Horizon 2020 Energy Challenge (SC3)

Calls for proposals 2020

#H2020Energy
info days

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Clean Energy Transition

Research and Innovation

Content

- **Policy framework**
- **Horizon 2020 energy calls 2020**
- **Submitting a proposal**
- **Resources for help**

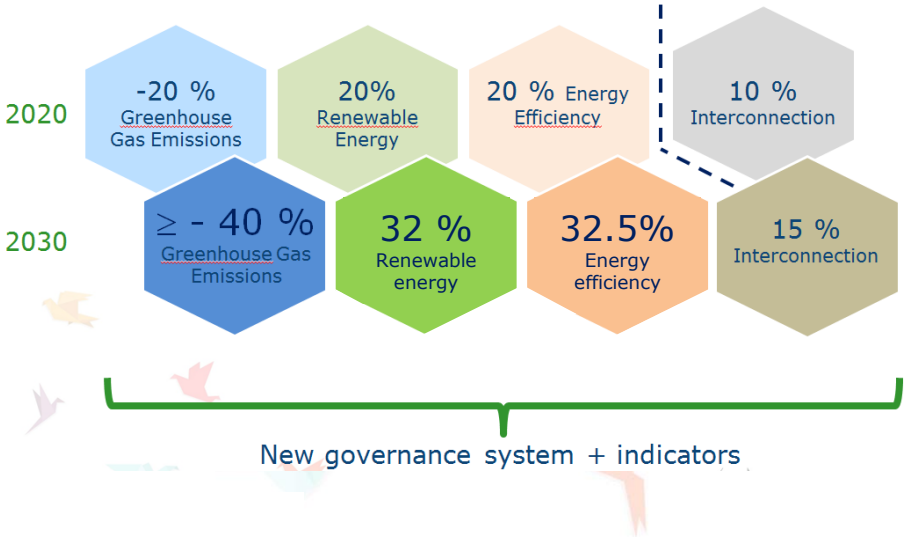
European Commission

Policy Framework

"Clean Energy for all Europeans"

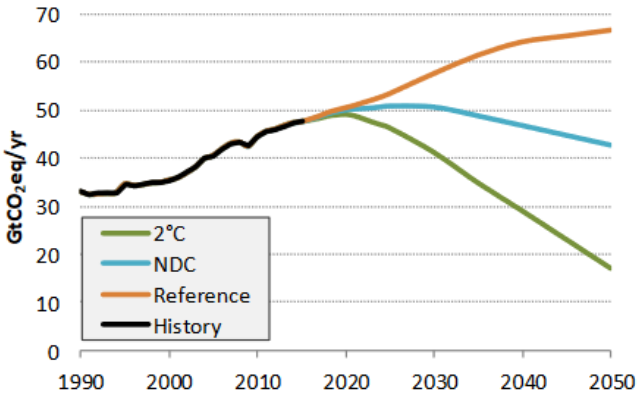
- *Putting energy efficiency first*
- *Demonstrating global leadership in renewables*
- *Delivering a fair deal for consumers*

Agreed headline targets



Paris Agreement

*Holding the increase in the global average temperature to **well below 2°C** above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels*



Source: POLES-JRC model, included in 'Clean Planet for All' (EC, 2018)

EU long-term vision for climate-neutral economy ('Clean Planet for all')

Other EU policy priorities

- Digital Single Market
- Jobs, Growth and Investments
- EU as a strong global actor
- …

European Commission

Policy Framework

Accelerating Clean Energy Innovation

- Mission Innovation
- EU-Africa cooperation

EU's global role

- Subsidies
- Innovation-principle
- Public Procurement
- Standards

Policy Signals

"Accelerating Clean Energy Innovation"
(COM(2016)763)

Funding Energy Science and Technology

> EUR 2.2 billion in H2020 (2018-2020) on:

- Decarbonising EU building stock by 2050
- Strengthening EU leadership in renewables
- Affordable and Integrated energy storage
- E-mobility and more integrated urban transport systems

