



Horizon 2020 Energy Challenge (SC3)

Buildings in Energy Transition (B4E)

Smart and Clean Energy for Consumers (EC)

Calls for proposals 2020

**#H2020Energy
info days**

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Research and
Innovation

Content

- **Intro**
- **Policy framework**
- **Horizon 2020 energy calls 2020**
- **Resources for help**

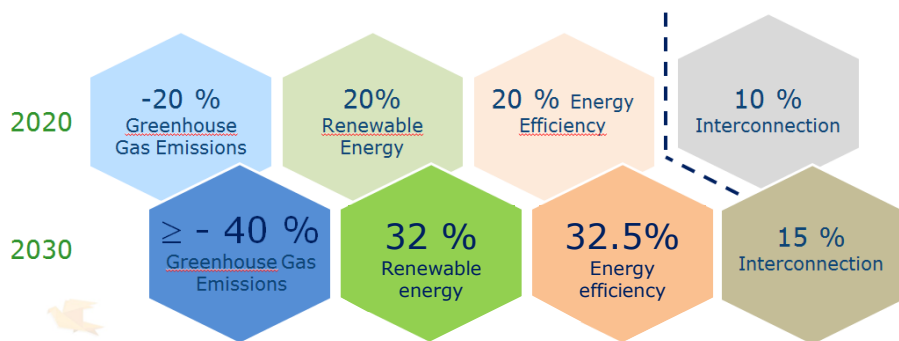
Policy Framework



"Clean Energy for all Europeans"

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

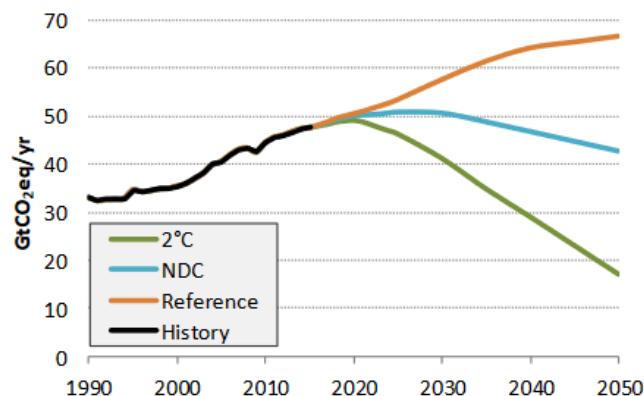
Agreed headline targets



New governance system + indicators

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)

