Innovative financing mechanisms for alternative proteins in Europe

May 2025

Executive summary

The Good Food Institute estimates that $10.4-$17.5 billion in investment is required to build the necessary infrastructure for plant-based meat to represent just 2.5% of the global meat market in 2030. This is necessary not only to meet projected demand but also to ensure that alternative proteins can compete on price, taste, and accessibility – key factors in driving consumer adoption. Diversifying Europe's protein supply is essential for meeting our climate targets, boosting food security, protecting public health and creating space for nature-friendly farming.

This report aims to explain and analyse a comprehensive list of all financing mechanisms and enablers that can be leveraged to fund infrastructure projects in the European alternative protein industry, with a focus on innovative solutions. As traditional approaches often fail to fund capital-intensive facilities for scale-up and commercial manufacturing projects, blended finance and tailored adaptive solutions appear to be key to unlocking the sector's full potential.

The report explores different funding sources from various types of investors, illustrating each mechanism with case studies from similar industries or regions outside Europe, and ranks them according to their relevance and potential impact for alternative proteins.

The reflections provided lead to four key recommendations for the alternative protein funding ecosystem in Europe, summarised as follows:

- **Create a market**: One of the main challenges for alternative proteins is the need to create a viable market by using market-shaping instruments and strategic investments in adjacent sectors to reduce risk, lower costs, and demonstrate commercial potential, ultimately breaking the cycle where investors await proof and startups await funding.
- **Derisk**: Public-private collaboration through blended finance is key, as public involvement signals long-term support, attracts private capital, and has historically proven effective – such as in the clean energy sectors – by sharing risks and catalysing large-scale funding.
- **Collaborate**: To overcome fragmentation in the alternative protein sector, collaboration among all stakeholders – including investors, startups, governments, and corporates – is essential to reduce risk, foster innovation through shared infrastructure like open-access pilot plants, and form strategic partnerships that improve scalability, cost-efficiency, and long-term industry growth.
- **Be creative**: Scaling alternative proteins requires creative, tailored financing – there's no one-size-fits-all solution, so success depends on combining available funding mechanisms into hybrid approaches that align with each project's specific stage, scale, goals, and investor expectations.

Those reflections aim to serve as a foundation for further discussions among public and private investors and finance professionals within companies. As financing alternative protein infrastructure projects is still quite a new topic, we expect more financing mechanisms to be identified with time.

About the Good Food Institute Europe

The Good Food Institute Europe is a nonprofit and think tank helping to build a more sustainable, secure and just food system by diversifying protein production.

We champion the science, policies and investment needed to make alternative proteins delicious, affordable and accessible across Europe.

By advancing plant-based foods, cultivating meat from cells and producing ingredients through fermentation, we can boost food security, meet our climate targets and support nature-friendly farming. GFI Europe is powered by philanthropy.

The Good Food Institute is not a licensed investment or financial advisor, and nothing in this report is intended or should be construed as investment advice.

Helene Grosshans
Infrastructure Investment Manager
europe@gfi.org

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01 Introduction

As global populations continue to grow and concerns about food security, environmental sustainability, and health intensify, protein diversification will be essential for building resilient food systems. With escalating demand for sustainable protein sources, alternative proteins – including plant-based foods, cultivated meat, and ingredients made using fermentation – are gaining traction in Europe among consumers, investors, and food manufacturers alike. BCG estimates that for every trillion dollars invested in developing plant-based meat, 4.4Gt of CO_2 could be saved: three times more than equivalent investments in other high-emitting sectors, such as transport or buildings.[1]

Between 2020 and 2022, European alternative protein companies raised significant funding from the private sector, driven by a search for yield in a low-interest-rate environment, and from public entities primarily through R&I grants. However, in 2023, this wave of enthusiasm subsided amid a global retrenchment in the investment climate, whereby venture capital investors shifted their focus back to high-growth, low-capital-expenditure companies. This coincided with a slowdown in plant-based sales as societies emerged from the Covid-19 pandemic and consumers faced inflationary pressures.

Alternative protein startups, like food companies more generally, are capital-intensive and operate with low margins – which does not align with venture capital investor targets. Funding the construction of a demo or commercial-scale facility can cost between €15 million and €250 million, which is unrealistic for most early-stage companies to raise from venture capital.

