



Calls of the Horizon 2020 Societal Challenge “Clean, secure and efficient energy” in 2019

Overview

Context

- EU Energy Policy
- SET-Plan
- Mission Innovation

Calls for proposals

- Overview

Preparing proposals

Help

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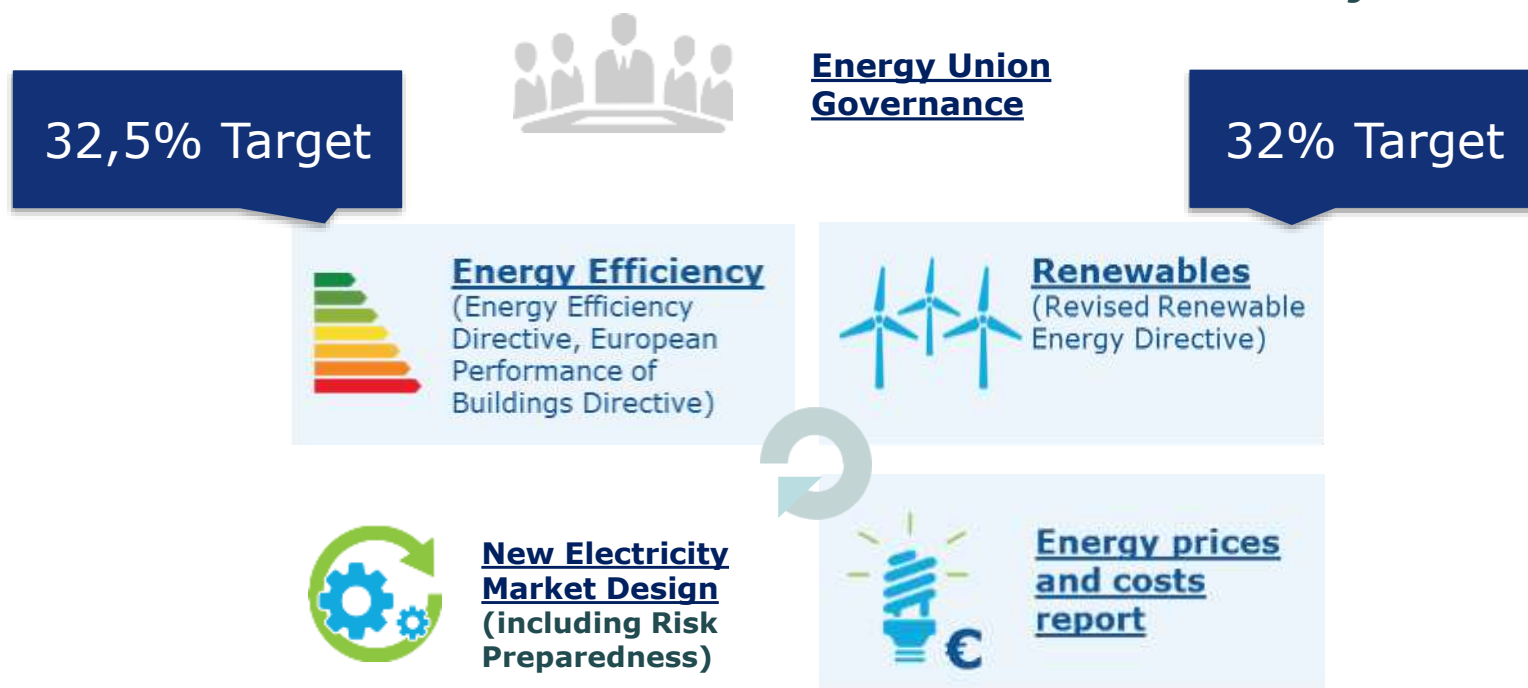
Help

Energy Union 2016 Winter Package

THE RIGHT REGULATORY FRAMEWORK FOR POST – 2020

" In essence the new package is about tapping our green growth potential across the board"

Commissioner Miguel Arias Cañete (2016)



The Strategic Energy Technology Plan (SET-Plan)



Overall objective: Accelerating the development and deployment of low-carbon technologies through cooperation among EU countries, companies, research institutions, and the EU itself, based on **common priorities, targets and actions**.

