

FALLING WALLS SCIENCE SUMMIT



KEY RESULTS OF THE ROUND TABLE

“BIOMANUFACTURING: SCALING THE SUSTAINABLE BIOECONOMY”

— *Turning bio-based breakthroughs into bankable, climate-scale industries.*

A world of growing populations, rising energy demand and mounting waste cannot be decarbonised with fossil-based systems and linear supply chains. Biomanufacturing promises low-carbon ingredients, critical minerals and materials from renewable feedstocks. Yet it faces long development cycles, high capital costs, regulatory friction and entrenched fossil competitors. To turn potential into real climate and health impact, the sector must rigorously prioritise what works, de-risk scale-up, align markets and regulation, and build the partnerships and skills that allow bio-based solutions to succeed at industrial scale.

Engineering biology, precision fermentation and biomineral are already delivering proteins, functional ingredients and critical minerals with radically lower emissions, water use and waste. Using Queensland’s fast-growing ecosystem and Europe’s industrial base as reference points, the panel highlighted how public research, non-dilutive funding, shared pilot infrastructure and global alliances can shorten the journey from lab to market. The next phase of the bio-economy will depend less on headline breakthroughs and more on disciplined scale-up: robust impact analysis, clear and stable rules, trusted collaboration with incumbent industries and a workforce able to run tomorrow’s bio-based plants.

THE PANEL CALL TO ACTION:

1 — Quantify and prioritise biomanufacturing routes that deliver real climate impact.

Use rigorous techno-economic and life-cycle assessments to identify bio-based processes that can cut emissions at meaningful scale rather than relying on generic percentage claims.

2 — De-risk scale-up with shared infrastructure, non-dilutive funding and patient capital.

Expand access to pilot and demonstration plants, tax incentives and matching grants so that startups can build prototypes, validate unit economics and bridge the “valley of death” without surrendering their cap tables or stalling for lack of early risk capital.

3 — Align regulation and market rules with sustainable bio-based products.

Create faster, predictable and science-based approval pathways for novel bio-based ingredients and materials, while pricing carbon and other externalities so that climate-positive products compete fairly against cheap fossil-based waste streams.

4 — Build trusted industry partnerships and social licence from the outset.

Co-design solutions with sectors like mining, chemicals and food, listen closely



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PANELLISTS

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CEO, Eclipse Ingredients

Denys Villa Gomez
Senior Lecturer, University of Queensland

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Claudia Vickers
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to their operational realities and involve social scientists and communities early to address risk perceptions, safety and acceptance alongside technical performance.

5 — Invest in skills and global collaboration across the bioeconomy.

Train the next generation of bioengineers, operators and regulators, accelerate innovation in low-water, low-waste bioreactors and strengthen international alliances so regions can learn from each other's funding models, infrastructure and policy successes.

This event is supported by Trade and Investment Queensland and assembled in the framework of the Falling Walls Science Summit 2025 in Berlin. The Falling Walls Science Summit is a leading international, interdisciplinary, and intersectoral forum for scientific breakthroughs. It commemorates the fall of the Berlin Wall and aims to promote dialogue between science and society.

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