



THE EU FRAMEWORK PROGRAMME
FOR RESEARCH AND INNOVATION

HORIZON 2020

**Secure, clean and efficient
energy challenge**

**National Information Day -
Portugal**



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Outline

- EASME
- H2020 structure and overview
- H2020 Societal Challenges
- Secure, clean and efficient energy:
 - **Energy Efficiency**
 - **Smart Cities and Communities**
 - **Low carbon energy**
- Final notes



EACI → EASME

- **Executive Agency for Small and Medium-Sized Enterprises**
- The **EASME** replaces the EACI (Executive Agency for Competitiveness and Innovation)
- <http://ec.europa.eu/easme/>

EASME

- Most of the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises – COSME
- Part of **Horizon 2020**, in particular:
 - **The SME instrument**
 - **The Energy Efficiency part of 'Secure, Clean and Efficient Energy';**
 - **The calls for proposals in the fields of waste, water innovation and sustainable supply of raw material under the challenge 'Climate action, Environment, Resource Efficiency and Raw Materials'**
- Some areas of the 'Industrial leadership' challenge:
 - **part of the Leadership in Enabling and Industrial Technologies**
 - **Innovation in SMEs and**
 - **The Sustainable Industry Low Carbon Scheme (SILC II)**
- The EU programme for the Environment and Climate action (LIFE)
- The European Maritime and Fisheries Fund (EMFF)
- The legacy of the Intelligent Energy – Europe programme and the Eco-innovation initiative

EASME

Unit B1 Energy

- Manages the Energy Efficiency part of 'Secure, Clean and Efficient Energy' challenge
- The same team that was managing the IEE programme (EACI's EE+RES units)

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HORIZON 2020

**The New EU
Framework Programme for
Research and Innovation**

2014-2020



Horizon 2020

- 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)

Basic principles

- **2-year work programme** to allow for better preparation of applicants
 - One call BUT several deadlines and different evaluation processes
 - Topics can be repeated BUT challenges could change
- **Challenge-based approach** (not prescribing technology options)
- Cross-cutting actions
- Focus areas
- Use of **TRLs** to specify scope of activities
- Indicative **project size** range
- Grant signature within **8 months** from the deadlines

Time to grant

Deadline



0

**Informing
Applicants**



5

**Grant
signature**



8



Months



Technology Readiness Levels

- TRL 0: Idea.** Unproven concept, no testing has been performed.
- TRL 1: Basic research.** Principles postulated and observed but no experimental proof available.
- TRL 2: Technology formulation.** Concept and application have been formulated.
- TRL 3: Applied research.** First laboratory tests completed; proof of concept.
- TRL 4: Small scale prototype** built in a laboratory environment ("ugly" prototype).
- TRL 5: Large scale prototype** tested in intended environment.
- TRL 6: Prototype system** tested in intended environment close to expected performance.
- TRL 7: Demonstration system** operating in operational environment at pre-commercial scale.
- TRL 8: First of a kind commercial system.** Manufacturing issues solved.
- TRL 9: Full commercial application,** technology available for consumers.

Horizon 2020 (2014-2020)



**R&D - Public
Private
Partnerships**

**Market uptake
activities**

TRL 0

TRL 9

2007-2013: FP 7 → First application → Intelligent Energy Europe



Relevant type of actions

Research and Innovation Actions (RIA)

They are actions with Research and Development activities as the core of the project intending to establish new scientific and technical knowledge and/or explore the feasibility of a new or improved technology, product, process, service or solution:

- **may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment**
- **may contain closely connected but limited demonstration or pilot activities aiming to show technical feasibility in a near to operational environment**

100% funding rate



Relevant type of actions

Innovation Actions (IA)

'Innovation action' means an action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

70% funding rate (100% for non-profit legal entities)

Overlaps RIA / IA

- 'prototyping', 'testing', 'demonstrating' and 'piloting' not specific to innovation activities; they are also used to describe research and development activities (100% funding)
- In the case of a Research and Innovation action, these activities are undertaken on a small scale prototype, in a laboratory or simulated environment
- Innovation projects may include limited research and development activities.
- **Type of project expected, funding and Technology Readiness Level scale indicated in the WP topics**



Relevant type of actions

Coordination and Support Action (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. Substantially similar to FP7.

100% funding rate

Horizon 2020

Participants portal

The single entry point for beneficiaries

European Commission

(A-Z) Sitemap About this site Contact Legal Notice English

RESEARCH & INNOVATION
Participant Portal

European Commission > Research & Innovation > Participant Portal > Home

HOME FUNDING OPPORTUNITIES HOW TO PARTICIPATE EXPERTS SUPPORT LOGIN REGISTER

The Participant Portal will be under maintenance today between 17:00 and 18:00 (CET). You may experience difficulties in using some functionalities during this period. We apologise for any inconvenience this may cause.

