# Climate action and sustainable development

### CLIMATE ACTION AND SUSTAINABLE DEVELOPMENT IN HORIZON 2020

As key Horizon 2020 objectives, climate action and sustainable development are relevant to **all areas** of the programme. At least 35% of Horizon 2020's total budget is expected to address climate action, while at least 60% is expected to involve sustainable development. When drafting proposals, applicants should consider their project's expected contribution to climate action and sustainable development objectives, if and where applicable.

### WHY IS THIS IMPORTANT?

This means that there are opportunities for research and innovation related to climate action and sustainable development across the whole Horizon 2020 work programme, not just in obvious places like Societal Challenge 5 – Climate action, environment, resource efficiency and raw materials.

Moreover, for most parts of the programme applicants are asked in the proposal template to mention, where relevant, the expected impact of their proposal with regard to any potential contribution to climate action and sustainable development objectives.

### INTEGRATING CLIMATE ACTION AND SUSTAINABLE DEVELOPMENT OBJECTIVES IN RESEARCH AND INNOVATION

**Why is it important to take climate action and sustainable development into account?**

When one or other of these aspects are explicitly mentioned in the topic description, or otherwise form part of the proposed work, experts will evaluate the corresponding elements of the proposal against the criteria, as they would with other aspects of the proposal.

For many types of action the proposal template indicates that applicants should also mention any other substantial impacts including any that would "address issues related to climate change or the environment, or bring other important benefits for society". This means that applicants should ensure that their proposal clearly describes the expected impact of the project with regard to any potential contribution to climate action and sustainable development objectives, beyond what is mentioned explicitly in the topic description. These aspects will be evaluated by experts in addition to other relevant aspects of the proposal.

**How can applicants integrate climate action and sustainable development in their proposal?**

1. Using the guidance below, determine the relevance of climate action and/or sustainable development objectives to the research and innovation proposal and make sure that relevant aspects are mentioned clearly in the proposal.
2. Where relevant, proposals should refer to how the research or innovation can be expected to impact on one or several of the Sustainable Development Goals (SDGs). This may be immediate or longer-term impact.
3. Applicants should refer to existing evidence or indicators to substantiate statements.

**WHAT IS CLIMATE ACTION?**

Climate action is understood to include mitigating climate change (i.e. contribution to the reduction of greenhouse gas emissions), adapting to the impacts of climate change by building resilience (e.g. regarding floods, droughts, extreme weather events etc), and understanding the underlying causes of climate change.

Activities contributing to climate action are varied and can include any of the following:

- energy efficiency, energy savings or energy recovery in any sector;
- renewable non-fossil energy (e.g. wind, solar, aero-thermal, geothermal, hydrothermal, ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, biogases) and related infrastructure including energy storage and 'smart grids';
- low-carbon technologies, manufacturing processes, goods and services;
- carbon capture and storage;
- reducing road and air traffic emissions, and encouraging use of public transport systems, inland waterway, short sea shipping, cycling and pedestrians;
- biological sequestration/conservation of $CO_2$-emissions (e.g. afforestation, re-vegetation, forest/cropland management, reduced tillage, soil maintenance/remediation) including sinks and reservoirs of greenhouse gases (e.g. soil, peatlands, wetlands, forests);
- eliminating or substantially reducing emissions of other greenhouse gases like methane, $N_2O$, PFCs, HFCs, $SF_6$ and $NF_3$;
- building resilience and reducing vulnerability to climate-related disasters (heatwaves, floods, extreme weather events etc), covering any sector including transport, energy, supply chains, communication networks and other infrastructures, planning, insurance; risk prevention and risk/disaster management, ICT for early warning systems;
- combatting heat effects and/or adapting to drought, including water efficiency measures;
- strengthening coastal defences against erosion, storm surges and sea-level rise;
- taking advantage of the possible opportunities arising from climate change;
- integrating climate change concerns in specific policy activities, developing capacity, strengthening the regulatory and policy framework;
- socio-economic issues related to climate change options such as behaviour patterns, societal acceptance and barriers to uptake of policies or technologies;
- understanding climate change processes and/or impacts including sea ice/ice sheet/glaciers, permafrost, air and sea surface temperatures, precipitation, biodiversity loss, movement or distribution of plant/fish/animal species, ocean acidity, crop yields, hydropower potential, seasonal tourism patterns, habitats for disease vectors etc.

**WHAT IS SUSTAINABLE DEVELOPMENT?**

Sustainable development is understood as development that meets the needs of the present without compromising the ability of future generations to meet their own needs within the planet's physical boundaries. Sustainable development is comprised of economic, social and environmental dimensions. The economic dimension is enriched by activity that provides economic added value through new technologies, products, services, governance or business models that improve competitiveness and prosperity, and promote job creation or safeguard jobs, together with related policies. The social dimension includes addressing and improving human health, quality of life, safety and security of individuals and populations, culture, skill formation, social integration and inclusion, poverty reduction,

effective and democratic governance, and related policies. The natural dimension comprises protecting, reducing/preventing degradation of, or restoring natural resources and ecosystems (e.g. air, water, forests, soil…), and the biodiversity that underpins them.

