

The future of advanced materials R&I in Europe – IAM-I Vision2040

Advanced Materials. Advancing Europe.

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NEXUS 2026

Eva Schillinger, Secretary General IAM-I

Why do Advanced Materials matter?

European policy perspective

Advanced materials are an important factor for the competitiveness of European industries ⁽²⁾ and are crucial building blocks for the **EU's resilience and open strategic autonomy**. They are included in the list of 10 critical technology areas for the Union's economic security ⁽³⁾.

Advanced materials offer a wealth of solutions for a successful implementation of the European Green Deal. They drive innovations in new clean energy technologies provided for in the Net-Zero Industry Act and have the potential to substitute certain Critical Raw Materials (CRMs), thus contributing to the objectives of the CRM Act. Advanced materials

Communication on Advanced Materials for Industrial Leadership(2024)

Demand for **innovative advanced materials** will increase exponentially in the coming years, attracting investments and reshaping global supply chains. The Commission will put forward an **Advanced Materials Act** to provide the framework conditions to support the whole lifecycle, from research and innovation to start-up creation until manufacturing and deployment.

A Competitiveness Compass for the EU (2025)

Trans-Regional Circularity Hubs to promote smart specialisation and economies of scale for recycling. The Hubs will identify strategic projects based on proposals by groups of Member States and/or industrial actors, enabling the pooling of diverse regional streams. This approach will ensure a sufficient scale, allowing the installations to achieve the necessary size to operate continuously. They will build on the experience of Strategic Projects under the Critical Raw Materials Act and apply similar approaches to the technical and biological materials on which our industries depend. Furthermore, the Commission will actively assist Member States in the design of a potential new IPCEI on circular advanced materials for clean technologies.

The Clean Industrial Deal (2025)

I am convinced: the future of clean tech will continue to be made in Europe. But for that, we also need to make sure that our industry has the materials here in Europe. And the only answer here is creating a truly circular economy. So we need to move faster on the Circular Economy Act. And move ahead in those sectors that are ready. Finally, we need to keep up the speed. So the Commission will propose an **Industrial Accelerator Act** for key strategic sectors and technologies. In sum, when it comes to digital and clean tech: faster, smarter and more European.

State of the Union address, President von der Leyen (2025)

