# WHY INVEST IN NEXT-GEN MATERIALS?

## COMPETITIVE ADVANTAGES

Next-gen materials possess a range of competitive advantages that make them a strong candidate for investment. Their ability to address critical environmental and social issues, combined with their high performance and potential to disrupt the market, positions them as a key player in the future of the materials industry. As consumer and regulatory pressures continue to mount, the demand for these innovative materials is only expected to grow, offering significant opportunities for investors who recognize their potential.

Image credit: BMW x NFW

## APPLYING LESSONS FROM ALTERNATIVE PROTEINS TO NEXT-GEN MATERIALS

In recent years, alternative proteins have disrupted the food industry and continued to accelerate in technological advancement, sales and market share growth, and investments globally. Next-gen materials have emerged as the next big wave in this paradigm shift away from a reliance on industrial animal agriculture, and there are many parallels between the development of the two industries.

In fact there are single companies innovating in both areas. We see the next-gen materials industry as 5-10 years behind where the alternative protein industry is currently. In 2019, McKinsey & Co. estimated the market base for alternative protein at approximately USD2.2 billion compared with a global meat market of approximately USD1.7 trillion.[20]

### Harnessing Markets and Tech for Good: Plant-Based Milk Case Study

We believe in the power of markets and technology to bring about deep and rapid change in the materials industry. The growth of non-dairy milks provides a great example. Today, non-dairy milk makes up 15% of the entire milk market, while sales of dairy milk are on a steady decline.[21] This dramatic shift didn't occur because more people began caring about the ethical or environmental consequences of dairy farming. It happened because non-dairy milks became more affordable, accessible, and delicious. Millions of non-vegan consumers enjoy plant-based milk on a regular basis simply because they prefer the flavor.


Image credit: Richard Levine / Alamy Stock Photo

The next-gen materials industry can leverage the technological and production advances pioneered by the alternative protein field. Furthermore, people do not have the same attachment to cow leather or silkworm silk as they do to cow steak or swine bacon. This makes it easier to market next-gen materials to most consumers.

## INDUSTRY CHALLENGES

### Tariff Disparities

Current tariffs create a significant disparity between traditional and next-gen materials, disadvantaging sustainable options. Until tariff reforms occur, next-gen companies can gain competitive advantages by leveraging tax incentives and public funding.[8,9]

### Labeling Concerns

We expect that producers of animal-based materials will challenge the use of terms like “leather” and “fur” for next-gen materials, but that such labeling laws will ultimately not survive legal challenges.[10]

**“The rules of the game need to change, so people trying to work responsibly aren’t punished. We need taxes on unsustainable materials and incentives for the alternatives.”**

— **Hannes Schoenegger**, co-founder and CEO, Bananatex[11]

### Industry Failures

High-profile bankruptcies and production-pauses such as those of Renewcell and Bolt Threads have raised questions over the industry’s longevity.[12,13] But such events are normal for emerging technologies where risk-taking pioneers often ‘fail-forward’ for the greater good. One company’s demise does not negate the demand for next-gen materials or the viability of the industry as a whole.[14] Per Gartner’s Hype Cycle for Emerging Technologies, the next-gen materials industry is likely emerging out of the ‘trough of disillusionment’ and moving up the ‘curve of enlightenment’ towards maturity. Setbacks and shake-outs are an expected part of this stage of development.[15]

**“A lot of the first-movers in this space — who really paved the way in generating interest and demand — have faced challenges. Investors see pilots here and there but they’re looking for bigger commitments to prove that brands want this and will do what is necessary to support it. ”**

— **Stephanie Downs**, co-founder and CEO, Uncaged Innovations.[16]

Image credit: Reformation x LENZING

# DRIVERS OF SUSTAINABLE AND ETHICAL TRANSFORMATION

### Disruption in Animal Agriculture

The animal agriculture industry is at risk as affordable and efficient alternative proteins and materials gain market share. This shift could drive up prices for traditional products and challenge the industry's viability, potentially accelerating the move away from animal-derived products.

### Backlash Against Plastic

Plastic is increasingly unpopular, pushing brands to reduce or replace petroleum-based fibers like polyester and nylon. The growth of next-gen materials is being driven partly by the demand to replace current-gen synthetics.

### Ethical Shifts in Animal Welfare

Growing concern for animal welfare has led to an increase in certifications and widespread bans on certain husbandry practices and animal-based materials. These bans have been adopted by brands, fashion shows, and countries alike. As cruelty-free, high-performance and sustainable alternatives become more available, this trend is expected to continue.