Horizon 2020 Funding

Starting from 1/1/2014

On this site you can find and secure **funding** for research & innovation projects under the following EU programmes:

- 2014-2020 Horizon 2020 - research and innovation framework programme
- 2007-2013 7th research framework programme (FP7) and Competitiveness & Innovation Programme (CIP)

Non-registered users

- search for funding
- read the funding guide & download the legal documents
- check if an organisation is already registered
- contact our support services or check our FAQs

Registered users

- submit your proposal
- sign the grant
- manage your project throughout its lifecycle

WHAT'S NEW? FUNDING OPPORTUNITIES HOW TO PARTICIPATE WORK AS AN EXPERT MY PERSONAL AREA INFORMATION AND SUPPORT

RESEARCH ON EUROPA CORDIS OLAF

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

Three priorities





Priority 3. Societal challenges

- Concerns of citizens and society/EU policy objectives (climate, environment, energy, transport, etc.) cannot be achieved without **innovation**.
- Breakthrough solutions come from **multi-disciplinary collaborations**, including social sciences & humanities.
- Promising **solutions** need to be **tested, demonstrated and scaled up!**



Horizon 2020 – Societal Challenges

1. Health, Demographic Change and Wellbeing
2. Food security, Sustainable agriculture and forestry, Marine, Maritime and Inland water, Research and the Bio-economy
- 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

SOCIETAL CHALLENGE - ENERGY

Call for proposals 2014-2015*

**Energy
Efficiency**

-

21 topics

**Smart
Cities &
Communities**

-

6 topics

**Low
Carbon
Energy**

-

22 topics

***documents
for Call
2015 are
only
indicative
and may be
subject to
changes**

Structure of the topics

1. SPECIFIC CHALLENGES

- What is/are the problems? / where do we want to get?
- Background information

2. SCOPE

- Where should proposals focus? / areas of action?
- Specific information

3. EXPECTED IMPACT

- e.g. What is the impact in terms of energy saved/RES triggered / investment / jobs created / stakeholders engaged / technology innovation, etc.

Important note: challenges are not prescriptive. Proposers need to come up with solutions/proposals that are excellent, high-impact and use resources effectively.



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FOR RESEARCH AND INNOVATION

HORIZON 2020

Energy Efficiency
H2020-LCE-2014 / 2015





Energy Efficiency

H2020-EE-2014 / 2015

Topics in 4 main areas:

1. Buildings and consumers: EE1 - EE12
2. Heating and cooling: EE12 - EE14
3. Industry and products: EE15 - EE18
4. Finance for sustainable energy: EE19 - EE21

EE 1: Manufacturing of prefabricated modules for renovation of buildings, PPP

Challenges: Lower cost, ease building integration process, and lead to reduction in total buildings primary energy consumption.

Scope: Mainly demonstration activities.

Impact: Energy savings, reduction renovation costs and time, etc.

TRL: 5-7

Type of action: IA (70%)



Note on Public-Private Partnerships in Horizon 2020

The objectives of PPPs are:

- *To solve problems together with industry*
- *To strengthen European industrial leadership*
- *To facilitate prioritisation of R&I in line with Europe 2020 objectives and industry needs*
- *To strongly commit industry to joint objectives*

Two types of PPPs in Horizon 2020

Contractual PPPs: budget is only committed on an annual basis through H2020 calls in WPs, prepared on the basis of an industry-developed multi-annual roadmap and a contractual arrangement which specifies an indicative 7 years EU funding, and the commitments of industry to match this and to additional investments outside the PPP calls with high leverage factors, but not legally binding.

Joint Technology Initiatives: like the contractual PPPs, but with ring fenced 7 year budget, the JU launching the calls (where derogations to H2020 are possible) and with the additional commitments of industry outside the calls inserted in the legislation.

PPPs in Horizon 2020

Joint Technology Initiatives

- **Innovative Medicines (IMI)**
- **Clean Sky**
- **Single European Sky ATM Research (SESAR)**
- **Fuel Cells and Hydrogen (FCH)**
- **Electronic Components and Systems (ECSEL - old ARTEMIS + ENIAC)**

New:

- **Bio-based Industries (BBI)**

Contractual PPPs

- **Factory of the Future (FoF)**
- **Energy-efficient Buildings (EeB)**
- **Green Vehicles (EGVI)**
- **Future internet (5G)**

New:

- **Sustainable Process Industry (SPIRE)**
- **Robotics**
- **Photonics**
- **High Performance Computing**



For more information:

Information days on Research PPP (16-17/12/2013):

http://ec.europa.eu/research/industrial_technologies/information-day-for-ppp-2013_en.html

Energy-Efficient Buildings Association (E2BA):

<http://www.e2b-ei.eu/default.php>

Sustainable Process Industry through Resource and Energy Efficiency Association (A.SPIRE):

<http://www.spire2030.eu/>

EE 2: Building design for new highly energy performing buildings, PPP

Challenges: Development and demonstration of solutions which reduce cost of new buildings with at least NZE performance levels and accelerate market uptake.

