



THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

# HORIZON 2020

## **H2020 - Energy Calls 2016**



**European Commission**



# Content overview

- ❑ Context
- ❑ Relevant Calls 2016 (2017)
  - Energy Efficiency (EE)
  - Competitive Low-Carbon Energy (LCE)
  - Smart and Sustainable Cities – Smart Cities and Communities (SCC)
  - Other Actions no. 27 ELENA (European Local Energy Assistance)
- ❑ Support



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# Horizon 2020 – Overall Objectives

## HORIZON 2020

Responding to the economic crisis by investing in future jobs and growth

Strengthening the EU's global position in research, innovation and technology

Addressing people's concerns about their livelihoods, safety and environment

Contributing to sustainable development (at least 35% of the overall budget)

Supporting EU policies (e.g. Europe 2020 / Energy Union)



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# Political Context

## 2030 Climate-Energy Package

- 40% reduction of Greenhouse Gases
- 27% of renewable energy
- 27% improvement in energy efficiency



## Energy Union

- *Energy security, solidarity and trust*
- *A fully integrated internal energy market*
- *Energy efficiency first*
- *Transition to a low-carbon society*
- *An Energy Union for Research, Innovation and Competitiveness*

## SET-Plan

- *Integrated Roadmap*
- *Communication on Integrated SET-Plan (C[2015]6317)*





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# Types of actions

## **Research and Innovation Action (RIA)**

- establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution
- 100% funding rate
- At least 3 legal entities from 3 different MS/AC

## **Innovation Action (IA)**

- producing plans/arrangements or designs for new, altered or improved products, processes or services (incl. prototyping, testing, demonstrating, piloting, large-scale product validation and market replication)
- 70% funding rate (but 100% for non-profit organisations)
- At least 3 legal entities from 3 different MS/AC

## **Coordination and Support Action (CSA)**

- accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services
- 100% funding rate
- At least 1 legal entity from MS/AC. In Energy mostly 3 entities

## **ERA-NET Cofund**

- support public-public partnerships in their preparation, networking, design, implementation and coordination of joint activities as well as EU topping-up of a trans-national call for proposals
- At least 3 legal entities from 3 different MS/AC
- participants must be 'research funders'



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# The 2016-2017 calls of the Energy Challenge

## **Energy Efficiency (EE)**

- Heating and Cooling
- Engaging consumers
- Buildings
- Industry, services and Products
- Innovative financing

## **Competitive low-carbon energy Technologies (LCE)**

- Energy system (grids, storage)
- Renewable energies
- Decarbonising fossil fuels
- Socio-economic research
- European Research Area in energy

## **Smart Cities and Communities (SCC)**

- Light-house demonstration projects
- (Nature based solutions)

## **SME instrument (SIE)**



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# Policy context Energy Efficiency

- 2020 & 2030 Framework for Climate and Energy
- Energy Union and its third pillar – Energy Efficiency

**Review  
Energy Efficiency  
Directive**

**Review  
Energy Labelling  
and Ecodesign  
Directives**

**Review  
Energy  
Performance of  
Buildings  
Directive**

WP 2016-2017:

- Focussing on consumer-related issues
- More topics on heating and cooling
- Multi-level approach to eliminate market barriers to finance for energy efficiency





