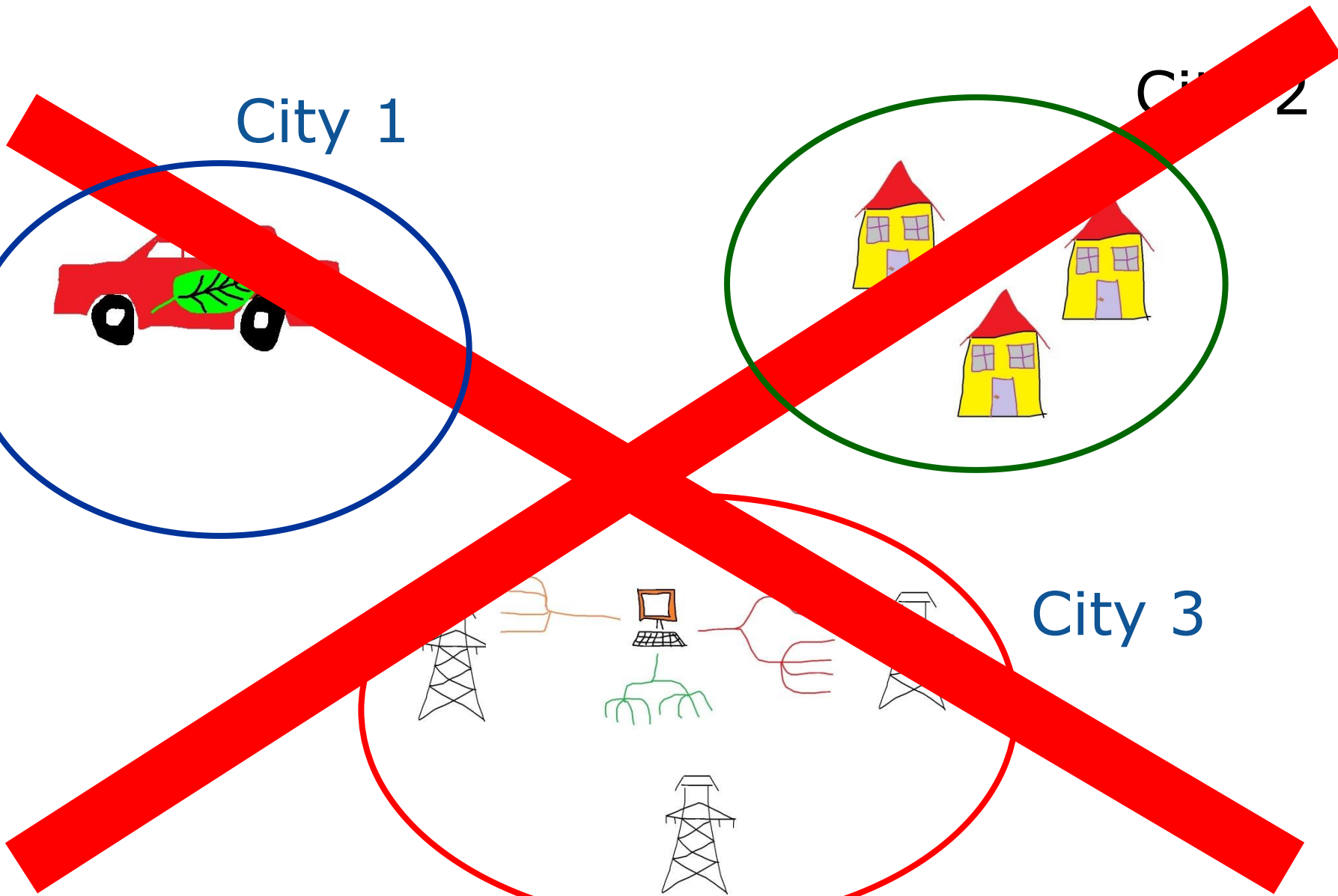
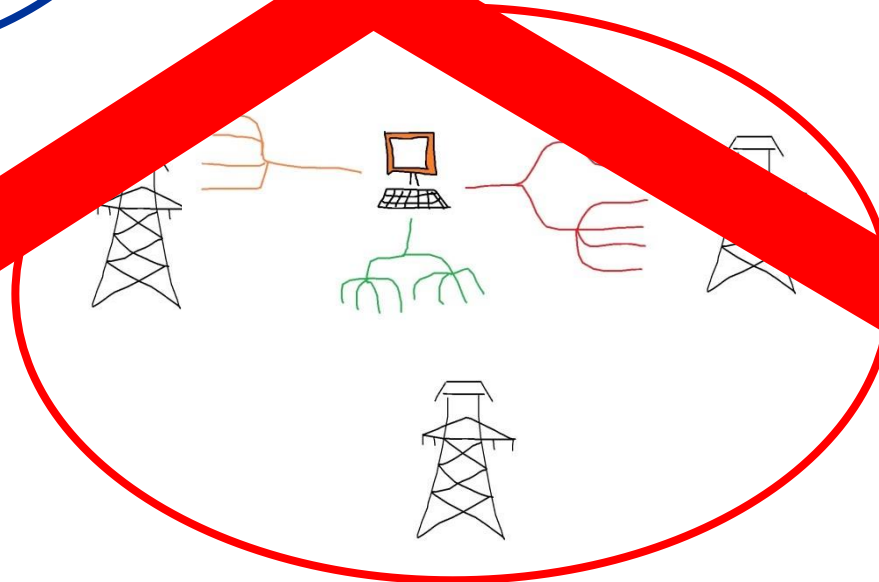
City 1