To pave the way towards a more sustainable society worldwide, world leaders adopted in 2015 the 2030 Agenda for Sustainable Development, which includes a set of 17 Sustainable Development Goals (SDGs) to end poverty, fight inequality and injustice, and tackle climate change by 2030:

- Goal 1: End poverty in all its forms everywhere
- Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
- Goal 3. Ensure healthy lives and promote well-being for all at all ages
- Goal 4: Ensure inclusive and equitable quality education and promote life-long learning opportunities for all
- Goal 5: Achieve gender equality and empower all women and girls
- Goal 6: Ensure availability and sustainable management of water and sanitation for all
- Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all (incl. business)
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10: Reduce inequality within and among countries
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12: Ensure sustainable consumption and production patterns
- Goal 13: Take urgent action to combat climate change and its impacts
- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

Activities addressing one or more of the Sustainable Development Goals contribute to the long-term achievement of this worldwide goal.

An important element of sustainable development is increasing resource efficiency, which is addressed by several Sustainable Development Goals. Resource efficiency has a strong connection to climate action, since increased resource efficiency can mitigate climate change. Resource efficiency can be achieved by activities with the following aims:

- more resource efficient consumption and production in all areas of society/the economy;
- avoiding waste, improving waste management, increasing re-use, repair or recycling, using waste from some production processes as a resource for others, in all sectors including food, construction/demolition, processing industries, raw materials…;

- ensuring good quality and quantity of water; promoting efficient and economical water supply and use; helping reduce water shortages/droughts and floods;
- improving/ensuring clean air and reducing air pollution (including particulate matter, ground-level ozone, nitrogen dioxide), addressing the effects of air pollution;
- improving/ensuring soil protection, reducing soil-sealing, addressing/helping prevent erosion, land-slides, soil contamination, salinisation, desertification;
- more sustainable management of fishery resources and marine resources by all operators along the value chain, including in the fields of mineral extraction, pharmaceuticals, biotechnology and energy; contributing to good environmental status in marine waters;
- increasing sustainable chemistry/'green' chemistry; substituting dangerous chemicals with safer and more technologically and economically viable alternatives;
- more resource efficient food production, with reduced environmental impact (e.g. water/fertiliser use) of food/drink value chains; more sustainable forest management;
- reducing noise pollution;
- energy efficiency and reducing greenhouse gas emissions (see 'climate action' above);
- addressing behaviour patterns, societal acceptance and barriers to uptake of policies or technologies, promoting awareness raising on resource efficiency matters, including education and training.

**WHERE CAN APPLICANTS FIND FUNDING OPPORTUNITIES FOR ACTIONS SUPPORTING CLIMATE ACTION AND SUSTAINABLE DEVELOPMENT?**

**Climate action**

Applicants are encouraged to use the 'search topic' function on the participant portal to search for topics with specific keywords. Topics with strong relevance to climate action are found using search terms such as 'climate', 'energy efficiency', 'decarbonisation', 'emissions', 'CO2', 'climate adaptation' as well as more specific terms such as 'extreme weather', 'resilience'…

Topics with strong relevance to climate action are most frequently found in the Work Programmes of Societal Challenge 2 (Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy), 3 (Secure, clean and efficient energy), 4 (Smart, green and integrated transport) and 5 (Climate action, environment, resource efficiency and raw materials), as well as in the LEIT-NMBP (Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing) work programme part.

Topics which include elements of relevance to climate action may also be found in the Work Programmes of Societal Challenges 6 (Europe in a changing world – inclusive, innovative and reflective societies) and 7 (Secure societies – protecting freedom and security of Europe and its citizens), as well as in the calls relating to Research Infrastructures, the SME Instrument and LEIT-ICT (Information and communication technologies).

Proposals including climate action elements may also be relevant to the Work Programmes for Spreading excellence and widening participation and Science with and for society.

Finally, bottom-up areas of the Work Programme such as the European Research Council grants, Marie Skłodowska Curie Actions, FET-Open, the Fast Track to Innovation pilot are also open to applicants with climate-relevant proposals.

**Sustainable development**

Since sustainable development is such a broad concept, all parts of Horizon 2020 can be relevant to different aspects of sustainable development and can be expected to contribute to one or other of the Sustainable Development Goals (SDGs). Applicants are encouraged to use the 'search topic' function on the participant portal to search for topics with specific keywords of relevance to their field of activity.

Topics with strong relevance to resource efficiency are most frequently found in the Work Programmes of Societal Challenge 2 (Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy), 3 (Secure, clean and efficient energy), 4 (Smart, green and integrated transport) and 5 (Climate action, environment, resource efficiency and raw materials), as well as in the LEIT-NMBP (Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing) work programme part.

Topics which include elements of relevance to resource efficiency may also be found in the calls relating to Research Infrastructures, the SME Instrument and LEIT-ICT (Information and communication technologies).

Proposals including elements concerning resource efficiency may also be relevant to the Work Programmes for Spreading excellence and widening participation and Science with and for society.

Finally, bottom-up areas of the Work Programme such as the European Research Council grants, Marie Skłodowska Curie Actions, FET-Open, the Fast Track to Innovation pilot also provide excellent opportunities to applicants with proposals addressing aspects of resource efficiency.

**Related links**

- Climate action and sustainable development in the Horizon 2020 on-line manual
- FAQ on the evaluation of climate action in H2020 proposals
- FAQ on the evaluation of environmental issues in H2020 proposals
- Research and innovation for climate action, environment and resource efficiency
- The United Nations Sustainable Development Goals (SDGs) Research and Innovation Perspective