European Innovation Council

Financial Instruments

- InnovFin EDP
- EFSI

European Commission

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 Intents

Implementation Plans (IP)
- Temporary Working Groups

Execution of IPs

European Commission

Policy Framework

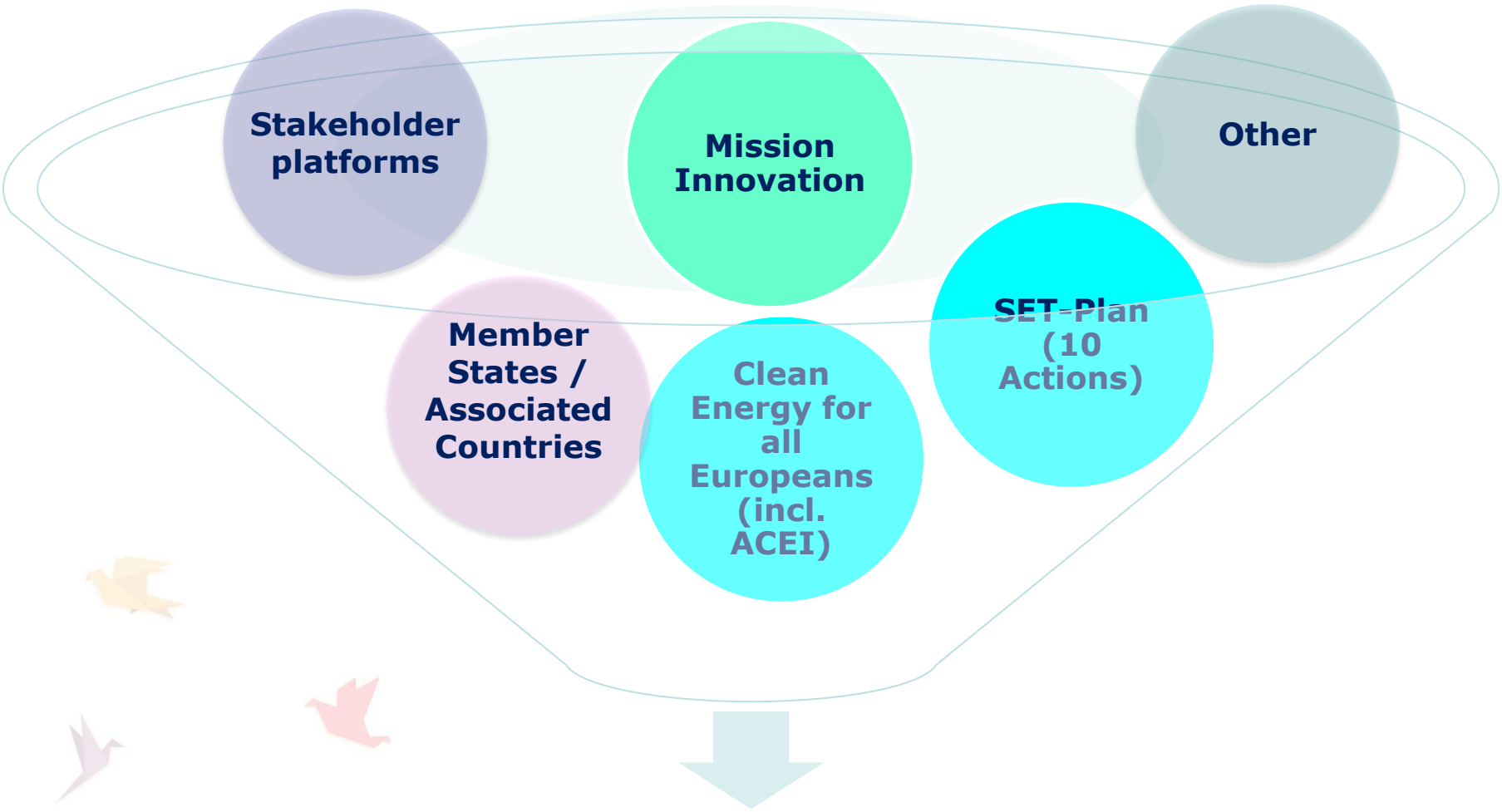
Mission Innovation

Overall objective: To reinvigorate global efforts in clean energy innovation, Mission Innovation members share a common goal to **develop and scale** breakthrough technologies and substantial **cost reductions**. MI members aim to seek to **double public clean energy research and development investment** over five years.

		Australia	Austria	Brazil	Canada	Chile	China	Denmark	European Union	Finland	France	Germany	India	Indonesia	Italy	Japan	Mexico	Morocco	Netherlands	Norway	Republic of Korea	Saudi Arabia	Sweden	United Arab Emirates	United Kingdom	United States
1	IC1: Smart Grids Innovation Challenge	●	●	●	●		●	●	●	●	●	●	●	●	●		●			●	●	●	●		●	●
2	IC2: Off-Grid Access to Electricity Innovation Challenge	●		●	●		●		●	●	●		●	●	●		●		●	●	●	●	●		●	●
3	IC3: Carbon Capture Innovation Challenge	●			●		●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●
4	IC4: Sustainable Biofuels Innovation Challenge	●		●	●		●		●	●	●		●	●	●		●		●	●			●		●	●
5	IC5: Converting Sunlight Innovation Challenge	●		●	●	●	●	●	●	●	●	●	●		●	●	●			●		●	●	●	●	●
6	IC6: Clean Energy Materials Innovation Challenge	●			●			●	●	●	●	●	●		●		●			●	●	●	●		●	●
7	IC7: Affordable Heating and Cooling of Buildings Innovation Challenge	●	●	●	●		●	●	●	●	●	●	●		●		●		●	●	●	●	●	●	●	●
8	IC8: Renewable and Clean Hydrogen Innovation Challenge	●	●		●	●	●		●		●	●	●		●	●			●	●		●			●	●