City 2



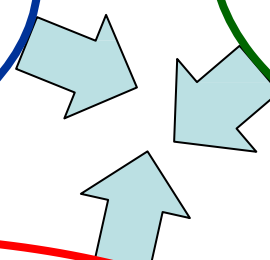
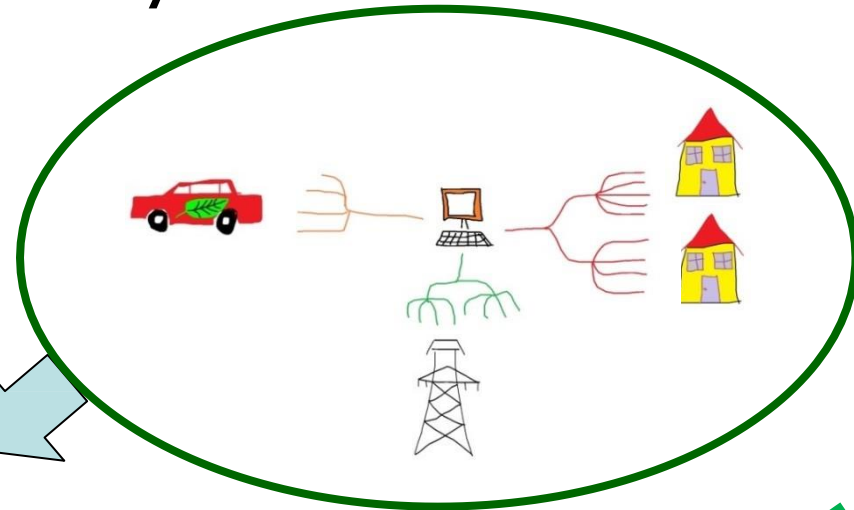
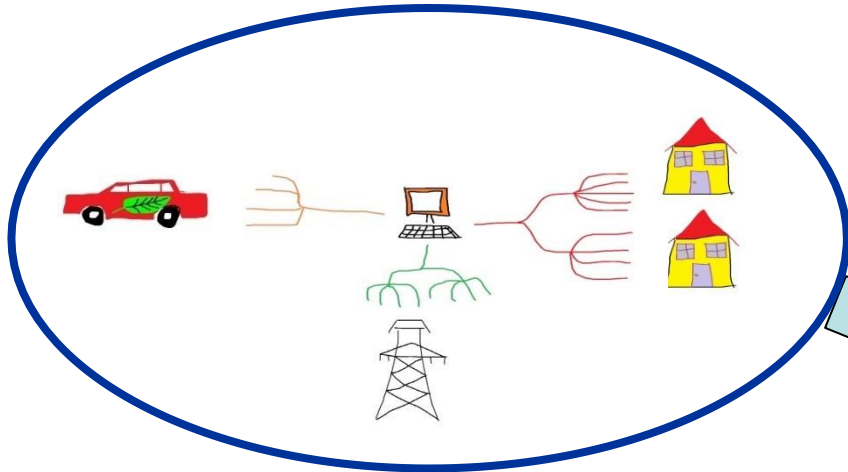
City 3



