



Advanced Materials 2030 Initiative

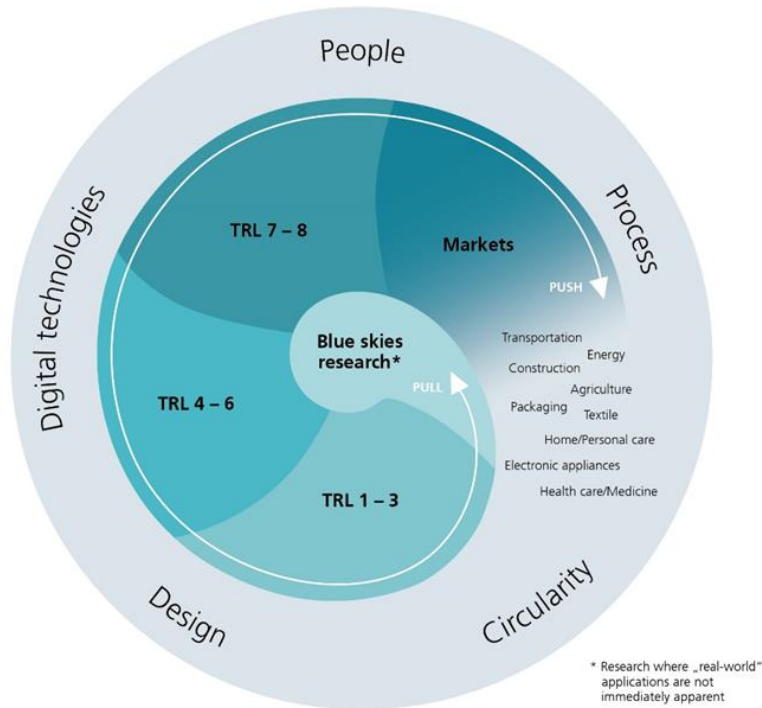
Dr. Amaya Igartua, Fundación TEKNIKER
Core Team Member of AMI2030
Co-secretary of EUMAT Platform
Contact: amaya.igartua@tekniker.es

June 2023

El Manifiesto de los Materiales 2030

Feb. 2022

*Una llamada para fomentar nuevas formas de cooperación **inclusiva** a lo largo de la cadena de valor **para** contrarestar la fragmentación de la I+D en Europa*



Europa debe apoyar la evolución de la investigación en materiales:

- Combinando las competencias y capacidades de los materiales y el mundo digital
- Combinando el empuje de la tecnología y el tirón del mercado
- Unificando Europa

*“Se requiere una aproximación hacia el Sistema, para desarrollar la siguiente generación de **materiales avanzados orientados** a soluciones concretas, que proporcione **respuestas a los retos** de una forma más **rápida, escalable y eficiente**, convirtiendo en oportunidades para la Sociedad Europea, la economía y el medio ambiente, hoy y en el future”*

Un año después...

- 370+ organizaciones involucradas
- ~ 600 expertos

La ambición de la Iniciativa de Materiales Avanzados 2030

Los Materiales avanzados son una fuente de prosperidad para la Sociedad Europea

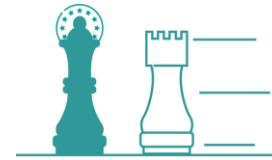
Principales retos, fallos, lagunas,...



La necesidad de desarrollar materiales avanzados **cada vez más complejos**, y de forma **más rápida**.



Una Sociedad **fragmentada** en sus miembros, competencias, recursos e iniciativas.



El **liderazgo Europeo** en la Innovación de materiales y la competitividad industrial en diferentes mercados estratégicos **está en Riesgo**.



Falta de **resiliencia** y **sostenibilidad** en las cadenas de valor de los Materiales Avanzados.

Un acelerador multi-sectorial para el diseño, desarrollo y escalado de materiales avanzados más seguros y sostenibles, hacia una economía circular

La ambición de la Iniciativa Materiales 2030

OBJETIVOS GENERALES



Impulsar la **competitividad industrial** a través de la Innovación tecnológica interdisciplinar



Establecer y fortalecer las cadenas de valor de los materiales avanzados, para hacerlos más sostenibles, resilientes y circulares, **apoyando el Green Deal**