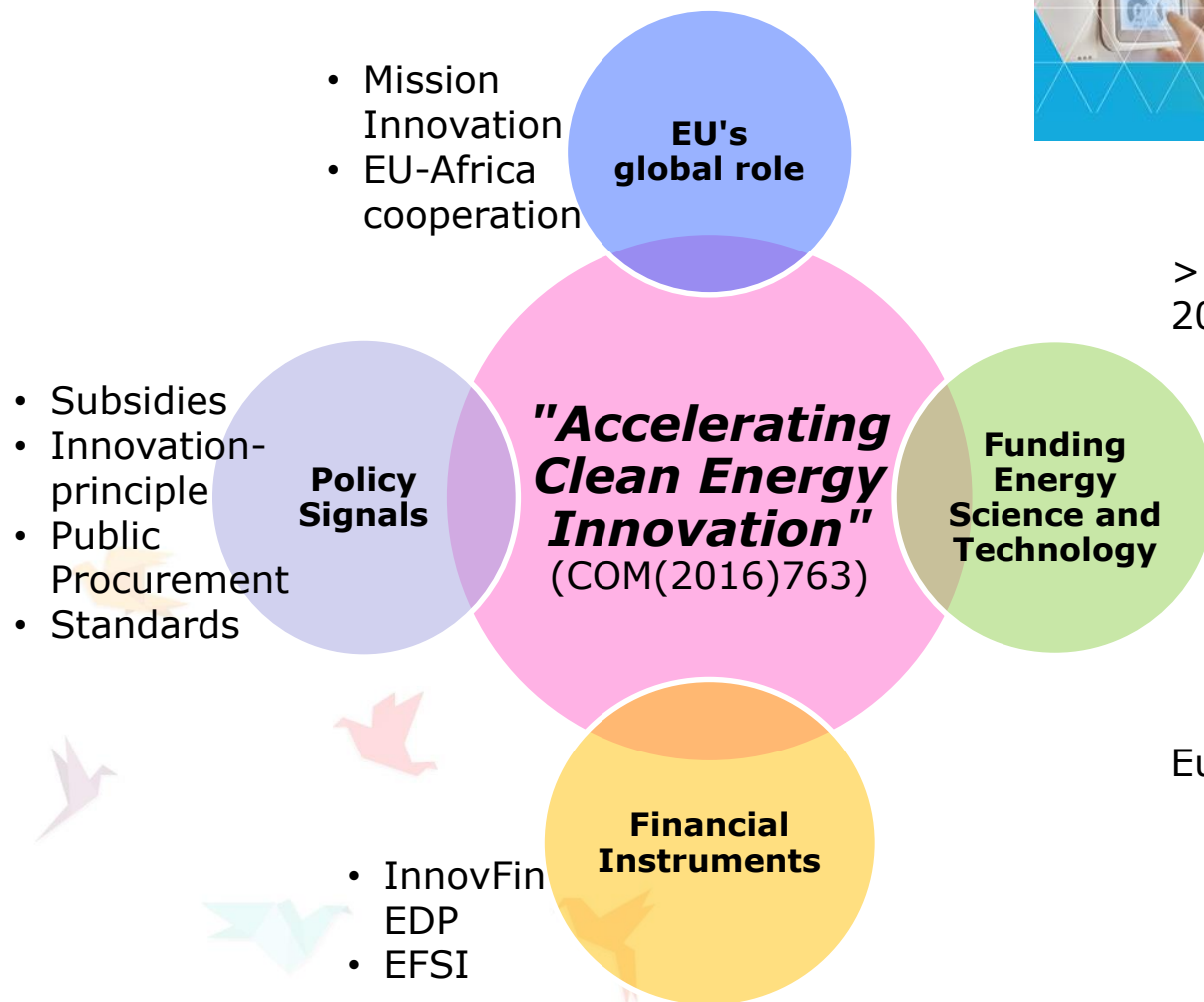
EU long-term vision for climate-neutral economy ('Clean Planet for all')

