

Innovation in practice for the furniture value chain

A project has a deadline. A platform has a purpose.

Enza Gioia · Head of Communication · Fondazione MICS · Federlegno · Palermo, 16 September 2026

€131.7

million

The largest amount Italy has ever committed
to the circular economy for its manufacturing industry.

National Recovery and Resilience Plan

NextGenerationEU · Ministry of University and Research

2023 — 30 June 2026

The programme is closed. The results are final.

Not incentives. Not a campaign.

The money was used to build an institution.

Twenty-five founding members

Public and private, around the same table, with the same weight.

RESEARCH & UNIVERSITIES

Consiglio Nazionale delle Ricerche	Università Federico II Napoli
Politecnico di Milano	Università di Padova
Politecnico di Torino	Università di Firenze
Politecnico di Bari	Università di Brescia
Sapienza Università di Roma	Università di Bergamo
Alma Mater Studiorum Bologna	

INDUSTRIAL PARTNERS

Natuzzi	Itema
SCM Group	AEFFE
Brembo	Cavanna
Leonardo	Prima Additive
SACMI	Italtel
Camozzi Group	Italian Leather Research Institute
Thales Alenia Space	

Two of those names will be familiar to everyone in this room.

An Extended Partnership

Industry and academia meet at the beginning, when the question is still being written.

25

founding
members

8

thematic
Spokes

14+

universities
involved

1

operational
Hub

Advanced digital design · Eco-design strategies · Green products & materials · Intelligent materials
Closed-loop factories · Additive manufacturing · New business models · Data-driven factory

Research designed with a company reaches that company. That is why the technology transfers.

Every company has two kinds of problems

01

Competitive problems

Where your advantage comes from

Design language, customer relationships, margins.

You solve these alone — and you should.

02

Pre-competitive problems

Where everyone pays for the same answer

Disassembly of glued composites. Certification of recycled content. Product data structures.

Solved separately, at full cost, by every company in Europe.

That is not competition — it is duplicated expenditure. MICS solves it once, for the whole chain.

Fashion, furniture and automation: three of the four A's of Made in Italy

Furniture is not a niche

45%

of total national
employment

48%

of national
value added

50%+

of national
production value

If that wall does not make the transition, we do not reform the industry. We lose it.

MICS estimates

Three years. Three kinds of result.

The programme is closed. What it generated now has to keep generating value.

01

Circular transition & environment

Materials, waste, emissions, closed loops

02

Intellectual capital & knowledge

People, skills, publications, transfer

03

Digital innovation & business models

Platforms, data, process efficiency

An inventory of what there is to transfer. All of it published in our first Impact Report.

Where we could measure

From the projects with consolidated outcome metrics — not from every project in the programme.

–40 / –90%

production waste

–30 / –65%

carbon emissions

up to 100%

components recovered

7

circular value chains, activated or emerging

One connects furniture and textiles. Another routes agro-industrial waste into furniture materials.

200+ prototypes and demonstrators

18 patents filed

The result that matters most in ten years

People

1,113+	researchers involved
425+	women
448+	under 40
1,200+	scientific publications
800+	events that carried the work out

Factory

19

digital platforms and infrastructures — traceability, integrated LCA,
energy monitoring, circular material-flow data

–15% to –20% cycle times

where digital innovation reached production

Twelve hundred papers are a library. Eight hundred events are what turns a library into technology transfer.

Three lessons, whatever your product is

01

Waste is a routing problem

Not a chemistry problem. Someone could already use the material — they just did not know it existed. The expensive failure is coordination, and coordination is somebody's job.

02

Circularity is decided at the drawing board

Not at the recycling plant. By the time a product exists, most of its end-of-life is already fixed. Everything after that is damage limitation.

03

If you cannot prove it, it did not happen

Sustainability is turning into a data structure attached to a product. A company that is genuinely circular but cannot document it will be treated exactly like one that is not.

The direction is not in doubt

Europe is moving, across several pieces of legislation, in one consistent direction.

Durability

Repairability

**Recycled
content**

**Data that travels
with the product**

It will not be a reputational difference. It will be market access.

Large groups have compliance departments. Our industry — in Italy and in Spain — is built on small and medium companies that do not. Not because they don't care: because nobody has handed them a method.

Two months ago, we could have closed. We didn't.