● Lead ● Participant

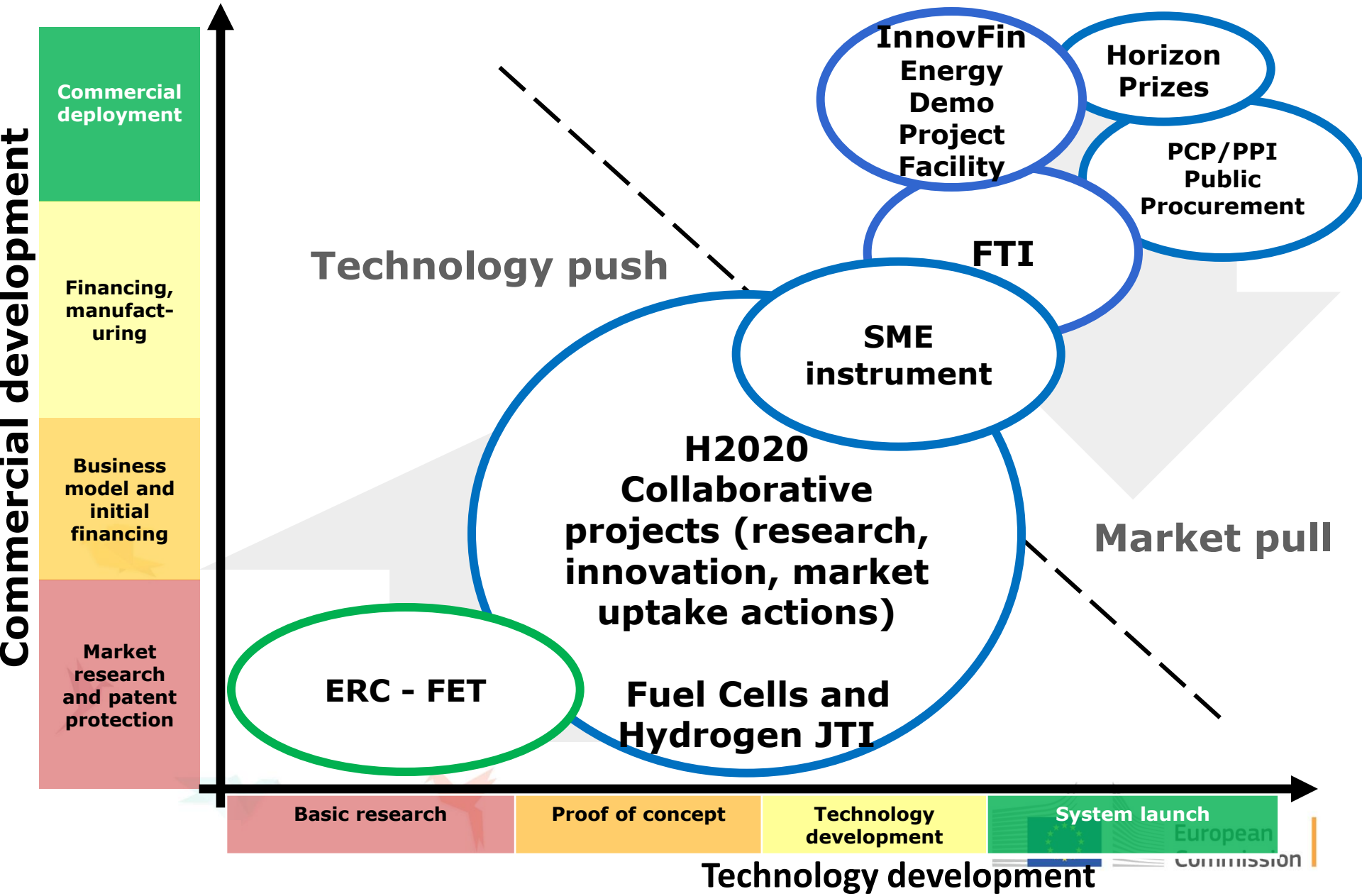
Inputs to the work programme 2018-2020



Energy calls 2018-2020

European Commission

Horizon 2020 Toolbox



Energy Challenge (SC3) calls 2020: targeted impact

Deliver on:

- Paris Agreement
- Energy Union (including Clean Energy for all Europeans, and ACEI)
- EU Long-term vision for climate-neutral economy
- Digital Single Market; and Jobs, Growth and Investments

Targeted impacts:

Clean energy transition

Improving energy efficiency Advancing efficient solutions for buildings, industry, products; removing non-technological barriers

Global leadership in renewables Decreasing costs, improving performance, facilitating market-uptake of renewable solutions

Integrating the European energy system better integration of renewables; more active role of consumers

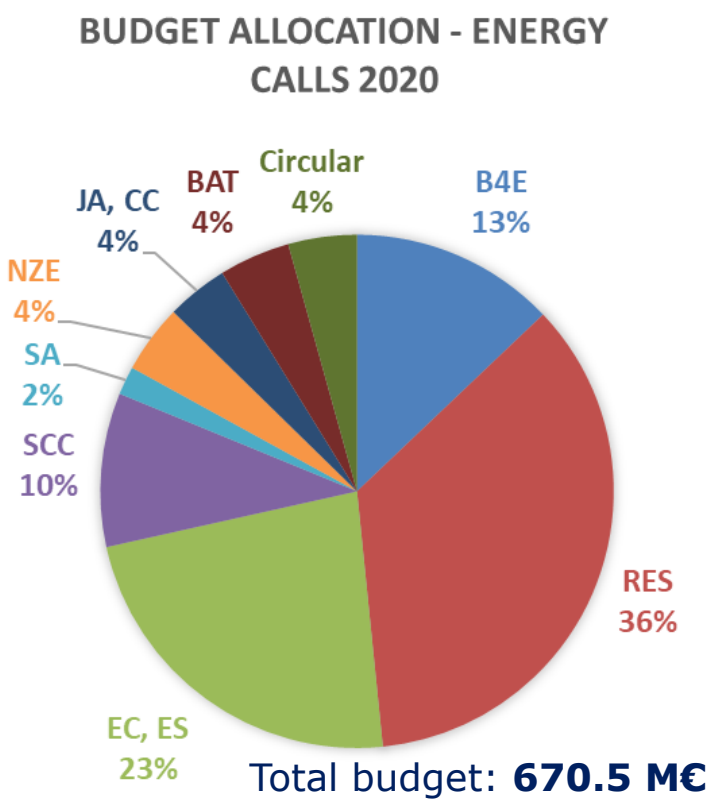
Reduce impact of fossil fuels use on the climate and environment