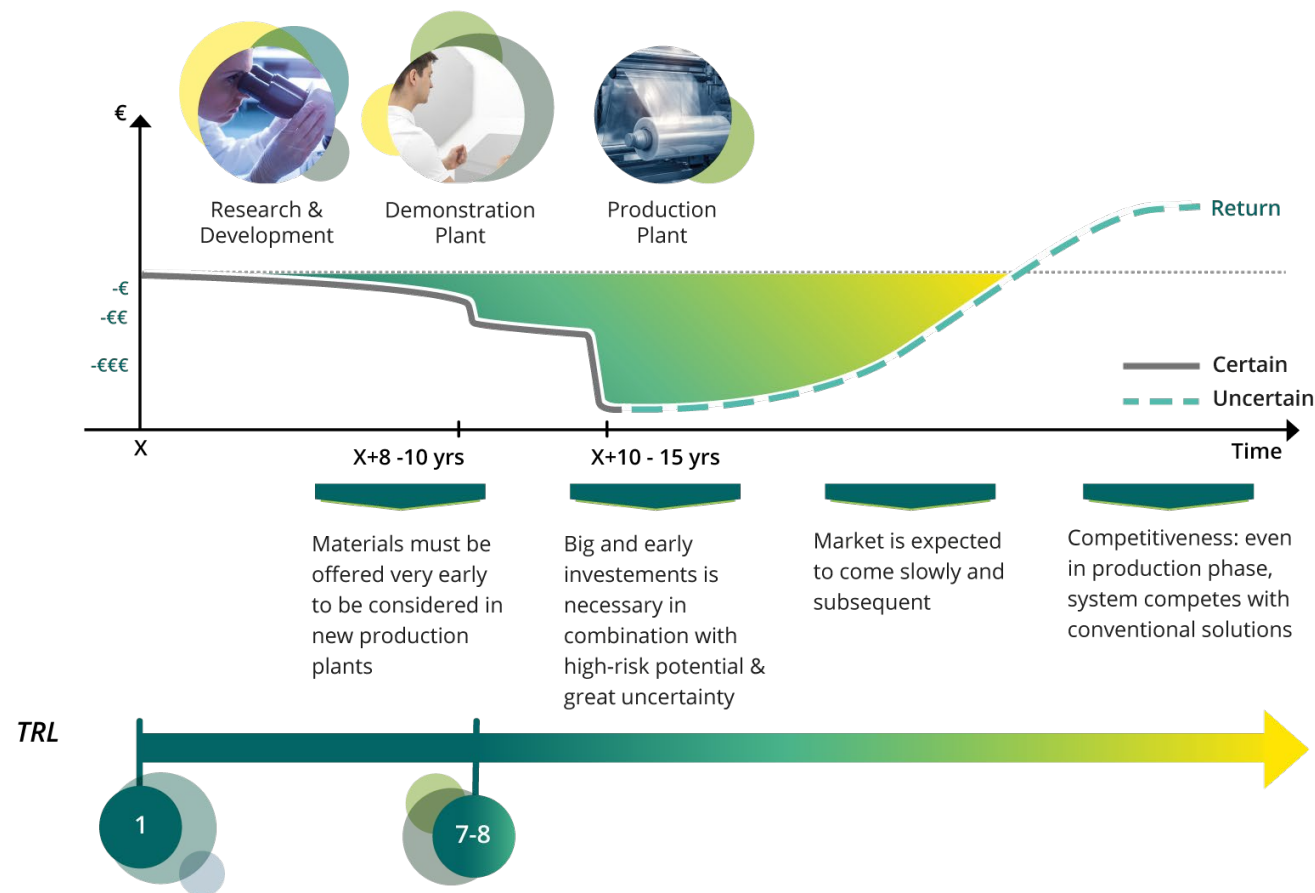
The risk. Modern economies are deeply interconnected and rely on a wide range of inputs, intermediate goods and essential services from partners globally. In some cases, supply is highly concentrated – often in countries that do not share the same strategic interests and that have the capability and willingness to increase and weaponise such dependencies. These risks to the EU's supply chains are particularly visible in our reliance on certain **critical raw, processed and advanced materials, clean tech components,** and **mainstream semiconductors,** as well as in **financial services, pharmaceuticals, aeronautics, digital and space technologies.** They are also

Communication Strengthening EU economic security(2025)

Advanced materials drive technological innovation and are **critical to Europe's industrial competitiveness**, resilience, sustainability, circularity, and open strategic autonomy.

Europe is too slow – and too costly

Strong in research; slow and expensive to turn discoveries into products made in Europe.



Four structural bottlenecks

- 1 Discontinuous lab-to-fab pathway
- 2 Disconnected value chains, weak demand signals
- 3 Too little scale-up finance and infrastructure
- 4 Framework conditions (standards, norms, regulations...) lag the technology

Vision and Mission

Vision

IAM-I envisions a Europe where advanced materials solutions are developed, adopted and scaled with **speed and confidence across industries**, forming a cornerstone for Europe's **circular, resilient and competitive economy - powered by technological leadership**.