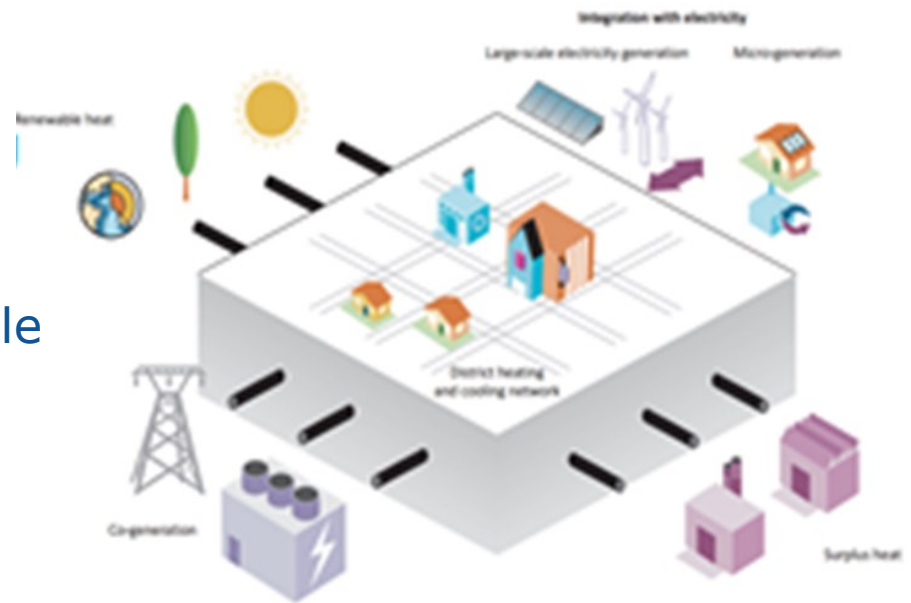
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# Heating & Cooling

Communication on policy strategy foreseen beginning 2016,  
based on broad consultation of stakeholders

## *Objectives:*

- Tackling H&C consumption – Moderating demand
- Increasing energy efficiency in supply
- Maximising use of local sustainable and renewable energy sources
- Recovering waste heat
- Linking with electricity system
- Achieving affordable costs





# Heating & Cooling – Topics 2016

Research and innovation of **efficient and low-carbon H&C technologies**

- *Topic EE-3-2016 (IA – TRL 6-8), EE-4-2016-2017 (RIA – TRL 4-6)*

Models and tools for **heating and cooling mapping and planning**

- *Topic EE-5-2016 (RIA – TRL 5-7)*



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# Consumer in the centre

## New deal for energy consumers:

- ✓ Empowering consumer
- ✓ Deploying demand side response
- ✓ Using smart technologies
- ✓ Protecting vulnerable customers

### *Objectives:*

- Achieve a deeper understanding of consumer behaviour and motivation structures
- Inform, engage and activate consumers

### **WP 2016-2017 :**

- A specific consumer-focused area with four dedicated topics
- Consumer-oriented approach in other parts





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# Consumer engagement – Topics 2016

Engaging private consumers towards sustainable energy

- *Topic EE-6-2016-2017 (CSA)*

Behavioural change toward energy-efficiency through ICT

- *Topic EE-7-2016-2017 (IA – TRL >6)*

Socio-economic research on consumer's behaviour related to energy efficiency

- *Topic EE-8-2016 (RIA)*

Engaging and activating public authorities

- *Topic EE-9-2016-2017 (CSA)*



# EE-09-2016-2017: Engaging and activating public authorities

## Specific Challenge:

- Due to their spending power and pivotal role within the community, the **public sector is an important driver in supporting a market transformation towards more efficient energy systems**, buildings, products, services and towards stimulating a general public behaviour for **increased uptake of energy efficiency solutions**.
- One of the key challenges remains in **linking up public bodies at the national, regional and local level** through effective multi-level governance to realise an **energy transition** driven from the **local level** with concerted **planning and implementation** of energy projects, as well as in achieving a coherent **transformation** of the energy system capitalising on synergies and economies of scale.



## Scope:

### a) Actions aiming at engaging public authorities

- Proposals demonstrating an **innovative approach** in empowering public authorities to step up their active role **to develop, finance and implement ambitious sustainable energy plans** and measures on the basis of reliable data. ...encouraged to adopt a multi-stakeholder approach and to look at **sectors with high energy saving potential such as buildings, industry and urban mobility**, as well as to take into consideration **the integration of relevant indoor environment quality** criteria regulations...
- Proposals should focus on one of the following topics (*out of 7*):
  - **Innovative ways to enable public engagement in the energy transition, developing interface capacities within public authorities to engage with civil society**
  - **Supporting public authorities to foster integrated energy, transport mobility and land-use planning at local level**



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### Impact:

- Primary energy savings, **renewable energy production** and **investments in sustainable energy** triggered in the territory of participating parties by the project within its duration (respectively in GWh/year and million Euro of investments per million Euro of EU funding); (for a & b)
- Number of integrated plans, vertically and or horizontally (for a)
- Number of certified municipalities (for a)
- ...