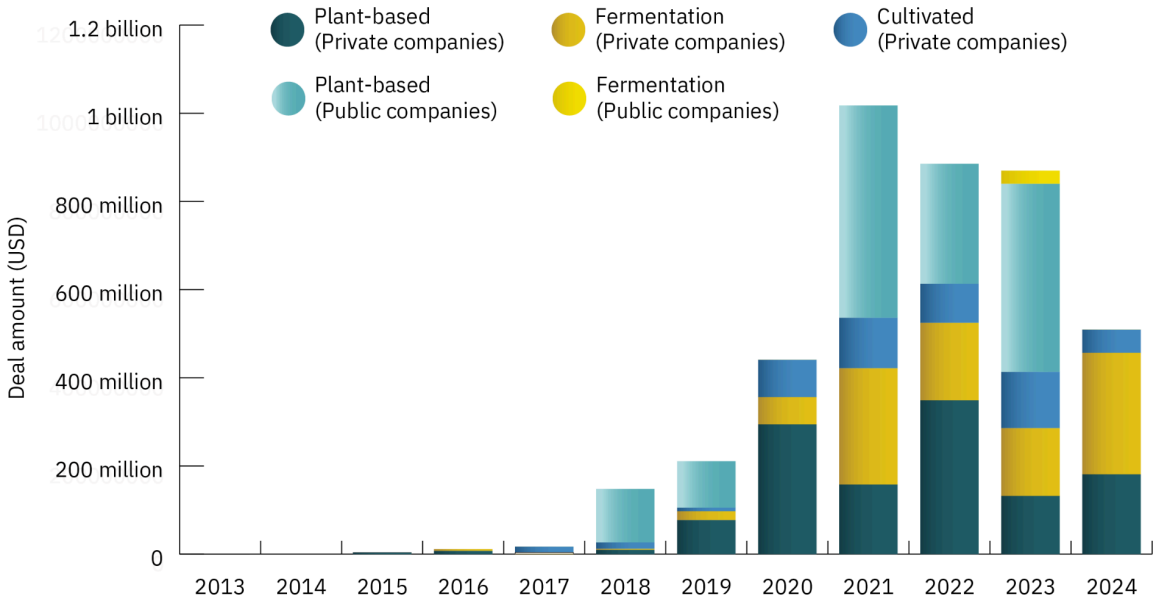
To secure this financing level, governments and mission-driven entities, such as philanthropic organisations and foundations, should focus on incentivising private investors and developing innovative financing solutions and support mechanisms. The European Investment Bank (EIB) recently announced that agriculture and the bioeconomy will be prioritised in its Strategic Roadmap for the upcoming three years (2024-2027). They emphasised that public financial support is essential to derisking infrastructure investments, acknowledging its vital role in lifting this emerging ecosystem.

In 2024, investments (grants excluded) in private companies across plant-based foods, cultivated meat and fermentation reached €470 million in Europe, surpassing the 2023 total and signalling a potential return to growth in the industry. Maintaining that momentum and significantly increasing investment in this sector will be essential for boosting Europe's food security, meeting our climate targets and supporting a shift towards more nature-friendly

[1] BCG x Blue Horizon, The Untapped Climate Opportunity in Alternative Proteins (2022). Available from: https://web-assets.bcg.com/6f/f1/087a0cc74221ac3fe6332a2ac765/the-untapped-climate-opportunity-in-alternative-proteins-july-2022.pdf. Accessed 7 May 2025.

farming in the years to come. This report examines how conventional and especially innovative financing mechanisms and enablers can support the European alternative protein ecosystem and which mechanisms should be prioritised, with a focus on infrastructure projects for scaling production and achieving the sector's full potential.

Investments in alternative protein companies in Europe, 2013-2024 (excl. grants)



Sources of funding

This report explores different categories of funding.

New pools of capital are specifically established or tailored to support alternative proteins, such as a venture capital fund dedicated to alternative proteins, a grant programme targeting alternative protein companies, or implementing a new tax whose proceeds are used to support the alternative protein industry.

Existing sources of funding are pre-established financial resources that have been available historically and can be reallocated to alternative protein projects even if they were not originally intended for this purpose, such as bank loans or tax revenues.

Direct funding sources, such as grants or venture capital deals, involve a tangible cash flow between the investor and the recipient. In contrast, **indirect financing mechanisms**, which act as financing enablers, are designed to stimulate additional investment. These include regulations and offtake agreements.

Regarding public funding, two types of financing mechanisms exist to reduce risk: **push mechanisms** lower costs (through subsidies or tax credits) and **pull mechanisms** increase revenue (with market-shaping incentives or guarantees).

Types of investors

All the financing tools presented in this report are provided by either private or public stakeholders.

Private investors include commercial banks, institutional investment funds, crowdfunding platforms, strategic industrial partners, philanthropic organisations and leasing companies.