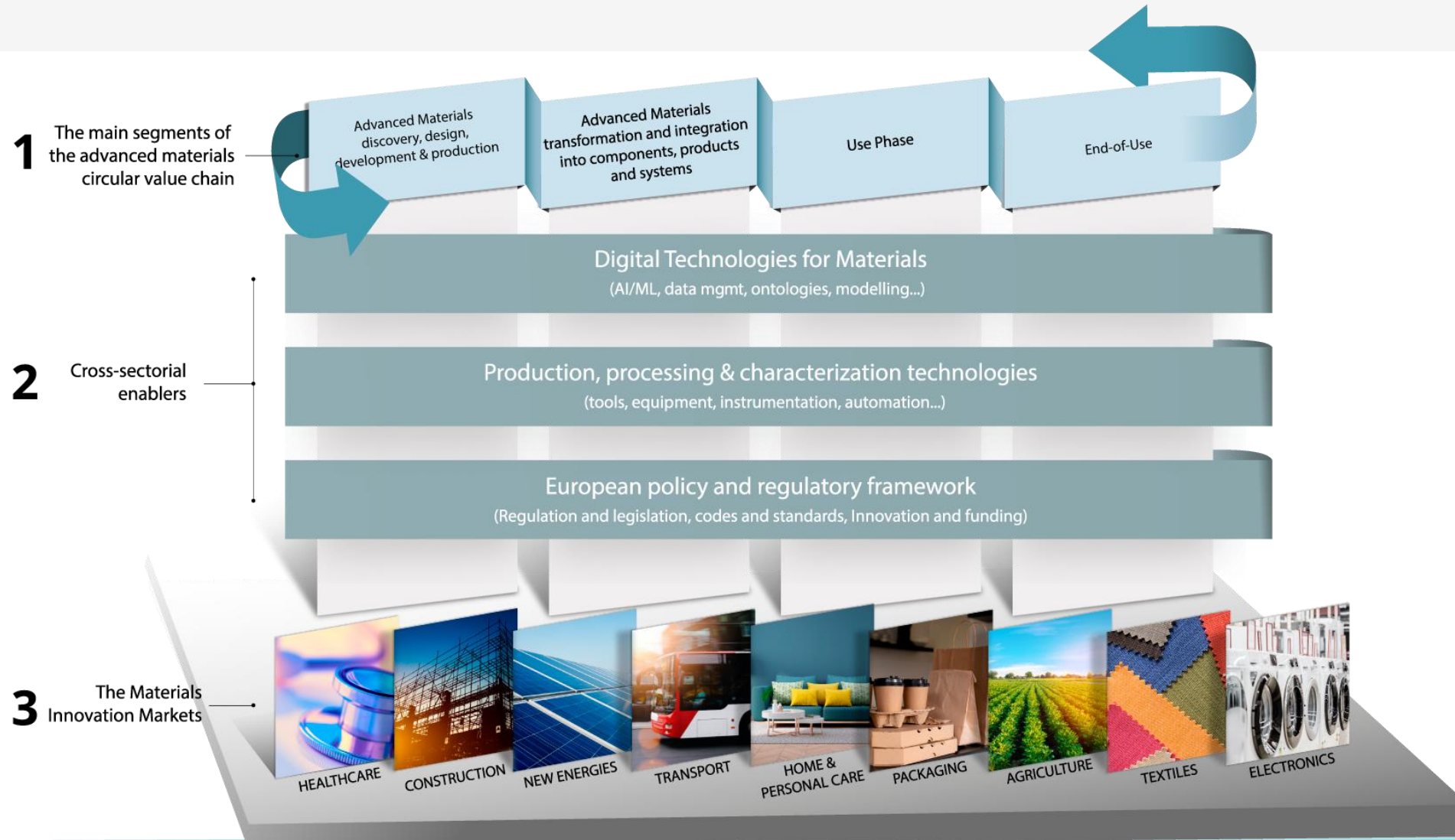
Reforzar **la Soberanía Europea** a través del liderazgo global y **autonomía estratégica en áreas clave**, asegurando la compatibilidad con los valores Europeos



Contribuir a la **Digitalización** facilitando la accesibilidad de los materiales y datos