Other EU policy priorities

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

Policy Framework

Accelerating Clean Energy Innovation



> 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

Policy Framework

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

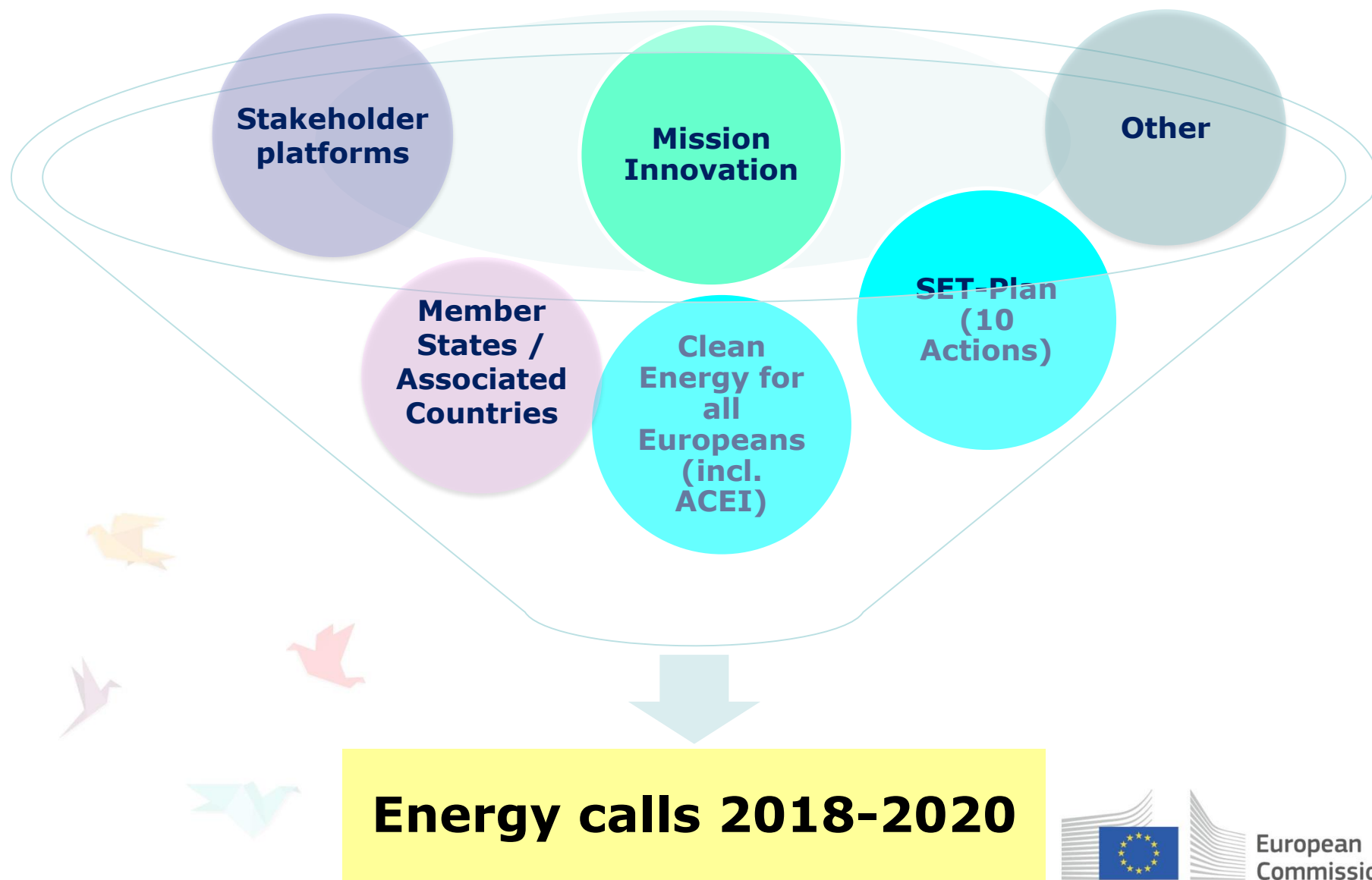
Implementation Plans (IP)

- Temporary Working Groups

Execution of IPs



Inputs to the work programme 2018-2020



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

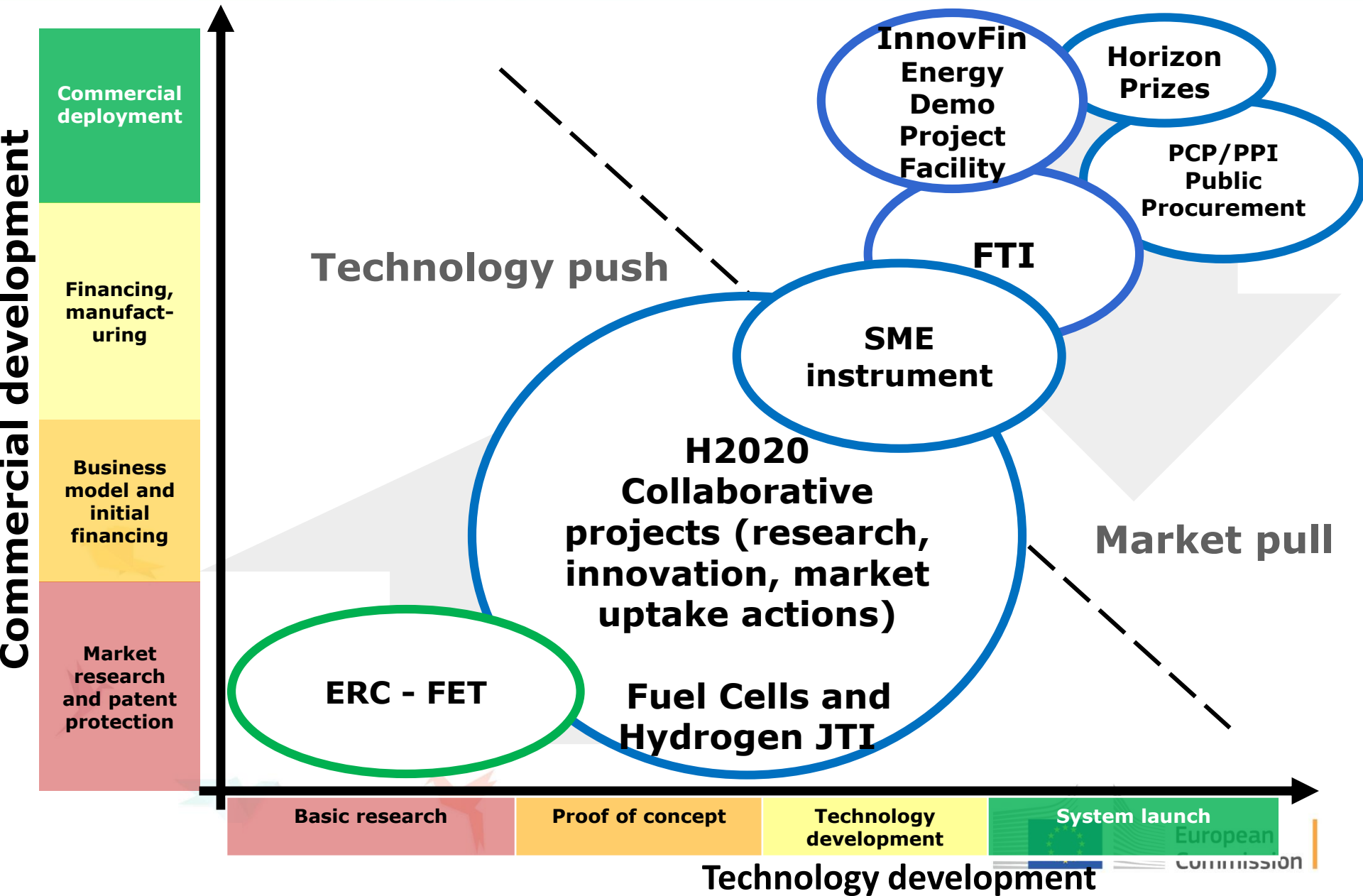
- Materials
- PPPs on Energy-efficient Buildings and SPIRE
- Information and Communication Technologies
- Space (Galileo)