Scope: Demonstration projects where buildings are active contributors to production and environmental quality (e.g. for new districts planned), etc.

Impact: Increase the number of 'nearly zero-energy' buildings.

TRL: 5-7

Type of action: IA (70%)

EE 3: Energy strategies and solutions for deep renovation of historic buildings, PPP

Challenges: Innovative, affordable, non-invasive, reversible solutions to deliver significant improvements in energy efficiency. Insulation, monitoring technologies and systems, integration of renewables, etc.

Scope: Demonstrate the effectiveness of the technologies, methodologies, systems or tools developed and prove the replication potential.

Impact: Optimised design and implementation of renovation projects for historic buildings.

TRL: 4-6

Type of action: RIA (100%)

EE 4: Construction skills

Challenges: Addressing the gap in knowledge and skills in the construction sector through building on BUILD UP Skills.

Scope: Upgrade or establishing large-scale qualification and training schemes in order to increase the number of skilled building workers. Includes also qualification and skills of middle and senior level building professionals.

Impact: e.g. 1 million Euro of EU support = increase the skills of at least 2000 craftsmen.

Type of action: CSA (100%)

EE 5: Increasing energy performance of existing buildings ... and creating a market for deep renovation

Challenges: Process and organisation innovations and creating a market for deep renovation. Removing market barriers. Product and process innovation, etc.

Scope: Development, testing and/or implementation of regulations, decision-making tools for renovation strategies, quality standards and enabling conditions to finance deep renovation of buildings, etc.

Impact: e.g. renovation of existing buildings towards high energy performance, should result in energy savings of at least 25 GWh/year per million EUR of EU support

Type of action: CSA (100%)



Only in
2015

EE 6: : Demand response in blocks of buildings

Challenges: Demand response can increase users participation in energy markets and profit from optimal price conditions, making the grid (heat, cold, electricity) more efficient and contributing to the integration of renewable energy sources.

Scope: Cost effective, real time optimisation of energy demand, storage and supply in blocks of buildings with the help of intelligent energy management systems.

Impact: Demonstrate demand response at the level of blocks of buildings, quantify energy, cost saving, etc.

TRL: 6-7

Type of action: IA (70%)

EE 7: Enhancing the capacity of public authorities to plan and implement sustainable energy policies and measures

Challenges: Public authorities play a key role in the reduction of EU energy consumption and the increase of renewable energy capacity.

Scope: Empowering public authorities to plan, finance and implement ambitious sustainable energy policies and plans. Especially sectors with high energy saving potential. Capacity building.

Impact: e.g. Impacts must be measured in terms of number of public officers influenced and number of new or improved policies and plans.

Type of action: CSA (100%)

EE 8: Public procurement of innovative sustainable energy solutions.

Challenges: Considering the large volume of public spending (19% of EU GDP, or roughly EUR 2,200 billion in 2009), the public sector constitute an important driver to stimulate market transformation.

Scope: Reducing barriers to sustainable energy public spending through e.g. sharing best practice and involve central purchasing organisations.

Impact: 1 million Euro of EU support is expected to trigger the launch of public tenders for the purchase of sustainable energy products, buildings or services resulting in savings of more than 25 GWh.

Type of action: CSA (100%)

EE 9: Empowering stakeholders to assist public authorities in the definition and implementation of sustainable energy policies and measures

Challenges: While public authorities have an important role to play to develop energy efficiency policies and plans, the latter require the full involvement of private stakeholders and the civil society for their effective implementation.

Scope: Projects to target specific actors among stakeholders (utilities, industry, financing institutions, non-gov. org., consumer associations, interest groups, trade unions...). Large scale capacity building or engagement activities.

Impact: e.g. influence hundreds of stakeholders playing a key role in the definition and successful implementation of national, regional or local policies.

Type of action: CSA (100%)

EE 10: Consumer engagement for sustainable energy

Challenges: Residential use of energy is responsible for 28% of EU energy consumption . The barriers to consumer energy saving have been known for more than 30 years but are still present.

Scope: Reducing market barriers through changing behaviour of consumers using market segmentation and focus on "action", e.g. through use of social innovations and comparative ICT solutions and educational activities or tools.

Impact: e.g. each million € of EU support expected to deliver annual energy savings of around 10% for at least 5,000 households (around 8 GWh/year of savings).