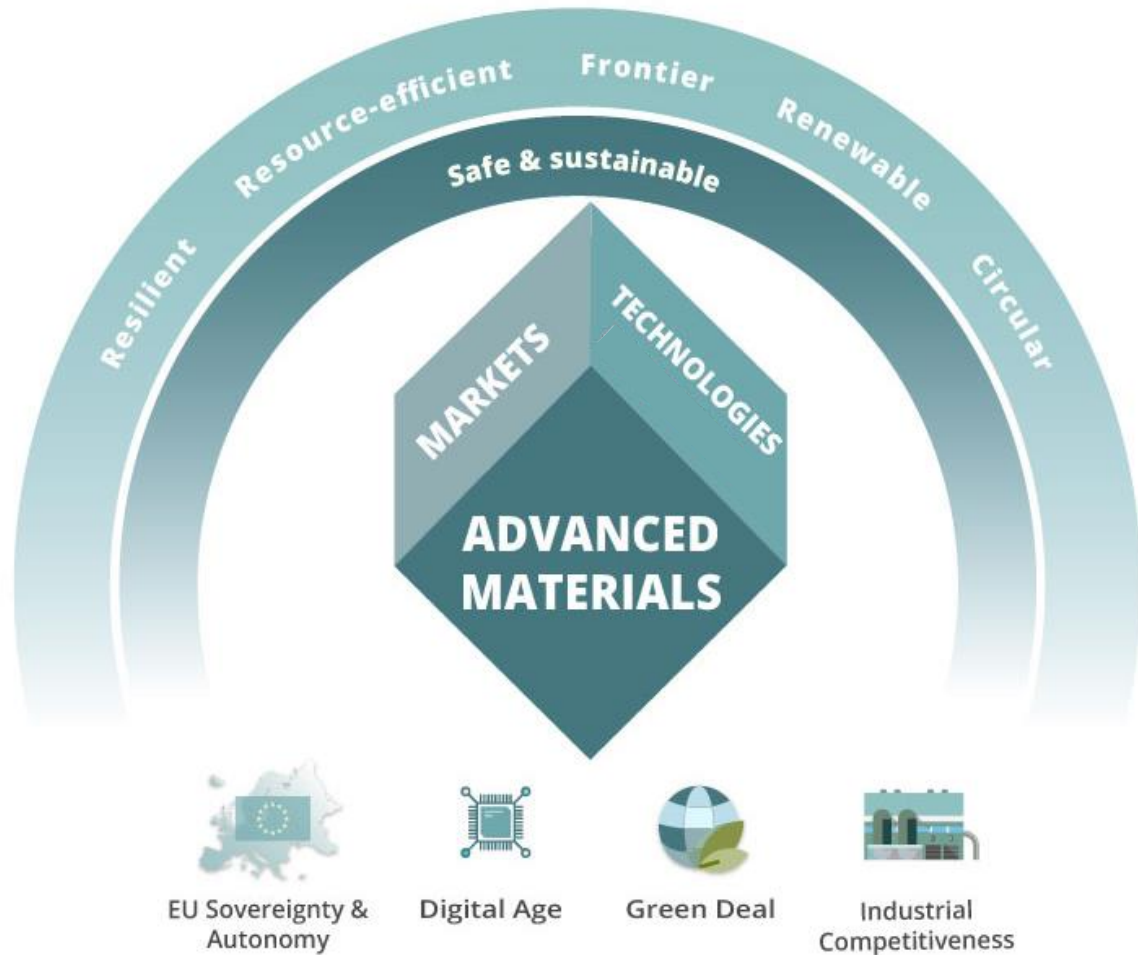
Agenda Estratégica Europea de los Materiales Avanzados

Áreas de intervención están estructuradas en 3 dimensiones clave



Agenda Estratégica Europea de los Materiales Avanzados

Las necesidades entrecruzadas de los materiales avanzados para conseguir maximizar el impacto



- **Seguros y Sostenibles**

evitando en la fase de diseño, el daño a las personas y al planeta,

- **Materiales resilientes**

con un nivel bajo/sin materias primas críticas

- **Materiales eficientes en recursos**

con bajos recursos embebidos/bajos recursos durante su operación

- **Materiales circulares**

bio-degradables/reciclables

- **Materiales renovables**

no basados en recursos fósiles /bio-basados

- **Materiales frontera**

con nuevas funcionalidades/ materiales customizados/ aplicaciones futuras...)

