Pathways towards the decarbonisation and resilience of the European economy in the timeframe 2030-2050 and beyond

Trans-disciplinary approaches, including social sciences, are considered necessary to address this specific challenge.

Projects should also foresee activities to cluster with other projects financed under this topic and – if possible – also under other parts of Horizon 2020.

Proposals should address **one** of the following:

a) Managing technology transition (2016): The decarbonisation of European society will require a series of gradual or rapid technology changes in different sectors such as power generation, transport, industry, agriculture, and residential energy use. The massive deployment of new or existing low-carbon and smart technologies within a relatively short time represents an enormous challenge for innovators, regulators and investors, as well as for users and citizens. Proposals should explore and address the challenges of planning technological transition ahead of time and prioritising within and between different sectors in Europe so as to support stringent mitigation policies, taking into account among other aspects the inertia in innovation systems and lock-in effects. Special emphasis should be given to non-technological factors and drivers and innovative solutions influencing the development and deployment of low-carbon and smart technologies within the transformational requirements of the deep decarbonisation pathways for the timeframe 2030-2050 and beyond.

Proposals should also explore the inter-linkages between large-scale deployment of low-carbon technologies and intra-EU and international trade, energy security, job creation and the competitiveness of the European economy, as well as the necessary policy interactions across different governance levels (EU, national and sub-national). In addition, proposals should address the socio-economic and environmental implications of deep decarbonisation, including the consequences for supply chains

and production of goods (e.g. agriculture, industry, feedstock, raw material availability) and the impacts on various social groups (including gender aspects). Proposals should also identify necessary changes in investment patterns, financial mechanisms and regulatory incentives in order to achieve sustainable growth, job creation and ambitious low-carbon goals.

Proposals should provide a research and innovation framework which allows the co-design of pathways and scenarios with key economic and societal actors and addresses relevant cross-sectorial perspectives of the decarbonisation of the European economy.

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 million and EUR 6 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

b) Assessment of the global mitigation efforts in the perspective of the long-term climate goal (2016): The Parties of the United Nations Framework Convention on Climate Change (UNFCCC) agreed to limit the rise of global mean temperature to 2°C compared to pre-industrial levels, in order to prevent dangerous anthropogenic (i.e. human-caused) interference with the climate system. The 21st Conference of Parties of the UNFCCC, known as COP21, which will be held in December 2015 in Paris, will mark a milestone in the course of international efforts to engage on global climate action consistent with the 2°C target.

Proposals should analyse the adequacy of the outcomes of COP21 and the pledges of major emitting countries in view of the long-term climate goal. Proposals should also address the available pathways and necessary level of actions that will be needed to be on track with the objective of limiting temperature increase to below 2°C. Furthermore, proposals should analyse the implications and opportunities emerging from the UNFCCC negotiations on European decarbonisation and broader objectives, particularly in view of industrial competitiveness, green growth, international trade, energy security, public finance and cross-border capital flows.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged, in particular with countries that substantially contribute to global greenhouse gas emissions. Proposals should include partners from (non-European) high-, middle- and/or low-income countries.

The Commission considers that proposals requesting a contribution from the EU of between EUR 2 million and EUR 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

c) The risks and costs of climate change for Europe (2017): Climate change can induce large – or eventually extremely large – environmental and socio-economic damage. Defining and assessing complex impact chains under different climate change scenarios – from unmitigated to effectively mitigated – including macro-economic consequences (such as impact on growth and welfare) as well as non-market damage constitute a prerequisite of policy-making. In this constantly evolving research area, efforts must continue to further develop modelling tools and formulate more detailed and downscaled projections associated with the possible consequences of climate change, also taking into account climate tipping points and low-probability, high-impact events. Proposals should build on the latest results of climate science, with special regard to the IPCC's 5th Assessment Report and also relevant European projects[[For example the PESETA II project (http://peseta.jrc.ec.europa.eu/)]] and contribute to the evolution of methodologies in physical science, risk assessment and economics. Improved methodologies should then be applied to the analysis of possible impact chains, as well as to the economic valuation of climate action (mitigation and adaptation) in the EU at various levels (regions, countries, economic sectors) over medium to longer-term timeframes. Proposals should focus their analysis on Europe, but take into consideration the global context of climate change.

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 million and EUR 5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

In the broad spectrum of the feasible decarbonisation pathways, the challenge for political and economic decision-makers is to weigh uncertain impact chains against potentially devastating damage, immediate and medium-term engagement against long-term benefits, and the need for global mitigation efforts against differences in economic and political outlook on the international scene. It is therefore imperative to build a comprehensive evidence-based framework for research, business, investment and policy decision making which is able to assess the socio-economic implications of and incentives for medium- to long-term decarbonisation pathways (including their associated costs, benefit and risks), the challenges of planning medium- to long-term technological transitions, the adequacy of future global commitments for achieving long-term climate goals as well as the risks and costs of climate change. This action should be built around the co-design of pathways and scenarios with economic and societal actors and address relevant cross-sectorial perspectives of the decarbonisation of the European economy.

Project results are expected to contribute to:

a)

- fostering the design and implementation of cost-effective medium to long-term technological transitions, consistent with decarbonisation pathways and economic development in Europe and beyond;
- providing a medium to long-term vision on low carbon technological development and deployment in Europe, within the context of a global economy;
- fostering greater transparency of models, methods and tools;
- contributions to major international scientific assessments (e.g. IPCC);
- enhancing the science-decision making interface, though co-creation/co-design with economic and societal stakeholders;

b)

- providing a thorough analysis of the adequateness, potential and barriers of international mitigation efforts in the perspective of the long-term climate target, and their repercussions for EU goals and policies;
- identifying most pressing areas for policy action at European or national/regional level;
- contributions to major international scientific assessments (e.g. IPCC);
- enhanced scientific cooperation with third countries;

c)

- providing more accurate and downscaled economic valuation of climate-induced impacts and risks in Europe;
- decreased uncertainties concerning the economic valuation of climate action in the EU, over the longer term (2050 and beyond);
- fostering greater transparency of models, methods and tools;
- contributions to major international scientific assessments (e.g. IPCC).

Ostatnia aktualizacja: 12 Kwietnia 2024

Permalink: https://cordis.europa.eu/programme/id/H2020_SC5-06-2016-2017/pl