Type of action: CSA (100%)

EE 11: New ICT-based solutions for EE

Challenges: Motivate and support behavioural change to achieve greater EE taking advantage of ICT.

Scope: Creation of innovative IT ecosystems that would develop services and applications making use of information generated by energy consumers or captured from sensors and micro generation.

Impact: e.g. accelerate wide deployment of innovative ICT solutions for energy efficiency.

Type of action: RIA (100%).

EE 12: Socioeconomic research on energy efficiency

Challenges: formulate long-term strategies and define cost-effective policies, policy makers.

Scope: Foresight socio economic activities informing the debate on the development and monitoring of EE strategies looking to the horizon 2030 and beyond. Multiple benefits of EE or evolution of social, economic, cultural and educational barriers. Priority to development of micro-economic analysis of the updated EE measures.

Impact: e.g. examples of positive impacts on energy efficiency policy development

Type of action: CSA (100%)

EE 13: Technology for district heating and cooling

Challenges: District heating and cooling systems need to be more efficient, intelligent and cheaper.

Scope: Develop, demonstrate and deploy a new generation of highly efficient, intelligent district cooling and heating systems. Reduce distribution losses. Develop optimisation, control, metering, planning and modelling tools. New solutions for low temperature heat recovery and recirculation.

Impact: e.g. reduce the energy consumption of space and water heating by 30 to 50% compared to today's level.

TRL: 4-6

Type of action: RIA (100%)

EE 14: Removing market barriers to the uptake of efficient heating and cooling solutions

Challenges: Action is needed to remove non-technological (including legislation) barriers to exploit the full potential of efficient heating and cooling solutions.

Scope: Innovative measures to accelerate the replacement of old, inefficient space heaters and packaged cooling systems with products having A +++ to A+ energy labels. Inspection of heating and cooling systems.

Impact: e.g significant impacts should also be measured in terms of investment made by stakeholders in sustainable energy.

Type of action: CSA (100%)

EE 15: Ensuring effective implementation of EU product efficiency legislation.

Challenges: By 2020 full implementation of the EU product efficiency legislation should be one of the most important contributions to the EU energy efficiency target.

Scope: Building up monitoring, verification and enforcement of the EU's related products policy.

Impact: e.g. every million Euro of EU support is expected to generate at least 15 GWh/year of energy losses avoided from non-compliance.

Type of action: CSA (100%)

EE 16: Organisational innovation to increase energy efficiency in the industry

Challenges: The industry sector could further reduce its consumption by at least 13%, etc.

Scope: Removing market barriers like lack of expertise and information on energy management. Uptake of cross-cutting innovative technologies. Industrial systems efficiency benchmarking. Sector specific technology pathways. Energy management in SMEs and industry. Human and organisational change.

Impact: e.g. every million Euro of EU support is expected to result in savings of at least 25 GWh per year.

Type of action: CSA (100%)



Only in
2015

EE 17: Driving energy innovation through large buyer groups

Challenges: Buyers of energy-related products can foster innovation by specifying energy performance levels that are higher than the best levels available on the market.

Scope: Actions where groups of buyers can set higher-than-available performance levels which manufacturers of sustainable energy products are called to meet through product innovation.

Impact: New energy-using or -producing products with at least 25% better performance than the best available products

Type of action: CSA (100%)

EE 18: New technologies for utilization of heat recovery in large industrial systems..., SPIRE

Challenges: Heat recovery represents an important and unexplored opportunity for reducing energy use in industrial processes and in heating and cooling.

Scope: Research and demonstration of technologies to recover waste heat from industrial processes. Validation at real production conditions with demo sites, testing in industrial facilities.

Impact: e.g. viable solutions and technologies allowing recovering at least 15% of process heat, etc

TRL: 4-7

Type of action: RIA (100%)

EE 19: Improving the financeability and attractiveness of sustainable energy investments

Challenges: Sub-optimal levels of investment in sustainable energy (in particular energy efficiency) are linked to a lack of trust of investors and financiers in the financial viability of sustainable energy measures, etc.

Scope: Activities that foster dialogue with and between financial market actors, standardisation and valuation entities, industry, public authorities, consumers and property owners.

Impact: Reduced uncertainty as regards investments into sustainable energy in terms of increased investors' confidence and trust

Type of action: CSA (100%)

EE 20: Project development assistance for innovative, bankable and aggregated sustainable energy investment schemes and projects

Challenges: Mobilise all relevant stakeholders, draw up investment inventories, develop feasibility studies, financial engineering instruments, and to address legal and procurement issues.

Scope: Project development assistance support to Public and private project promoters such as public/private infrastructure operators, retail chains, cities and SMEs/industry, leading to innovative, bankable sustainable energy investments schemes.