Mission

IAM-I is the voice of European Research and Innovation in advanced materials. We bring together a Europe-wide, **cross-sector R&I ecosystem** by linking stakeholders across **the full advanced materials value chain**. We target acceleration of the **market uptake of advanced materials** by identifying **focus topics** and advocating for **tailored policies and funding instruments**.

Members 2026

309 members, 31 countries

INDUSTRY



RESEARCH



ASSOCIATE



WGs & TFs



Seven Working Groups

- ☐ WG#1 – AI, Materials digitalization & Data management
- ☐ WG#2 – Resilient & circular value chains
- ☐ WG#3 – Materials Innovation Markets (CONSTRUCTION)
- ☐ WG#4 – Materials Innovation Markets (ELECTRONICS)
- ☐ WG#5 – Materials Innovation Markets (ENERGY)
- ☐ WG#6 – Materials Innovation Markets (TRANSPORT)
- ☐ WG#7 – Materials Innovation Markets (HEALTH)



Four Task Forces

- ☐ TF#1 - Education & Workforce
- ☐ TF#2 - Standards & Norms
- ☐ TF#3 - Infrastructures, support to SMEs & Upscaling
- ☐ TF#4 - Policies, Funding & Strategy beyond HE

Horizon Europe partnerships



March 2025 (Cluster 4) **Digital, Industry and Space**

- ☐ ADRA
- ☐ Clean Steel
- ☐ IAM4EU → 250m€ EU budget
- ☐ Made in Europe
- ☐ Photonics21
- ☐ Processes4Planet
- ☐ Textile

Last batch of new partnerships adopted by European Commission on March 19th, MoU signed.