Agenda Estratégica Europea para los Materiales Avanzados

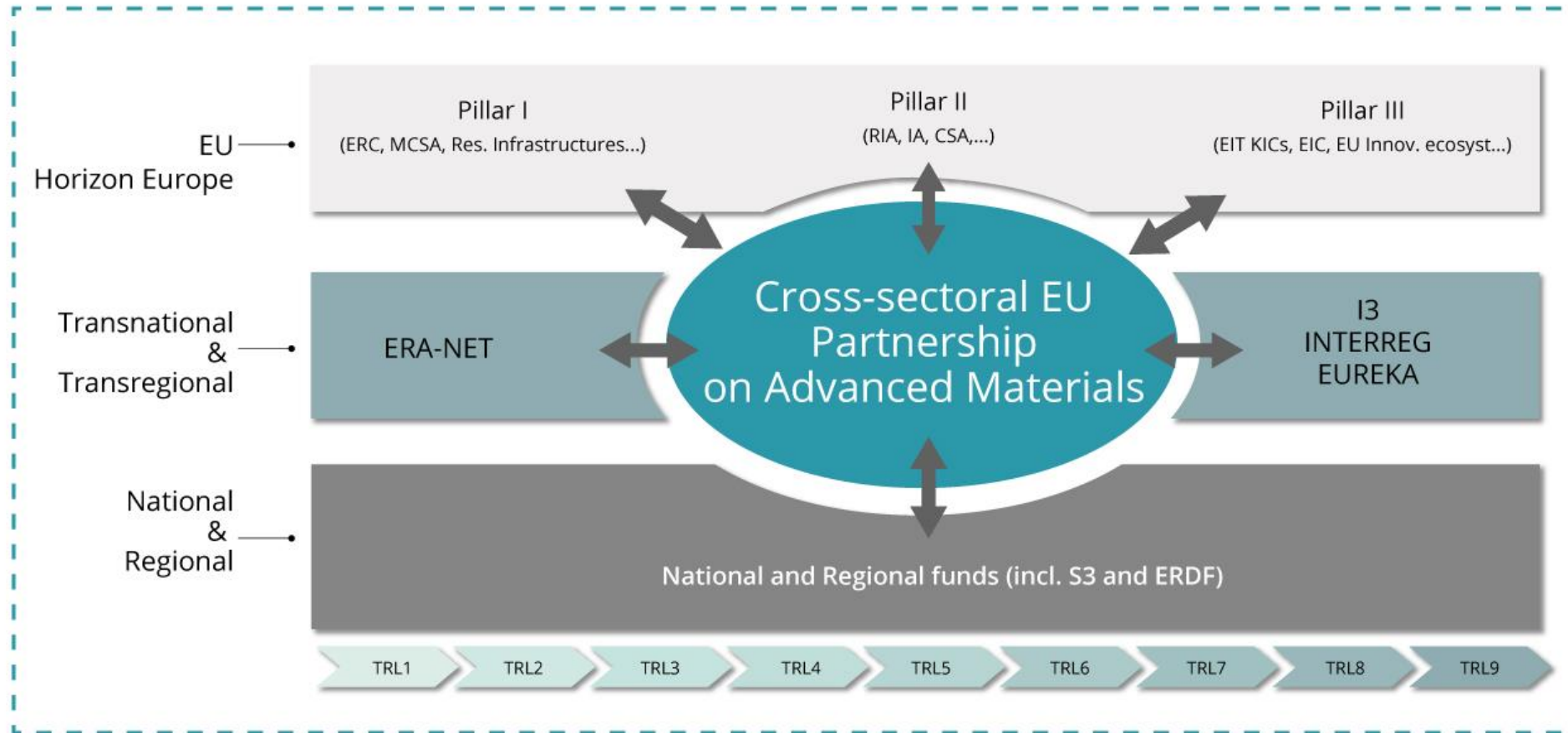
ACCIONES ESPECÍFICAS

1. | Facilitar la introducción **tecnologías de cambio** para el **rápido** desarrollo de soluciones **escalables de** los materiales
2. | Desarrollar tecnologías de materiales **con menor impacto medioambiental** y **modelos de economía circular**
3. | Apoyar la Innovación, escalado y acceso a **infraestructuras y servicios**
4. | Promocionar la **consecución, disseminación y explotación** de los resultados
5. | Contribuir en **una implementación eficiente de regulaciones clave, normas y estándares**, apoyando el diseño, desarrollo y escalado de los materiales avanzados
6. | **Educación & formación** (Gestión del conocimiento)
7. | Estableciendo el camino hacia **un ecosistema de innovación Europeo en materiales avanzados**
8. | **Cooperación Internacional**

Conectando todos los actores de las iniciativas en materiales avanzados

Para acelerar el diseño, desarrollo y escalado de los materiales avanzados hacia una economía circular

R&I Funding landscape



AMI2030 Platform

Necesidad de colaboración entre las diferentes iniciativas

ACCIONES ESPECÍFICAS

A1 - Facilitar la introducción **tecnologías de cambio** para el rápido desarrollo de soluciones **escalables** de los materiales

A2 - Desarrollar tecnologías de materiales **con menor impacto medioambiental** y **modelos de economía circular**