Impact: Every million Euro of Horizon 2020 support must trigger investments worth at least EUR 15 million

Type of action: CSA (100%)

EE 21: Development and market roll-out of innovative energy services and financial schemes for sustainable energy

Challenges: The deployed public funds have to be matched and multiplied by private sector capital, to address the financing gap.

Scope: Roll-out of business models for innovative EE services. Replication of successful innovative financing solutions. Implementation of large-scale capacity building for public authorities and SMEs to set-up or use innovative financing schemes for sustainable energy.

Impact: e.g every million Euro of EU support invested into the relevant activities is expected to deliver savings of at least 25 GWh/year

Type of action: CSA (100%)

Call Energy Efficiency: Budget

Topics*		2014 (M€)	2015 (M€)	Source
EE1, EE2	EeB PPP: Pre-fabricated modules and New Energy Efficient Buildings	8	9	PPP
EE3	EeB PPP: Historic Buildings	5		
EE18	SPIRE Topic PPP: Heat recovery	8	8	
EE6, EE12, EE13	Demand response in building blocks, socio-economic research and technology for DHC	8,5	13,35	Research and Innovation
EE11	ICT for energy efficiency	8,5	8,5	
EE4, EE5, EE7, EE8, EE9, EE10, EE14, EE15, EE16, EE17	Market uptake in Buildings, Consumers, Industry and Products Empowering public authorities and its stakeholders	34,5	32,8	IEE
EE19, EE20, EE21	Finance for sustainable energy including project development assistance	25	26,5	

* Corresponds to the topic code in the work-programme

Call Energy Efficiency: Deadlines

Topics*	2014	2015
EE1, EE3, EE18	20/03/2014	
EE4, EE5, EE7, EE8, EE9, EE10, EE11, EE12, EE13, EE14, EE15, EE16, EE19, EE20, EE21	05/06/2014	
EE2, EE18	09/12/2014	
EE5, EE6, EE7, EE9, EE10, EE11, EE13, EE14, EE15, EE16, EE17, EE19, EE20, EE21		10/06/2015

* Corresponds to the topic code in the work-programme



Energy efficiency call

Single entry point for queries

Contact the EASME Energy Unit team via:

