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| From: | General Secretariat of the Council |
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| Subject: | Draft Council conclusions on the Commission's communication on advanced materials - Presidency text |

Delegations will find attached a revised Presidency text on the *draft Council conclusions the Commission's communication on Advanced Materials* with a view to the Research Working Party meeting on 30 September 2024.

Changes in comparison to doc. 12737/24 are marked in **bold underline** for additions and in ~~strikethrough~~ for deletions.

DRAFT COUNCIL CONCLUSIONS ON THE COMMISSION'S COMMUNICATION
ON ADVANCED MATERIALS

The COUNCIL of the EUROPEAN UNION

RECALLING

- **its conclusions of 22 December 2022 on the New European Innovation Agenda which sets out an innovation policy to position the EU as a global leader¹** ;
- its policy debate of 23 May 2024 on Research and Innovation (R&I) for advanced materials for Industrial Leadership, focused on the coordination of research and innovation on advanced materials between the Union and the Member States to avoid fragmentation, the application areas to be prioritised, and the best practices in the Member States²;
- its conclusions of 23 May 2024 on Strengthening knowledge valorisation as a tool for a resilient and competitive industry and for strategic autonomy in an open economy in Europe, where it underlines the strategic importance of critical and emerging technologies – such as artificial intelligence, life-science technologies and advanced materials - in strengthening the Union's position in global value chains and driving its resilience and sustainability³ ;
- its conclusions of 24 May 2024 on a competitive European industry driving our green, digital and resilient future where it stresses the need to promote advanced materials and circularity⁴;
- ~~its conclusions of 22 December 2022 on the New European Innovation Agenda which sets out an innovation policy to position the EU as a global leader⁵;~~
- **the report “The future of European competitiveness” prepared by Mario Draghi, published on 9 September 2024, in particular its recommendation to boost EU industrial leadership in advanced materials;**

¹ **15602/22.**

² 9333/24.

³ 10182/24.

⁴ 10127/24.

⁵ ~~15602/22~~

1. WELCOMES the Communication from the Commission on Advanced Materials for Industrial Leadership, published on 27 February 2024⁶, which sets out a European strategy to ensure research, innovation and industrial leadership in advanced materials, a key enabling technology. RECALLS that the communication places European research and innovation on advanced materials as a launchpad for the twin transition, addresses advanced materials under five different pillars ranging from research into future advanced materials under EU, national and regional research programmes to production and use of already available advanced materials.
2. ACKNOWLEDGES that the demand for advanced materials is expected to grow significantly in the coming years in various sectors. UNDERLINES that the Union needs to accelerate research and development in advanced materials; scale up its innovation and manufacturing capacity; and ~~accelerate~~ **encourage** the **efficient** industrial use of advanced materials to strengthen ~~the EUnion~~ **the Union**'s competitiveness, enhance its economic ~~and research~~ security and reinforce its resilience and strategic autonomy while preserving an open economy.
3. RECOGNISES the necessity to ~~create~~ **further develop** a dynamic, secure and inclusive ecosystem for advanced materials **across the Union** ~~in Europe~~ that contributes to a competitive green and digital transition. CONSIDERS that such an ecosystem should build on existing strengths, tackle ~~weaknesses~~ **gaps**, support **fundamental and applied** research, development and innovation in the Union, and stimulate competitiveness and growth. STRESSES in this context the importance of making use of European research **infrastructures and technology** infrastructures with the potential and unique capabilities to enable scientific breakthroughs in materials science. **EMPHASISES the need to support regional innovation ecosystems to structure and connect value chains.**

⁶ 7172/24.

4. RECALLS the importance for the next generation of advanced materials to be safe, sustainable, ~~and~~ circular **and resource efficient. EMPHASISES the need to implement the “reduce, reuse, recycle” principle in designing and processing advanced materials, which are cost-effective and competitive. CONSIDERS that foresight studies are needed to explore different scenarios of future needs and possible circular and sustainable solutions, as well as the desirable production and use of advanced materials that may be critical in the future.** CONSIDERS that these materials should ~~strive to be~~ ‘safe and sustainable by design’ to **meet** ~~achieve~~ the Green Deal’s **targets** ~~ambitions~~ for zero pollution and a toxic-free environment, ~~and~~ offer solutions to meet the ambition of achieving a European Circular Economy, to contribute to the objectives of the Green Deal Industrial Plan - including the Critical Raw Materials Act, the Net-Zero Industry Act, and the objectives of the **European** Chips Act – as well as to improve energy and resource efficiency. CALLS ON the Commission to identify as soon as possible **evidence-informed** criteria and policies to mitigate the risks of European strategic dependencies on critical raw materials by means of advanced materials. RECOGNISES the necessity **for** ~~of~~ methods and assessment tools for the characterisation, ~~and~~ testing **and validation** of advanced materials, ~~and~~ **for** ~~of~~ ~~the~~ **integration of** circular economy principles and **the** conducting **of** comprehensive lifecycle assessments to ensure sustainable production, use, and disposal of advanced materials. UNDERLINES the need to **reduce the general use of materials,** increase resource efficiency, **and** promote circularity and reuse of materials to reduce environmental impact and resource dependency.
5. **STRESSES that advanced materials are critical for the European economic security. Therefore, INVITES the Commission and the Member States to develop further measures to improve research security and risk management, in collaboration with third countries where appropriate.**

