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From:	Trio Presidency
To:	High Level Working Group on Competitiveness and Growth
Subject:	Multi-country cooperation on recovery and resilience plans to secure "European added value"

The Recovery and Resilience Facility (RRF) is the centrepiece of Next Generation EU. It is designed to foster a sustainable and inclusive recovery, promote the green and digital transitions and enhance the resilience of the European economy. The RRF's financial firepower of up to EUR 672.5 billion, providing financial support through grants and loans, will help Member States to engage in public investments and reforms. The amount will be partially frontloaded for the crucial first years of the recovery and will include provision for pre-financing at 13 %.

Since the launch of the RRF, the Commission has started a dialogue with Member States on the preparation of their recovery and resilience plans. The agreement on the Regulation will now enable Member States to align their preparations with the final legal framework. The main changes that Member States will need to reflect relate to: the scope (i.e. the six pillars[1]), the assessment criteria, the strengthened focus on controls and auditing or a revised methodology for tracking climate expenditure, as well as an appropriate participation by small and medium-sized enterprises. The Commission is currently updating the guidance document of September 2020 to assist the Member States in this process.

Most importantly, the recovery and resilience plans will contribute to the national reform and investment agenda designed in line with the EU policy objectives and shall be consistent with and help effectively to address all, or a significant subset of the challenges identified in the relevant country-specific recommendations issued in the context of the European Semester.

The RRF is a unique opportunity to address Member States shared challenges, e.g. to steer the digital and green transition and to deepen the Single Market by providing incentives to Member States to work together on cross-border and multi-country projects. Business clusters and networks should be used, since they bridge SMEs, large companies and research across administrative borders and can effectively accelerate uptake of technologies and standards, channel funding where needed and connect bottom-up requests with top-down initiatives. Such coordination of efforts and pooling of resources across borders can increase the impact of the projects, whilst better integrating value chains and deepening the Single Market.

In the light of today's discussion, Member States are invited to consider areas which present potential for multi-country and cross-border cooperation which will contribute to developing synergies. They can present key elements of their plans, exchange good practices and thereby identify avenues for multi-country and cross-border cooperation. In that context, this note highlights the possibility for cooperation on market surveillance, hydrogen, microelectronics, cloud infrastructure, raw materials, and autonomous vehicles.

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1 Green transition; digital transformation; smart, sustainable and inclusive growth; social and territorial cohesion; health, and economic, social and institutional resilience; and policies for the next generation, children and youth, including education and skills.

1. Market surveillance

The lack of product controls in the Single Market and at the external borders has been exposed during the COVID-19 pandemic, with rogue traders taking advantage of the public health crisis to sell dangerous, illicit and non-compliant products (e.g. face masks and other protective equipment). Recent measures have been adopted to modernise this sector in the new regulations on market surveillance (Regulation (EU) 2019/1020) and type-approval (Regulation (EU) 2018/858).

Effective cross-border cooperation between market surveillance authorities in different EU countries is essential to ensure efficient, comprehensive, and consistent activities. Nonetheless, most Member States struggle with budget limitations when wishing to fund market surveillance structures, in particular the costs for additional staff and testing. It is of the outmost importance to allow Member States to use RRF resources to build or upgrade their market surveillance systems covering all non-food products, including those in the automotive sector.

The RRF might provide the necessary resources to:

- support the establishment of new accredited public laboratories, or the extension of existing ones, for cross-border product testing by groups of interested Member States.
- support market surveillance authorities with stepping up the digitalisation of product inspections and data collection, and applying artificial intelligence to trace dangerous and illicit products and identify trends and risks in the Single Market. This would include support for the purchase of state-of-the-art-equipment and IT tools, such as barcode scanners, web crawler and data mining tools, and interfaces with the ICSMS.
- support the consolidation of national market surveillance authorities in single national – or, in federal countries, regional – product safety and surveillance agencies, so as to improve the resilience of market surveillance and product safety.

2. Hydrogen

Fast deployment of renewable hydrogen is essential for the transition towards reduced emissions. The 'Power up' flagship calls for coordinated investments and reforms to develop hydrogen lead markets to accelerate the EU transition to climate neutrality and provide tangible benefits for the economy. The targets of 6 GW electrolyser capacity and the production and transportation of 1 million tonnes of renewable hydrogen across the EU by 2025 requires coordinated investment. This is due to the need to simultaneously build up the full hydrogen value chain, including renewable hydrogen production, infrastructure (e.g. pipelines), deployment in industry and mobility. In addition, the 'Refuel and recharge'[2] flagship calls for investment to build 500 hydrogen refuelling stations by 2025, so as to accelerate the use of sustainable transport. The EU's industries are competitive on hydrogen technologies, but the emerging value chain requires substantial support in order to maintain its technological leadership at this early market phase. Investments in all parts of the value chain will ensure the EU's capacity along the full value chain, resulting in a competitive and resilient hydrogen industry that will deliver jobs and climate neutral solutions.