Understanding the **social & economic dimension**

European Commission

Energy Challenge (SC3) calls 2020: Overview

Buildings in energy transition (B4E)	• 14 topics – total budget: 86.5 M€
Renewable energy (RES)	• 18 topics – total budget: 238 M€
Energy system and consumer (EC, ES)	• 10 topics – total budget: 155 M€
Smart Cities and Communities (SCC)	• 2 topics – total budget: 65 M€
Smart Airports (SA)	• 1 topic – budget: 12 M€
Decarbonisation of fossil fuels (NZE)	• 1 topic – budget: 29 M€
Cross-cutting issues (JA, CC)	• 3 topics – total budget: 26 M€
Batteries call (BAT)	• 2 topic – total budget: 30 M€
Circular economy call	• 2 topics – total budget: 29 M€



Total budget: **670.5 M€**

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!

European Commission

Horizon Prizes

EIC Prizes

- **Innovative Batteries for eVehicles (€ 10 M)** (close: 4th quarter 2020)
- **Fuel from the Sun: Artificial Photosynthesis (€ 5 M)** (close: 1st quarter 2021)

Energy Challenge Prize

- **RESponsible Island (€ 1.7 M)**
  (close: 1st round: September 2019;
  2nd round: September 2020)

Horizon Prizes *set an ambitious goal, without saying how that goal should be achieved or who should achieve it.*

The prize is awarded to whoever can most effectively meet a defined challenge.

European Commission

Content

- **Policy framework**
- **Horizon 2020 energy calls 2020**
  - Renewable Energy Solutions (RES)
  - Enabling Near-Zero Emission s from fossil fuel plants and carbon intensive industries (NZE)
  - Cross-cutting issues (CC)
- **Submitting a proposal**
- **Resources for help**

European Commission

Global leadership in renewables

Next renewable energy solutions

- **RES-1, RES-3**

Renewable energy solutions at consumer scale

- **RES-9, RES-10**

Renewable energy solutions for energy system implementation

- **RES-18, RES-19, RES-20, RES-31, RES-32, RES-33, RES-34, RES-35**

Renewable fuels for transport

- **RES-25, RES-26, RES-27, RES-36, RES-37**

Market Uptake Support

- **RES-28**

European Commission

Next Renewable energy solutions

The focus of these actions is to:

- support research activities aiming at identifying renewable energy breakthroughs that will feed the innovation cycle and become the basis of the next generation of EU technologies.

Up to TRL 3 or TRL 4

Size: 2-4 M€

RIA

Ind. Budget: 45M€

LC-SC3-RES-1-2019-2020: Developing the next generation of renewable energy technologies

Scope:

- focus on converting renewable energy sources into an energy vector, or the direct application of renewable energy sources.
- bottom-up proposals addressing any renewable technology currently in the early phases of research.
- activities also might include energy materials, catalysts, enzymes, microorganisms, models, tools and equipment, as long as those are strictly connected to the energy conversion process
- clearly address the following related aspects: lower environmental impact, better resource efficiency than current commercial renewable technologies, issues related to social acceptance or resistance to new energy technologies, related socioeconomic and livelihood issues

Up to TRL 3 or TRL 4

Size: 2-4 M€

RIA

Ind. Budget: 10M€

The ranking of the successful proposals will ensure that a balanced portfolio of activities is covering both cooperation with USA and China

Mission Innovation

LC-SC3-RES-3-2020: International Cooperation with USA and/or China on alternative renewable fuels from sunlight for energy, transport and chemical storage

Scope:

- international cooperation with the USA and/or China on targeted research activities
- advanced biofuels and alternative renewable fuels for energy and transport through photochemical/ photobiological or electrochemical reaction
- The proposals will develop breakthrough artificial photosynthesis technologies in terms of sunlight conversion efficiency for the production of energy carriers (other than electricity) with either de-novo synthetic biological and artificial/biochemical hybrid systems or novel photo-catalysis or photo-electro catalysis coupled with CO2 reduction
- Use of external renewable electricity or electricity generated by sunlight with PV or CSP to produce the carriers is excluded

European Commission

Renewable energy solutions for implementation at consumer scale

The focus of these actions is to:

- Solutions explored under this line of intervention consider holistically the consumer energy needs, from electricity generation to heating and cooling services, aiming to develop near-zero fossil energy solutions for buildings and districts.
- The solutions should allow for a significant part of the energy to be consumed at the place of production, fostering the emergence of the energy prosumers and therefore enabling the consumer participation into the energy transformation

From TRL 4-5 to TRL 6-7

Size: 5-7 M€

IA

Ind. Budget: 20M€

LC-SC3-RES-9-2020: Next generation of thin-film photovoltaic technologies

Scope:

- demonstrate alternative thin-film (including multilayer) technologies that can yield high-efficiency devices with expanded lifetime, through simple fabrication processes and the use of earth-abundant, low-cost materials complying with the RoHS guidelines.
- include a business case and exploitation strategy, as outlined in the Introduction to the LEIT part of this Work Programme.