Priority Actions:

- 1+2. Improving performance and reducing cost of renewable energy
3. Smart solutions for consumers
4. Smart Resilient and Secure Energy System
5. Energy Efficiency in Buildings
6. Energy Efficiency in Industry
7. Batteries and e-Mobility
8. Renewable Fuels and Bioenergy
9. Carbon Capture Utilisation and Storage
10. Nuclear Safety

Defining priorities

- SET-Plan Communication 2015

Setting targets

- Declaration of Intent

Implementation Plans (IP)

- Temporary Working Groups

Execution of IPs

Mission Innovation - Background

Doubling governmental investment in Clean Energy RD&D over 5 years (2015-20)



- **24 Members (23 countries + EC)
of which 10 EU MS**
- *Morocco, South Africa and Argentina expressed interest to join MI.*



The EU's commitment to Mission Innovation



Doubling public funding
on clean energy research
and innovation





























































































































































Cooperating with
Mission Innovation **members**
on innovation challenges



Triggering private
investment
and innovation

Mission Innovation - Background

		Australia	Brazil	Canada	Chile	China	Denmark	EC	Finland	France	Germany	India	Indonesia	Italy	Japan	Mexico	Norway	Republic of Korea	Saudi Arabia	Sweden	The Netherlands	UAE	UK	USA
																								
1	Smart Grids Innovation Challenge																							
2	Off Grid Access to Electricity Innovation Challenge																							
3	Carbon Capture Innovation Challenge																							
4	Sustainable Biofuels Innovation Challenge																							
5	Converting Sunlight Innovation Challenge																							
6	Clean Energy Materials Innovation Challenge																							
7	Affordable Heating and Cooling of Buildings Innovation Challenge																							