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!

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



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€

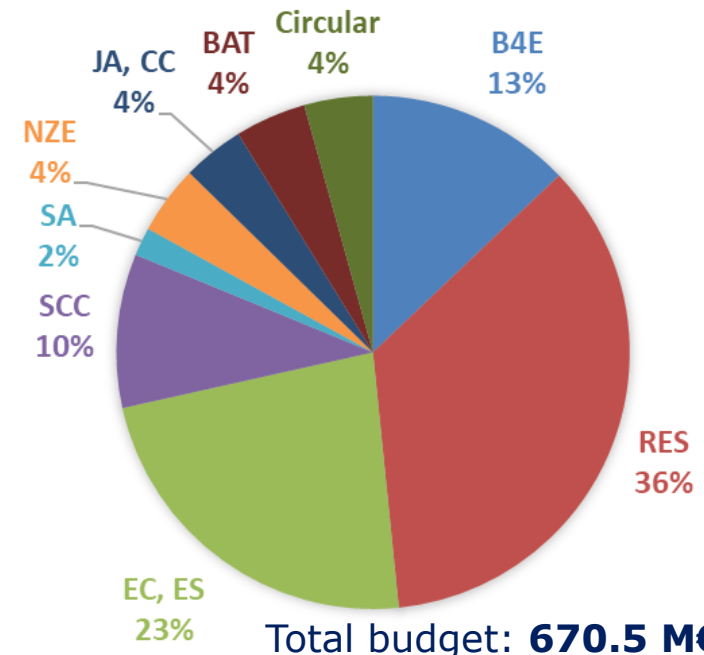
Batteries call (BAT)

• 2 topic – total budget: 30 M€

Circular economy call

• 2 topics – total budget: 29 M€

BUDGET ALLOCATION - ENERGY CALLS 2020



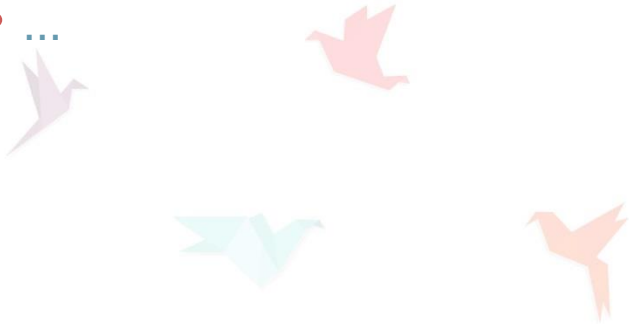
The calendar of the calls

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, BAT8, BAT9	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