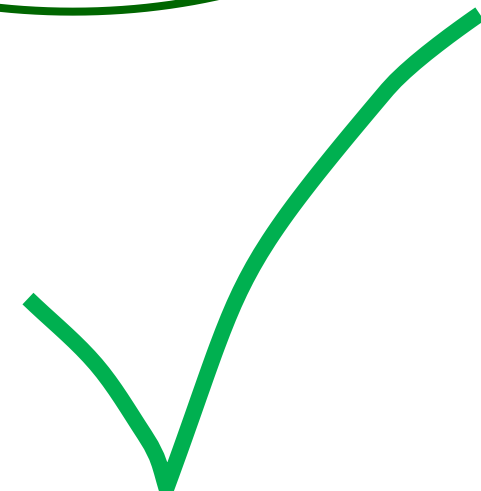
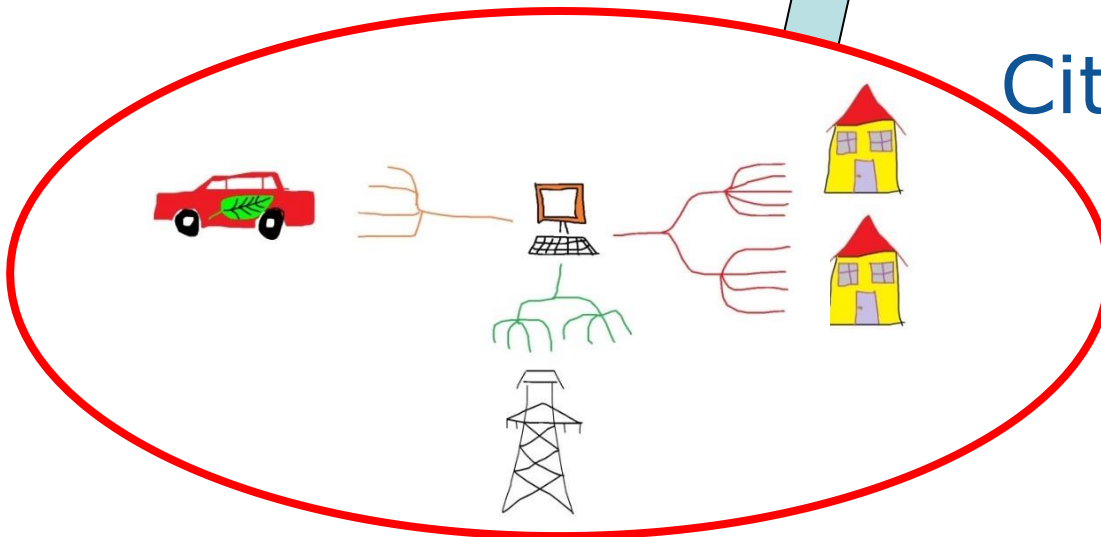


City 1

City 2



City 3



# Include area maps in proposals



**Indicate boundaries of affected areas**

## Call Smart cities & communities: deadlines and budget

Topics*	2016	2017
SCC1 – Smart cities and communities lighthouse projects	05/04/2016	14/02/2017
	60,5 M€	71,5 M€

# Important details

- A city can be **funded as a lighthouse city only once** under Horizon2020
- **Follower cities are defined as cities that have not yet acquired the full technical competence to become a lighthouse city**
- **Performance monitoring for at least 2 years**
- **Convincing and realistic work, replication and investment plans**
- **Incorporate all performance data into SCIS (<http://smartcities-infosystem.eu/>)**

## Non-eligible costs

- **Costs of construction (including scale of unit costs),**
- **Costs of retrofitting (including scale of unit costs),**
- **Full cost of purchasing of electric vehicles,**
- **Costs of acquisition of standard ICT tools, conventional RES and their mounting**
- **Insulation of the building envelope, good windows; heat pumps, and other appliances**

## Eligible costs (1)

All those innovative aspects that transform the city into a smart city, such as for example:

- Integration of storage with all grids
- Innovative part of building management that is leading to a deep integration with the local energy system
- Smart integration of the electricity grid with RES, with electricity storage and heat storage at the district level

## Eligible costs (2)

- **Only the innovative parts of RES, suited for smart integration**
- **Integrated approaches and testing of "business" models for the local production and distribution of electricity together with electric vehicle fleets, to create the conditions for market take up**
- **Smart electricity, heat or cold storage and its management for maximising self-consumption**