Challenge 8 (new): Renewable and Clean Hydrogen Innovation Challenge

Lead

Participant

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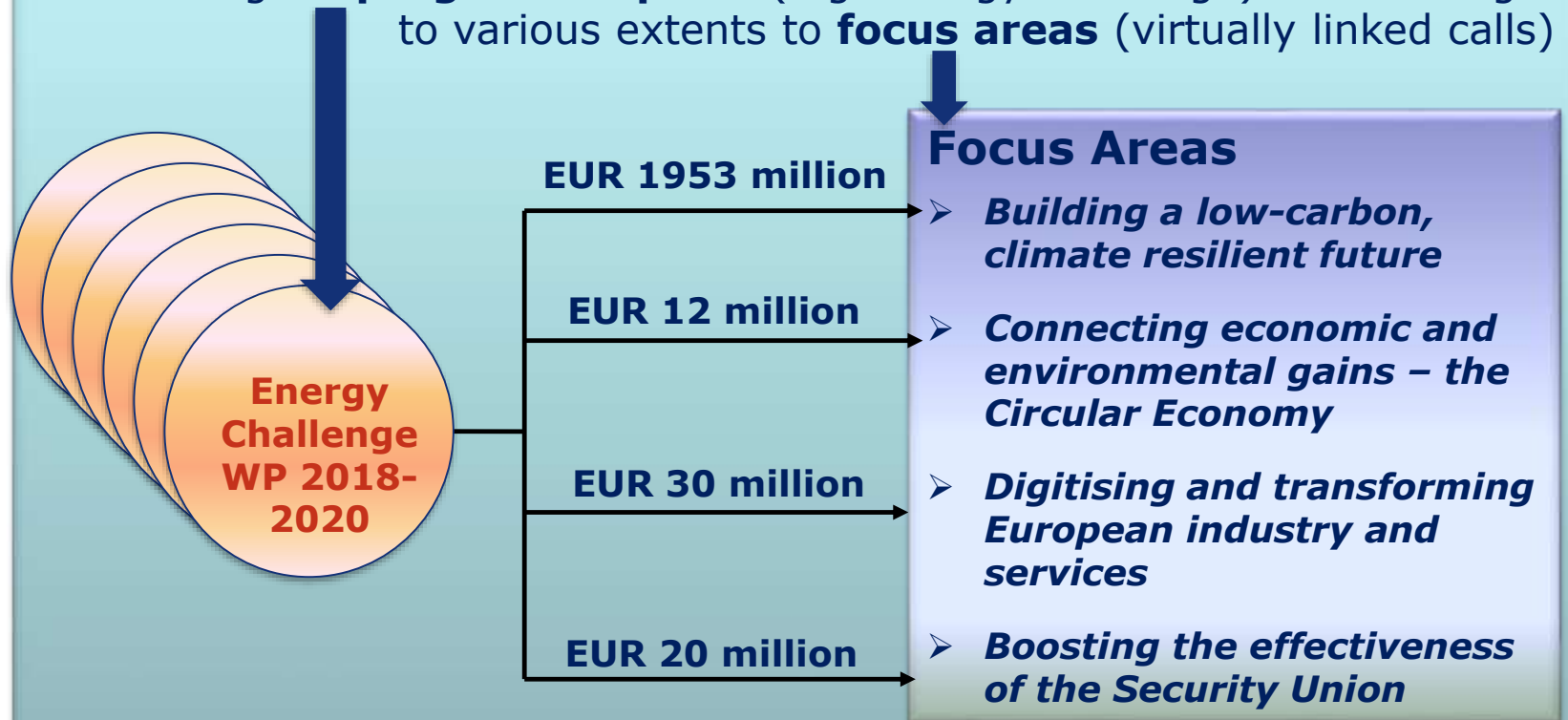
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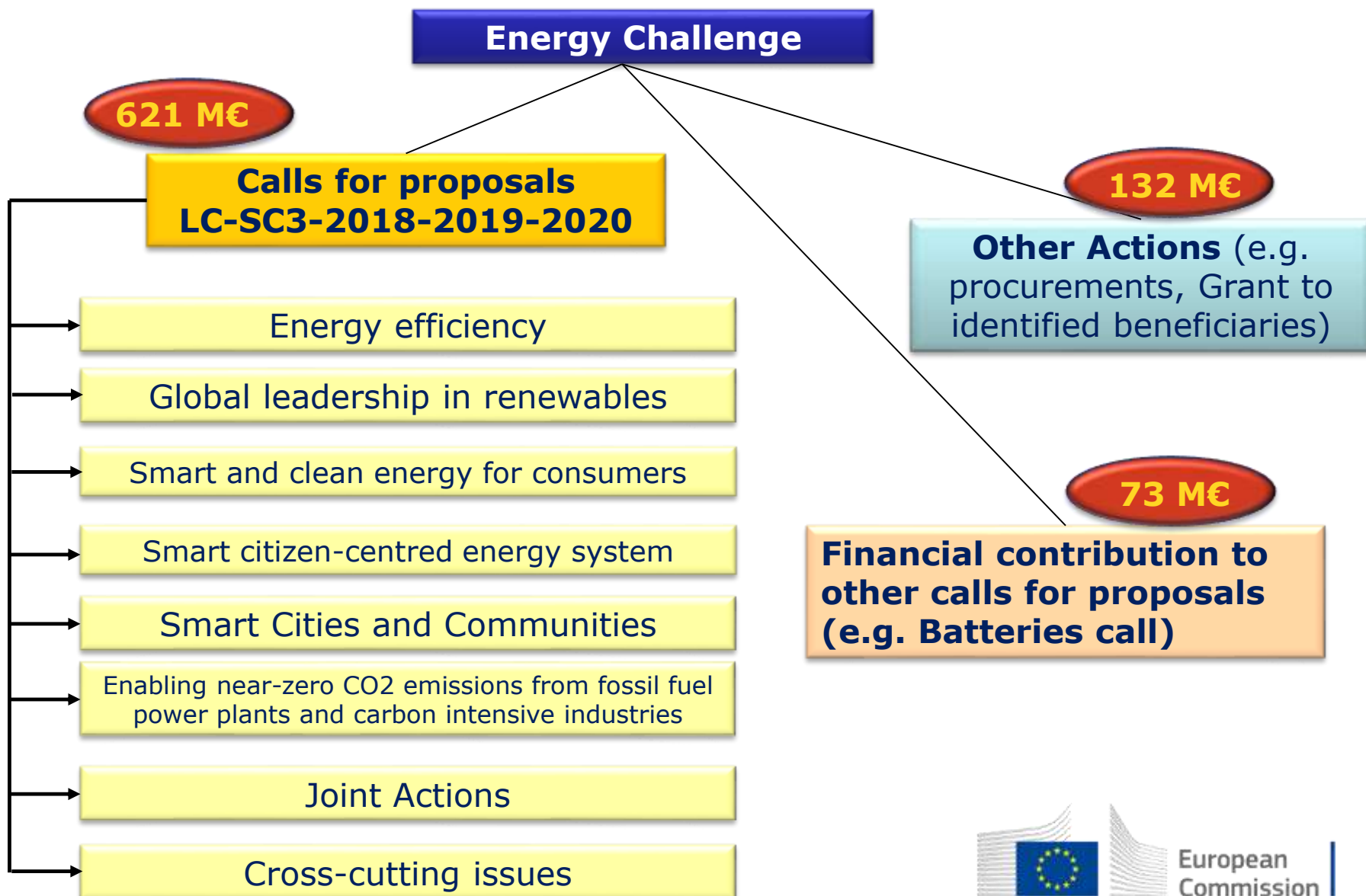
Work programme structure