Size: 8-15 M€

PCP

Ind. Budget: 15M€

Energy Performance of Buildings Directive

Nearly Zero-Energy Buildings (NZEBs).

LC-SC3-RES-10-2020: Pre-Commercial Procurement for a 100% Renewable Energy Supply

Scope:

- to bring radical improvements to the quality and energy performance of existing **public buildings** by encouraging the development and validation of breakthrough solutions through Pre-Commercial Procurement.
- developing novel components and configurations to generate in an existing public building energy from renewable sources so that 100% of the energy consumption of the building (electricity, heat and cooling).

European Commission

Renewable energy solutions for energy system level implementation

The focus of these actions is to:

- reduce capital and operational costs, to increase reliability and to provide flexibility to the energy system.
- Solutions should be implemented at the system level, namely in those cases where the renewable energy that is inserted into the network, is to be transmitted and distributed to the end user and not, or only in minimal part, used for self-consumption

From TRL 3-4 to TRL 4-5

Size: 2-4 M€

*RIA – **Lump Sum***

Ind. Budget: 8M€

LC-SC3-RES-18-2020: Advanced drilling and well completion techniques for cost reduction in geothermal energy

Scope:

- novel non-mechanical drilling technologies required for applications on all types of geological formations and with the ability to reach cost-effectively greater depths and higher temperatures (i.e. beyond 5 km and 250°C)
- or develop new mechanical-drilling operation technologies making use of digitisation, automation, machine learning, and innovative instrumentation.
- Risk assessment and lifetime analysis
- Innovative systems to avoid and/or reduce discharge of geothermal fluids into the environment should be considered

SET Plan

European Commission

Up to TRL 6-8

Size: up to 25 M€

IA

Ind. Budget: 25M€

LC-SC3-RES-19-2020: Demonstration of innovative technologies for floating wind farms

Scope:

- demonstration of floating offshore wind innovations (such as blades, floaters, moorings, electrical subsystems and cabling, monitoring systems, and/or integrated systems, including whole wind turbines specifically conceived for floating offshore)
- Different sea and weather conditions shall be considered.
- improve industrial design and manufacturing processes, installation methods and operation & maintenance
- >10MW

European Commission

Up to TRL 6

Size: 6-10 M€

IA

Ind. Budget: 10M€

LC-SC3-RES-20-2020: Efficient combination of Concentrated Solar Power and desalination (with particular focus on the Gulf Cooperation Council (GCC) region)

Scope:

- demonstrate efficient solutions that couple the thermal cycle of a CSP plant to a water desalination system
- international cooperation is encouraged, in particular with Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The participation of organisations from these countries as partners in the project will be positively evaluated.

European Commission

Up to TRL 4-5

Size: 2-4 M€

RIA

Ind. Budget: 8M€

LC-SC3-RES-31-2020: Offshore wind basic science and balance of plant

Scope: address one or more of the following research areas for offshore wind

- Atmospheric multi-scale flow modelling (from meso-scale to wind farm flows);
- Understanding and modelling key uncertainties and physical phenomena of offshore wind energy design and operation
- High performance computing and digitalisation
- Development and validation of models of structural damage and degradation
- Numerical and test methods for accurate assessment of system and component reliability when introducing new materials and technologies
- Other offshore balance of plant aspects related to the manufacturing, construction, installation and/or decommissioning

SET Plan

European Commission

Size: 2-5 M€

RIA

Ind. Budget: 8 M€

LC-SC3-RES-32-2020: New test rig devices for accelerating ocean energy technology development

Scope:

- generate one or more new test rig prototype devices including novel test procedures that should be used by multiple ocean energy technology developers, and facilitate design convergence
- to connect and integrate the various capacities and resources of the beneficiaries and other ongoing European and national projects in the proposed research areas

From TRL 6-7 to TRL 7-8

Size: 6-10 M€

IA

Ind. Budget: 20 M€

LC-SC3-RES-33-2020: Increase performance and reliability of photovoltaic plants

Scope:

- develop and demonstrate technical solutions, processes and models, which increase a PV system's operational stability and reliability, allowing for higher PV penetration levels
- address specific objectives such as the reliability of system components, advanced and automated functions for data analysis, diagnosis and fault detection, forecasting and model-predictive control frameworks, ancillary services for the stability of the network; maintenance planning and/or reporting; interoperability of plants and components; business models; etc

From TRL 6-7 to TRL 7-8

Size: 7-10 M€

IA

Ind. Budget: 10 M€

LC-SC3-RES-34-2020: Demonstration of innovative and sustainable hydropower solutions targeting unexplored small-scale hydropower potential in Central Asia

Scope:

- demonstrate innovative hydropower equipment exploiting unexplored small-scale hydropower potential in Central Asia up to 10 MW installed capacity by means of sustainable and cost-effective small-scale hydropower solutions
- the demonstration activities shall take place in Central Asia (Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan or Uzbekistan), with participation of local partners
- socio-economic and environmental sustainability and impact, and engagement of local civil society
- contribute positively to the regional cross-border Water/Food/Energy/Climate nexus and refer to embedded sustainable hydropower auxiliary services

Up to TRL 6-8

Size: 5-10 M€

IA

Ind. Budget: 10 M€

LC-SC3-RES-35-2020: Reduce the cost and increase performance and reliability of CSP plants

Scope:

- demonstrate innovations that reduce the cost and/or increase the performance and/or the reliability of CSP plants, in relation to any of the plant subsystems
- state clearly to which R&I Activity (or Activities) of the Implementation Plan for CSP they contribute
- impacts on the environment of the proposed innovations shall be assessed during the execution of the project

SET Plan

European Commission

Renewable Fuels for transport

The focus of these actions is to:

- address the competitiveness of the next generation of biofuels and renewable fuel technologies as well as the up-scaling of advanced biofuels for specific transport needs in a cost-effective way. Furthermore, they aim at achieving European leadership in global development of specific disruptive technologies for a complete ultimate replacement of fossil fuels.