A3 - Apoyar la Innovación, escalado y acceso a **infraestructuras y servicios**

A4 - Promocionar la **consecución, disseminación y explotación** de los resultados

A5 - Contribuir en **una implementación eficiente de regulaciones clave, normas y estándares**, apoyando el diseño, desarrollo y escalado de los materiales avanzados

A6 - **Educación & formación** (Gestión del conocimiento)

A7 - Estableciendo el camino hacia **un ecosistema de innovación Europeo en materiales avanzados**

A8 - **Cooperación Internacional**

 Large scope

 Targeted scope

Preliminary assessment		Specific actions							
		A1	A2	A3	A4	A5	A6	A7	A8
Cross-enabling Initiatives	EIT Raw Materials								
	Made in Europe								
	Process4Planet								
	Circular Bio-based Europe								
	EIT Manufacturing								
	AI - DATA - Robotics								
	EIT Digital								
	European Metrology (EURAMET)								
	European Open Science Cloud								
Downstream/ Aplicative initiatives	2Zero, B4P, BATT4EU, Clean Energy Transition, Europe's Rail, ZWET, Clean Aviation								
	Clean Hydrogen								
	KDT, Photonics								
	Clean Steel								
	Innovative Health Initiative EIT Health								
	EIT Food								
MS-driven initiatives	M-ERA.NET, MANUNET, ERA-MIN								
	S3 Vanguard Initiative								
	ELN - European Lightweighting Network								
	Graphene Flagship								
	Nano Safety Cluster								
EU networks	Malta Initiative								
	IRISS Network								
CSA actions	EMMC								
	RDA								
	DSSC								
	Others to be assessed

Iniciative de Materiales Avanzados– AMI2030

Estado actual y Nuevos pasos

- Discusiones con iniciativas complementarias
=> reforzando coherencias y sinergias

- Estableciendo un Plan de Involucración de las empresas

Initiative	Status
EIT Raw materials	Will to collaborate
Made in Europe	Will to collaborate
Process4Planet	More discussion needed
Circular bio-based Europe	Will to collaborate
AI Data Robotic	Will to collaborate
EIT Manufacturing	Will to collaborate
European Metrology (EURAMET)	Will to collaborate
2Zero	TBD
ECTP/B4P	Will to collaborate
BATT4EU	Will to collaborate
Clean Aviation	Will to collaborate
Clean Hydrogen	Will to collaborate
KDT	Will to collaborate
Photonics21	Will to collaborate
Clean Steel	Will to collaborate
Innovative Health Initiative / EIT Health	TBD
M-ERA.NET	More discussion needed
ERA-MIN	TBD
Graphene Flagship / 2-D Materials Partn.	Will to collaborate
Malta Initiative	Will to collaborate
NanoSafety Cluster	Will to collaborate
IRISS Network	Will to collaborate
PARC	Will to collaborate
European light materials network (ELN)	Will to collaborate
EERA	Will to collaborate
EMCC	Will to collaborate
EMMC	Will to collaborate



June xx, 2023

Leading Industrial Companies fully support the launch of a Co-Programmed European Partnership on Advanced Materials

To bring about the twin green and digital transition, the EU is in dire need of innovative and sustainable advanced materials, i.e. materials specifically designed to exhibit novel and outstanding functional or structural properties, which are urgently required in various industries, such as energy, mobility, the building sector, electronics, health and food, to name but a few. By providing resource-efficient and/or recyclable solutions, with less or even no Critical Raw Materials (CRMs), advanced materials also play an important role in reinforcing Europe’s resilience and safeguarding Europe strategic open autonomy.

At present, the EU leadership in advanced materials is under threat from the lack of a sustainable and resilient supply chain and from increased competition from other regions of the world. The speed of development of advanced materials needs to increase considerably to keep pace with the developments required to achieve the digital and green transitions. This is hampered by the current fragmentation of stakeholders, competences, resources, initiatives, and programmes.

Iniciativa Avanzada de Materials – AMI2030

Estado actual y Nuevos pasos



- Conversaciones con otras propuestas (M-ERA.NET, 2D complementarias, DG-GROW/ERAMIN,...)
=> buscar el camino para conseguir el mayor equilibrio entre partenariados coprogramados y cofinanciados en materiales

➤ Plan de Apoyo para la reunion MS (SPC reunion del 11 de Julio)

WHY AMI2030 IS CALLING FOR A CO-PROGRAMMED PARTNERSHIP?