IMPACTS

Among others:

- Primary energy savings triggered (GWh/year).
- Investments in sustainable energy (million EUR).
- Replication of the approach ...
- Support to Policies
- Awareness raising...
- Number of stakeholder reached/engaged/changing behaviour...
- GHG reduction (tCO₂-eq/year), air pollutants reduction (kg/year), RES generation (GWh/year)
- Market uptake of innovative solutions and technologies
- ...



DEADLINE ENERO 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
EC-4	Socio-economic research, modelling of multiple non-energy impacts, behavioural insights for energy efficiency interventions	RIA	10 M€	1-2 M€

A. Modelling multiple non-energy impacts

B. Behavioural insights for energy efficiency interventions



DEADLINE ENERO 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
B4E-1	Building renovation, integration of clean energy technologies, business cases	CSA	7 M€	1-2 M€

- Demonstrate that **deep / NZEB renovation** is more reliable, faster, cheaper & easier to implement than standard practices & avoid negative impact on environment and health
- Demonstrate seamless & cost-effective integration of clean energy solutions enabling buildings to play **active role in energy system**
- Demonstrate high **replication** potential of proposed solutions, including viable renovation **financing** concepts
- Tackle relevant **market barriers** & involve relevant stakeholders in communication & dissemination

DEADLINE ENERO 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-5	Design concepts and ICT solutions for server rooms/small data centres in buildings	IA	3 M€	2-3 M€

- Optimal energy performance of design concepts for **small DC or server rooms** (maximum 250kW per pilot)
- At least **3 pilots** in **3 different countries** and climatic conditions
- **Integration** with buildings energy systems and renewable energy sources
- Minimising total **waste heat** production and valorising of waste heat
- Geographical and temporal **workload balance**
- Elimination of unnecessary power conversions (**AC/DC**)
- Operation of **ICT equipment** in a wider range of temperatures

DEADLINE ENERO 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-6	Large-scale pilot test-beds for big data applications in buildings	IA	12 M€	3.5-4 M€

- Define a **reference architecture** for buildings data
 - Integration with existing dataset formats, legacy architectures etc
 - Compatibility with smart meters, sensors, IoT devices, BMS, existing databases
- Develop and pilot an open, cloud-based **data analytics toolbox**
 - process big sets of data and perform Statistical Analysis, Data Visualisation, Business Intelligence (BI) and Predictive Modelling
 - integrate of state of the art data science technologies like Statistics, Artificial Intelligence (AI), Machine Learning (ML) and Deep Learning (DL)
 - support third party development of services and business models
- **Access to existing large-scale real datasets**

DEADLINE ENERO 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-7	Data collection and processing for buildings	CSA	4 M€	1.5-2 M€

- Build a **community** committed to improve, standardise and strengthen data collection
- Develop **strategies** to encourage/support collection of data on buildings and convergence of data collection practices
- Address **critical issues** such as: scope of data, data formats, open access, privacy issues
- Develop a **vision and roadmap** for a more advanced “big data” approach to buildings data collection in Europe: “European building stock data 4.0”
- Coordination between **several initiatives** in this area

DEADLINE ENERO 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-8	Heating and hot water production, multi-apartment residential buildings	IA	7 M€	2-2.5 M€

- A need to demonstrate the **cost-effective heating and DHW units** installed in multi-apartment residential buildings
- The proposed solutions with all support systems should already have been **validated** in an operational environment
- The **competitiveness** in the building value chain and its position in growth markets should be elaborated
- The **costs** and **energy benefit** calculations should be developed in a user-friendly manner suitable for convincing potential end users
- The system should be **scalable** for different types of multi-apartment residential buildings

DEADLINE ENERO 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-9	Coordination of European smart buildings innovation community	CSA	1.5 M€	1-1.5 M€

- Facilitate the **flow and exchange of information** between EU-funded projects in the field of smart buildings
 - Map out the European smart buildings innovation community
 - Coordinate communication, contribution and participation of the community
 - Encourage and support the promotion, and roll-out of the SRI in the EU
 - Suggest priorities for EU support to research, innovation and market uptake in the field of smart buildings
- Focus on efficiency in **breaking silos and bridging the gaps** between innovation, markets and policy