## Eligible costs (3)

- **only ICT platforms based on open specifications**
- **Economic research and development of new business models that avoid lock-in situations**
- **Training and education within and between cities**



# Evaluation Criteria

<b>Excellence</b>	<b>Impact Factor 1.5 !</b>	<b>Quality &amp; efficiency of implementation</b>
Clarity and pertinence of the objective  Credibility of the approach	Concerning the expected impacts listed in the work programme	Coherence and efficiency of the work plan – allocation of tasks and resources  Competence of participants  Appropriateness of the management structure and procedures including risk and innovation management

## Call: SMEs and Fast track to Innovation for Energy - SIE

- **Stimulating the innovation potential of SMEs for a low carbon and efficient energy system (SME Instrument)**
  - **Phase 1: feasibility study (i.e. risk assessment, market study, innovation strategy development...)**
  - **Phase 2: innovation project with emphasis on demonstration and market replication (i.e. prototyping, testing, miniaturisation, design...)**
  - **Phase 3: commercialisation phase; access to financial facilities of the "Access to Risk Finance"**
- **Fast Track to Innovation - Pilot**
  - **Continuously open call, bottom-up driven logic, <5 legal entities, <3M€**

## ***Cross-thematic priorities:***

- ***LEIT – advanced materials, nanotechnologies, electronics, manufacturing and processing, biotechnology , ICT***
- ***Future and emerging technologies (FET)***
- ***Research Infrastructures***
- ***European Research Council***
- ***SME instrument (directly paid from Energy SC budget)***
- ***Fast track to innovation***
- ***JRC direct actions (IET, IPTS)***
- ***Marie Skłodowska-Curie Actions***

## Close links

- **Food security, sustainable agriculture and forestry, marine and maritime and inland water research and bio-economy (societal challenge 2)** – biomass production, marina energy
- **Transport (societal challenge 4)** – energy efficient transport, electromobility, green vehicles, alternative fuels
- **Climate action, resource efficiency, raw materials (societal challenge 5)** – nature based solutions for smart and sustainable cities and communities
- **Science with and for society (societal challenge 6)** – social innovation, responsible research
- **Secure societies (societal challenge 7)** – critical infrastructures

# International cooperation

- **Brazil**
- **Australia**
- **Canada**
- **USA**
- **China**
- **South-Korea**
- **Mexico**

# Dedicated topics/actions to international cooperation in energy WP 2016/2017

**Underground CO<sub>2</sub> & natural gas (LCE-27)**



**- CCS in industrial applications (LCE-29)**



**Geothermal energy (LCE-23)**



**CO<sub>2</sub> capture (LCE-24)**



**Advanced biofuels (LCE-22)**



**CO<sub>2</sub> storage (LCE-30)**



<https://www.b2match.eu/energycall2016>



# Horizon 2020 Energy - Brokerage Event Calls for Work Programme 2016/2017

16 September 2015, Brussels, Belgium

[Home](#) [Participants](#) [How it works](#) [FAQ](#) [Agenda](#) [Infoday](#) [Event 2013](#) [C-Energy 2020](#) [Location](#) [Contact](#) [Sign in](#)

## GET INVOLVED in the next H2020 Energy Proposals! A Brokerage Event in the field of Energy Technologies

- Are you interested in submitting a proposal for "Energy" in Horizon 2020?
- Start building your consortium of excellent partners from industry and academia now! Do not miss the following opportunity - free of charge.

### H2020 Energy - New Calls

14th/15th September 2015 - EU Energy Infodays

*NOTE: A separate registration for the Infodays is necessary!*

16th September 2015 - Brokerage Event

This Brokerage Event will be organised on the 16th of September 2015 in conjunction with the Horizon 2020 Energy Infodays 2015 of the European Commission!

### FOCUS

The event will target a wide spectrum of companies, universities and researchers from Europe and beyond to foster the creation of consortia for the upcoming Horizon 2020 Energy calls 2016/17 in the 3 Focus areas:

Registration  
closed since 8 Sep 2015

#### ORGANISERS



SCHEDULE



# C-ENERGY 2020

Connecting Energy National Contact Points in a pro-active network under Societal Challenge 3 'Secure, clean and efficient energy' in Horizon 2020



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EU funding



Partner Search



EU networks



News & EU Policy



Calendar



Media

C-Energy 2020 Project

H2020 Energy

Open Call

News

Policy updates



## Which social challenge would *you* like to see cracked?

### Vote now!



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 New Events - most recently added events appear first in this feed. There is also a feed for past events.