- To launch ambitious transformational actions across the entire lifecycle of materials (from post-mining/refining to recycling) as a continuum, enabling the strengthening of materials value chains, efficient materials digitalization and EU-wide harmonized exploitation of materials data along value chains and across markets ① ③ ④
- To accelerate the transformation of an excellent European knowledge base into economic value, ensuring continuity along the TRLs, while safeguarding new knowledge creation & transfer and promoting skills & education ① ② ③
- To place the EU industry (from small to large players; from materials producers, transformers and users to recyclers) at the core of the dual green and digital transition to ensure the fastest and greatest impacts on the environment, the economy and society thanks to a long-term vision to be implemented in Horizon Europe and pursued beyond
- To create a unified EU-wide competitive R&I landscape attractive for European Industry to invest in Advanced Materials, matching competing initiatives in other regions of the world and avoiding the offshoring of its R&D activities ① ③ ④
- To foster research excellence through inclusiveness and open & fair competition across all MS and associated countries and to ensure that all world-class national organisations (public or private) and smaller actors (e.g., start-ups, SMEs), wherever they are based in the EU27 and Associated Countries, have equal opportunities for access and support ① ② ③
- To promote the active participation of less industrialised countries and regions, empowering stakeholders and sectors through a combination of capacity-building actions, participation in European research and innovation projects and complementary investments in cross-fertilization and further exploitation of the related results (MS co-funded actions; cross-sectorial & multi-markets approach; small-to-large projects/initiatives;) ② ④
- To foster international cooperation, notably on standardisation/harmonisation of safety tests, sustainability assessment frameworks, and materials data management ① ② ③ ④
- To leverage in-kind contributions from EU industry for additional activities contributing to the objectives of the Partnership ① ③ ④

Preliminary list of candidates for the second set of co-funded and co-programmed European Partnerships, and short descriptions	Currently envisaged implementation mode(s)
<p>4. Innovative Materials for YOU (I'M FOR YOU)</p> <p>New materials design and engineering is endless, with new uses and products appearing daily, essential for the green and digital transition of a resilient Europe (70% the innovations depend on materials). Innovative materials also so-called advanced materials (including nanomaterials or two-dimensional, one atom thick materials), are engineered to have new or enhanced properties over conventional materials. The partnership focuses on research, development, and uptake of a new generation of advanced materials building on the safe and sustainable by design framework. It will bring together developers, upstream producers and downstream industrial users and continue opening-up these technologies to new European value chains and value loops (circularity) from material design and synthesis to devices, systems and early products for market penetration. The partnership will be part of the Coordinated Plan on Advanced Materials, announced as a Commission action in the Communication on Critical Raw Materials, which positions R&I as a key element to meet its objectives. It builds on the achievements of the Horizon 2020/Horizon Europe projects, including ERA-NETs, the Graphene Flagship and the proposals by a large stakeholder initiative called Advanced Materials Initiative (AMI 2030).</p>	Co-programmed
Preliminary list of candidates for the second set of co-funded and co-programmed European Partnerships, and short descriptions	Currently envisaged implementation mode(s)
<p>7. Raw Materials for Europe</p> <p>The target focus are minerals and metals, especially critical and strategic raw materials. The thematic scope is exploration, extraction, processing, refining and recycling.</p> <p>The proposal for the CRM Act stresses the need of synergies with Member States R&I programmes. Therefore, Partnership will serve as a tool to coordinate Member States' national R&I funding organisations through development of a joint Strategic Research and Innovation Agenda and development of joint calls for proposals on raw materials, co-funded by the EU.</p> <p>Most of the topics will focus on basic research, not covered by classical topics in Cluster 4. Projects from the partnership would serve then as a basis for future uptake by Horizon projects or by EIT Raw Materials. This is a synergy with the CRM Act which stresses the need to scale up projects from lab to commercialization.</p> <p>Finally, the partnership will serve as an instrument to involve third countries on joint work on R&I topics and involve their stakeholders in joint projects. This targets specifically countries with which the EU has established or will establish strategic partnerships on raw materials. In this respect, the proposal for the CRM Act stresses the importance to add local value, notably through R&I cooperation on raw materials.</p>	Co-funded

2nd batch of European Partnerships: Tentative timeline

EC: European Commission
PKH: Partnerships Knowledge Hub
SPC: Strategic Programme Committee co



- Information on the draft fiches shared with SPC and PKH
- Discussions with thematic PCs
- PKH Opinion
- Input from the EC expert group supporting the Strategic Coordination Process
- First discussion at the SPC, including the results of the consultation
- Final decision on the 2nd batch partnership portfolio
- Publication of the partnership proposals on the EC website
- Request for commitments letters sent to MS/ACs
- Preparation of WP 2025