~~6. 5-~~ HIGHLIGHTS that the Union, national and regional level priorities in R&I on advanced materials need to be coordinated ~~and aligned~~ with the Union's strategies on the twin transition and economic resilience. RECALLS the preliminary priorities identified by the Commission communication, in the areas of energy, mobility, construction and electronics, as these are critical for the Union's green and digital transition. CALLS on the Commission to continue working with Member States to ~~agree on common objectives and~~ identify **the common objectives and to revise and update, as appropriate, priority areas** for the research, development and deployment of advanced materials, **including consideration of thematic areas such as healthcare and agri-food**. REITERATES the importance of co-creation between the Member States and the Commission to effectively progress ~~our~~ the advanced materials R&I priorities. **NOTES that the next priority areas for advanced materials should cover sectors of outstanding importance from economic, strategic and social point of view.**

~~6.~~ HIGHLIGHTS that ~~priority areas should be revised and updated as necessary in agreement between the Member States and the Commission, taking into account socio-economic, scientific, or technological developments, or following the further identification of common needs for joint actions.~~ WELCOMES the approach to focus on future priorities for advanced materials as of 2025. ~~NOTES that the next priority areas for advanced materials should cover sectors of outstanding importance from an economic, strategic and social point of view.~~

7. HIGHLIGHTS the critical role of digitalisation of R&I in advanced materials, in particular digital modelling tools, common data analytics/ontologies and artificial intelligence that have the potential to accelerate the discovery and the composition of new innovative materials. ~~UNDERLINES the strategic importance~~ **TAKES NOTE of the suggestion** of setting up a common digital infrastructure for advanced materials, **open to all Member States**, to fully exploit the potential of material's data and artificial intelligence in Europe to speed up the design and development of advanced materials throughout the whole lifecycle, taking into account the ecosystem of already existing research **infrastructures** and technology infrastructures and data spaces such as the EuroHPC Joint Undertaking and the European Open Science Cloud. STRESSES that such common digital infrastructure should **be supported by** ~~a joint effort~~ of the Union and the Member States, fostering contributions from both academia and industry **and facilitating the integration of national initiatives**.

8. NOTES the Decision of the Commission of 5 July 2024 for a governance structure in the form of a Technology Council for Advanced Materials, which will coordinate the actions on advanced materials with Member States, research performing and funding organisations and industry. REQUESTS the Commission, when setting up this forum, to take into account existing structures, where relevant, and **to** avoid unnecessary administrative burden for Member States and any overlaps with the decision-making role of the Council and the work carried out within the R&I Framework Programme's committees, **in line with the principles of good governance and transparency.** WELCOMES the cooperation on common objectives and priorities with the R&I Framework Programme Associated Countries, and with third countries, where relevant, **in line with the Union's strategic autonomy.**
9. EMPHASISES that ~~increasing~~ public and private funding and investment in research, development and innovation of advanced materials is key to the proposed actions. **HIGHLIGHTS the importance to continue funding R&I actions with low Technology Readiness Levels at national level and Union level through the R&I Framework Programme.** NOTES that the new 'Innovative Materials for EU' partnership is a further step in joining forces between industry and academia and ~~triggering~~ **generating** more private investment. STRESSES that this new industrial partnership should embrace a transparent, **open** and inclusive approach, **based on** ~~striving for~~ excellence and **striving for** the widest possible participation across Europe when establishing collaborations, in order to exploit knowledge, resources and expertise from the whole EU, paving the way for more resilient and interconnected industries. ~~NOTES~~ **TAKES INTO ACCOUNT** the **work** ~~discussions~~ in the Joint European Forum for Important Projects of Common European Interest on advanced materials which could ~~be~~ play a key **an important** role in the deployment of innovative advanced materials.