EU contribution: Between **€1 to 2million**

Type of action: Coordination and Support Action (CSA)



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# Buildings

**Buildings account for 40% of the final energy consumption**

## **Challenges**

- Increasing the rate, quality and effectiveness of renovation to reduce the energy use in buildings, as well as their replication capacity;
- Integration of demand response in energy management systems while ensuring interoperability;
- Reducing the cost of designing and constructing new Near-Zero Energy Buildings (NZEBs) in order to increase their market uptake;
- Building capacity and provide support for sustainable energy policy implementation.





# Buildings – Topics 2016

## Deep renovation of buildings

- *Topics EE-10-2016 (EeB-PPP) (IA – TRL 6-8) , EE-11-2016-2017 (CSA)*

## Cost reduction of new Nearly Zero-Energy buildings

- *Topic EE-13-2016 (CSA)*

## Construction skills

- *Topic EE-14-2016-2017 (CSA)*



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# Industry, services and products – Topics 2016-2017

**Industry and service sectors represent more than 39% of the EU's final energy consumption**

## **Challenges**

- Energy efficiency investments in industrial & service sectors are not implemented due to a combination of market factors & barriers;
- Waste heat recovery in large industrial systems is not fully exploited and waste energy from one industry could be a resource for another;
- European industry needs to develop a global technological leadership in energy efficiency solutions
- Non-compliance with EU legislation (Eco-design and Energy labelling) is reducing savings;
- Demand for computing and data handling is driving increased energy consumption for data centres;
- Public sector spending means that it can act as a driver for procurement of innovative energy efficiency solutions



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## Industry, services and products – Topics 2016-2017

Effective implementation of EU product legislation

- *Topic EE-16-2016-2017 (CSA)*

Waste heat recovery / Energy symbiosis in industrial systems

- *Topic EE-17-2016-2017 (SPIRE-PPP) (IA – TRL 5-7)*

Joint energy-efficiency R&I efforts in industry & services

- *EE-21-2016 (ERA-NET Cofund)*



# Financing Energy Efficiency

**100 bn €** investments/year needed to achieve EE targets

## Existing framework :

EFSD, ESIF, H2020, Smart Finance for Smart Buildings

## Challenge:

• Improve supply of **large-scale finance** at a low cost for by:



- Providing **Project Development Assistance** to public and private sectors to deliver innovative and bankable sustainable energy investments;
- Development of **innovative financing schemes** insuring flow of private finance for EE investments;
- Increase "readability" of market fundamentals for financiers and investors through **benchmarking and standardisation** of EE investments;
- Develop, demonstrate and standardise new types of **energy efficiency services and business models**



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# Financing Energy Efficiency – Topics 2016

## Aggregation - Project development assistance

- *Topic EE-22-2016-2017 (CSA)*



## De-risking - Standardisation and benchmarking

- *Topic EE-24-2016 (CSA)*

## Market based culture - Energy efficiency services and innovative financing schemes

- *Topic EE-25-2016 (CSA)*



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# Energy Efficiency call 2016 - Overview

## Deadline 21 January 2016

- Sub-budget: EUR 16 million
  - EE-10
  - EE-17
- Sub-budget: EUR 34 million
  - EE-3
  - EE-4
  - EE-5
  - EE-7
  - EE-8

**IA – green**  
**RIA – blue**  
**CSA- orange**  
**ERA-NET - black**

## Deadline 15 September 2016

- Sub-budget: EUR 30 million
  - EE-6
  - EE-9
  - EE-11
  - EE-13
  - EE-14
  - EE-16
  - EE-24
  - EE-25
- Sub-budget: EUR 8 million
  - EE-22
- Sub-budget: EUR 5 million
  - EE-21