There are lots more events (in the area of molecular life sciences) on the EMBO calendar

### Suggest an event

If you would like an event to be listed in the calendar, you can suggest an event by filling in the form.

Please note that it must be relevant to the Research and Innovation activities of the European Union.


You can use the same form to request a change to an existing event.

### Events by theme

ALL

## Info Day on the Horizon 2020 Work programme 2016-2017 'Secure, Clean and Efficient Energy'

14-15 September 2015, Brussels

 Share  [Go to the main events calendar to see all forthcoming events](#)

### Content of the info day

The info day targeted potential applicants to the calls for project proposals under the H2020 challenge 'Secure, Clean and Efficient Energy'. The new Work Programme for 2016-2017 in the area of H2020 energy research was presented on 14 September, and in-depth sessions on various calls of the Work Programme were held on 15 September.

Take a look at the [presentations of the info day](#).

A **brokerage event in the field of Energy Technologies** followed the info day on 16 September.

A side event on Euratom took place on 15 September as well. Presentations of this event will be available on this page soon.

### Follow the info day

Watch the info day online via the links below:

14 September: <https://scic.ec.europa.eu/streaming/horizon-2020-work-programme-2016-17-secure-clean-and-efficient-energy-info-day-1>

15 September:

Opening session and sessions on energy efficiency; smart cities & communities; smart grids &

<http://ec.europa.eu/research/index.cfm?pg=events&eventcode=0B56FA95-AFE0-D63B-DD0527FE301EC26C>

# More Information



**Areas in Horizon 2020:**

<http://ec.europa.eu/programmes/horizon2020/find-your-area>



**European Research Council:** <http://erc.europa.eu/>



**Joint Undertaking on Fuel Cells and Hydrogen (FCH JU):**

<http://www.fch.europa.eu/page/call-2015>



**KIC InnoEnergy:** <http://www.kic-innoenergy.com/>



**Participants Portal:**

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

# LESSONS LEARNED



## EE 2 – 2015: Buildings design for new highly energy performing buildings

**Specific Challenge:** By the end of 2020 (2018 for buildings occupied and owned by public authorities), all new buildings should comply with the Energy Performance of Buildings Directive obligations and thus meet 'nearly zero-energy' performance levels using innovative, cost-optimal technologies with integration of renewable energy sources on site or nearby. Moreover, the construction of 'plus-energy' buildings - i.e. buildings producing more energy than they consume - should also be encouraged in order to reduce energy use whilst increasing the share of renewable energies. However the costs of these highly energy performing buildings still represent a barrier for investors. Therefore the construction industry needs to deliver more affordable solutions.

**Scope:** Projects should focus on development and demonstration of solutions which significantly reduce the cost of new buildings with at least 'nearly zero-energy' performance levels, whilst accelerating significantly the speed with which these buildings and their systems are taken up by the market. The focus should lie on solutions for appropriate indoor air quality and comfort, design adapted to local climate and site, passive solutions (reducing the need for technical building systems which consume energy) or active solutions (covering a high share of the energy demand with renewable energies), building energy management systems (where appropriate), highly efficient Heating, Ventilation and Air-Conditioning (HVAC, e.g. low temperature systems, solar cooling), electric and/or thermal energy storage of renewable energy onsite and nearby. Projects should also provide solutions for automated and cost-effective maintenance of the installed equipment, and assess differences between predicted and actual energy performance. Such differences should be documented and minimized. Projects should also focus on design methods for on-site and nearby-generation of renewable energy for new buildings (electricity as well as heating and cooling generation, e.g. heat pumps, integrated photovoltaics, or other options) accompanying energy efficiency measures to achieve standards higher than those of 'nearly zero-energy' buildings.

The performance of innovative technologies may be verified through technology verification schemes such as the EU Environmental Technology Verification (ETV) pilot programme.

The Commission considers that proposals requesting a contribution from the EU of between EUR 3 and 5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

This topic will be implemented under the PPP on Energy efficient Buildings.

The activities are expected to be implemented at TRL 5-7 (please see part G of the General Annexes).