- | | | |
|----|------------------------------|--|
| 01 | Permanent Observatory | MICS Index and Maturity Model — in pilot. Measure where you stand, rather than guess. |
| 02 | Matchmaking | Structured connection between industry and research, and support for joint project design. |
| 03 | Funding guidance | Helping smaller companies reach national and European programmes. |
| 04 | Services | Training, contract research, access to qualified skills — as a development partner. |
| 05 | Policy | So the rules get written by people who have been inside a factory. |

A project has a deadline. A platform has a purpose. This is the purpose.

What happens if you call us on Monday

You bring us a problem

A material you cannot recycle, a joint you cannot undo, a claim you cannot substantiate. We tell you whether it is already solved in the network — and connect you to whoever solved it.

You use the results

Prototypes, methods, platforms, published findings. Much of it exists precisely so it can be reused.

You join a project

When the same question shows up across several companies, we structure the joint work and help you reach the funding.

You measure yourself

The Index and the Maturity Model are in pilot with a small number of partner companies. If you want to be one of them, tell me today.

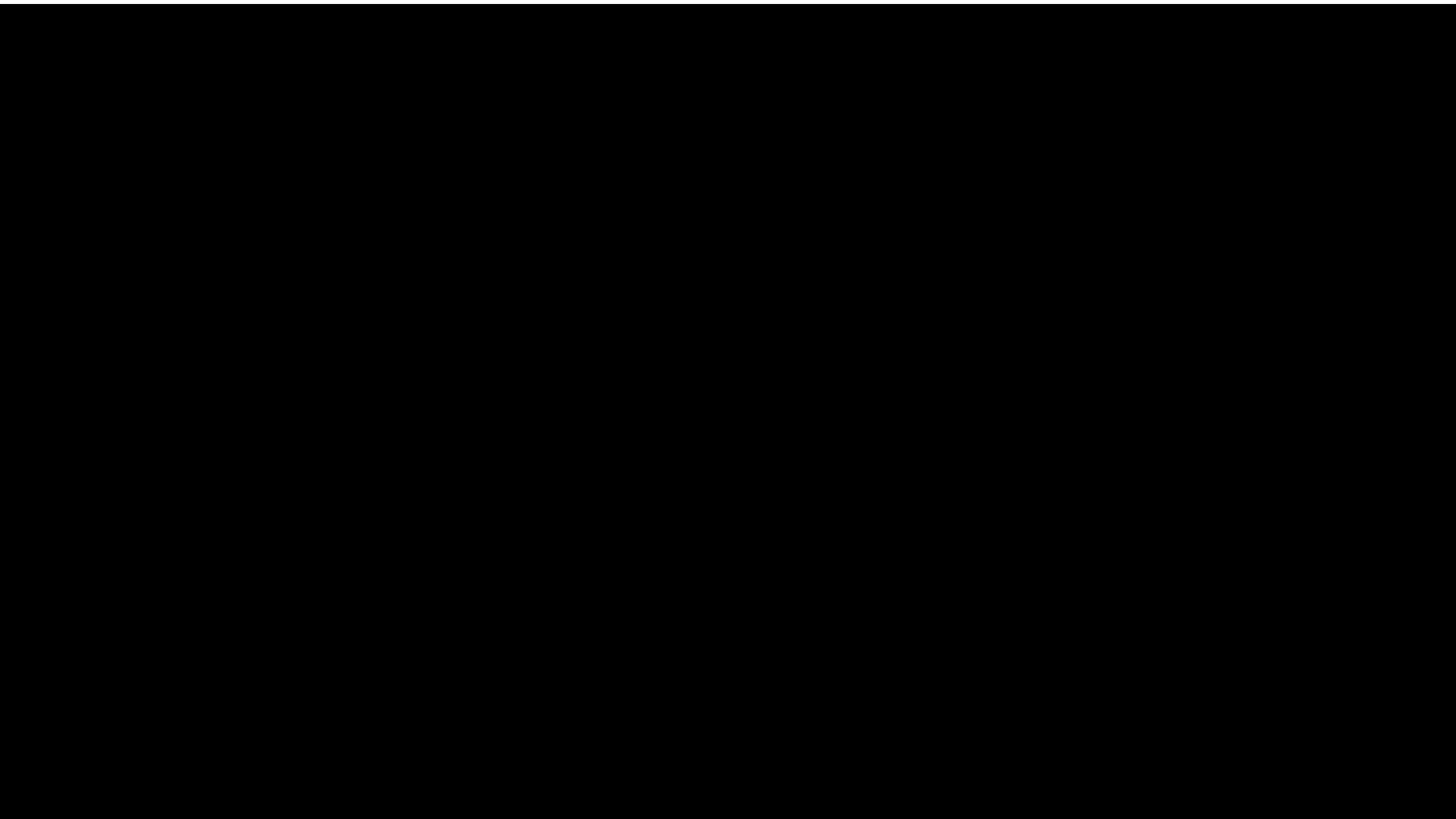
Four routes. All four are technology transfer. None of them requires you to be large.

