

Working Document

Disclaimer: this document aims only to support a brainstorming exercise. It does not present a draft of the Green Deal call to be part of the Horizon 2020 work programme update, nor any future position of the European Commission.

Horizon 2020 update – European Green Deal call

1. The “European Green Deal” call: Rationale and main characteristics

With the European Green Deal Communication¹, the new Commission placed at the centre of its priorities the need to take immediate and drastic actions to fight climate change and to make Europe climate-neutral by 2050. The need for immediate and drastic actions against climate change, has also been explicitly acknowledged by the leaders of the EU Member States who, in the conclusions of the European Council of 17-18 October 2019 state: *“The existential threat posed by climate change requires enhanced ambition and increased climate action by the EU and at global level.”*

In this context, the Commission announced in its Communication on the European Green Deal Investment Plan² the launching of a new call in support of the European Green Deal thus demonstrating the contribution of research and innovation to this central priority of the new Commission. The call will be part of the Horizon 2020 work programme for 2020, with an estimated budget of the order of EUR 1 billion. The budget will come primarily from third countries’ contributions and the recent increase in Horizon 2020 budget. This dedicated Call will address directly the main priorities of the Green Deal and will establish a pathway for additional, related research and innovation initiatives in the context of Horizon Europe.

The proposed call is different in structure and approach from previous Horizon 2020 calls. **It seeks to respond to the urgency of the current situation and the ambition of the new Commission.** It will seek to demonstrate the key ability of R&I to provide concrete solutions addressing the 8 European Green Deal work streams, within a relatively short time frame.

At the same time, transition to sustainability must be understood as a process engaging society **and aim at ‘leaving nobody behind’**. In addition therefore to technology development and demonstration, experimentation and social innovation for new ways to engage civil society and empower consumers to make more sustainable choices should also be supported.

The call will propose **a clear ‘impact focussed’ approach** supporting the development of ideas into pilot applications and demonstration projects, innovative products, experiments and approaches able to show their value in practice and be ready for further scale-up. To this end, it is necessary to gather a critical mass of resources and efforts around a small number of

¹ ‘The European Green Deal’ COM(2019) 640 final

² ‘European Green Deal Investment Plan’ COM(2020) 21 final

‘thematic’ topics, directly relevant to the European Green Deal objectives, the importance of which can be easily recognised by society at large.

The design of these topics should ideally take into account the 4 levers of sustainability transformations mentioned in the UN-Global Sustainable Development Report 2019 ‘The future is now—Science for achieving sustainable development’ which is also mentioned in the Council Conclusions of December 10th. These are:

- Science and technology
- Governance
- Economy and finance
- Individual and collective action

Therefore, in addition to scientific and technological development, issues of governance, economy and market, social innovation, behavioural and cultural aspects become important elements of integrated proposed actions that could provide solutions to the citizens’ concerns and the main societal problems linked to the necessary transitions over the next years.

In order to further re-inforce the societal engagement in the necessary transitions, in addition to embedding these aspects into the individual ‘thematic’ topics, new ways for societal, consumer and individual mobilisation and engagement can be further explored in a separate section that would support dedicated activities across the various thematic areas.

Climate action requires naturally additional R&I efforts that extend beyond innovative solutions at a relatively mature state of development. Despite significant progress in our understanding of the complex issues linked to climate change and sustainability over the past few decades, it is important to further improve our relevant knowledge. In addition to pilot applications and demonstration projects which will be main objective of the ‘thematic’ topics, the call will therefore contain dedicated topics aiming precisely to strengthen the European knowledge base, adopting a longer-term perspective while also acting as a bridge to Horizon Europe.

Given the ambition of the Commission to establish the EU as a global leader in the transition towards a climate-neutral economy and society, international cooperation aspects are important. In this context, International Cooperation aspects should be addressed (where appropriate) within the individual thematic topics. In parallel, a dedicated topic might be established to encourage international cooperation, specifically in relation to target regions (for example, Africa or G20) mentioned in the European Green Deal Communication.

In summary, the main part of the call would comprise 8 sections (with 1-2 ‘thematic’ topics each) that reflect directly the 8 work streams of the European Green Deal. In addition to these 8 areas which form the centre of the Call, the latter will also contain 2 supporting sections that will complement the strong impact focus of innovative solutions and demonstration actions of the thematic areas, with activities targeted to support the European Green Deal through a longer term approach aiming to improve our knowledge with respect to climate action and sustainability issues as well as about societal, consumer and individual mobilisation and engagement issues. As mentioned above, depending on the international cooperation content of the 8 thematic areas, a separate international cooperation topic may also be included.

For the majority of the ‘thematic’ topics, the most appropriate implementation instrument would be Innovation Actions around R&I solutions that have already reached a good level of maturity, although other types of action (such as RIA and CSA) could also be used in a complementary way. Topics should aim at systemic solutions and would therefore require the participation of stakeholders like civil society, administrations or state funded foundations that do not participate often in research and innovation projects. A tentative structure of the call is shown in the following section.