DEADLINE ENERO 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
B4E-10	Self-assessment and self-optimisation of buildings and appliances	IA	6 M€	3-6 M€

- Develop and demonstrate cost-effective technological solutions for the **self-assessment and reporting** of actual energy performance;
- Ensure the **energy-optimisation functions** at building, system or appliances level based on real time and historical data.
 - For products, collect real-time data (as a system or stand-alone; aggregated at building level); if regulated under Ecodesign and Energy Labelling, benchmark energy consumption against respective legal provisions
 - For buildings, demonstrate self-assessment, address any underperformance, also over-time

DEADLINE ENERO & SEPTIEMBRE 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
B4E-12	National roundtables to implement the Smart Finance for Smart Buildings initiative	CSA	3 M€	0.5-1.5 M€

- setting up of national roundtables focused on energy efficiency investment, as permanent multilateral discussion forums gathering the relevant stakeholders, including: government, local and regional authorities, financial sector, ESCOs, homeowners, industry sector, construction sector, SME sector
- focus on existing private and public buildings, industry and SME's; but could also include renovation of street lighting, district heating and transport infrastructures.
- energy efficiency measures + integrated renewable sources

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
EC-1	set up/support energy communities, regulatory barriers	CSA	12 M€	1-2 M€
EC-2	Household energy poverty, support schemes	CSA		1-2 M€

- **EC-1:** Set up and/or support **energy communities** to:

- Increase energy efficiency within the community

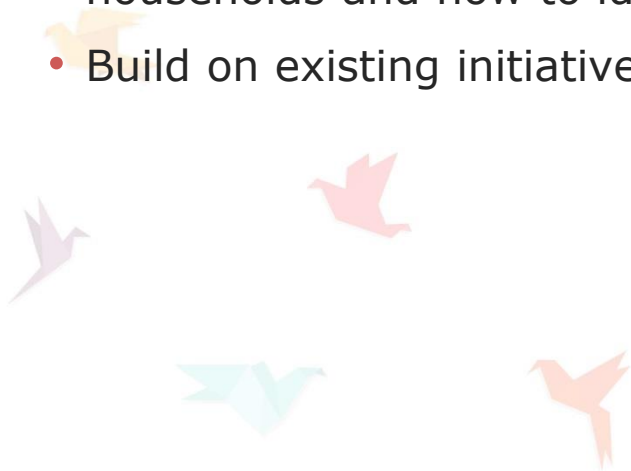
And/or

- Optimise energy management to integrate a greater share of renewable energy
- Identify and address regulatory barriers and contractual conditions for cooperative actions
- Demonstrate that collectively organised energy-related actions are financially viable and attractive to the members of the energy communities

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
EC-1	set up/support energy communities, regulatory barriers	CSA	12 M€	1-2 M€
EC-2	Household energy poverty, support schemes	CSA		1-2 M€

- **EC-2:**
- Contribute to actively alleviating energy poverty
- Develop a better understanding of the types and needs of energy poor households and how to identify them
- Build on existing initiatives (EUPOV)



DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
EC-5	Support to local and regional public authorities, support delivery of the Energy Efficiency Directive	CSA	9 M€	1-1.5 M€

- Scope A:
- Better decision-making for **energy efficiency measures** and coordination of administrative levels
- Policy scenarios and transition **roadmaps (2050)** to inform **SEAPs/SECAPs**
- **Innovative public engagement** of public authorities with civil society
- **Capacity building** programmes for cities and regions to drive the energy transition

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
EC-5	Support to local and regional public authorities, support delivery of the Energy Efficiency Directive	CSA	9 M€	1-1.5 M€

- **Scope B:**

- Assist Member States and support the implementation of EED (and Energy Union Governance Regulation)
- Build on existing effective EU practices and experiences
- Possible areas of work (non-exhaustive):
 - harmonisation of energy savings calculations (Art. 3)
 - implementation EEOs and consistent monitoring & verification (Art. 7)
 - higher efficiency of the generation (Art. 14) and of transmission or distribution systems (Art. 15)
 - development and reporting of National Energy and Climate Plans

