



#H2020Energy

# Horizon 2020 Work Programme for Research & Innovation 2018-2020

## Smart Cities and Communities SCC1 - 2018

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European Commission – DG ENERGY

Research and  
Innovation

# Smart Cities and Communities - SCC1

- **2018** will be the **5<sup>th</sup> year of lighthouse projects** and the network is steadily growing.
- We already have **36 Lighthouse cities** and **42 Follower cities**.
- They do not operate in isolation but are **working together** in the **lighthouse collaboration network**.
- They also formed **specific task groups** to intensively work on **common topics** like:
  - **Replication**
  - **Business models**
  - **Dissemination**

2014

**GROWSMARTER**

Köln, Barcelona, Stockholm  
& Graz, Cork, Valletta, Porto, Suceava

**REMOURBAN**

Valladolid, Tepebasi, Nottingham  
& Seraing, Miskolc

**TRIANGULUM**

Eindhoven, Stavanger, Manchester  
& Prague, Leipzig, Sabadell

2015

**REPLICATE**

San Sebastián/Donostia, Firenze, Bristol  
& Lausanne, Essen, Nilufer

**SHAR-LLM**

Milano, Lisboa, London (Greenwich)  
& Burgas, Bordeaux, Warsaw

**SMARTENCITY**

Sønderborg, Tartu, Vitoria/Gasteiz  
& Asenovgrad, Lecce

**SMARTER TOGETHER**

Wien, München, Lyon  
& Sofia, Santiago de Compostela, Venezia, Yokohama,  
Kiev

2016

**mySMARTlife**

Hamburg, Helsinki, Nantes  
& Varna, Palencia, Rijeka, Bydgoszcz

**RUGGEDISED**

Rotterdam, Umea, Glasgow  
& Brno, Parma, Gdansk

2017

**STARDUST**

Pamplona, Tampere, Trento  
& Cluj-Napoca, Derry, Kozani, Litoměřice

**IRIS**

Utrecht, Göteborg, Nice Côte d'Azur  
& Vaasa, Alexandroupolis, Santa Cruz de Tenerife, Focsani

**MatchUP**

Valencia, Dresden, Antalya  
& Ostend, Herzliya, Skopje, Kerava



## Lighthouse cities and Follower cities

### ➤ Lighthouse Cities:

- should act as **exemplars**
- **help to plan and initiate** the replication of the deployed solutions in the Follower cities
- Have to be bold and **try new innovative solutions**
- get the larger part of the funds also because they bear the **first mover risk** for new solutions

### ➤ Follower Cities:

- should **actively participate** from the first moment with the aim of **replication** of good solutions

### ➤ Lighthouse Cities and Follower Cities will **closely collaborate**

## Lighthouse projects

- Consortia shall be composed of **2 lighthouse cities** and **at least 5 follower cities**.
- **By the call deadline**, all lighthouse cities **must have a validated**: i) Sustainable Energy Action Plans (SEAP) or ii) Sustainable Energy (and Climate) Action Plans (SECAP) or iii) a similar, at least equally ambitious, plan.
- A city can be funded as a lighthouse city **only once** under Horizon 2020.

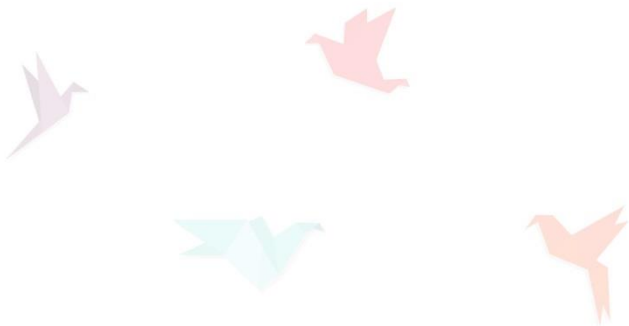
# Challenge

- **COP21, EU Energy/Climate goals**
- **Role of cities**
- Necessary **energy transition in cities**
- Increase **energy systems integration** and to push **energy performance levels** significantly



## Scope

- Deploy and test integrated innovative solutions for **Positive Energy Blocks/Districts** in the Lighthouse Cities.
- Carry out extensive **performance monitoring** (ideally for more than **2 years**)
- **Interaction and integration** between the **buildings**, the **users** and the larger **energy system**.
- Implications of increased **electro-mobility**, its impact on the energy system and its integration in planning.