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# Energy system – Context

## *Challenges for the European energy system*

- Increasing electricity generation and consumption
- Increasing share of renewable energies in electricity generation
- Strong growth of variable RES (wind, solar)
- Huge differences between national energy systems





# Renewable energy technologies 2016

## ***Advanced research***

- PV, CSP, Solar H&C; Geothermal energy; Wind; Ocean energy; CHP and Integration of RES in the energy system; Biofuels

## ***Demonstration***

- PV, CSP, Solar H&C, Wind; Ocean energy; Biofuels

## ***Market uptake 2016-2017***

- 2016 Ocean energy
- 2017 PV, CSP, Wind, Ocean, Hydropower, Geothermal energy; CHP, RES integration in the system, Bio- and Renewable Alternative Fuels



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# Renewable energy – Topic overview

## Deadline 5 April 2016

- LCE-1 – budget 20 M€
- LCE-2 – budget 73.46 M€
- LCE-3 – budget 4 M€

## Deadline 16 February 2016

- LCE-7 – budget 61,3 M€
- LCE-8 – budget 10 M€
- LCE-23 – budget 10 M€

## Deadline 8 September 2016

- LCE-9 – budget 25 M€
- LCE-13 – budget 10 M€
- LCE-15 – budget 15 M€
- LCE-19 – budget 15 M€
- LCE-20 – budget 15 M€
- LCE-22 – budget 5 M€

IA – green  
RIA – blue  
CSA- orange



# Social Sciences and Humanities (SSH)

Transition to a low-carbon energy system is a **complex societal problem** because it changes the interrelations between all relevant actors in the system (-> policy, economic, governance challenges)

- **Horizon 2020:** *Commitment to embed SSH aspects across all the research support provided.*
- **Energy Union:** *SSH aspects as enablers for tackling related priorities (e.g. citizen involvement, social dialogue, social innovation)*
- **SET Plan:** *SSH considerations cut across and inform other challenges – 'main-streaming' of SSH (modelling, societal impacts, innovation support)*



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# SSH-related topics

**Social Sciences in support of the Energy Union** Energy-related choices and behaviour (individually and collectively)

- *LCE-31-2016-2017 (RIA)*

## **European Platform for energy-related SSH research**

Setting up a new European platform to integrate existing energy-related SSH networks, identify research gaps for SSH in the energy field and strengthen the dialogue among different stakeholders

- *LCE-32-2016 (CSA)*

## **Main-streaming of SSH**

- For example topics EE-8, LCE-6, LCE-7, LCE-11, LCE-15, LCE-17, LCE-18, LCE-19, LCE-20, LCE-22, LCE-28



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# Call Smart Cities and Communities



- Improving quality of life, competitiveness and sustainability
- Exporting European knowledge in a strong growth market estimated globally at €1.3 trillion in 2020



# Smart Cities and Communities

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

Continuation of the 'Lighthouse project' approach

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

- *SCC-1-2016-2017 (IA)*

- **Deadlines:** 5 April 2016
- Part of the '**Smart and Sustainable Cities**' call which also includes actions on sustainable cities through nature-based solutions



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# ELENA – European Local ENergy Assistance

## ***(1) Energy efficiency and distributed renewable energy.***

- *public and private buildings, including social housing, commercial and logistic properties and sites, and street and traffic lighting, to support increased energy efficiency*
- *integration of renewable energy sources (RES) into the built environment*
- *investments into renovating, extending or building new district heating/cooling networks*
- *local infrastructure including smart grids, information and communication technology infrastructure for energy efficiency, energy-efficient urban equipment and link with transport*

## ***(2) Urban transport and mobility in urban/suburban agglomerations and other densely populated areas***

- *use and the integration of innovative solutions for alternative fuels in urban mobility*
- *introduction at a wide scale of new, more energy-efficient transport and mobility measures in any modes in urban areas*



*Up to 90% of the technical support cost needed **to prepare, implement and finance the investment programme.***  
*Helps to attract funding from private banks and other sources, including the EIB for the actual investments.*