Image credit: Alexander McQueen x Demetra

### Consumers Care About Sustainability

More and more people are concerned about sustainability in their fashion purchases. Consumers, especially Millennials and Gen Z, are expressing desires to purchase more sustainable products. 86% of respondents in a global study believe purchasing clothes made from sustainable materials is crucial for a sustainable lifestyle.[7]

### The Relative Lack of Barriers

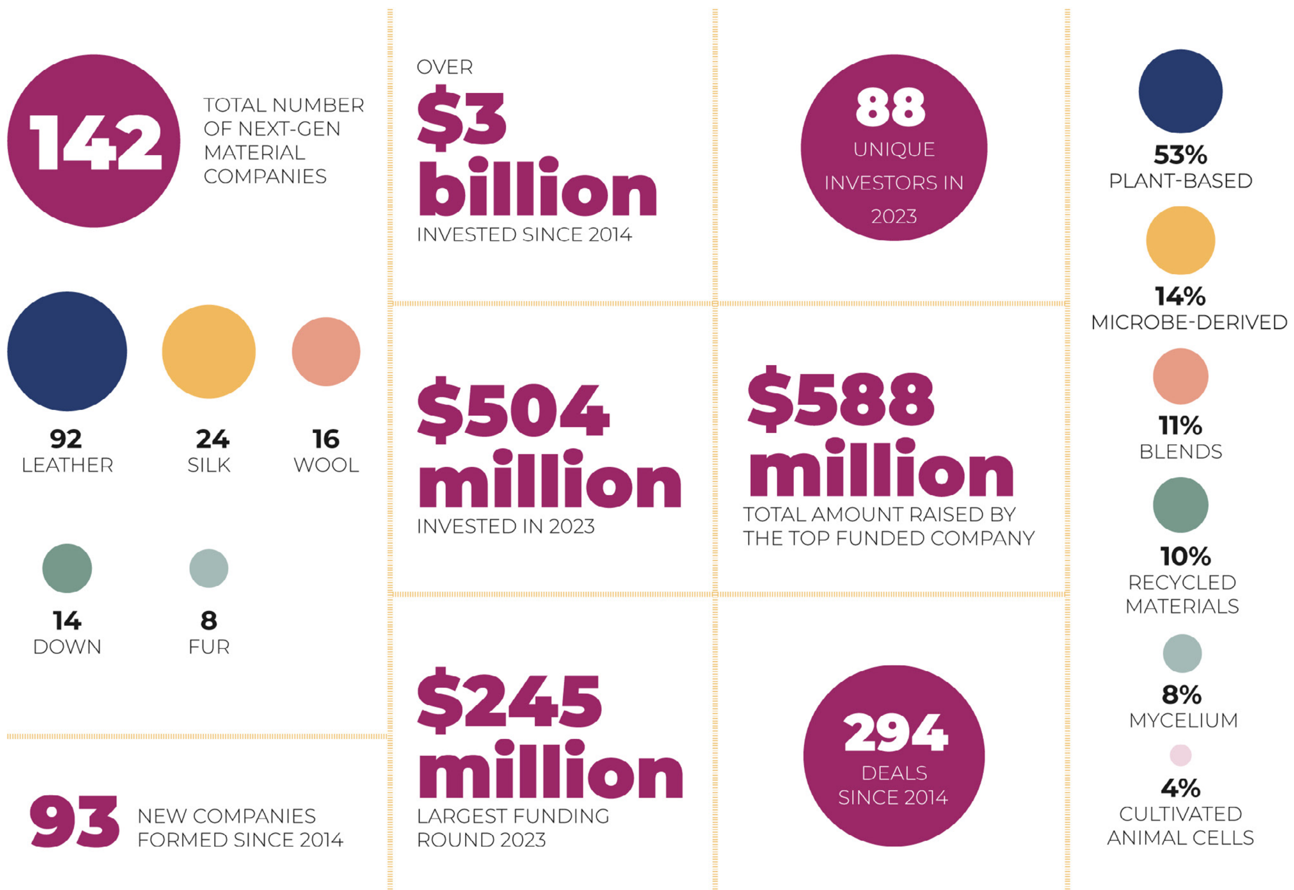
Effecting large-scale change in the materials industry will be easier than doing so in the meat industry due to a relative lack of barriers concerning consumer acceptance and regulatory hurdles:

- Fashion and automotive brands are willing to switch to next-gen materials once they meet the necessary specifications for their products.
- Consumers are more likely to quickly shift away from animal-derived materials than from animal-based foods, as they have less emotional attachment to materials and are more open to technological innovations in products like clothing and cars.
- The regulatory hurdles are significantly fewer for introducing a new material to market than for a novel food.