Up to TRL 3

Size: 2-5 M€

RIA

Ind. Budget: 5 M€

LC-SC3-RES-25-2020: International cooperation with Japan for Research and Innovation on advanced biofuels and alternative renewable fuels

Scope:

- international cooperation with Japan involving Japanese organisations in the consortia
- development of disruptive catalytic technologies, by developing novel catalysts
- significantly improved performance for conversion efficiency
- specific marginal cost reduction for obtaining low-cost bioenergy carriers, non-food/feed based advanced biofuels and alternative renewable fuels (excluding hydrogen) and maximizing GHG abatement

Mission Innovation

European Commission

From TRL 3-4 to TRL 4-5

Size: 3-5 M€

RIA

Ind. Budget: 8 M€

LC-SC3-RES-26-2020: Development of next generation renewable fuel technologies from CO2 and renewable energy (Power and Energy to Renewable Fuels)

Scope:

- develop next generation renewable fuels for energy and transport, which
- improve substantially (beyond the state-of-the-art),
- the performance regarding energy efficiency as well as cost of the conversion of direct renewable energy (e.g., sunlight) or renewable electricity and /or heat to liquid or gaseous renewable fuels from CO_2.
- Targeted fuels should also provide very low engine-out emissions

European Commission

From TRL 5 to TRL 6-7

Size: 6-10 M€

IA

Ind. Budget: 10 M€

LC-SC3-RES-27-2020: Demonstration of advanced biofuels production from aquatic biomass

Scope:

- demonstrate aquatic advanced biofuel pathways which improve the economic viability of the subsequent energy production, including the upgrading technologies and valorisation of co-products
- scale of 100-1000 tonnes from seaborne aquatic biomass such as macro-algae and/or fish residues in an energy-driven integrated biorefinery concept,
- demonstrate the full value chain with achievement of at least 70% energy output (fuel, heat and power)
- environmental sustainability based on a life-cycle assessment
- Long-term potential for large scale biofuel production should be considered

European Commission

From TRL 3 to TRL 5

Size: 3-5 M€

RIA

Ind. Budget: 5 M€

All types of non-food/feed biomass including forestry, agricultural and their residues, organic fractions of municipal and industrial wastes can be targeted.

LC-SC3-RES-36-2020: International cooperation with Canada on advanced biofuels and bioenergy

Scope:

- international cooperation with Canada for fostering the deployment of advanced biofuels and bioenergy while substantially decreasing the costs of the feedstock supply or the conversion process
  - **Development of the full supply chain of biomass-to-bioenergy applications including intermediate bioenergy carriers, advanced biofuels, heat and power generation. Sustainable biomass production and collection strategies that facilitate sustainable bioenergy production and decrease feedstock supply costs will be included,**
  - **Thermochemical, biochemical and chemical processing of sustainable biomass to advanced biofuels focusing on the pre-treatment and the conversion process and in particular on reducing the respective marginal cost**

European Commission

From TRL 3-4 to TRL 4-5

Size: 2-4 M€

RIA

Ind. Budget: 6 M€

given the world-wide applicability of this specific challenge, international cooperation is encouraged

LC-SC3-RES-37-2020: Combined clean biofuel production and phytoremediation solutions from contaminated lands worldwide

Scope:

- bridge the gap between phytoremediation strategies and clean liquid biofuel production.
- optimise energy crops for phytoremediation by targeting different classes of known soil pollutants and integrate in the conversion process to biofuels a strategy to extract these pollutants in concentrated form
- overall process will be optimized in terms of cost and sustainability.
- Pilot-scale, small trials are expected for both clean biofuel production and phytoremediation processes

Market Uptake Support

- Challenges exist for renewable energy to realise its full potential in all sectors and accelerate the clean energy transition, playing a crucial role in leading to an increased share of renewable energy consumed in the EU and to a more active role for the consumers.
- The introduction and deployment of renewable energy at large scale requires overcoming a number of barriers.
- The challenges are also related to creating a renewable energy sector fit for massive deployment in the market, which means ensuring that complete value chains for a broad range of renewable energy technologies are in place,

Size: 1-3 M€

CSA

Ind. Budget: 25 M€

LC-SC3-RES-28-2018-2019-2020: Market Uptake support

Scope:

- develop solution(s) addressing one or more of the identified challenge(s), for the entire renewable energy sector or focusing on a specific energy market, such as electricity, heating, cooling or renewable fuels.
- solution can be developed to address a local challenge but should have wide potential for reapplication
- solution must have a long term viability and not be limited to an ad-hoc fix
- the consortia have to involve and/or engage relevant stakeholders and market actors who are committed to adopting/implementing the results