**Expected Impact:** Significant increase of the share of 'nearly zero-energy' buildings with the aim of 100% market uptake by the end of 2020. Costs reductions of at least 15% compared to current situation, with additional benefits in terms of energy reduction. Demonstration for net-zero energy districts taking advantage of onsite or nearby-generation of renewable energy.

**Type of action:** Innovation Actions

- **Work programme follows the evaluation criteria**
- **Proposers are offered sufficient flexibility and freedom of choice**
- **Careful reader of the work programme should get a clear message of needs and expectations**
- **Some cases of misinterpretation were nevertheless detected**
- **Further improvement of wording of the work programme text is still possible**

- **Participant Portal has been well accepted and valued by R&I community, but work programme needs to be more visible (general introduction, introduction to calls, supporting documents etc)**
- **Horizon 2020's IT system provides a large variety of assistance and allows 100% paperfree project life cycle, i.e. it has been well developed but there is still space for further improvement**

- **Some delays in communication and problem solving have been detected, which has to be avoided in future**
- **Frequently Asked Questions (FAQ) must be updated regularly in order to be a helpful environment for (potential) participants**
- **NCPs need more support and information from the Commission to do their work efficiently**

- **Success rates are lower (14%) than in FP7, owing to the significant over-subscription (8x the available budget in Horizon 2020, 5x under FP7).**
- **The overall high oversubscription rate is a combination of the general great interest of the R&I community, the higher funding rate in Horizon 2020 and the huge response to a limited number of open research topics.**



Proposals' requested budget was in general **within the ranges indicated in the work programme**, often towards the **higher end** of the range.

Main-listed proposals **did not differ significantly** in terms of their requested budget from the rest of the proposals.

General **proposal characteristics** (applicants per proposal, requested EU contribution per proposal and applicant) are **similar to FP7**.

- **Overall funding rate: 86% (98% for CSAs and RIA, 82% for IA, 69% for SME instrument and 33% for COFUND) - FP7: 56%**
- **Lower leverage factor: 1 € EU contribution -> 0.16 € matching contribution (FP7: 0.78€).**
- **Less projects can be financed compared to FP7 for the same amount of EU contribution**

# **Main weaknesses (I)**

- **Too ambitious (counsortium, budget, time, impact)**
- **Target groups insufficiently engaged**
- **Pointless letters of support**
- **Weak management and decision making process**
- **Out of focus**
- **Poorly substantiated estimations**
- **Lack of detail and clarity**
- **Calculation mistakes**

## **Main weaknesses (2)**

- **Unclear methodology, source of data, performance indicators or achievement of objectives**
- **IPR issues not or insufficiently considered**
- **Too many partners/work packages/tasks/milestones**
- **Very generic approach**
- **Unjustified costs**
- **Lack of coherence between objectives/methodology/work packages**

# Characteristics of a competitive proposal :

- **Excellence**
- **Credibility**
- **Clarity**
- **Ambitiousness**
- **Relevance**
- **Coverage**
- **Coherence**
- **Soundness of concept**
- **Involvement of stakeholders**
- **Geographical scope**

## **Lessons Learnt from first Horizon 2020 Calls – recommendations:**

- **Continue challenge-based approach in delivering topics while improving their clarity (esp. impact requirements);**
- **Address key features (international cooperation, SSH, gender etc.) upstream in work programme preparation;**
- **Adapt call conditions for two-stage evaluations ensuring a 1:3 (budget-wise) success rate in the second phase;**
- **Better use of the whole toolbox of funding instruments such as pre-commercial procurement (PCP) or public procurement of innovative solutions (PPI) co-fund actions.**

## **Lessons Learnt from first Horizon 2020 Calls – recommendations:**

- **Increase international cooperation activities (flagship initiatives, accompanying actions)**
- **Conduct further analysis of oversubscription and devise measures to effectively manage large demand, especially in two-stage calls;**
- **Step-up efforts to attract experts and further improve evaluation process, esp. impact and innovation**
- **Continue monitoring the implementation of calls and ensure adequate level of feedback to applicants.**