EACI-IEE-enquiries@ec.europa.eu



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HORIZON 2020

Smart Cities and Communities

H2020-SCC-2014/2015



Call 2014

SCC2: Data
Collection
€1m

SCC1: Lighthouse Projects

€90m

4-5 projects

SCC4: Public
Procurers' Networks
€1m

Call 2015

SCC3: System
Standards
€1m

€106m

5-6 projects

SCC5: Solutions
Competition €1m



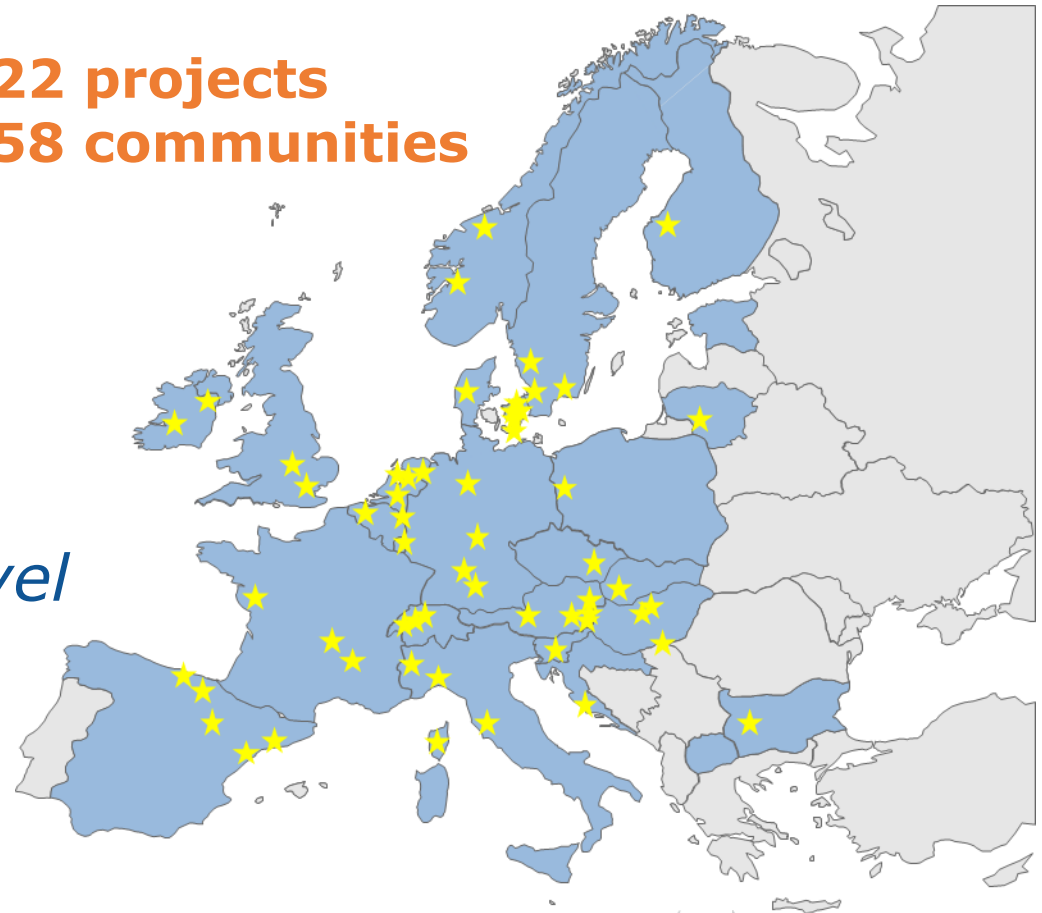
Innovate: Go beyond what exists

- *Concerto in FP6 (2000-2006)*
- *Smart Cities in FP7 (2007-2013)*

22 projects
58 communities

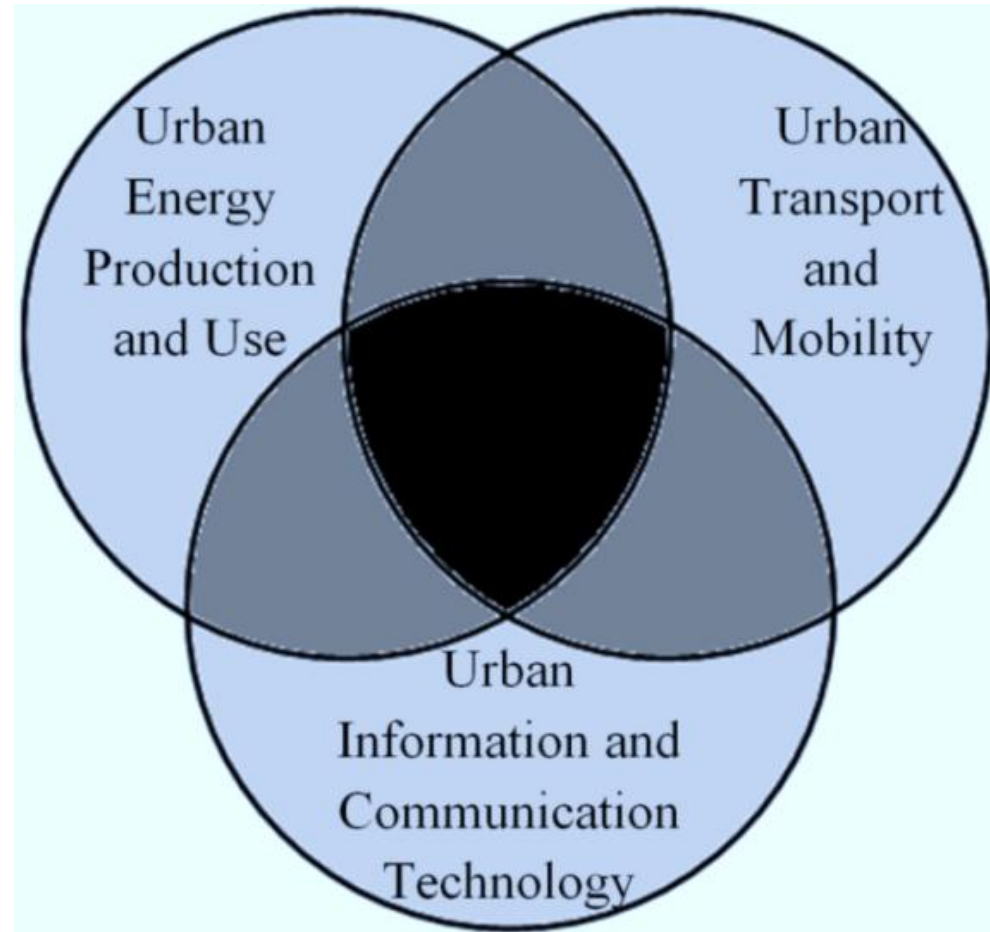
- *Take to the next level*

- www.concerto.eu



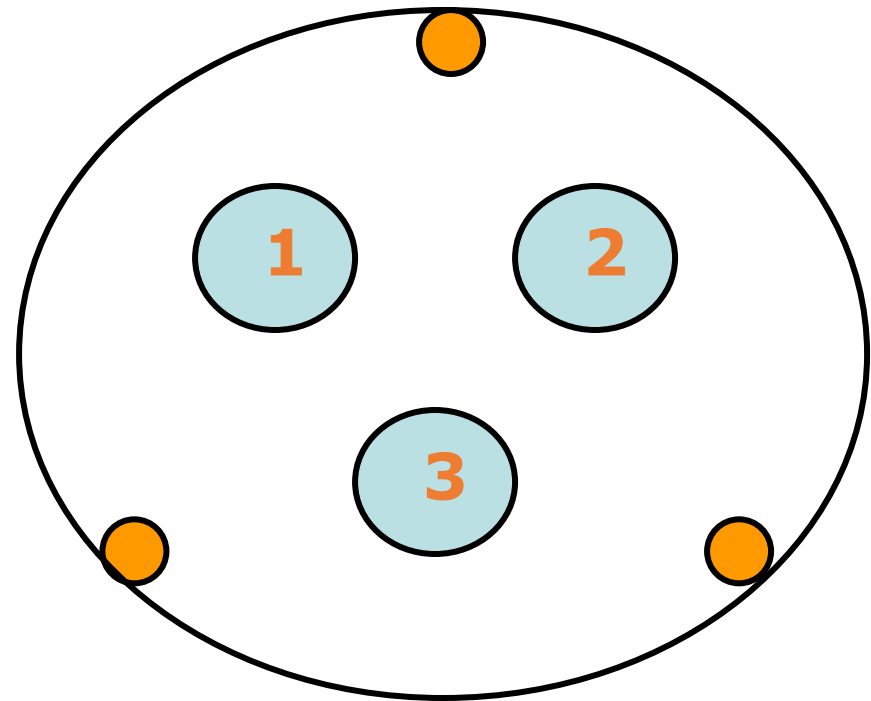
Integrate

- 3 dimensions
- In same location



Replicate

- 2-3 Lighthouse cities
- 2-3 Follower cities
- Multi-sector input
- Embedded in urban plans



Administration

- ≥ 2 years monitoring
- Costs
- Time to grant
- Financial viability
- Commitment



Call Smart cities & communities: Budget

Topics*	Short-hand Description	2014 (M€)	2015 (M€)
SCC1	SCC solutions	90,32	106,8
SCC2	Developping framework for monitoring	1	
SCC3	Developping system standard		1
SCC4	Public procurers networks	1	
SCC5	Prize		1

* Corresponds to the topic code in the work-programme

Call Smart cities & communities: Deadlines

Topics*	2014	2015
SCC1	07/05/2014	
SCC2, SCC4	07/05/2014	
SCC1		03/03/2015
SCC3, SCC5		03/03/2015

* Corresponds to the topic code in the work-programme



Call Smart Cities and Communities

Single entry point for queries