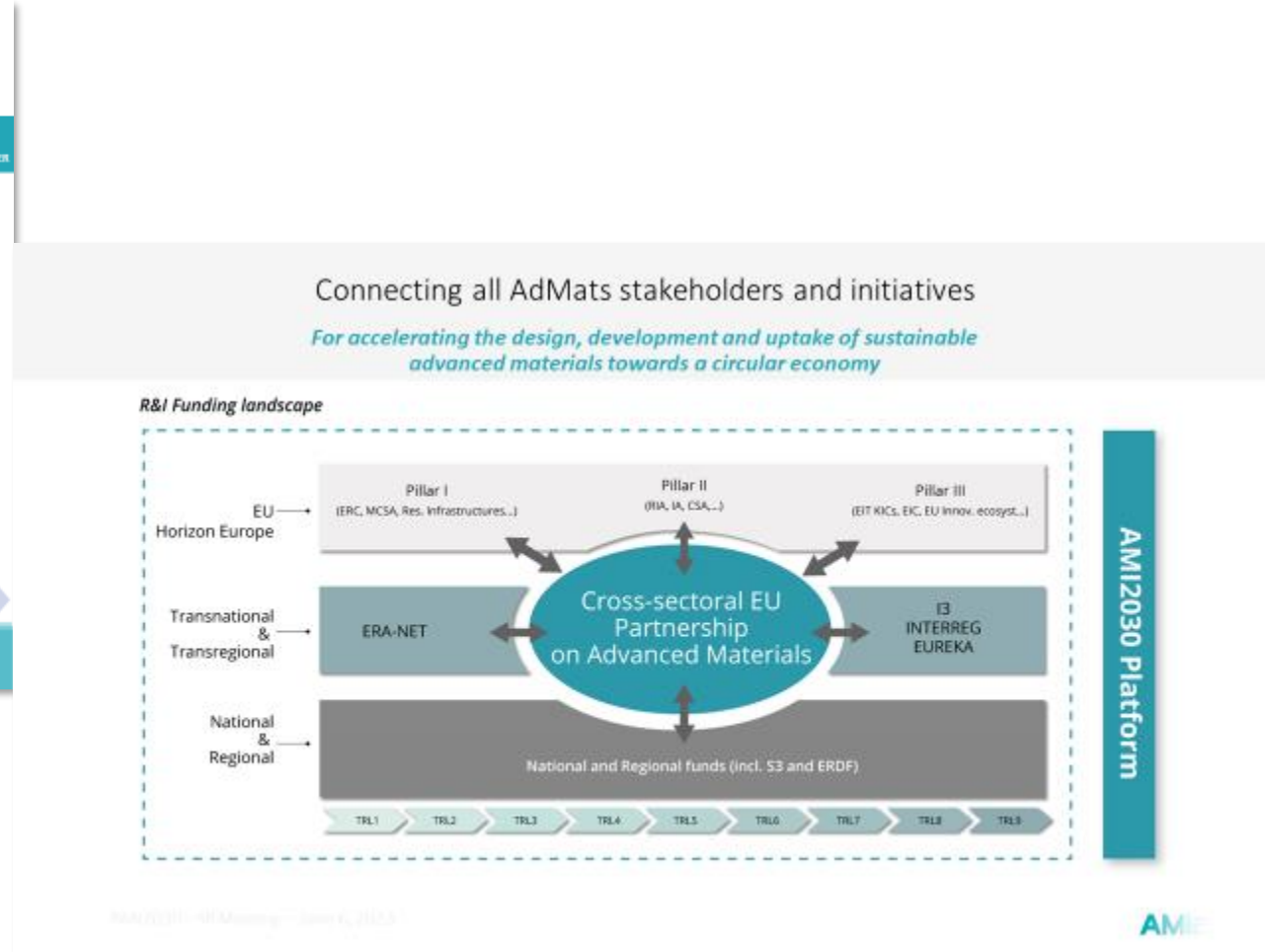
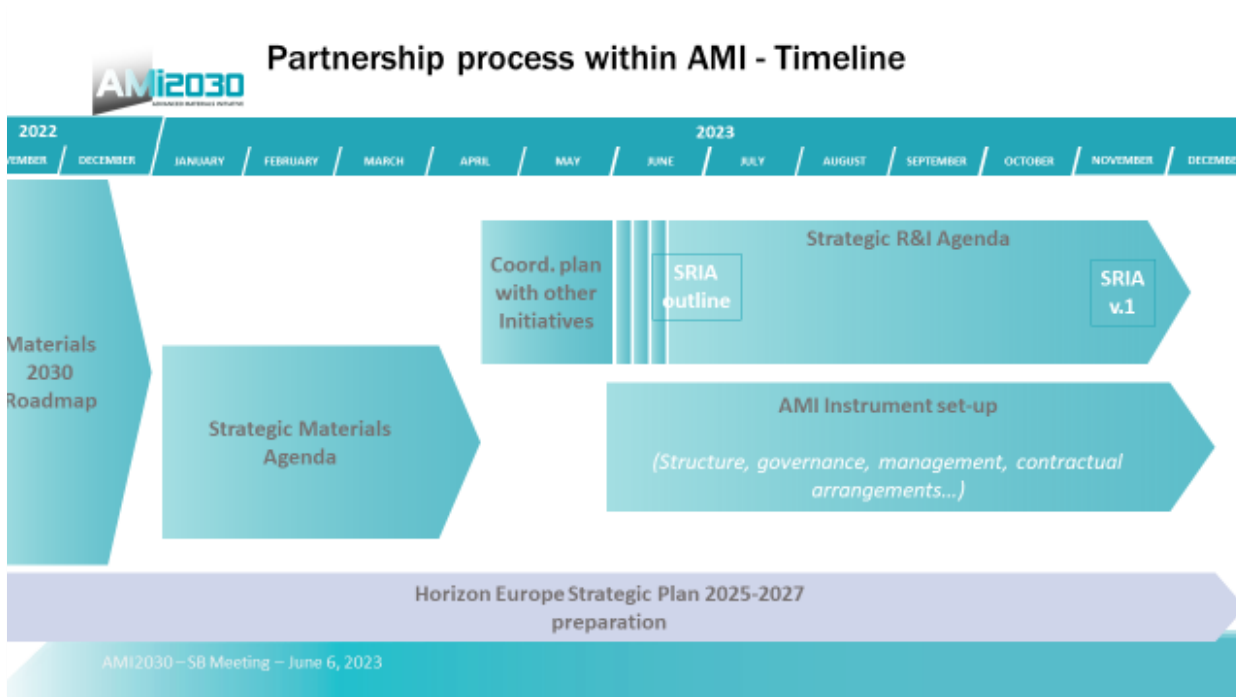
Materplat, 29 June 2023