- *feasibility and market studies,*
- *programme structuring,*
- *energy audits and*
- *tendering procedure preparation.*

**Leverage effect** of 20 (1 euro support = 20 euro investment)

**Minimum level of investment** 30 million euro

*No deadlines*

*Implemented by the European Investment Bank*

[www.eib.org/elena](http://www.eib.org/elena)

# Smart, green and integrated transport

## Call Mobility for Growth – Urban mobility

- *MG-4.4-2016: Facilitating public procurement of innovative sustainable transport and mobility solutions in urban areas (CSA) Deadline: 26 Jan 2016*
- *MG-4.5-2016: New ways of supporting development and implementation of neighbourhood-level and urban-district-level transport innovation (RIA) Deadline: 20 Jan 2106 (Stage 1); 29 Sep 2016 (Stage 2)*



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# Additional eligibility criteria set in the WP

<b>EE-19-2017</b>	<b>PPI at 35% funding rate (instead of 20%)</b>
<b>EE-02-2017, EE-06-2016-2017, EE-09-2016-2017, EE-11-2016-2017, EE-13-2016, EE-15-2017, EE-18-2017, EE-23-2017, EE-24-2016-2017, EE-25-2016</b>	<b>CSA but three minimum participants</b>
<b>EE-16-2016-2017</b>	<b>CSA but three minimum participants Market surveillance authorities included</b>
<b>LCE-22-2016</b>	<b>Coordination with Brazil</b>
<b>LCE-23-2016</b>	<b>Coordination with Mexico</b>
<b>LCE-20-2016-2017</b>	<b>Off-take agreement requirement</b>
<b>SCC-1-2016-2017 SCC-02-2016-2017</b>	<b>Minimum "front-runner"/"follower" and "lighthouse"/"follower" cities</b>



# Funding rates

*One project = One rate*

- ✓ *For all beneficiaries and all activities in the grant.*
- ✓ *Defined in the Work Programme:*
  - *Up to 100 % of the eligible costs; (Research and Innovation Action and Coordination and Support Action)*
  - *but limited to a maximum of 70 % for innovation projects (exception for non-profit organisations - maximum of 100%) (Innovation Action)*
  - *Specific reimbursement rates for programme co-fund actions (ERA-NET Cofund)*



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# Single indirect cost-model

**Single model:  
25 % Flat Rate**



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# Time to Grant

*A maximum Time-to-Grant of **8 months***

**5 months**

for informing all applicants  
on scientific evaluation

But likely earlier

**up to 8 months**

for signature of GA

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



# Admissibility criteria set in the WP

## ➤ **Proposals must be**

- submitted in the electronic submission system (no paper, email submissions)
- before the deadline
- readable, accessible and printable.