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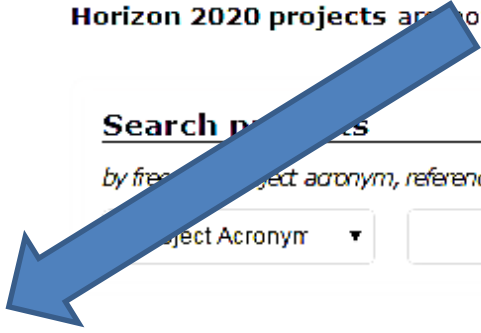
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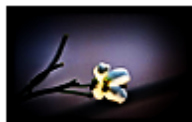
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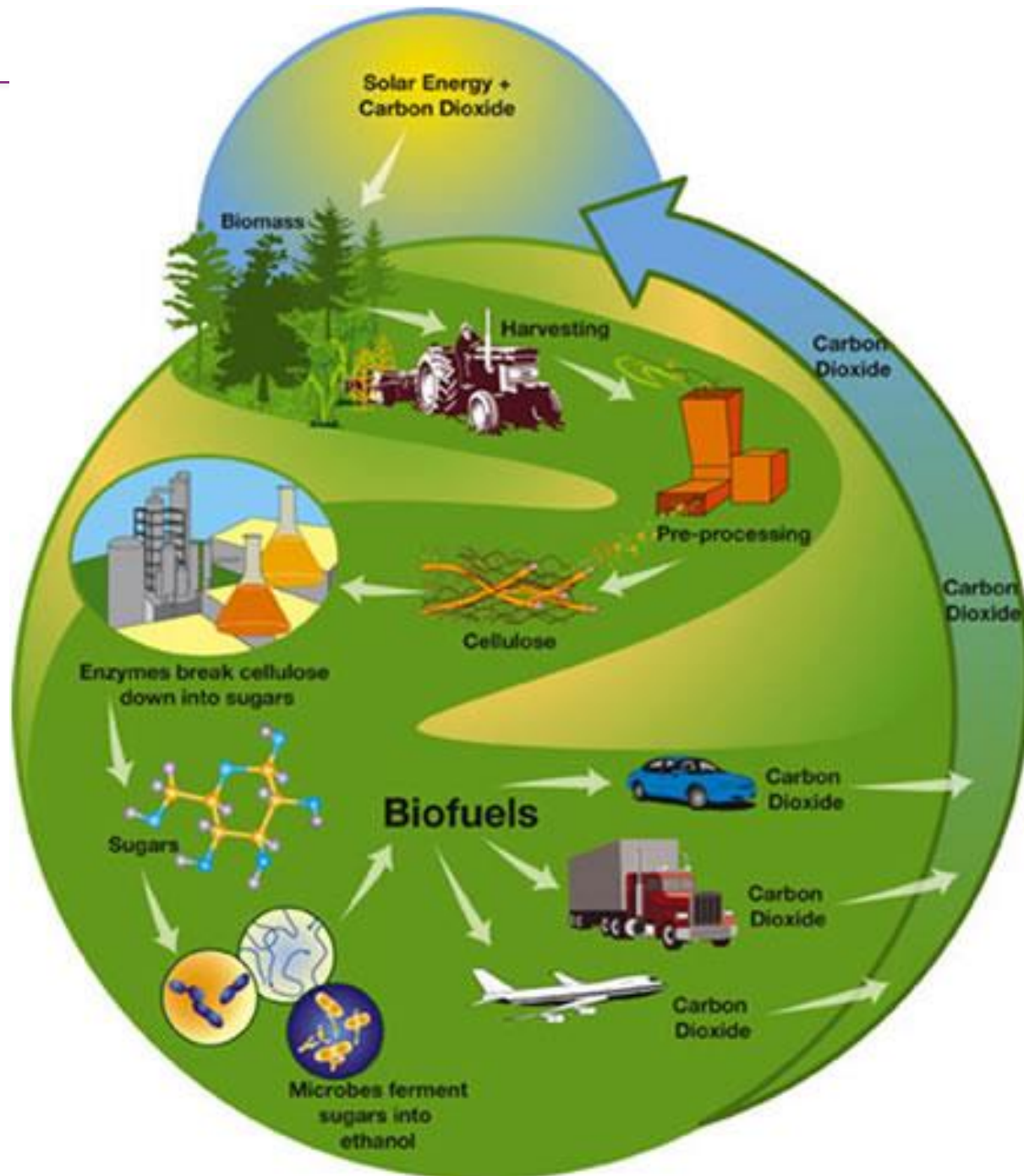
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