Iniciativas de Materiales avanzados- AMI2030

Estado Actual y Nuevos pasos



- Iniciando el trabajo en la Estrategia de la Agenda de Investigación y Desarrollo, SRIA (Estructura, Grupos de trabajo...) y Gobernanza



Iniciativa de Materiales Avanzados– AMI2030 Conclusiones

- 18 Abril, 2023 – [Agenda Estratégica publicada](#) Llamada hacia un partenariado coprogramado
- 18 Abril, 2023 – Evento a alto Nivel (online) bajo la presidencia Sueca, con participación Ministra Española
- Final de April – AMI2030 listado en la lista preliminar entre las 11 propuestas de partenariado enviadas por la Comisión Europea a los Estados Miembros
- 20 Mayo – Documento de 2-Páginas enviado a los países Miembros en HEurope CL4 PC
- 9 Junio, 2023, Cooperación con AMI2030-ELN (European Light Materials Network)
- 12 June, 2023 – Mensaje conjunto con la iniciativa Materiales 2D
- 12 June, 2023 – Sesión AMI2030 durante el EuroNanoForum
- 20 June, 2023 – 2-pager “Porqué AMI2030 solicita un Partenariado Coprogramado”
- 29 June, 2023- AMI2030 Presentación en MATERPLAT



Support from Industry, Research and Member States



Joint Statement: Collaboration between the Advanced Materials 2030 Initiative and the 2D Materials Initiative for a European Partnership in the field of advanced materials

AMI2030 & the 2D Materials initiative are jointly calling for a EU Partnership in Advanced Materials



AMI2030 at the EuroNanoForum in Lund

On June 12th in the afternoon AMI2030 organised a panel session to discuss the main challenges and expectations of AMI2030 to accelerate advanced materials innovation in Europe. In addition, we had booth at the Exhibition area. You can now rewatch the session [here](#).

THANK YOU



Join us!

 info@ami2030

 www.ami2030.eu

 Advanced Materials 2030 Initiative

 Materials2030