Horizon Europe work programme 2026/2027

#	Title	Type	Total Budget	Deadline
1	HORIZON-CL4-2027-01-MATERIALS-PRODUCTION-22: Innovative advanced materials and new production processes – reducing dependencies on Critical and Strategic Raw Materials <i>With Processes4Planet</i>	IA	36m€	February 2, 2027
2	HORIZON-CL4-2026-01-MATERIALS-PRODUCTION-23: Accelerating the discovery and development of chemicals and innovative advanced materials through digitalisation and artificial intelligence	IA	51m€	April 21, 2026
3	HORIZON-CL4-2026/2027-01-MATERIALS-PRODUCTION-05/06-two-stage: Circular innovative advanced materials: facilitating the transition from design to markets <i>With Made in Europe</i>	RIA	37.5m€ 36m€	April 21, 2026 February 2, 2027
4	HORIZON-CL4-2027-02-MATERIALS-PRODUCTION-32: Efficient energy input from renewable sources and energy management in the process industries <i>With Processes4Planet</i>	IA	60m€	February 2, 2027 September 2, 2027
5	HORIZON-CL4-2026-05-MATERIALS-PRODUCTION-25: New or enhanced Innovative Advanced Materials (IAM) enabled sensing functionality	RIA	24m€	April 15, 2026
6	HORIZON-CL5-2027-04-Two-Stage-D2-07: Novel approaches towards next-generation battery concepts, leveraging the enabling role of innovative advanced materials <i>With Batt4EU</i>	RIA	48m€	April 14, 2027 October 7, 2027

Vision 2040

**Accelerating advanced materials —
from discovery to industry, at European scale**

Launched 7 September 2026





Three levers, one window

The rules, the research programme and the scale-up funding are being decided in parallel across 2026–2027 — setting the terms to 2034.

Advanced Materials Act

The regulatory framework.

Commission proposal expected Q4 2026.

Horizon Europe 2028–2034

The EU research programme.

Pillar II partnerships continue.

European Competitiveness Fund

Scale-up to industry.

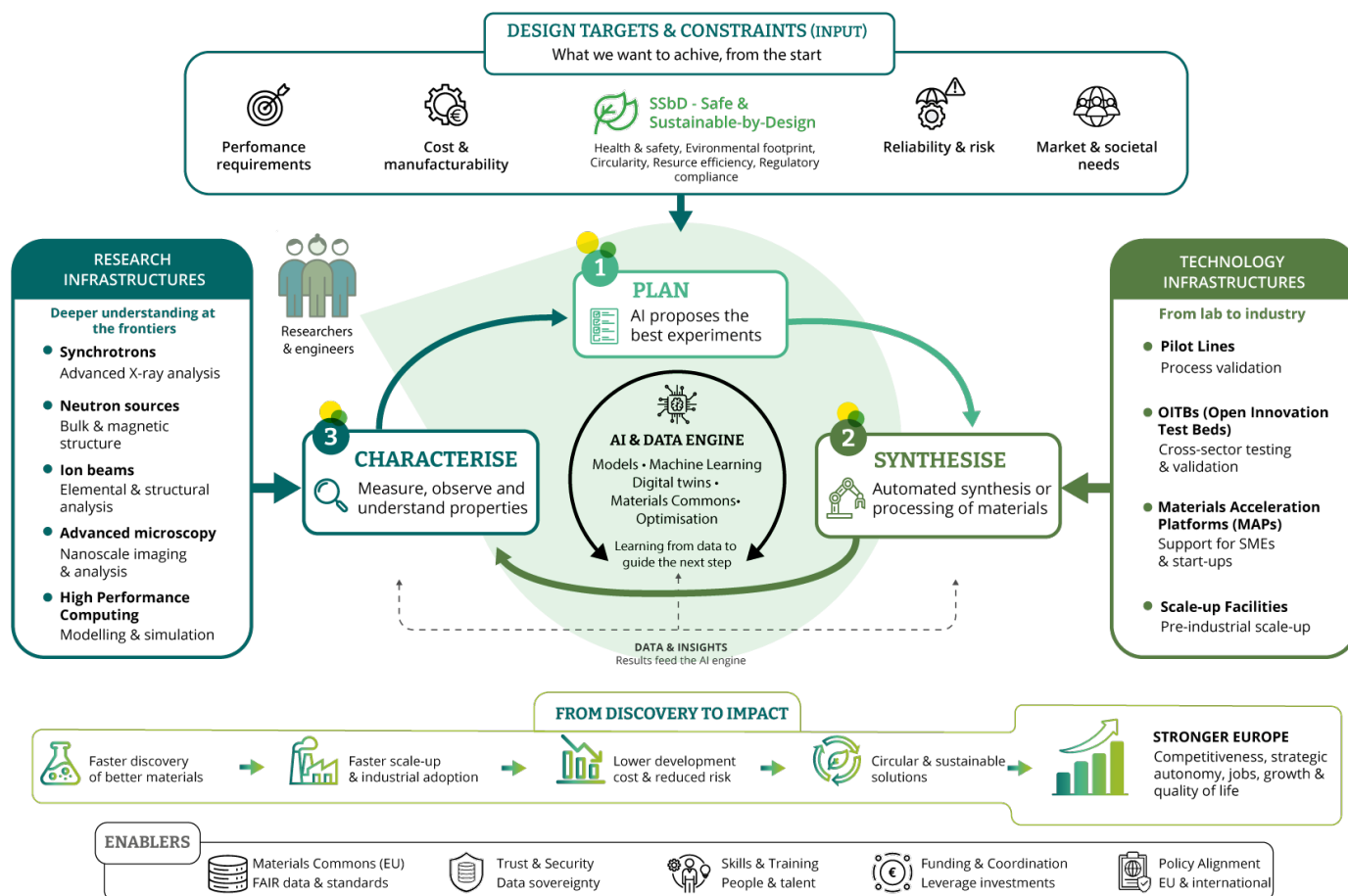
Within the MFF 2028–2034.

