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NOTE

From: Presidency
To: Permanent Representatives Committee/Council

Subject: *Preparation of the Competitiveness Council on 25-26 November 2021*
Research and Innovation in achieving cross-sectoral objectives
- *Policy debate*

Delegations will find attached a Presidency note on "Research and Innovation in achieving cross-sectoral objectives" with a view to the policy debate at the Competitiveness Council on 26 November 2021.

RESEARCH AND INNOVATION IN ACHIEVING CROSS-SECTORAL OBJECTIVES

Research and innovation in achieving cross-sectoral objectives

Acquiring a better understanding of complex challenges and applying existing or developing new knowledge to the challenge is becoming the default policy approach in Europe. This dynamics increases the importance of programming the right research and innovation (R&I) activities and diffusing and exploiting its results, but it also challenges the ways in which R&I policy coordinates and interacts with other policy domains.

On 14 July 2021, in an effort for Europe to become a climate-neutral continent within the next 30 years, the European Commission adopted the Fit for 55 package - a set of interconnected proposals with the aim to accelerate the green transition and reduce by 2030 the net greenhouse gas emissions by at least 55%, compared to 1990 levels. This requires cross-cutting policy measures from all relevant actors (e.g. EU, state governments, industry and citizens) and to start cooperating at national, regional and local level, to mobilise all sectors, taking due account of the different capabilities and specificities of Member States and of their economies.

In line with this, on 15 September, the Commission adopted a Communication on the New European Bauhaus. The New European Bauhaus expresses the EU's ambition of creating beautiful, sustainable, and inclusive places, products and ways of living. The initiative aims at a threefold transformation, in specific places on the ground, in the way of thinking but also in doing things differently to make innovation happen. A long-term, life-cycle thinking and new approaches to innovation should allow combining cutting-edge technology with low-tech and no-tech elements, to shape solutions that match the different contexts.

On 16 September the Commission, with a view of preventing, detecting, and rapidly responding to health emergencies, launched the European Health Emergency Response Authority (HERA). HERA is a pillar of the European Health Union and will fill a gap in the EU's health emergency response and preparedness. HERA will anticipate threats and potential health crises, through intelligence gathering and building the necessary response capacities. When an emergency hits, HERA will ensure the development, production and distribution of medicines, vaccines and other medical countermeasures. R&I will be a key pillar of HERA, contributing to many of these activities and to the overall objectives of HERA.

1. R&I component within the Fit for 55 package

The Fit for 55 package mobilises a broad range of policy areas and economic sectors, inter alia industry, energy (renewable energy, energy efficiency, fuels, energy use in various sectors), transport, land use and forestry. Furthermore, the package sets specific targets, standards and policy support measures to ensure a fair, competitive and green transition by 2030 and beyond. The Commission committed¹ to allocate at least 35% of R&I funding under the Horizon Europe programme (i.e. more than €33.4 billion) for climate-related green investments, including through the European partnerships and Missions. This investment should substantially contribute to the development of sustainable and innovative solutions enabling the ecological transition, as well as steer and accelerate Europe's recovery and resilience. In particular, Horizon Europe's actions through its pillars and in particular through clusters 'Climate, Energy, Mobility' and 'Food, Bioeconomy, Natural Resources and Environment', with joint funding of around €25 billion, will underpin the implementation of Europe's 2030 climate and energy targets benefiting people, planet, and prosperity, and prepare Europe to reach climate neutrality by 2050.²

¹ COM(2021) 550 final

² 'A European Green Deal' agreed to in 2019 by Council, and further reinforced at COP26 this month

Transport

More ambitious targets have been set to reduce CO₂ emissions for new vehicles, which will help pave the way towards zero-emission mobility. It is required that new cars and vans will emit 55% less CO₂ by 2030 and no CO₂ from 2035³. The aviation sector has a goal of decreasing its emissions by at least 30% by 2030. The greenhouse gas intensity of energy used on-board ships shall be reduced by 6% by 2030 and 75% by 2050. Clean alternative fuels should become more widespread and mainstreamed in all three transport sectors: road⁴, aviation⁵ and maritime⁶. This will lead to significant societal benefits, for example cleaner air, health improvements and cost savings for citizens.