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HORIZON 2020

**Competitive Low-Carbon
Energy**

H2020-LCE-2014 / 2015





Competitive Low-carbon Energy – H2020-LCE-2014 / 2015

Topics in 9 areas:

1. New knowledge and technologies: LCE1

2.RES electricity and heating/cooling: LCE2-4

3. Modernising the European **electricity grid**: LCE 5-7

4. Energy **storage** technologies: LCE8-10

5. Sustainable **biofuels** for transport: LCE 11-14

6.Decarbonisation of the use of fossil fuels: LCE 15-17

7. Support **European Research Area**: LCE 18-19

8.Social, environmental and economic aspect: LCE 20-21

9.Cross-cutting issues: LCE 22

	AREA	TRL	TYPE
LCE 1	New knowledge and technologies	2 > 3-4	RIA
Renewable electricity and heating/cooling			
LCE 2	Developing the next generation technologies of renewable electricity and heating/cooling	3-4 > 4-5	RIA
LCE 3	Demonstration of renewable electricity and heating/cooling	5-6 > 6-7	IA
LCE 4	Market uptake of existing and emerging renewable electricity, heating and cooling technologies	7-9	CSA

	AREA	TRL	TYPE
Modernising the European electricity grid			
LCE 5	Innovation and technologies for the deployment of meshed offshore grids	6-7 > 8	IA
LCE 6	Transmission grid and wholesale market		IA, RIA
LCE 7	Distribution grid and retail market		IA, CSA
Energy storage technologies			
LCE 8	Local/small scale storage	5 > 6	IA
LCE 9	Large scale storage	5 > 6-7	IA
LCE 10	Next generation technologies for energy storage	2 > 5	RIA