A decade's positioning, decided now.

One connected ecosystem – a continuous loop

EUROPE'S CONNECTED ECOSYSTEM FOR ADVANCED MATERIALS

AI-driven · Data-powered · Infrastructure-enabled · Safe & Sustainable-by-design · Impact-driven



One connected system.

At its heart, a continuous loop — plan · make · measure · learn — a year of trial-and-error compressed into weeks.

Self-driving labs, a shared data space, research facilities and pilot lines — linked by shared methods and standards.

Not a fixed set of parts, but an ecosystem that keeps growing as new capabilities join.



IAM4EU+ builds the connecting layer

The advanced materials partnership proposed for Horizon Europe 2028–2034.

It develops

the HOW itself — the shared standards, data environments, software, methods and reusable blueprints that are part of the toolbox.

It applies the HOW to the advanced materials behind Europe's strategic technologies — chips, batteries, hydrogen, quantum... — as test cases.

It does not

build or operate the physical infrastructure — labs, facilities, pilot lines.

It is not the fund that pays for scale-up.

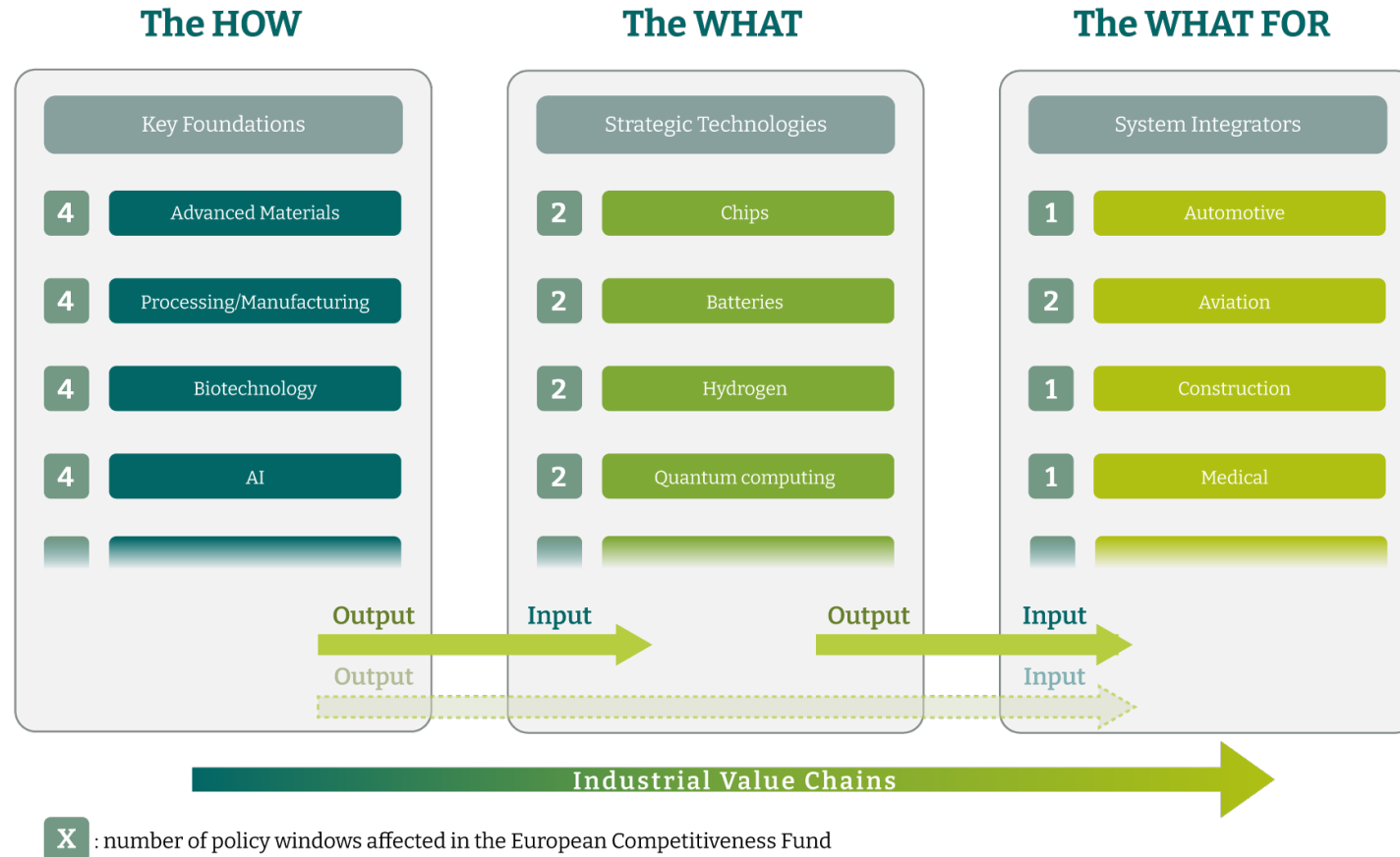
Those are other instruments.

Infrastructure and partnership advance in parallel — each makes the other work.



The test-case approach

A toolbox is only proven by using it.



IAM4EU⁺ works with and for the value-chain partnerships. Together they choose which advanced materials to take on as **test cases** — then the toolbox is applied to a real industrial problem, sharpening it with each case and delivering materials that fit industrial needs.



Where IAM4EU⁺ sits — Horizon Europe's pillars

Pillar I · Excellent Science

European Research Council and Marie Skłodowska-Curie Actions — frontier knowledge at the lowest TRLs. The discoveries the toolbox learns to accelerate.

Pillar II · Global Challenges

IAM4EU⁺'s home. Collaborative, mission-driven R&I at mid-TRL — where the connecting layer is built and proven.

Pillar III · Innovative Europe

The European Innovation Council — scale-up of individual breakthroughs at higher TRL, downstream of the shared method. Focus on complementarity.

Pillar IV · Infrastructures

The physical toolbox — labs, facilities, pilot lines. IAM4EU⁺ projects use it; other instruments build and operate it.

Beyond Horizon Europe, the European Competitiveness Fund funds scale-up to industrial use.

The prize: half the time to market

20 → 10 years. 10 → 5 years.