Horizon 2020 work programme 2018-2020

- Total budget envelope: ~ EUR 30 billion
- Covering **18 programme parts** (e.g. Energy Challenge) contributing to various extents to **focus areas** (virtually linked calls)



Overview of Energy Challenge activities 2019



Calls for proposals LC-SC3-2018-2019-2020



Objectives

- On the supply side, **cheaper and more performant generation technologies** (e.g. renewable energy technologies) which are **better integrated** in various levels of the energy system;
- A **smarter, more flexible and resilient energy system** (including affordable and integrated energy storage solutions), taking into account current and future climate change adverse impacts;
- On the demand side, **increased overall energy efficiency** (e.g. in the EU's building stock) and provision of means to enable **consumers** to play a more active role in the energy transition;
- A better understanding of the specific **socio-economic contexts** in which the energy transition takes place which will allow to address obstacles in a more effective way;
- Increased **market-uptake of innovations**, including the implementation of energy policy, the preparation for rolling-out investments, and the support for capacity-building.

Calls for proposals LC-SC3-2018-2019-2020

Calls for proposals LC-SC3-2018-2019-2020

Energy efficiency <ul style="list-style-type: none">• Buildings• Industry• Financing• Energy source• Policy innovations 113 M€*	Global leadership in renewables <ul style="list-style-type: none">• Next generation• Consumer scale• Energy system level• Transport fuels 216 M€*	Smart and clean energy for consumers 15 M€*	Smart citizen-centred energy system 111 M€*	Smart Cities and Communities 80 M€*	Enabling near-zero CO2 emissions from fossil fuel power plants and carbon intensive industries 53 M€*	Joint Actions 21 M€*	Cross-cutting issues 12 M€*
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*Budget figures for 2019 topics only

Topics

Energy efficiency

RIA
IA
CSA
ERA-NET, PCP

Upgrading buildings' energy performance and smartness

- LC-SC3-EE-1-2018-2019-2020: Decarbonisation of the EU building stock: innovative approaches and affordable solutions changing the market for buildings renovation (12 M€)
- LC-SC3-EE-2-2018-2019: Integrated home renovation services (10 M€)
- LC-SC3-EE-3-2019-2020: Stimulating demand for sustainable energy skills in the construction sector (6 M€)
- LC-SC3-EE-4-2019-2020: Upgrading smartness of existing buildings through innovations for legacy equipment (10 M€)
- LC-SC3-EE-5-2018-2019-2020: Next-generation of Energy Performance Assessment and Certification (10 M€)

Energy efficient industry and services

- LC-SC3-EE-6-2018-2019-2020: Business case for industrial waste heat/cold recovery (5 M€)
- LC-SC3-EE-8-2018-2019: Capacity building programmes to support implementation of energy audits (5 M€)

Topics

Energy efficiency

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Energy efficiency is an investment

- LC-SC3-EE-9-2018-2019: Innovative financing for energy efficiency investments (4 M€)
- LC-SC3-EE-10-2018-2019-2020: Mainstreaming energy efficiency finance (6 M€)
- LC-SC3-EE-11-2018-2019-2020: Aggregation - Project Development Assistance (6 M€)

Energy efficiency is an energy source

- LC-SC3-EE-13-2018-2019-2020: Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side as energy resource (8 M€)
- LC-SC3-EE-14-2018-2019-2020: Socio-economic research conceptualising and modelling energy efficiency and energy demand (4 M€)

Support for policy-driven innovations

- LC-SC3-EE-16-2018-2019-2020: Supporting public authorities to implement the Energy Union (10 M€)
- LC-SC3-EE-17-2019: European City Facility - European cities as key innovation hubs to unlock finance for energy efficiency (16 M€)
- LC-SC3-EE-18-2019: Bioclimatic approaches for improving energy performance in buildings in Africa and Europe (1 M€)

Topics

Global leadership in renewables

RIA
IA
CSA
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Next Renewable energy solutions