Public funding can be issued on many different levels. Mutli-lateral institutions (such as the World Bank, United Nations and Regional Development Banks) mainly target macro projects in developing economies. National governments and regional and local bodies are mostly active via sovereign wealth funds.

At the EU level, there is no single dedicated fund for infrastructure, making it challenging for entrepreneurs and innovators to navigate the funding landscape. However, experience shows that the following instruments offer the most relevant financing solutions for infrastructure projects and associated scale-up costs:

- **Horizon Europe** is the European Union's key funding programme for research and innovation, running from 2021 to 2027. With a budget of approximately €95.5 billion, it aims to strengthen the EU's scientific and technological base, boost innovation, and address global challenges. While primarily known for its research grants, Horizon Europe also finances the European Innovation Council (EIC), which supports highly innovative small and medium-sized enterprises (SMEs) and startups through instruments such as the EIC Accelerator. The latter provides a combination of grant funding (non-dilutive) for innovation development costs, and equity investments to help scale up game-changing solutions. In its 2024 and 2025 work programmes, the EIC Accelerator earmarked €50 million to support the scaling of precision fermentation technologies.
- The **European Regional Development Fund** (ERDF) aims to strengthen economic and social cohesion in the EU by funding projects that promote regional development, innovation, and job creation. Although it rarely finances infrastructure projects on its own, it can co-finance industrial infrastructure development, such as open-access pilot plants, or support the repurposing of existing sites into cutting-edge alternative

production facilities. National and regional authorities manage ERDF allocations, determining priorities and the scope of funding.

- **InvestEU** is an EU budget guarantee mechanism designed to stimulate investment across Europe. It provides an EU-guaranteed risk cushion for financial intermediaries, such as the EIB and national financing and development institutions, encouraging them to fund projects they might otherwise deem too risky. By 2027, InvestEU aims to mobilise more than €372 billion of public and private investment through an EU budget guarantee of €26.2 billion. Project promoters (such as companies) should apply directly to one of the 17 implementing partners to explore financing solutions supported by the EU guarantee.

- The **EIB Group** serves as the EU's lending arm and consists of the EIB and the European Investment Fund (EIF), which focuses on support for SMEs. Together, they provide a range of financial instruments, such as loans, guarantees, and equity investments, to foster growth, sustainability and innovation across the EU. In 2024, the EIB provided a €20 million loan to MATR Foods, a Danish biomass fermentation company, marking the first time the EIB financed an alternative protein venture.[2]

Methodology

This report and its insights are grounded in a **compilation of case studies** from various regions around the world and other capex-intensive and innovative industries. These case studies are then analysed for their **relevance and applicability to the European alternative protein sector**.

Each financing mechanism is described theoretically, with examples of its implementation in other sectors to highlight real-life success stories. The current European context for alternative proteins is then explored, assessing whether these mechanisms are currently available, whether they would be beneficial to promote further, and their potential constraints.

All mechanisms are evaluated using the **ITN framework**, a tool designed to estimate the value of allocating marginal resources to address problems based on their importance, tractability, and neglectedness. Initially developed by Holden Karnofsky around 2013, this framework has enabled us to assess and prioritise the various financing mechanisms in terms of their

[2] Denmark: Foodtech start-up MATR gets €20 million EIB loan to expand production of its clean label meat-alternatives (2024). Available from: https://www.eib.org/en/press/all/2024-335-danish-foodtech-start-up-matr-gets-eur20-million-eib-loan-to-expand-production-of-its-clean-label-meat-alternatives. Accessed 7 May 2025.

suitability for the European alternative protein sector. The conclusions are displayed in the summary table on the following pages.

Importance: If this financing mechanism were available, how impactful would it be for infrastructure financing of alternative proteins in Europe?

- **Green:** very impactful
- **Orange:** somewhat impactful
- **Red:** not impactful

Tractability: How easy is implementing this financing mechanism for alternative proteins in Europe?

- **Green:** very easy
- **Orange:** somewhat easy
- **Red:** not easy

Neglectedness: How available is this financing mechanism for alternative proteins in Europe now?