## ➤ **Proposals must be complete:**

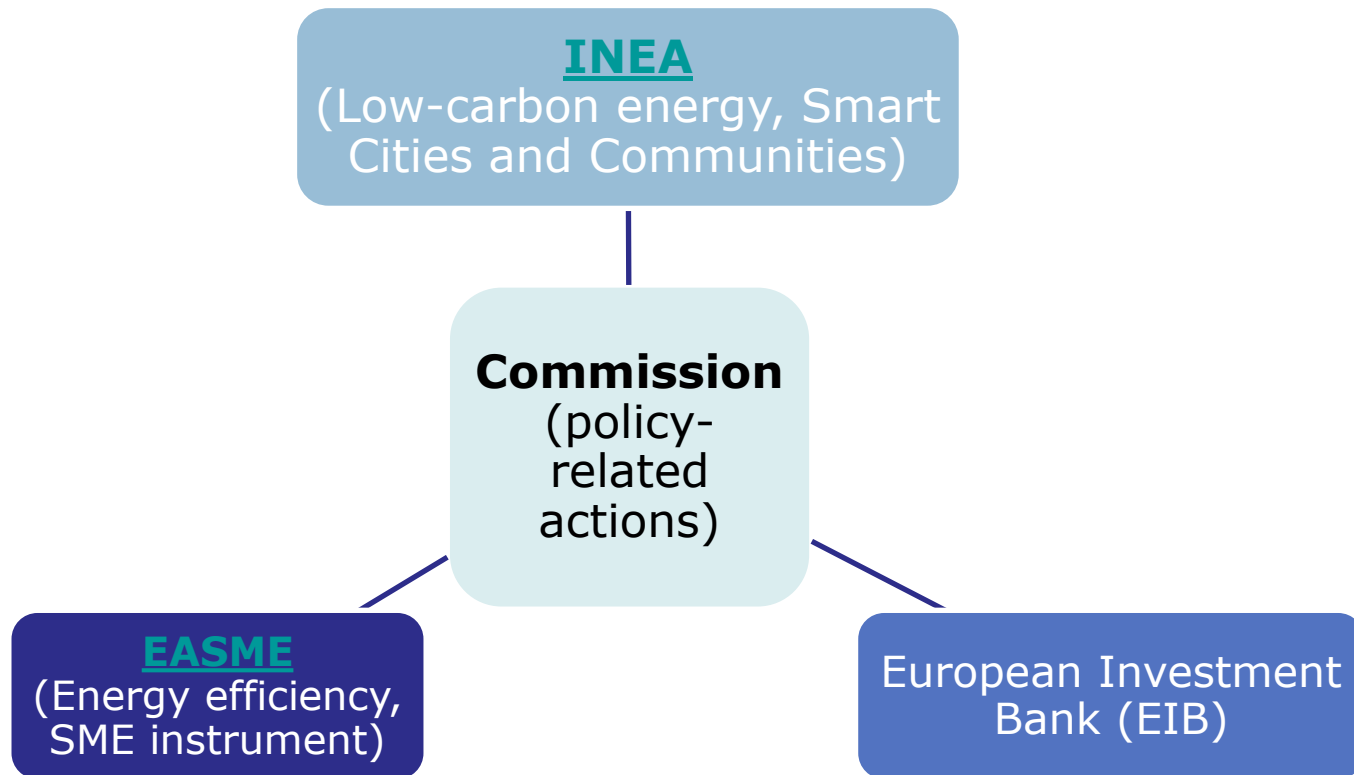
- Include administrative data, the proposal description, and any supporting documents specified in the call
- Include supporting documents for operational capacity (CVs, up to 5 prior publications/products, up to 5 prior projects, major infrastructure, third parties)
- Proposals **must** include **draft plan for the exploitation and dissemination of the results** (not required for proposals at the first stage of two-stage procedures)





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# Implementation of the Energy Challenge





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# National Contact Points (NCPs)

NCPs are in the front line for providing specialist advice and on-the-ground guidance to potential applicants

## **Main services:**

- Guidance on choosing relevant H2020 topics and types of action;
- Advice on administrative procedures and contractual issues;
- Training and assistance on proposal writing;
- Assistance in partner search.

## **Find your national NCP:**

[http://ec.europa.eu/research/participants/portal/desktop/en/support/national\\_contact\\_points.html](http://ec.europa.eu/research/participants/portal/desktop/en/support/national_contact_points.html)

[www.vinnova.se](http://www.vinnova.se), [Esa.Stenberg@vinnova.se](mailto:Esa.Stenberg@vinnova.se)

**Network of Energy NCPs:** [www.C-energy2020.eu](http://www.C-energy2020.eu)



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## More Information

### **Participants Portal**

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

### **Research Enquiry Service**

<http://ec.europa.eu/research/index.cfm?pg=enquiries>

### **Presentations of the Energy Info Day 2015**

<https://ec.europa.eu/inea/en/H2020-Energy-Infoday-presentations>

### **Horizon 2020 Homepage**

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

### **ManagEnergy** [www.managenergy.net](http://www.managenergy.net)

### **Intelligent energy for Europe** <http://ec.europa.eu/energy/intelligent/>

### **Eltis The urban mobility observatory** <http://www.eltis.org/>



# Thank you for your attention



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