- LC-SC3-RES-1-2019-2020: Developing the next generation of renewable energy technologies (20 M€)
- LC-SC3-RES-29-2019: Converting Sunlight to storable chemical energy (6 M€)

Renewable energy solutions for implementation at consumer scale

- LC-SC3-RES-7-2019: Solar Energy in Industrial Processes (10 M€)
- LC-SC3-RES-8-2019: Combining Renewable Technologies for a Renewable District Heating and/or Cooling System (15 M€)

Renewable energy solutions for energy system level implementation

- LC-SC3-RES-14-2019: Optimising manufacturing and system operation (20 M€)
- LC-SC3-RES-15-2019: Increase the competitiveness of the EU PV manufacturing industry (25 M€)
- LC-SC3-RES-16-2019: Development of solutions based on renewable sources that provide flexibility to the energy system (15 M€)
- LC-SC3-RES-17-2019: Demonstration of solutions based on renewable sources that provide flexibility to the energy system (40 M€)
- LC-SC3-RES-30-2019: Demonstration of plug and play solutions for renewable off-grid electricity (10 M€)

Topics

Global leadership in renewables

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Renewable Fuels for transport

- LC-SC3-RES-23-2019: Development of next generation biofuel and alternative renewable fuel technologies for aviation and shipping (20 M€)
- LC-SC3-RES-24-2019: Boosting pre-commercial production of advanced aviation biofuels (20 M€)

Market Uptake Support

- LC-SC3-RES-28-2018-2019-2020: Market Uptake support (15 M€)

Topics

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Smart and clean energy for consumers

- LC-SC3-EC-1-2018-2019-2020: The role of consumers in changing the market through informed decision and collective actions (7.5 M€)
- LC-SC3-EC-2-2018-2019-2020: Mitigating household energy poverty (7.5 M€)

Smart citizen-centred energy system

- LC-SC3-ES-1-2019: Flexibility and retail market options for the distribution grid (37.30 M€)
- LC-SC3-ES-2-2019: Solutions for increased regional cross-border cooperation in the transmission grid (25 M€)
- LC-SC3-ES-6-2019: Research on advanced tools and technological development (28.35 M€)
- LC-SC3-ES-8-2019: European Islands Facility - Unlock financing for energy transitions and supporting islands to develop investment concepts (10 M€)
- LC-SC3-ES-9-2019: ERA-NET Co-Fund Enhanced cooperation in Digitalisation of Energy Systems and Networks (10 M€)

Topics

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Smart Cities and Communities

- LC-SC3-SCC-1-2018-2019-2020: Smart Cities and Communities (83 M€)

Enabling near-zero CO2 emissions from fossil fuel power plants and carbon intensive industries

- LC-SC3-NZE-4-2019: Integrated solutions for flexible operation of fossil fuel power plants through power-to-X-to-power and/or energy storage (20 M€)
- LC-SC3-NZE-5-2019-2020: Low carbon industrial production using CCUS (33 M€)

Joint Actions

- LC-SC3-JA-2-2018-2019: Support to the realisation of the Implementation Plans of the SET Plan (1 M€)
- LC-SC3-JA-3-2019: European Pre-Commercial Procurement Programme for Wave Energy Research & Development (20 M€)

Topics

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Cross-cutting issues

- LC-SC3-CC-1-2018-2019-2020: Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition (10 M€)
- LC-SC3-CC-3-2019: Support for the opening of low-carbon energy research databases in Europe (2 M€)

Building a Low-Carbon, Climate Resilient Future: Next-Generation Batteries

- Energy storage crucial for decarbonisation of transport/energy sector
- Improvements needed for mass-market introduction
- Asia currently leading - EU has to develop a complete value chain

Topics (BAT-1 to BAT-6 all RIA)

- LC-BAT-1-2019: Strongly improved, highly performant and safe all solid state batteries for electric vehicles
- LC-BAT-2-2019: Strengthening EU materials technologies for non-automotive battery storage
- LC-BAT-3-2019: Modelling and simulation for Redox Flow Battery development
- LC-BAT-4-2019: Advanced Redox Flow Batteries for stationary energy storage
- LC-BAT-5-2019: Research and innovation for advanced Li-ion cells (generation 3b)
- LC-BAT-6-2019: Li-ion Cell Materials & Transport Modelling
- LC-BAT-7-2019: Network of Li-ion cell pilot lines (CSA)