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

Topic code	Keywords	Instru-ment	Total budget	~ Budget / project
NZE-6	Identification and geological characterisation of new prospective storage sites for CO2; CO2 storage pilots	RIA	14 M€	7-10 M€

LC-SC3-NZE-6-2020: Geological Storage Pilots

Scope:

- to carry out the identification and geological characterisation of new prospective storage sites for CO2
- To result in new data, knowledge and detailed models of potential storage complexes and their response to dynamic pressurisation
- Detailed plans should propose site-specific solutions for CO2 injection strategies, pressure management, mitigation of induced seismicity, and MMV (measurement, monitoring and verification).
- projects are expected to identify and engage relevant end users and societal stakeholders and analyse their concerns and needs

SET Plan

European Commission

Joint Actions; Cross-cutting issues

Topic code	Keywords	Instru-ment	Total budget	~ Budget / project
JA-5	Long Term EU-Africa Partnership for Research and Innovation actions in the area of renewable energy; strategic and joint research and innovation actions and related research capacity building actions	RIA	15 M€	15 M€

Topic code	Keywords	Instru-ment	Total budget	~ Budget / project
CC-1	Social Sciences and Humanities, Energy citizenship	RIA	10 M€	1-3 M€
CC-7	European Energy & Climate Modelling Forum, model benchmarking and comparison	RIA	5 M€	5 M€

LC-SC3-JA-5-2020: Long Term EU-Africa Partnership for Research and Innovation actions in the area of renewable energy

Scope:

- establish a long term partnership through the implementations of a series of strategic and joint research and innovation actions, and their related research capacity building actions, whose development has been conceptualised and whose essential elements have been so far developed by the project PRE-LEAP-RE
- activities include adaptation of renewable energy technologies to the African environmental, social and economic conditions through joint research efforts on renewable energy technologies
- The range of activities supported shall address the broad range elements identified in the preparatory phase and shall include a well-balanced set of research projects, demonstration projects, technology transfer projects, and also include provisions for exchange of researchers between MSs/ACs and African actors
- A rolling annual programme of activities will be an annual deliverable detailing the breakdown of activities for each year based on the overall programme of activities

LC-SC3-CC-1-2018-2019-2020: Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition

Scope: Energy citizenship

- Is energy citizenship more likely to emerge locally, or at regional, national or supranational levels? For what reasons?

- What is the relative importance of processes internal to relevant social groups (e.g., creating trust and connection, finding shared goals and solutions, building coalitions), as opposed to external environmental variables (e.g., relative openness of institutional or corporate environments, availability of sympathetic interlocutors, access to financial or other sources of support, legal or other obstacles)?

- What impact does the digitisation of the energy system and the proliferation of social media have on the emergence and consolidation of energy citizenship?

- Under what conditions is energy citizenship conducive to reaching broader policy goals, particularly the decarbonisation of the energy system, and under what conditions does it have the opposite effect?

Cross-cutting issues

Fuel Cells and Hydrogen

- Activities specifically targeting Fuel Cells and Hydrogen are **not** supported in the Energy Challenge work programme 2018-2020, but through calls for proposals of the **Fuel Cells and Hydrogen JU** (http://www.fch.europa.eu/)
- **But**, for topics included under the areas "Smart citizen-centred energy" and "Smart Cities and Communities", **system costs related to the integration of mature hydrogen based technologies for the purpose of integrated demonstration in a topic are eligible**.

Open research data

- Grant beneficiaries will engage in **research data sharing by default**
- Participants **may however opt out** of these arrangements, both before and after the signature of the grant agreement.

European Commission

Competitive, low carbon and circular industries

Topic code	Keywords	Instru-ment	Total budget	~ Budget / project
CC-9	Industrial (Waste) Heat-to-Power conversion	IA	14 M€	12-14 M€
NZE-5	Low carbon industrial production using CCUS	RIA	15 M€	15 M€

LC-SC3-NZE-5-2019-2020: Low carbon industrial production using CCUS

Scope:

- focus on integrating CO2 capture in industrial installations, whilst addressing the full CCUS chain.
- Projects will elaborate a detailed plan on how to use the results, i.e. the subsequent transport, utilisation and/or underground storage of the captured CO2
- Technology development has to be balanced by an assessment of the societal readiness towards the proposed innovations.
- Relevant end users and societal stakeholders will be identified in the proposal, and their concerns and needs
- Projects should also explore the socio-economic and political barriers to acceptance and awareness with a view to regulatory or policy initiatives.
- international cooperation is encouraged, in particular with relevant Mission Innovation countries such as China

LC-SC3-CC-9-2020: Industrial (Waste) Heat-to-Power conversion

Scope:

- integrate an industrial waste heat-to-power conversion system using one type of fluid (supercritical CO2 or organic) and demonstrate the system operation in industrial environment at an output power level of at least 2 MW, with improved cost efficiency compared to existing solutions.
- What is the relative importance of processes internal to relevant social groups (e.g., creating trust and connection, finding shared goals and solutions, building coalitions), as opposed to external environmental variables (e.g., relative openness of institutional or corporate environments, availability of sympathetic interlocutors, access to financial or other sources of support, legal or other obstacles)?
  - **Specific development areas required (read the full text)**