Through Horizon 2020, the EU invested €1.5 billion in automotive R&I, and Horizon Europe should almost double investments in such collaborative research, which will directly support the implementation of the revised Regulation⁷ on CO₂ emission standards for cars and vans. The ‘Towards Zero-Emission Road Transport’ (2Zero) and ‘Batteries’ (BATT4EU) partnerships focus on zero emission road transportation with joint investments of over €2.2 billion. The maritime sector will become clean and quiet through the ‘Zero-Emission Waterborne Transport’ (ZEWT) Partnership with almost €4 billion investments, and the aviation sector will be supported by more than €4 billion through the ‘Clean Aviation Joint Undertaking’.

³ COM(2021) 556 final

⁴ COM(2021) 559 final

⁵ COM(2021) 561 final

⁶ COM(2021) 562 final

⁷ COM(2021) 556 final

Energy

Reducing emissions requires a drastic increase of the share of renewable energy in electricity production and significant improvement in energy efficiency to reduce the cost of green energy and make it competitive. The Effort Sharing Regulation⁸ will set annual greenhouse targets. The revised Renewable energy directive⁹ will direct energy production from renewables and increase the target of producing at least 40% of our energy from renewables. The revised Energy taxation directive¹⁰ should further stimulate market uptake of renewable energy solutions, including for secondary energy (especially electricity and hydrogen), by simplifying the tax structure and ranking them according to environmental performance. The recast Energy efficiency directive¹¹ will set a binding energy efficiency target and drive renovation of buildings.

While Horizon 2020 already kick-started the necessary transitions in key sectors through its €1 billion Green Deal Call, Horizon Europe will leverage the successes and be even more instrumental in achieving the new targets and goals. It will support the development and market uptake of renewable energy technologies, building on €124 million of such investments in Horizon 2020. With an initial investment of almost €360 million the Horizon Europe Mission on ‘Climate-Neutral and Smart Cities’ will support 100 cities to become climate neutral by 2030 and make them innovation hubs, providing solutions for all remaining cities to follow suit and become climate neutral by 2050. Additionally, the ‘Clean Energy Transition’ (CET) partnership will contribute to reaching renewable targets with over €800 million for cost-efficient decarbonised technologies and systems, and the ‘Clean Hydrogen Partnership’, with over €2 billion in funding, will drive the EU’s hydrogen value chain, and will be completed by other partnerships dealing with use of hydrogen in transport and industry sectors.

⁸ COM(2021) 555 final

⁹ COM(2021) 557 final

¹⁰ COM(2021) 563 final

¹¹ COM(2021) 558 final

Industry

The Emissions Trading System (ETS) is seen as instrumental towards meeting the greenhouse gas reduction targets and combating climate change and emissions will become even more restricted in the EU¹². The Climate Action Innovation Fund revenues support the development of new clean technologies for energy-intensive industries, renewables, energy storage, and carbon capture, use and storage. The new Social Climate Fund should help Member States address social impacts of the green transition in transport and built environment.

Four of the five Horizon Europe Missions (Adaptation to Climate Change, Restore our Ocean and Waters, 100 Climate-neutral and Smart Cities, and A Soil Deal for Europe) will advance innovative solutions for climate-related challenges. The ‘EIT Climate’ Knowledge and Innovation Community (KIC) will continue to create and deploy solutions in those areas, in synergy with the relevant Missions.

For high climate impact European processing industries the ‘EIT Manufacturing’ KIC (which will receive €33.6 million in 2021), the €900 million ‘Made in Europe Partnership’ and the €2.6 billion ‘Processes4Planet’ partnership, will help lead the transition to climate neutrality and circularity in a fair and inclusive way. The ‘Clean Steel’ partnership will invest €1.7 billion over the next decade to enable climate-neutral steel production.

Land use and forestry

New targets have been set by the Land Use, Land-use Change and Forestry Regulation¹³ to put land use, forestry and agriculture on the path to climate-neutral food and biomass production. The capacity of the EU’s forests, soils, wetlands and peatlands¹⁴, oceans, and water bodies to act as carbon sinks and stocks have to be increased. These objectives require a sustainable and circular bioeconomy.

¹² COM(2021) 551 final and COM(2021) 552 final

¹³ COM(2021) 554 final

¹⁴ terrestrial wetland ecosystems in which waterlogged conditions prevent plant material from fully decomposing

Initial investments of €660 million through Horizon Europe's Missions 'A Soil Deal for Europe', 'Restore our Ocean and Waters by 2030' and 'Adaptation to climate change' will lead this transition together with citizens. Additionally, the Horizon Europe part-funded Circular Bio-based Europe partnership will bring together the public and private sector by providing €2 billion investment for bio-based innovative solutions and their market deployment.