Energy across Horizon 2020

Energy is also addressed in many Horizon 2020 parts

Bottom-up activities

- European Research Council (ERC)
- European Innovation Council (SME instrument, FTI pilot, FET, Prizes)
- Marie-Sklodowska Curie Actions

Industrial Leadership

- Materials
- PPPs on Energy-efficient Buildings and SPIRE
- Information and Communication Technologies
- Space (Galileo)

Societal Challenges (SC)

- SC2: Bioeconomy, Blue Growth
- SC4: Electric vehicles, Batteries, Energy-efficient transport
- SC5: Cities, Earth observation, raw materials, climate change mitigation strategies
- SC7: Cybersecurity, Critical energy infrastructure

-> Please check also calls of other Horizon 2020 parts!

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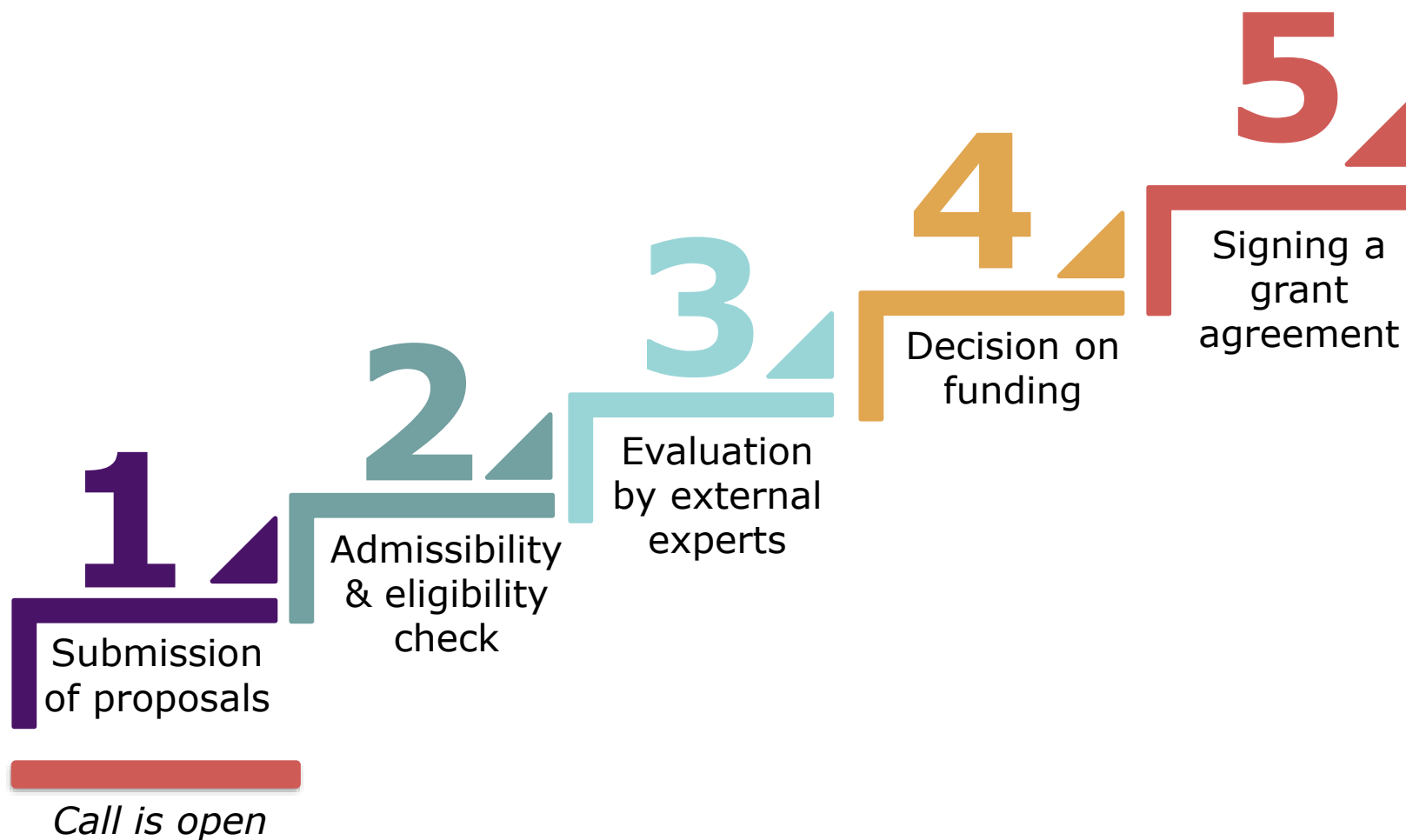
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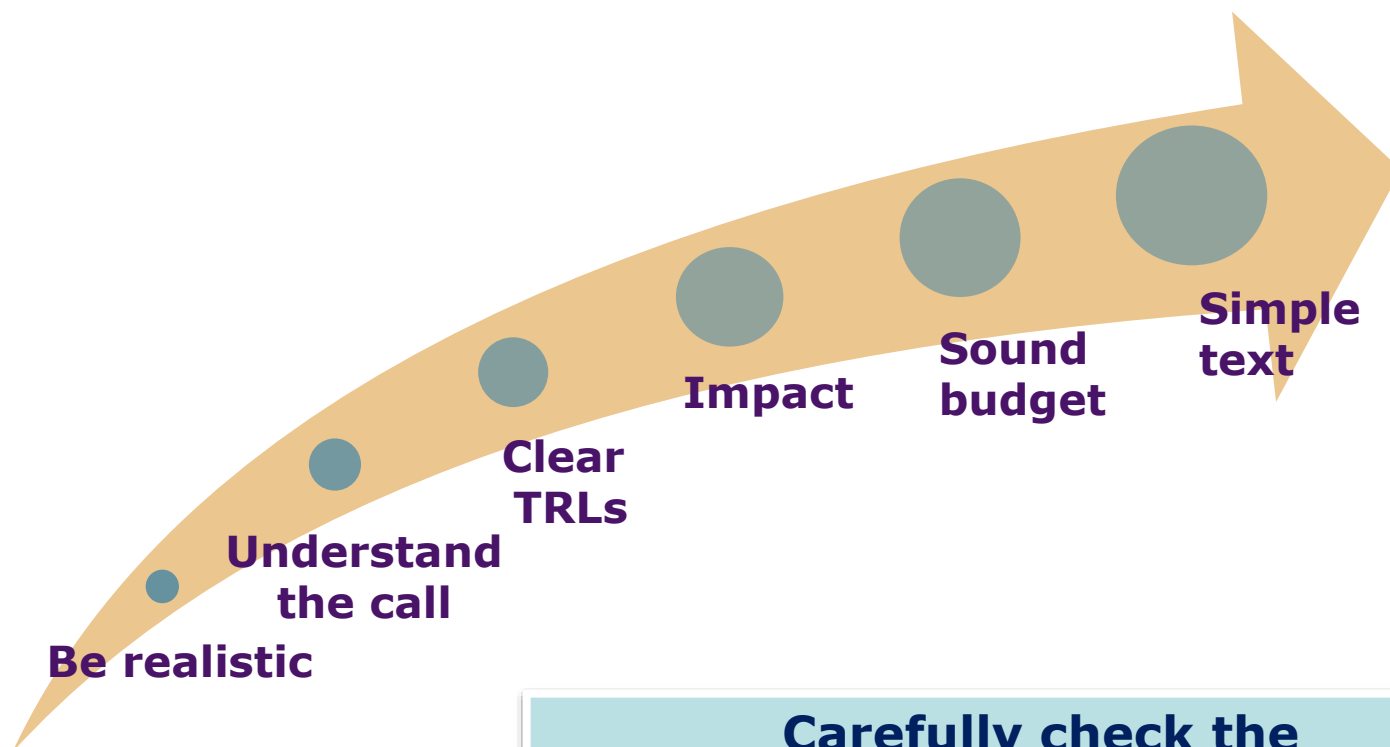
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5 steps of the selection process



6 steps to a successful proposal



**Carefully check the
Admissibility and Eligibility criteria!**

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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

Network of Energy NCPs: www.C-energy2020.eu



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 Horizon 2020 Energy Info Days 2017 and 2018 (see below)

Horizon 2020 Homepage:

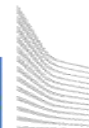
<http://ec.europa.eu/programmes/horizon2020/>

Info Days:

2017: <https://ec.europa.eu/easme/en/horizon-2020-secure-clean-and-efficient-energy-info-day>

2018: <https://ec.europa.eu/inea/en/news-events/events/horizon-2020-energy-info-day>

<https://ec.europa.eu/inea/en/news-events/events/horizon-2020-energy-virtual-info-day>



European
Commission



Thank you for your attention!

Questions?