2. Call design and proposed structure

2.1 The areas of the European Green Deal

The starting point for this call is the European Green Deal. It is therefore useful to briefly refer to the main priority areas of the respective Communication before describing the proposed structure of the Call. The European Green Deal identifies 8 main areas for action:

1. Increasing the EU’s climate ambition for 2030 and 2050

Under this area, the Commission, in line with the long term vision for climate neutrality set in the ‘Clean Planet for all’ Communication,³ spells out the need to address both climate mitigation (by proposing increased targets for greenhouse gas emissions reduction) and climate adaptation (by preparing a more ambitious EU strategy) and proposes specific courses of action for a number of policy instruments including the first European Climate Law that was adopted by the Commission on 4 March 2020⁴.

2. Supplying clean, affordable and secure energy

Given that the production and use of energy across economic sectors account for more than 75% of the EU’s greenhouse gas emissions, further decarbonising the energy system is critical to reach climate objectives in 2030 and 2050. Energy efficiency must be prioritised with emphasis on renewable sources and their smart integration, smart grids, hydrogen networks or carbon capture, storage and utilisation, energy storage, sector integration. Attention must be paid to achieve decarbonisation at the lowest possible cost and tackle energy poverty for households that cannot afford key energy services.

3. Mobilising industry for a clean and circular economy

³ A Clean Planet for all - A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy COM (2018) 773

⁴ Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law) COM(2020) 80 final

Currently, the EU industry remains dependent on a throughput of new materials extracted, traded and processed into goods and finally disposed of as waste or emissions. Only 12% of the materials it uses come from recycling. The transition to a climate neutral and circular economy is an opportunity to expand sustainable and job-intensive economic activities while reducing significantly greenhouse gas emissions and the pressure to biodiversity loss and water stress. Together with the proposal for an EU industrial strategy, a new circular economy action plan will help modernise the EU's economy and draw benefit from the opportunities of the circular economy domestically and globally. The action plan will support the circular design of all products and prioritise reducing and reusing materials before recycling them. Consumer policy will help to empower consumers to make informed choices and play an active role in the ecological transition.

4. Building and renovating in an energy and resource efficient way

The construction, use and renovation of buildings require significant amounts of energy and mineral resources. Buildings also account for 40% of energy consumed. Today the annual renovation rate of the building stock varies from 0.4 to 1.2% in the Member States. This rate will need at least to double to reach the EU's energy efficiency and climate objectives. Particular attention needs to be paid to the renovation of social housing, renovating schools and hospitals, as the money saved through building efficiency will be money available to support education and public health and to households that cannot afford to pay their energy bills.

5. Accelerating the shift to sustainable and smart mobility

To achieve climate neutrality, a 90% reduction in transport emissions is needed by 2050. This must be achieved through parallel actions across all transport modes and aimed to boost multimodality. Areas of particular attention are: the development of automated and connected multimodal mobility which can reduce congestion and pollution, especially in urban areas; take account of negative externalities in pricing of transport (particularly fossil-fuel based); ramp-up the production and deployment of sustainable alternative transport fuels for different transport modes – including electromobility; drastically reducing transport emissions in cities including from ports and airports.

6. From 'Farm to Fork': designing a fair, healthy and environmentally-friendly food system

Food production still results in air, water and soil pollution, contributes to the loss of biodiversity and climate change, and consumes excessive amounts of natural resources, while an important part of food is wasted. European food should become the global standard for sustainability. The Commission will present the 'Farm to Fork' Strategy in spring 2020 covering all the stages of the food chain, and paving the way to formulating a more sustainable food policy. The strategy will strengthen the efforts of farmers and fishermen to tackle climate change, protect the environment and preserve biodiversity. It will aim to reduce significantly the use and risk of chemical pesticides, as well as the use of fertilisers and antibiotics. The strategy will contribute to achieving a circular economy as well as to stimulating sustainable food consumption and promote affordable healthy food for all.

7. Preserving and restoring ecosystems and biodiversity

Ecosystems provide essential services such as fresh water and clean air and mitigate natural disasters, pests and diseases and help regulate the climate. The EU and its global partners need to halt biodiversity loss, caused primarily by changes in how land and sea are used, direct exploitation of natural resources, and climate change as the third most important driver. The Commission will soon present a Biodiversity Strategy that will identify specific measures to protect and restore ecosystems and halt biodiversity loss. Forest ecosystems are under increased pressure as a result of climate change. Effective afforestation, and forest preservation and restoration in Europe, will help to increase the absorption of CO₂, reduce the incidence and extent of forest fires, and promote bio-economy in full respect of biodiversity. The role of oceans in mitigating and adapting to climate change is increasingly recognised. Lasting solutions to climate change require greater attention to nature-based solutions including healthy and resilient seas and oceans.

8. A zero pollution ambition for a toxic-free environment

To protect Europe's citizens and ecosystems, the EU needs to better monitor, report, prevent and remedy pollution from air, water, soil, and consumer products. It is essential to restore the natural functions of ground and surface water in order to preserve and restore biodiversity in lakes, rivers, wetlands and estuaries, and to prevent and limit damage from floods. The Commission will propose measures to address pollution from several sources, such as urban runoff, new or particularly harmful sources such as micro plastics and chemicals, large industrial installations and it will also present a chemicals strategy for sustainability in order to ensure a toxic-free environment.