**Each of us can solve this twice, separately, at full cost.
Or we solve it once, together.**

Direzione Innovazione. Insieme.

Heading: innovation. Together.

Gracias. Grazie. Thank you.



Waste. Joints. Hands.

The three things you were just asked to watch for

Five objects, and the people from our community behind each one.

Anna Ettore · Fondazione MICS · Federlegno · Palermo, 16 September 2026

Three things to watch. Three things to explain.

Everything you just saw came out of MICS projects. Let me give each one a name, a company and a number.

01

The waste

Where the beautiful object started out as somebody's disposal cost.

02

The joints

Where a product was designed to come apart. One of them was designed here, in Sicily.

03

The hands

Who actually did it.

And three questions for you along the way, anonymous, straight from your phone.

What happens to your production offcuts today?

- A** We put them back into our own products
- B** We sell or give them to someone who uses them
- C** They are collected and disposed of as waste
- D** Honestly, I don't know

Scan the code on the next screen. Anonymous, no registration.

An armchair padded with textile offcuts

Politecnico di Bari with Integrated Sofa Service, from Calia group.

CONVENTIONAL

Polyurethane foam

Cheap, familiar, and effectively unrecyclable at the end of its life.

INDUSTRIAL SYMBIOSIS

Mats of bonded textile waste

Lower life-cycle impact — and better acoustic absorption across the whole frequency range. Measured, not estimated.

Not a compromise the customer has to accept. But a better chair.

Wood that does what wood does not do

Divergent Wood · FORWARD project, University of Naples Federico II, with craftsmen in inland Irpinia.

Soft

Flexible

Textile-like

Magnetic

Wood waste combined with bioplastics. Same feedstock, entirely different behaviour.

Stop treating a by-product as a cheaper version of the original.

Arcipelago: kitchen tables with no glue at all

University of Palermo, with Escooh in Favara. Designed and prototyped about two hours from this room.

Dry assembly

No glue, no chemical joints. If you can assemble it, you can take it apart, repair it, and recycle the wood as wood.

LegnoVivo panels

A patented treatment of solid wood — ion bombardment plus heat. Nothing chemical is added.

What it delivers

Single-material, antibacterial, water-repellent, zero formaldehyde — and mechanically stronger than untreated wood.

Could your best-selling product be taken apart at the end of its life?

- A** Yes: it is designed to come apart
- B** Partly: some components, with effort
- C** No: it is glued, stapled or welded together

Same code. Still anonymous.

They needed a testing machine. So they built one.

In the Circular Sofa Platform project, the padding team wanted to replace polyurethane foam with a printed structure — softness from geometry instead of chemistry.

To prove it was comfortable enough, they needed a compression tester. They did not have one, and there was no budget for one.

So they dismantled an old 3D printer and rebuilt it into one, with a load cell and about forty euros of electronics.

Not a white laboratory.

People working together, on a real product.

Walking into a boat that has not been built

Sailverse · Politecnico di Bari - digital co-design for yacht interiors.

You walk in first

The interior is built at full scale in virtual reality. The client does not look at a drawing of the space — they stand in it.

Avatars with a body

Ergonomic avatars test whether a real person actually fits: reach, headroom, how you move through it. The mistakes show up while they are still free to fix.

What it saves

Fewer physical prototypes. Fewer people flown across the country to see them. Fewer decisions taken from a rendering.

The cheapest prototype is the one you never had to build.

A yacht today, but the same works for a kitchen, a showroom, an office, a hotel fit-out. Any interior somebody has to approve before it exists.

What is the single biggest thing standing in your way?

- A** It costs more than the conventional option
 - B** We cannot find the right materials or suppliers
 - C** We do not have the know-how in-house
 - D** Our customers are not willing to pay for it
 - E** Time: nobody has the hours
-

Waste. Joints. Hands.

Bring us the object you cannot take apart.
We will tell you who has already taken it apart.

THREE OF THE THINGS YOU CAN EXPLORE WITH US · CONTACT [MICS.TECH](https://mics.tech)

Circular Design Library

Materials proven in furniture production

Repairability self-assessment

Score your own product and processes

ECODECK toolkit

The eco-design training model

Anna Ettore · anna.ettore@mics.tech Thank you.

Thank you.