Large-scale multi-country investment projects would support the joint development and deployment of hydrogen technologies and systems, particularly in hard-to-abate sectors where clean hydrogen is either the only available decarbonisation solution or else the most cost-efficient one. In addition, cross-border projects are relevant ways to ensure transmission of clean hydrogen from a given country for industrial use in a neighbouring country, and to ensure the establishment of smooth cross-border hydrogen refuelling infrastructure. In this context, cross-border cooperation can also contribute to achieving comparative advantages for efficient and cheap production of green hydrogen and its subsequent transportation.

[2] https://www.clustercollaboration.eu/news/flagship-area-recharge-and-refuel

As a preparation for large collaborative multi-country projects, a number of Member States have launched national calls for expression of interest in an *Important Project of Common European Interest* (IPCEI) on hydrogen. To increase cooperation in these large-scale projects, 22 EU Member States and Norway signed a manifesto for the development of a European Hydrogen Technologies and Systems value chain in December 2020, recognising the importance of promoting cross-border collaboration and of working on large-scale joint investment projects. During the same period, five Member States[3] issued a joint letter calling on the EU to clearly prioritise renewable energies. The discussions around these projects have covered the full hydrogen value chain, from renewable hydrogen production to hydrogen transportation and various end-uses, including industrial use in steel and chemical industries as well as mobility. Such initiatives are creating the conditions for Member States to align their hydrogen strategies with the EU's main objectives.

Furthermore, the thematic roundtables of the European Clean Hydrogen Alliance will elaborate a project pipeline that delivers on the 2030 objectives of the EU Hydrogen Strategy and strengthens the EU dimension and industrial capacities. Some of these hydrogen projects will require public investment from a number of Member States if they are to be viable, contribute to growth and help overcome the economic damage caused by COVID-19.

3. Microelectronics and connectivity

Microelectronics is an essential prerequisite for the competitiveness of European industry. It is the basis for value creation in almost all sectors, including communication (5G and 6G networks), AI, new mobility, IoT, autonomous driving, medical technology and security/defence technology. Microelectronics and the associated manufacturing know-how need to be available in the EU, or recovered in certain areas.

[3] Austria, Denmark, Luxembourg, Portugal and Spain.

Currently, globally operating companies dominate in certain areas (Huawei, China, in networking; TSMC, Taiwan, as a foundry for high-performance processors; Nvidia, USA, in design graphics/AI chips). The European microelectronics industry can only survive against this competition if it has access to the latest and most secure microelectronics technology and if that access cannot be disrupted. However, currently the free access is open to disturbance, sometimes of a sensitive nature. Economic dominance in the microelectronics and communication technologies sub-sectors is high up the agenda in the US and China.

In future, the European economy will only be able to compete on the world markets and position itself as an alternative to the conflicting interests of the USA and China if the microelectronic products or components are developed and manufactured in Europe, and if worldwide sales cannot be prevented or disrupted owing to their dependence on patent rights in the USA or China.

In this context, it is strategically important to launch a joint European initiative (IPCEI) to further develop existing microelectronics and communications technologies in Europe. This was made clear by the declaration '*A European Initiative on Processors and semiconductor technologies*', jointly signed by 18 EU Member States on 7 December 2020. In order to prepare large collaborative multi-country projects, a number of Member States have already launched national calls for expression of interest in an IPCEI on *Microelectronics and Connectivity*.

4. Cloud infrastructure and services

For the EU it is essential to build smart technological foundations for ensuring how data will be generated, stored, searched, analysed, processed, accessed, shared and exchanged, so as to benefit the European economy, its businesses, public entities and communities. The need to strategically 'invest in European' for the next generation of cloud and edge capacities has been emphasised on several occasions, e.g. within the scope of the flagship area 'Scale-up' in the Recovery and Resilience Facility presented by the Commission, in the European Council Conclusions of 1-2 October 2020, and in the Member States' Joint Declaration on Building the Next Generation of Cloud in Europe of 15 October 2020.