Buildings and the New European Bauhaus initiative

New policy measures will be put in place in order to improve the energy efficiency of buildings, energy appliances and systems so that the overall energy needs in heating and cooling are reduced. Buildings renovations for greener lifestyles is promoted by setting a benchmark of 49% renewable share in the energy used in buildings by 2030¹⁵.

These goals will be supported also by the 'Climate-Neutral and Smart Cities' mission of Horizon Europe, while the 'Built4People' partnership will directly accelerate people-centric innovation in the built environment through €800 million investments in R&I.

The European Commission is at the same time proposing to rethink our way of living together. The 'New European Bauhaus' initiative¹⁶, sets out a multi-level (from global to local), participatory and transdisciplinary approach for transforming places and the enabling ecosystem for innovation, as well as for diffusing new meanings, including through education and culture. The Communication foresees mobilising different EU programmes as well as working together with a variety of actors, notably the growing community that developed around the initiative during its initial 6 months of co-design, EU Member States and EU Institutions. For the period 2021-2022, different programmes, including Horizon Europe (relevant clusters, Missions and EIT) already support this initiative through dedicated calls worth in the range of €85 million.

Numerous complementary actions are also foreseen through more generic calls and actions supported under different instruments, in which the New European Bauhaus will be one of the priorities or an element of context.

¹⁵ COM(2021) 557 final

¹⁶ COM(2021) 573 final

In this spirit, the New European Bauhaus (NEB) will support the uptake of innovations across different industrial ecosystems, from construction to lifestyle and creative industries, from materials to business models, from digital to food and farming. From the promotion of participatory co-design processes to the ability to support the financing of local transformation projects, the NEB will require strong cooperation across international, national, regional and local levels of governance, including from individuals and grass roots organisations. R&I is playing an important role e.g. via the €25 million cross-EU Mission call for ‘NEB lighthouse demonstrators’. These pilot projects will embody the three core values of the NEB – sustainability, inclusion, and aesthetics – while also taking a mission-oriented approach to bring about real transformational change on the ground. Beyond 2022, further synergies will be explored between the NEB and the EU Missions.

2. R&I component in HERA (European Health Emergency Preparedness and Response Authority)

The COVID-19 pandemic was also a lesson about the importance of policies working together and quickly addressing pandemics and similar situations. The European Commission published in this context a package proposal on 16 September 2021 for completing the European Health Union, notably by setting up a European Health Emergency preparedness and Response Authority (HERA). It should address cross-border health threats, vulnerabilities and strategic dependencies within the Union (related to the development, production, procurement, stockpiling and distribution of medical countermeasures) and contribute to reinforcing the global health emergency preparedness and response architecture.

In HERA’s default “preparedness mode”, at least 3 of its 5 main tasks will be significantly underpinned by research and innovation: (1) anticipatory threat assessment, horizon scanning and foresight, (2) research and development for medical countermeasures and technologies and (3) training programmes to improve knowledge and skills. In its “crisis mode”, research and innovation will play a role after the emergency research and innovation plans are activated, and EU wide clinical trial networks and data sharing platforms will be used.

Horizon Europe will contribute to realising HERA's €6 billion budget in the next six years, particularly through programmed collaborative research and innovation projects in the domain of health, but also through fundamental research supported by the European Research Council, and innovation through the European Innovation Council and the European Institute of Innovation and Technology. The future 'European Partnership on Pandemic Preparedness' should in particular aim to improve the EU's preparedness to predict and respond to emerging infectious health threats by better coordinating funding for research and innovation at EU, national (and regional) level towards jointly agreed objectives and an agreed strategic research and innovation agenda.

3. Questions for discussion

We have been stressing continuously that R&I must be better mainstreamed in the relevant sectoral policies, providing smart directionality. This has now successfully been manifested through the Fit for 55 package, the New European Bauhaus and HERA initiatives among others. Tens of billions Euros will be invested from Horizon Europe in support of achieving their objectives, including through its missions and partnerships acting as a synergetic force across the EU funding programmes. The scale and complexity of challenges these initiatives are addressing are however such, that their design already implies acting not only at EU level, but jointly at national and regional levels. Therefore, the need is two-fold: accomplishing seamless multi-level action on the one hand and synchronous planning and implementation of R&I in different policies in a whole-of-government context on the other. Both require new efforts and approaches of policy-makers.

1. How did your country organise cross-sectoral coordination for European initiatives of the Fit for 55 package, New European Bauhaus and HERA?
2. How is your country preparing for their roll-out on national levels and the inclusion of research and innovation policy in them?