10. NOTES the intention of the Commission to support the development of advanced materials ~~through dedicated funding and investment through the European Innovation Council.~~ ENCOURAGES the strengthening, mobilising and managing of public and private investment through **the Strategic Technologies for Europe Platform (STEP) and** other EU instruments **such as**, ~~in particular through the Innovation Fund, the Strategic Technologies for Europe Platform (STEP) and InvestEU.~~ Therefore, CALLS on the Commission to reinforce synergies **between EU funds and programmes relevant for the development of advanced materials** and, on the Member States, to fully exploit **such** ~~the currently available synergies between EU funds and programmes relevant for the development of advanced materials.~~ HIGHLIGHTS the need to implement synergies between such EU funding opportunities at their design stage, and **to** encourage synergies with national and regional funding.
11. ~~RECALLS that, in line with the Commission Communication of 25 November 2020 on “Making the most of the EU’s innovation potential: an intellectual property action to support the EU’s recovery and resilience”⁷, it is important to analyse the identified challenges in the area of patents, and more generally the protection of intellectual property rights, specifically for the advanced materials sector.~~ **RECALLS that the valorisation of knowledge and the strategic use of intangible assets - including intellectual property rights and trade secrets - are essential factors for industries, and in particular Small and Medium-sized Enterprises (SMEs), to attract investment, to generate value and to increase their competitiveness.** ~~STRESSES that it is essential to encourage~~ **Therefore, CALLS upon** developers of advanced materials to make best use of the guidance for knowledge valorisation. ~~RECALLS that the Commission will perform an analysis of the patent landscape and the needs of industry to identify necessary actions to revamp the Union leading role.~~
12. RECOGNISES the critical role of ~~Small and Medium-sized Enterprises (SMEs)~~ and start-ups in conducting research and development and driving innovation in advanced materials. POINTS OUT that innovators and SMEs should be supported to design and test high-performance and sustainable materials. UNDERLINES the necessity of support mechanisms such as grants, financial instruments, equity investment, incubators, mentorships, and access to infrastructure to help SMEs to overcome market entry barriers and scale up their innovations.

⁷ 13354/20.

13. RECOGNISES ~~the importance of~~ **the need to learn from** the Open Innovation Test Beds as a pilot for future technology infrastructures and the need for a single-entry point to facilitate and accelerate industrial and commercial scale-up, in support to researchers, innovators, industry, and particularly to SMEs and start-ups. HIGHLIGHTS the role of regulatory sandboxes and standards as enablers of innovation.
- 14.** ~~13a.~~ ACKNOWLEDGES the importance to leverage public procurement to drive the demand of advanced materials. NOTES that this requires information sharing about state-of-the-art innovations available for procurers as well as better coordination between large buyers so that innovative firms can scale effectively and efficiently.
- 15.** ~~14.~~ EMPHASISES that new skills are needed for innovative methods and tools, and the design and development of new materials. **ACKNOWLEDGES that skills in materials science, chemistry, physics, engineering, and information technologies are especially needed.** NOTES the **launch by the Commission** ~~relevance of the contribution from the~~ **of an** Academy of Advanced Materials, ~~to be launched by the Commission~~ in collaboration with the European Institute of Innovation and Technology in 2024 as well as **and ENCOURAGES** other **relevant** ~~already existing~~ structures and programmes **to engage in delivering on new skills.** ~~ACKNOWLEDGES that skills in materials science, chemistry, physics, engineering, and information technologies are especially needed.~~ **SUGGESTS STRESSES** that, **in accordance with national competence and institutional autonomy,** these skills **are** need to be mapped and, **where needed, included** featured in **relevant** related education and training programmes, **in** including, the development and promotion of corresponding curricula and teaching methodologies at vocational education and training (VET), **and in** as well as higher education **as well as in other relevant** and training programmes for upskilling **programmes.** ~~the future and current workforce in accordance with national competence and institutional autonomy.~~

16. ~~15.~~ RECOGNISES the importance of promoting Science, Technology, Engineering, and Mathematics (STEM) education, supporting VET initiatives, and facilitating career development pathways for researchers and professionals in this field including intersectoral mobility mechanisms. UNDERLINES that efforts should be made to address women's under-representation in STEM studies through enabling inclusive and supportive ~~eng~~ learning and working environments-ensuring hands-on experiences and internships, and promoting role models and mentoring. CALLS FOR the promotion and sharing of best practices and successful case studies in the development and application of advanced materials to foster learning, innovation, and replication of successful models across the Union.

17. ~~16.~~ ACKNOWLEDGES the ethical considerations and societal implications of advanced materials, including **their impact** regarding **on** health and **the** environmental ~~impact~~. STRESSES the importance of **raising public awareness regarding** ~~developing frameworks to address these concerns and ensure~~ the responsible production and use of advanced materials. EMPHASISES the crucial importance of societal acceptance for advanced materials to ensure their successful integration into everyday life and economy. Therefore, ENCOURAGES the Commission and the Member States to provide extensive information at Union, national, regional and local level with the aim to raising public awareness and understanding on advanced materials. CONSIDERS that ~~this campaign~~ **such information** could highlight the benefits, safety and sustainability of these materials, could address potential concerns and foster public trust, and, where relevant, it could be linked to existing communication initiatives.