	AREA	TRL	TYPE
Sustainable biofuels and alternative fuels for transport			
LCE 11	Developing next generation technologies for biofuels and sustainable alternative fuels	3-4 > 4-5	RIA
LCE 12	Demonstrating advanced biofuel technologies	5-7 > 6-7	IA
LCE 13	Partnering with Brazil on advanced biofuels	5-7 > 6-7	IA
LCE 14	Market uptake of existing and emerging sustainable bioenergy	7-9	CSA

	AREA	TRL	TYPE
Enabling the decarbonisation of the use of fossil fuels			
LCE 15	Enabling decarbonisation of the fossil fuel-based power sector and energy intensive industry through CCS	4-5 > 6	RIA
LCE 16	Understanding, preventing and mitigating the potential environmental impacts and risks of shale gas exploration and extraction		RIA
LCE 17	Highly flexible and efficient fossil fuel power plants	3 > 4-6	RIA
Supporting the development of a European Research Area in the field of Energy			
LCE 18	Supporting Joint Actions on demonstration and validation of innovative energy solutions	5-6 > 6-7	ERA-NET
LCE 19	Supporting coordination of national R&D activities	2 > 5	CSA

	AREA	TYPE
Social, environmental and economic aspects of the energy system		
LCE 20	The human factor in the energy system	RIA, CSA
LCE 21	Modelling and analysing the energy system, its transformation and impacts	RIA
Cross-cutting issues		
LCE 22	Fostering the network of National Contact Points	CSA

Call Competitive **low-carbon energy** : Budget (M€)

Topics*	Short-hand Description	2014	2015
LCE1	New knoweldge & tech.	20	
LCE2, LCE11	RES – Research	60*	59*
LCE3, LCE12	RES - Demonstration	73*	80*
LCE4, LCE14	Market uptake	20	20
LCE5, LCE6, LCE7	Smart grids	60	71,48
LCE8, LCE9, LCE10	Storage	44,15	26
LCE13	Joint topic with Brazil		10
LCE15, LCE16, LCE17	CCS & other	33	35
LCE18	ERANET	34,25	57,85
LCE19	Coordination of MS	3	3
LCE20	Socio-Eco.	10,5	
LCE21	Socio-Eco.		10
LCE22	NCP Network	1,5	

* Corresponds to the topic code in the work-programme



Call Competitive low-carbon energy : Deadlines

Topics*	2014		2015
LCE1, LCE2, LCE11, LCE15, LCE16	01/04/2014 (Stage 1)	23/09/2014 (Stage 2)	
LCE22	01/04/2014		
LCE4, LCE7, LCE8, LCE10, LCE14, LCE18	07/05/2014		
LCE1, LCE2, LCE11, LCE15, LCE17	03/09/2014 (Stage 1)		03/03/2015 (Stage 2)
LCE3, LCE12, LCE19, LCE20	10/09/2014		
LCE3, LCE12, LCE19, LCE21 LCE4, LCE5, LCE6, LCE9, LCE14			03/03/2015
LCE18			28/04/2015
LCE13			05/05/2015

* Corresponds to the topic code in the work-programme



Call Competitive low-carbon energy

Single entry points for queries

- *Call coordination & LCE1: Philippe Schild*
- *LCE2 & LCE3: Fabio Belloni (PV), Piero de Bonis (CSP & RHC), Matthijs Soede (Wind & Ocean), Geothermal (Susanna Galloni) & Hydropower (Erich Naegele)*
- *LCE4 & LCE14: Maria Velkova*
- *LCE11, LCE12 & LCE13: Maria Georgiadou*
- *LCE15, LCE16 & LCE17: Jeroen Schuppers*
- *LCE18, LCE20, LCE21, LCE22: Martin Huemer*
- *LCE19: Arnaud Mercier*

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Final notes

- **Strong participation by SMEs will be promoted**
- Around 20% of the total budget for societal challenges (and LEITs) to go to SMEs
- A **new SME instrument** will be used across all societal challenges as well as for the LEITs
- A dedicated activity for research-intensive SMEs in **'Innovation in SMEs'**
- **'Access to risk finance'** will have a strong SME focus (debt and equity facility).

Final notes

Call SIE: SMEs and Fast track to Innovation for Energy

- **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€



Final notes

Other parts of H2020 of direct relevance to Energy

- **LEIT – KET materials, nano, electronics, manufacturing, processing**
- **FET-open and FET-pro-active**
- **Research Infrastructures**
- **ERC, EIT**
- **SME instrument**

Close links

- **Transport (societal challenge)**
- **Agriculture, marine, bio-economy (societal challenge), including Blue growth (strategic focus area)**
- **Climate action, resource efficiency, raw materials (societal challenge)**
- **Secure societies (societal challenge)**



Thank you for your attention

H2020 general website:

<http://ec.europa.eu/programmes/horizon2020/en>

National contact point:

<http://www.gppq.fct.pt/h2020/>