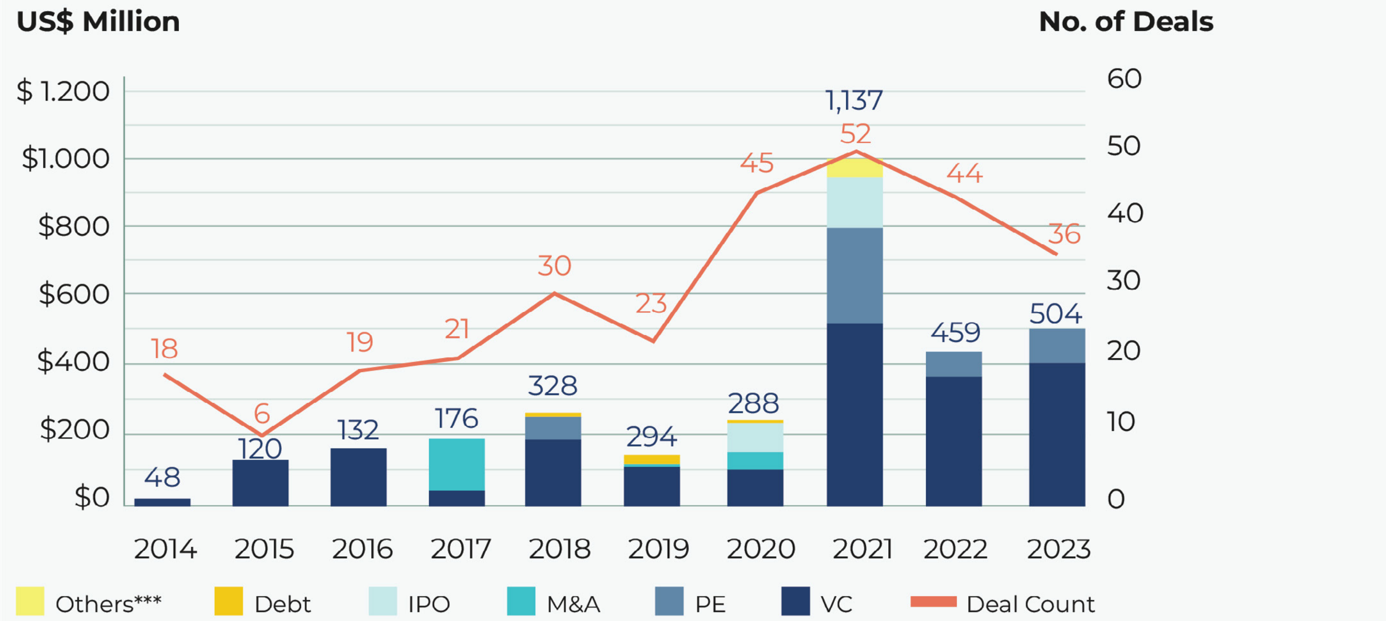
# INVESTMENT IN THE NEXT-GEN MATERIALS INDUSTRY

- Despite global VC funding falling 42% and deal count falling 30% to reach a 6-year low in 2023, funding for next-gen materials companies increased.[17] The next-gen materials industry enjoyed a 10% rise in investment funding in 2023, showing significantly higher investments than the general market.
- In 2023, just over US$500 million was raised by the next-gen material companies, from 36 publicly disclosed deals.
- Since 2019, over $3 billion has been invested in the next-gen materials industry. 93 new companies have been formed since 2014, putting the current company count at 142+, spread across 5 continents.[18]

## State of the next-gen material industry at a glance (2023)




## Capital invested in next-gen material companies, 2014-2023




VC Investments spiked globally in 2021, then declined.

*** "Others" includes deal types (i) Secondary Transactions - Private, & (ii) Corporate (Non-control transaction)

**Source:** MII analysis on investment activities in companies included in MII's company database, based on data from PitchBook and primary research.

See our [2023 State of the Industry Report: Next-Gen Materials] for more on recent investment activity in next-gen materials.[19]

## Top 10 most funded next-gen material companies in 2023

MODERN MEADOW

MYCOWORKS

RENEWCELL*

Spiber

NATURAL FIBER WELDING™

AMSilk

Uf Ultrafabrics®

SPINNOVA®

BOLT THREADS

NEWLIGHT

Source: MII analysis on investment activities in companies included in MII's company database, based on data from PitchBook and primary research. *In 2024, Renewcell was rebranded as Circulose following its acquisition by the private equity firm Altor.