2.2 The structure of the Green Deal Call

The Green Deal Call will address directly the 8 main areas of the European Green Deal as described above. Therefore, the call will be structured along these areas, especially regarding the topics that will aim at producing tangible results at the end of their implementation. Each of these topics will be endowed with significant budget, would cut across established sectoral domains and aim at realising impact for the policy areas covered by the European Green Deal by combining innovative technologies, business and governance models and behavioural approaches. This should be particularly the case for topics that would aim at supporting technology demonstration in real life context; such proposals should not be limited to technology demonstration but should for example aim at establishing lead-markets, addressing governance issues, possible standardisation needs, facilitating sustainable demand or similar aspects.

In parallel, 2 horizontal, supporting sections serving all the areas of the Call will include a limited number of topics that will have a longer term perspective and will aim to improve our knowledge on issues related to the European Green Deal as well as explore new ways for societal engagement in the necessary transition actions. Finally, in addition to the international cooperation dimension of the 'thematic' topics under the 8 main areas, it is envisaged that a separate topic on international cooperation focussing on areas that are

mentioned in the European Green Deal (such as Africa) might also be included in this section.

As already explained, the total number of topics must be limited in order to gather the necessary critical mass in each area and maximise the impact of the call. It is foreseen to arrive at a number between 8 and 12 thematic topics within the 8 areas of the Call and an additional number of 4-6 topics under the horizontal sections.

The proposed structure of the call is shown in the graph below:

UPDATED PROPOSED STRUCTURE FOR THE GREEN DEAL CALL

GREEN DEAL CALL

MAIN PART OF THE CALL FOCUSING ON INNOVATIVE SOLUTIONS AND DEMONSTRATIONS

Area 1:
Increasing
Climate
Ambition:
Cross
sectoral
challenges

Area 2:
Clean,
affordabl
e and
secure
energy

Area 3:
Industry
for a clean
and
circular
economy

Area 4:
Energy and
resource
efficient
buildings

Area 5:
Sustainable
and smart
mobility

Area 6:
Farm to
Fork

Area 7:
Ecosystems
and
Biodiversity

Area 8: Zero-
pollution,
toxic free
environment

Area 9: Strengthening our knowledge in support of the European Green Deal

Area 10: Empowering citizens for the transition towards a climate neutral, sustainable

Area 11: International cooperation (tbc)

3. Tentative topics for the Green Deal Call

The table below summarises the current list of topics per section of the GD call

FIRST LIST OF TOPICS AFTER THE SHERPA MEETING of 6/3/20

AREA OF THE CALL	TITLE OF TOPIC	NUMBER OF TOPICS
Area 1: Increasing Climate Ambition: Cross sectoral challenges	<ul style="list-style-type: none">- Preventing and Fighting Wildfires- Towards climate –neutral and socially innovative cities- Demonstrating innovative solutions for resilience of regions to climate change	3
Area 2: Clean, affordable and secure energy	<ul style="list-style-type: none">- Demonstration of innovative critical technologies to enable future large-scale deployment of offshore renewable energy technologies (with the possibility to address also hydrogen applications)	1
Area 3: Industry for a clean and circular economy	<ul style="list-style-type: none">- Closing the carbon cycle to combat climate change- Demonstration of systemic solutions for the territorial development of circular economy	2
Area 4: Energy and resource efficient buildings	<ul style="list-style-type: none">- Zero emissions built environment	1
Area 5: Sustainable and smart mobility	<ul style="list-style-type: none">- Green ports and airports	1
Area 6: Farm to Fork	<ul style="list-style-type: none">- Testing and demonstrating high impact innovations to address food system challenges in a place-based context.	1
Area 7: Ecosystems and Biodiversity	<ul style="list-style-type: none">- Restoring ecosystems and biodiversity	1

Area 8: Zero-pollution, toxic free environment	<ul style="list-style-type: none"> - Mitigating the effects of persistent and mobile chemicals - Towards innovative regulation of chemical and pharmaceutical mixtures: 	2
Area 9: Strengthening our knowledge in support of the EGD	<ul style="list-style-type: none"> - Reinforced R&I capacities and services to address European Green Deal challenges - Developing end-user products and services for all stakeholders and citizens, supporting climate adaptation and mitigation - <i>[Possible topic on: “towards transparent and accessible ocean” – tbc]</i> 	<p>2</p> <p><i>[1 -tbc]</i></p>
Area 10: Empowering citizens for the transition towards a climate neutral, sustainable Europe	<ul style="list-style-type: none"> - European capacities for citizen deliberation and behavioural change for the Green Deal - Empowering citizens to act on climate change through education, monitoring of their environmental impacts, and civic involvement 	2
<i>Area 11: International cooperation</i>	<ul style="list-style-type: none"> - <i>[Possible topic with a focus on cooperation with Africa – tbc]</i> 	<i>[1 – tbc]</i>
Total number of topics		17