Energy: Net Zero

FAPESP Week Netherlands · **Session 7** · 29 October 2026

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Three steps to net zero

Net-zero subtopic mentions in the FAPESP portfolio, by step of the storyline

1. Decarbonising production

CCUS, Decarbonisation, Low-carbon materials

47 research

1 start-ups

19 proposals

Today: Telma Franco · Wiebren de Jong

2. Strengthening natural sinks

Soil carbon & agri, Natural sinks

22 research

3 start-ups

7 proposals

Today: Ricardo Viani

3. Industrial deployment

MRV

7 research

8 start-ups

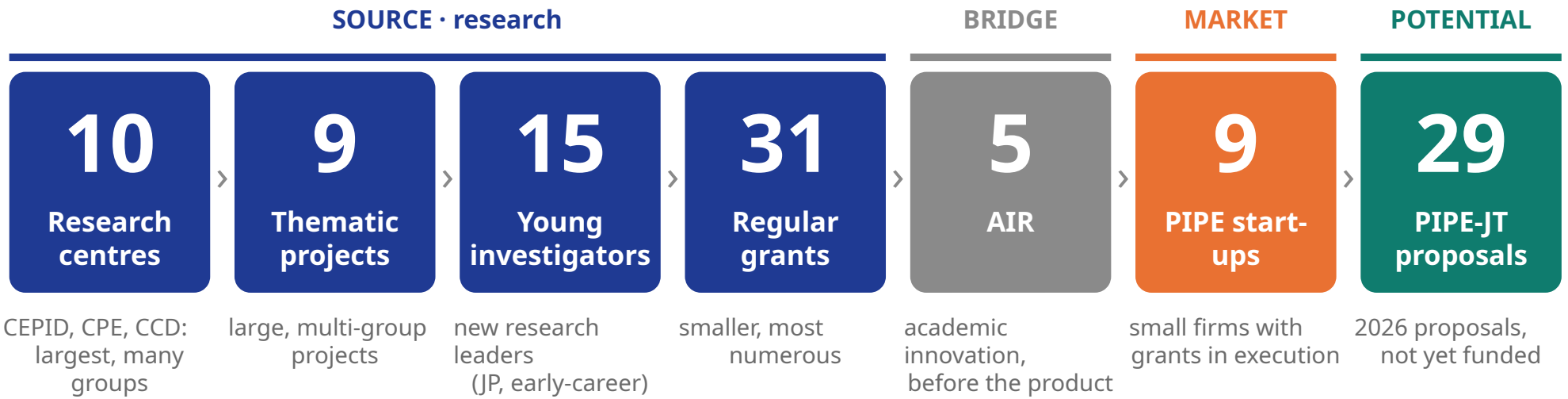
11 proposals

Today: Victor Leitão (start-up)

Sum of subtopic mentions per step (a project may appear in more than one subtopic). Source: FAPESP research grants in execution (centres, Thematic, Young Investigator, Regular, AIR; ANP training programmes excluded) · Market: PIPE grants in execution · Potential: PIPE-JT 2026 proposals, all calls, repeated submissions counted once, not yet funded.

FAPESP's path from lab to market

Net-zero projects in each FAPESP instrument, from the largest research grants to start-up proposals



65 net-zero research projects are spread across every research instrument — the largest share in Regular grants.

5 AIR projects and 9 PIPE grants are the narrow bridge where this research is turning into products.

Funding for joint FAPESP–NWO work was presented yesterday in the session "Public Support for Research Funding" (Niels Olsen, FAPESP · Belinda van der Gaag, NWO).

Counts = projects with at least one net-zero subtopic. AIR grants are counted in Source in the matrix. Source: FAPESP research grants in execution (centres, Thematic, Young Investigator, Regular, AIR; ANP training programmes excluded) · Market: PIPE grants in execution · Potential: PIPE-JT 2026 proposals, all calls, repeated submissions counted once, not yet funded.

Net zero: from research to market

Projects per subtopic at each stage · shading compares subtopics within each column

Subtopic	Source research projects · n=3,969	Market active start-ups · n=339	Potential submitted proposals · n=771
1 · Decarbonising production			
Carbon capture, use & storage (CCUS)	24	–	7
Industry & transport decarbonisation	14	1	10
Low-carbon materials & construction	9	–	2
2 · Strengthening natural sinks			
Low-emission agriculture & soil carbon	18	–	5
Natural sinks & nature-based solutions	4	3	2
3 · Industrial deployment			
GHG inventory, MRV & carbon markets	7	8	11
Energy carriers for hard-to-abate sectors			
Bioenergy & biofuels	45	1	9
Hydrogen & synthetic fuels	40	3	11

Reading the matrix

CCUS: 24 research projects, no start-up yet, 7 new proposals.

Bioenergy + hydrogen + CO_2: the strongest research lines in São Paulo, and the core of Power-to-X for aviation and shipping.

MRV & carbon markets: the only net-zero area led by start-ups.

Source: FAPESP research grants in execution (centres, Thematic, Young Investigator, Regular, AIR; ANP training programmes excluded) · Market: PIPE grants in execution · Potential: PIPE-JT 2026 proposals, all calls, repeated submissions counted once, not yet funded. Natural sinks counts only projects with an explicit mitigation focus. A project may have several subtopics.