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-2	Energy skills in construction/building sector	CSA	4 M€	0.5-1 M€

- Development, up-scaling and/or combination of a range of tools and initiatives, e.g.:
 - Tools facilitating the mutual recognition of energy skills and qualifications in the building sector:
 - National, regional or local initiatives raising awareness of home and building owners and tenants about the benefits of sustainable energy skills
- Support to public authorities for the development of new legislative frameworks.
- Partnerships with producers and retailers of construction products
- Initiatives reinforcing the link between skills/education and energy performance/quality of construction

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-3	Upgrade smartness of existing buildings, automation, IT	IA	8 M€	2-2.5 M€

- Demonstrate technological solutions for building upgrade, i.e.
 - increasing building management / control
 - increasing participation at local or grid level
 - increasing consumer satisfaction / benefit
- Pilots to involve appliances and technical building systems
 - with longer lifecycles (boilers, radiators, DHW, ventilation, lighting etc.)
 - with shorter lifecycles (dryers, washing machines, fridges, etc)
- Upgrade existing buildings of Europe

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-4	Energy Performance Assessment and Certification (EPC)	CSA	10 M€	1-2 M€

- Involve stakeholders including certification bodies, in stimulating roll-out of next-generation schemes
- Develop strategies to help converge EPC practices across EU
- Assess applicability of schemes through case studies
- Demonstrate potential of EU-wide uptake of the schemes
- Address training and certification
- Demonstrate the benefit of EPCs (Art. 14 & 15 of EPBD)
- Embed EPCs in energy audits, databases, one-stop-shops
- Link EPCs to buildings renovation passports, individual buildings renovation roadmaps or building logbooks

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
B4E-11	Mainstreaming energy efficiency finance , Innovative financing schemes for energy efficiency investments	CSA	16 M€*	1-1.5 M€
B4E-13	Project Development Assistance	CSA		0.5-1.5 M€

- Development, demonstration and promotion of frameworks for the standardisation, aggregation and benchmarking of sustainable energy investments
- Capacity building for banks and investors
- Gathering, processing and disclosing large-scale data on actual financial performance of energy efficiency investments
- Links to the work of Energy Efficiency Financial Institutions Group including the De-risking Energy Efficiency Platform and the Sustainable Finance initiative

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
B4E-11	Mainstreaming energy efficiency finance, Innovative financing schemes for energy efficiency investments	CSA	16 M€*	1-1.5 M€
B4E-13	Project Development Assistance	CSA		0.5-1.5 M€

- Development or replication and implementation of new innovative, operational financing schemes for EE investments
- Replication of previously successful solutions (e.g. developed/implemented under various PDA facilities, incl. ELENA of EIB)
- Establishment of regional/national aggregators able to develop large (standardized) project pipelines



DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instru- ment	Total budget	~ Budget / project
B4E-11	Mainstreaming energy efficiency finance, Innovative financing schemes for energy efficiency investments	CSA	16 M€*	1-1.5 M€
B4E-13	Project Development Assistance	CSA		0.5-1.5 M€

- 'Smart Finance for Smart Buildings' Initiative
- Targeted to public promoters
- Sectors targeted: Existing public and private buildings, Industry and services, Urban transport, Existing infrastructures (street lighting, water/wastewater)
- Investments launched before end of the action!

DEADLINE SEPTIEMBRE 2020

Topic code	Keywords	Instrument	Total budget	~ Budget / project
B4E-14	Smart energy services concepts	CSA	6 M€	1-2 M€

- Actions should further develop, adapt and refine concepts for smart energy services
- Take up and **advance smart energy services concepts** evolved in the market, including concepts developed, proven and tested under H2020
- Proposals should demonstrate that they help **converge innovative, successfully tested service elements**
- Actions should clearly address
 - revenue streams
 - use of monitoring and verification schemes
 - contractual aspects

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 (2020 topics):**
 - <https://ec.europa.eu/inea/en/news-events/events/horizon-2020-energy-info-days>
- **Horizon 2020 Homepage:** <http://ec.europa.eu/programmes/horizon2020/>
- **EASME H2020 Energy Efficiency:** <https://ec.europa.eu/easme/en/horizon-2020-energy-efficiency>

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

Thank you for your attention!

Questions?