Against this background, Member States must work together to offer a coordinated industrial response with significant European relevance. The implementation of an IPCEI on Next Generation Cloud Infrastructure and Services will be an effective measure for ensuring European data leadership, stronger and sustainable competitiveness of the EU economy, and the flourishing of smart cloud solutions that are highly innovative, fully interoperable, highly secure, fully energy efficient and respectful of privacy, and that increase access and choice for end-users across EU territory:

- The IPCEI will foster the development of the next generation of highly scalable, federated, interoperable, trustworthy and energy-efficient infrastructures and platforms, and by operating, where appropriate, on an edge-cloud model, will leverage existing national initiatives and the GAIA-X open source architectural framework and deliver on a key action of the EU Data Strategy.

- The IPCEI should be established by EU Member States and have wide benefits for businesses and public entities in terms of access, use and processing of their data, which will take place in real-time, with low latency and securely from anywhere across EU territory. Equipping the EU with advanced cloud to edge capabilities under European jurisdiction will foster the resilience of European industries and public entities, whilst paving the way for disruptive and innovative services.

- The IPCEI will comprise research, innovation, testing and the first industrial deployment of the next generation of infrastructure and the associated middleware and services based on cutting-edge, open-source frameworks and distributed and scalable architectures. The IPCEI will benefit various sectors in the European economy including manufacturing, smart mobility and healthcare.

5. Raw materials

The digital and green transitions rely on the crucial input of critical raw materials[4]. Raw materials feed multi-country value chains in the EU. Rare types of earth mined in Sweden or Germany, for instance, may be processed in Estonia, Poland to be manufactured into magnets in Estonia, Germany, Slovenia to be used in cars built in Poland, Germany, France, Sweden, Czechia.

EUR 30 billion will be invested in this sector through a set of multi-country projects by 2030, of which approximately EUR 9.4 billion is available for short-term financing until 2023. These sets of projects are divided into 3 groups:

i) *Rare earths and magnets:* priority investment areas include extraction of primary REE ores and recovery from mining waste (e.g. from bauxite-, iron ore- and coal mining), rare earth refining, magnet development, and recovery of rare earths from used magnets. The set of projects include candidates from France (magnet recycling), Estonia (rare earths processing and magnet production), Germany (mining, processing and magnet making). The overall investment needed for a set of projects is EUR 1.7 billion, with 1/3 from public sources.

ii) *development of battery-grade lithium refining capacity:* the set of projects includes candidates from Finland, France and Portugal, whilst Portugal and Sweden as well as Germany and Romania are proposing cross-country projects. The refined lithium may feed giga factories in France, Poland, Germany or Sweden. The overall investment needed for a set of projects is EUR 4.4 billion, with 1/3 from public sources.

[4] Such as lithium, cobalt and natural graphite for batteries, or rare earth elements for permanent magnets and motors and for data storage.

iii) *development of metals and critical raw materials capacities:* investment areas include base metals and CRM extraction and recovery from mining waste, environmentally-friendly production of base metals and CRMs. The set of projects include candidates from the Czech Republic (lithium mining) Poland (green copper production) and Spain (recovery of cobalt and copper from tailings), France (recovery of materials from end-of-life circuit boards and windmills), the Netherlands (urban mining and recycling of contaminated scrap; CO2 efficient smelting). The overall investment needed for a set of projects is EUR 3.3 billion EUR, with 1/3 from public sources.

The projects will need to accelerate promising cases through more efficient processes, while respecting compliance with the environmental impact assessment legislation and feasibility studies. The European Raw Materials Alliance (ERMA) network can facilitate off-take agreements to accomplish long-term supply relationships.

6. Making urban and interurban mobility healthy and sustainable with connected and automated multimodal mobility

Autonomous electric shuttles are a strategic choice for boosting the competitiveness of EU transport solutions and represent a promising emerging market for Europe, while contributing to greening and digitalising the transport sector. After several years of testing, the first commercial deployments are being launched (dedicated paths, airports, bus lanes, etc.) and the global market is expected to be over EUR 15 billion by 2040. Europe is already well-positioned in the development and deployment of autonomous shuttles systems, with several start-ups building shuttles and autonomous driving platforms, strong automotive suppliers and transport companies. However, progress is still needed on the technology and will only happen if an increasing number of vehicles are used on the road. The lack of public charging stations is also an issue. Public and private investment will be needed to support further technological progress and scale up the deployment of autonomous electric shuttles as a form of public transport. With the resources from the RRF, Member States have a unique opportunity to design autonomous and electric shuttle projects at the local, national and cross-border levels. Apart from the direct contribution to the twin green and digital transformation of the mobility ecosystem, the success of electric autonomous shuttles in Europe would help secure the development of a strategic technology, thereby positioning the EU as the leader in the fast-growing global market.

Question for discussion:

*What are your plans and intentions for **cross-border and multi-country** projects in the context of the RRF – i.e. projects in the areas identified in this paper or projects not covered by those areas?*