European Commission

The calendar of the calls

Topic code	Opening date	Deadline to apply
B4E1, B4E5, B4E6, B4E7, B4E8, B4E9, B4E10, B4E12, EC4	16 Jul 2019	15 Jan 2020
RES9, RES19, RES27, RES28, RES33, RES35	3 Sep 2019	11 Dec 2019
EC3, ES3, ES4, ES5, ES10, ES11, ES12, SCC1, SA1	3 Sep 2019	29 Jan 2020
JA5, RES10	26 Sep 2019	26 Mar 2020
RES1, RES18, RES26, RES31, RES32, RES37	3 Dec 2019	21 Apr 2020
B4E2, B4E3, B4E4, B4E11, B4E12, B4E13, B4E14, EC1, EC2, EC5	5 Mar 2020	10 Sep 2020
CC1, CC7, CC9, NZE5, NZE6, RES3, RES20, RES25, RES34, RES36, SCC2	5 May 2020	1 Sep 2020

Content

- **Policy framework**
- **Horizon 2020 energy calls 2020**
- **Submitting a proposal**
- **Resources for help**

European Commission

Submitting a proposal

5 steps of the selection process

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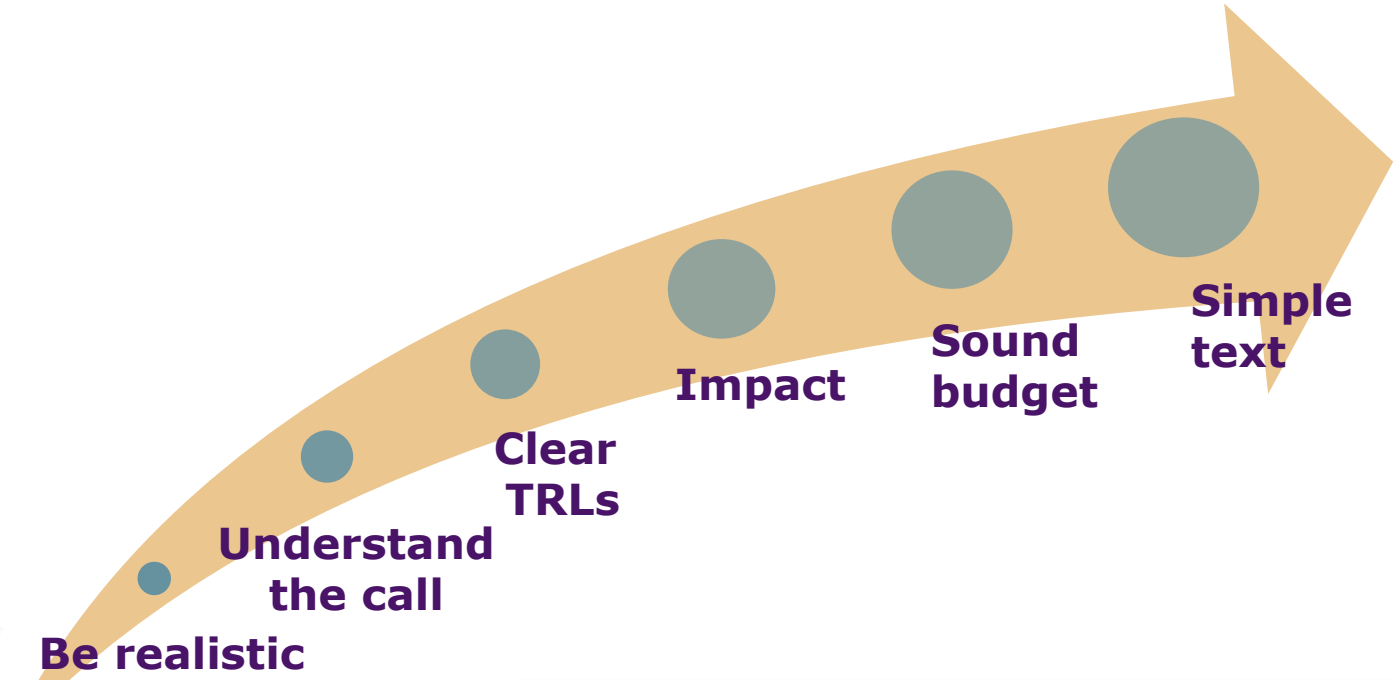
6 steps to a successful proposal



Carefully check the Admissibility and Eligibility criteria!

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Content

- **Policy framework**
- **Horizon 2020 energy calls 2020**
- **Submitting a proposal**
- **Resources for help**

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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

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Resources for help

- **Funding & Tender Opportunities Portal**: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home
- **Research Enquiry Service**: http://ec.europa.eu/research/index.cfm?pg=enquiries
- **Presentations of the Horizon 2020 Energy Info Days 2018 (2019 topics)**:
  - https://ec.europa.eu/inea/en/news-events/events/horizon-2020-energy-info-day (Energy system and Smart Cities and Communities)
  - https://ec.europa.eu/easme/en/horizon-2020-energy-efficiency/horizon-2020-energy-efficiency-information-day-main-takeaways (Energy efficiency)
  - https://ec.europa.eu/inea/en/news-events/events/horizon-2020-energy-virtual-info-day (Renewables, CCUS, Batteries)
- **Horizon 2020 Homepage**: http://ec.europa.eu/programmes/horizon2020/

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Thank you for your attention!

Questions?

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