## Definition Positive Energy Blocks/Districts:

- consist of several buildings (new, retro-fitted or a combination of both) that **actively manage their energy** consumption and the energy flow between them and the wider energy system.
- have an **annual positive energy balance**.
- make **optimal use of elements** such as advanced materials, local RES, local storage, smart energy grids, demand-response, cutting edge energy management (electricity, heating and cooling), user interaction/involvement and ICT.
- are designed to be **integral part of the district/city energy system** and have a positive impact on it. Their design is intrinsically **scalable** and they are well embedded in the spatial, economic, technical, environmental and social context of the project site.



## City-vision 2050

- Each Lighthouse City and Follower City will develop, together with industry, its **own bold city-vision for 2050**.
- The vision should cover **urban, technical, financial and social** aspects.
- Each vision should come with its **guide for the city** on how to move from planning, to implementation, to replication and scaling up of successful solutions.



## Proposals should also

- Focus on **mixed use** urban districts and positively contribute to the overall **city goals**
- Develop solutions that can be **replicated/gradually scaled up** to city level
- Make **local communities** and **local governments** (particularly city planning departments) an **active and integral part** of the solution, increase their **energy awareness** and ensure their **sense of ownership** of the smart solutions
- Promote **decarbonisation**, while improving **air quality**.
- Incorporate all relevant **performance data** into the Smart Cities Information System database (**SCIS**)

## Projects should also deliver:

- **Effective business models** for sustainable solutions
- **Practical recommendations** arising from project experience on:
  - regulatory, legal aspects and **data security/protection**;
  - gender and socio-economics (Social Sciences and Humanities);
  - **storage** solutions (from short-term to seasonal);
  - **big data**, data management and digitalisation;
  - **electro-mobility**: i) its **impact** on energy system and ii) appropriate city **planning** measures to support large scale roll-out;

## Eligible costs

- are primarily those that concern the **innovative elements** of the project needed to:
  - connect and integrate buildings;
  - enable Positive Energy Blocks/Districts;
  - foster innovative systems integration;
  - complement the wider energy system.



## Non eligible costs

- Costs of commercial technologies are **not eligible**, for example:
  - Buildings: purchase, construction, retrofitting and maintenance;
  - Electric vehicles and charging stations: purchase, installation and maintenance;
  - City-level ICT platforms: purchase, development and maintenance;
  - Standard, commercially-available RES: purchase, development and maintenance



## Cooperation

- Projects are expected to cooperate with **other Smart Cities and Communities projects** funded under Horizon 2020 as well as the **European Innovation Partnership on Smart Cities and Communities** (EIP-SCC).
- earmark appropriate collaboration resources (5% of the requested EU contribution)



## Expected Impact

- **Meeting EU climate mitigation and adaptation goals** and national and/or local energy, air quality and climate targets, as relevant;
- Significantly increased share of i) **renewable** energies, ii) waste **heat recovery** and iii) appropriate **storage** solutions (including batteries) and their **integration** into the energy system and iv) **reduce greenhouse gas emissions**;
- Lead the way towards wide scale roll out of **Positive Energy Districts**;
- Significantly **improved energy efficiency**, district level optimized **self-consumption**, reduced curtailment;
- Increased uptake of **e-mobility** solutions;

## Foreseen contribution from the EU

between EUR **15** to **20 million** / selected project

Submission deadline: **05 April 2018**





# Thank you!

**#H2020Energy**  
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[www.ec.europa.eu/research](http://www.ec.europa.eu/research)

Participant Portal [www](http://www)