Where new net-zero start-ups come from

Net-zero proposals submitted to PIPE-JT 2026, calls in the order they opened (one per month)

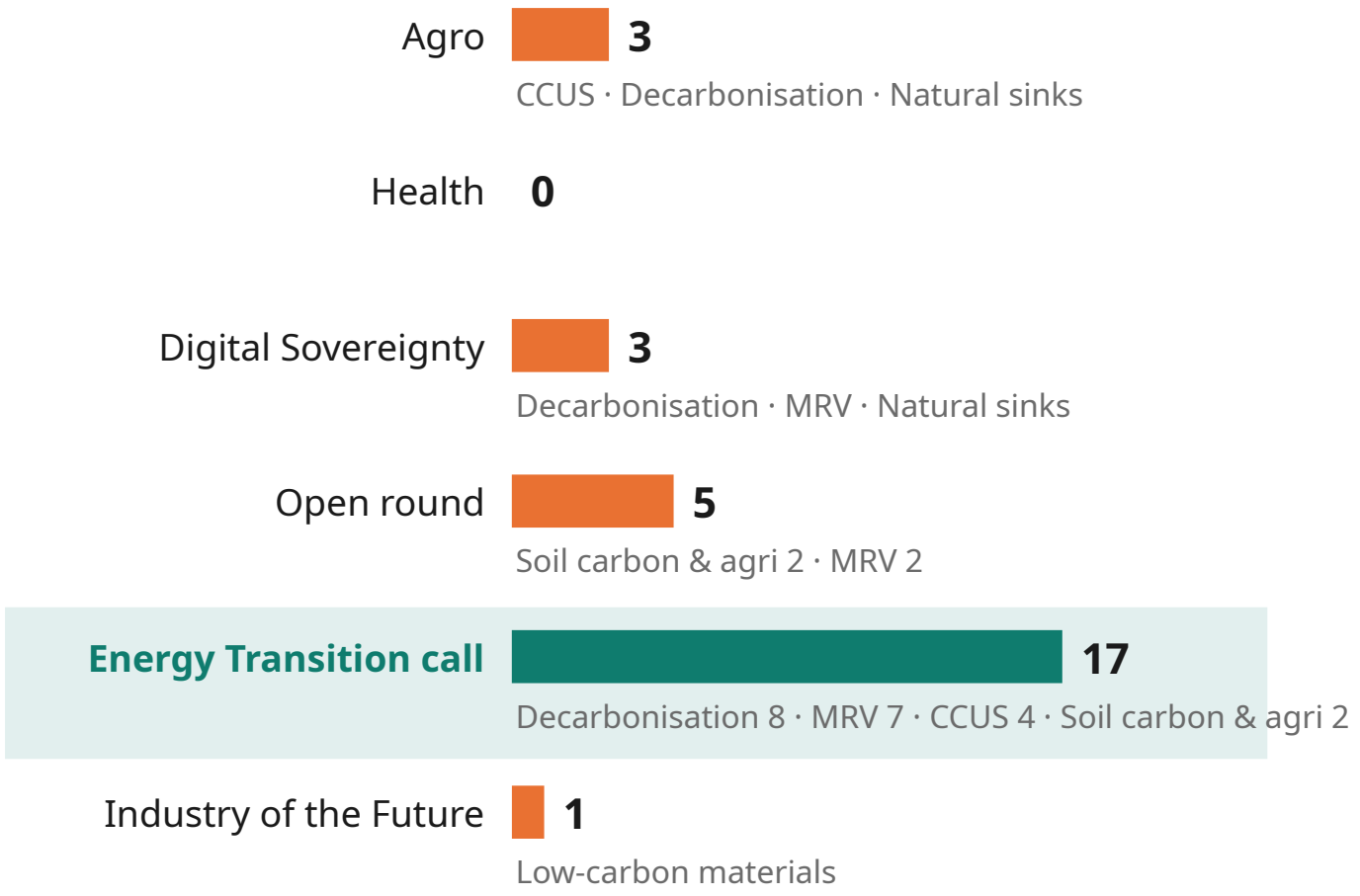
29

net-zero proposals

41%

12 of these 29 came through other calls:

11 before the energy call opened, 1 after it.



Source: FAPESP, PIPE-JT 2026 Phase 1 proposals (not yet funded); call order from process numbers. Repeated submissions counted once (in the Energy Transition call when submitted to both). Topic counts may overlap.

This session: from production to deployment

Wiebren de Jong TU Delft (co-chair)	Large-scale energy storage and carbon circularity – towards net zero emissions
Telma Teixeira Franco UNICAMP	Mind the Gap – closing material and energy loops through engineering the renewable carbon economy
Stefan Pfenninger TU Delft	Modelling net zero energy systems in Brazil and Europe
Ricardo Viani UFSCar	Tropical Forest Restoration as a Nature-based Solution: Lessons, Challenges and Opportunities
Eduardo Da Rosa Silva TNO	Towards a Brazil–Netherlands Green Industrial Corridor
Victor Leitão Forza Composites (start-up)	Strategic Composite Technologies for the Energy Transition

Where we can work together: Brazil's biomass, CO_2 and land-based sinks, combined with Dutch Power-to-X, systems and industrial scale-up.

Funding: as presented yesterday in the session "Public Support for Research Funding" (FAPESP · NWO).