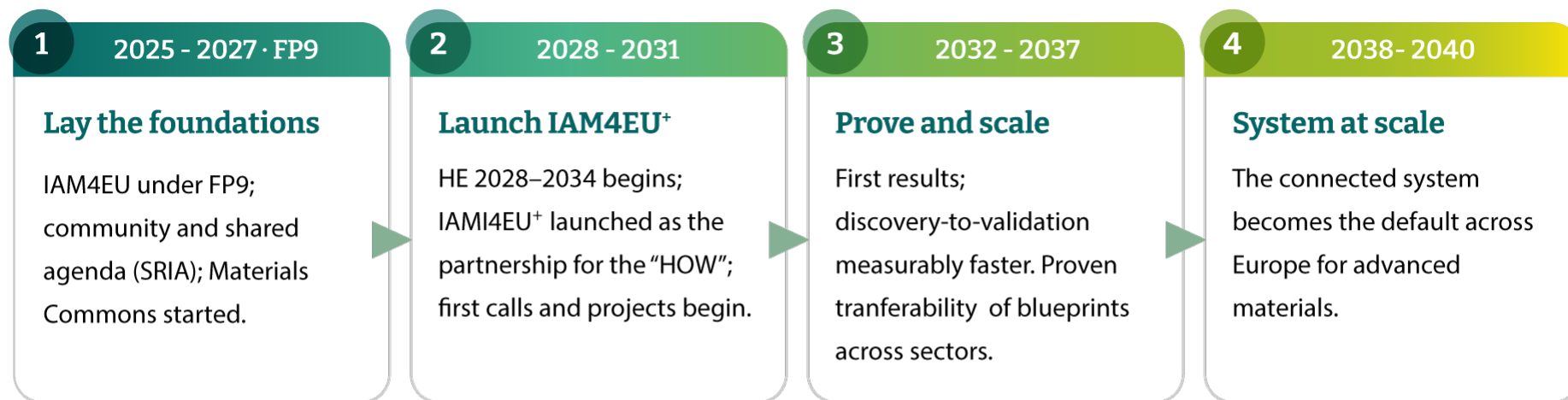
The Ambition By 2040.

The biggest gains are in the early stages — discovery, research and development — where these methods work best. The later stages — scale-up, qualification, regulated fields — gain too, though less than the early ones.

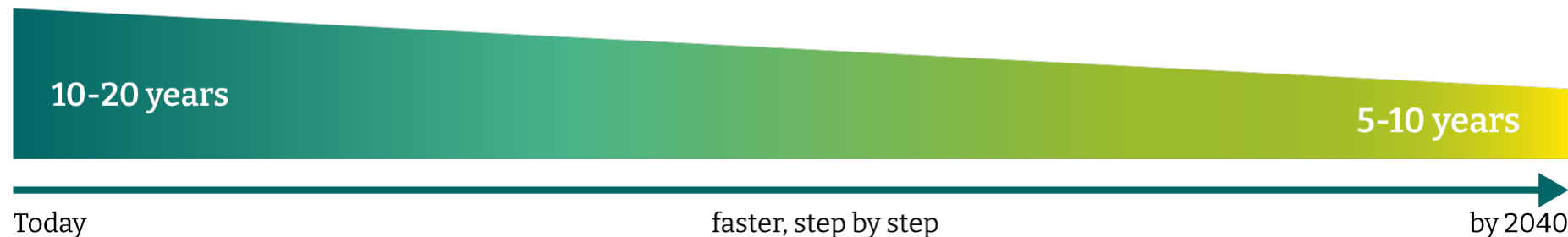


The road to 2040

Four phases, each building on the one before - and the journey from discovery to industry growing shorter.



Time from discovery to first industrial use



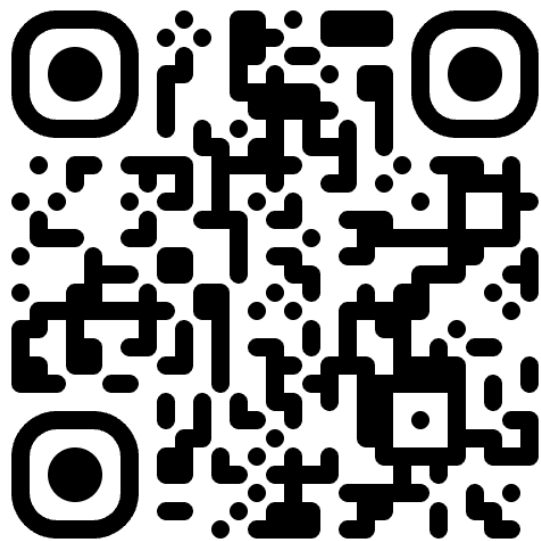
Make IAM4EU⁺ the advanced materials partnership of
Horizon Europe 2028–2034.

IAM-I — more than 300 members across 30+ countries.

Join us in building the toolbox.

Support the IAM-I Vision 2040!

Vision2040 landing page:



<https://www.iam-i.eu/vision/>