- **Green:** very available, and alternative proteins can easily benefit from this mechanism
- **Orange:** it's available but not very widespread
- **Red:** little to no availability for alternative protein companies in Europe

Summary of financing mechanisms[3]

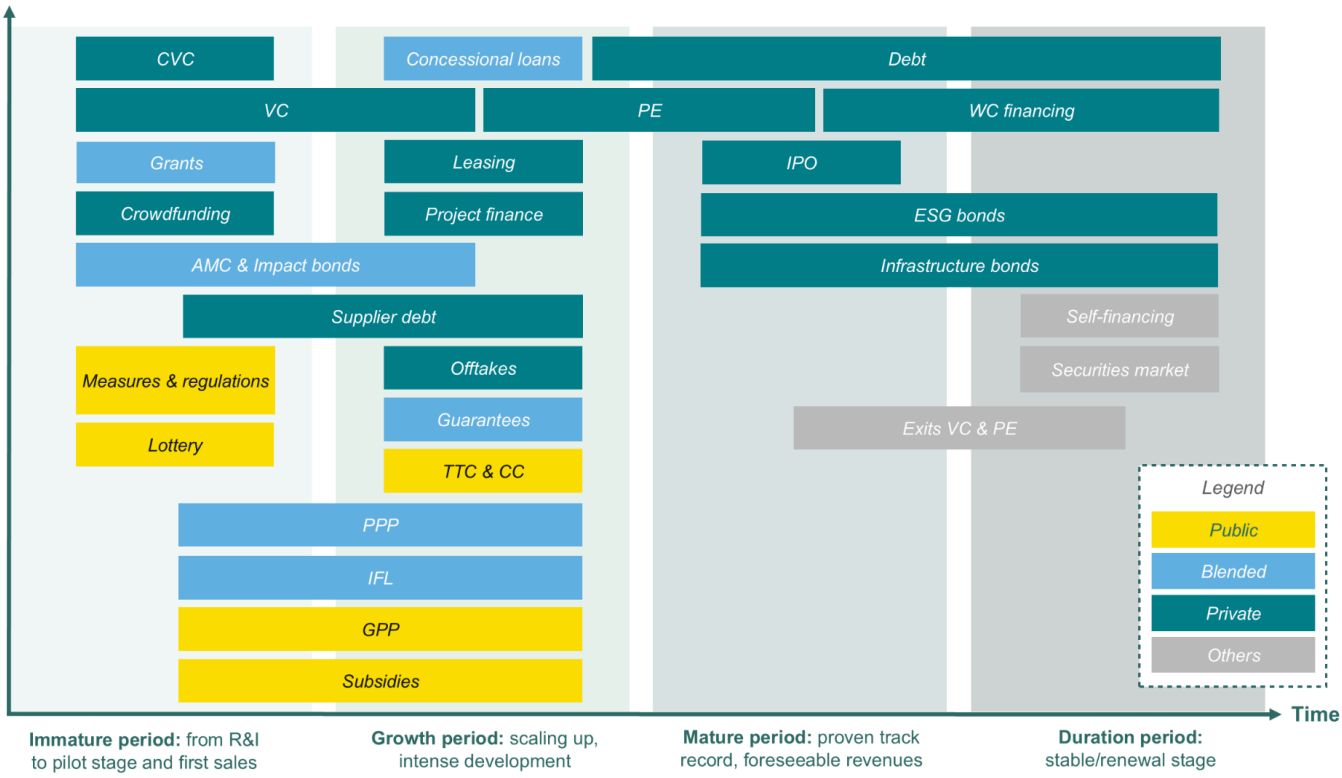
Mechanism	I	T	N	Investors/Enablers	Beneficiaries
Traditional financing mechanisms					
Venture capital				Investment funds	Fast-growing startups
Venture debt				Investment funds	Venture-backed startups
Corporate debt				Banks	Companies with forecastable future cashflows and healthy balance sheets
Private equity				Investment funds	Mature companies with proven track record
WC financing				Banks	Companies with steady income
IPO				Individuals, investment funds	Mature companies
Securities market				Individuals, investment funds	Very mature companies
Private innovative financing mechanisms					
CVC				Companies	Startups and companies, any stage
Leasing				Companies, investment funds	Startups and companies, any stage
Project finance				Banks, investment funds, crowdfunding platforms, public entities	Companies with forecastable future cashflows
Offtake agreements				Companies, public entities	Companies with forecastable production capacity
Infrastructure bonds				Investment funds, individuals	Mature companies with healthy balance sheets
Crowdfunding				Crowdfunding platforms	Startups and companies, any stage
Green bonds				Investment funds, individuals	Mature companies with healthy balance sheets
Supplier debt				Companies	Startups and companies, any stage
Blended finance					
Guarantees				Public entities, banks, foundations	Companies with healthy balance sheets
PPP				Companies, public entities, governments, banks, investment funds	Companies with solid business plans
Grants/subsidies				Public entities, companies,	Startups and companies, any stage

[3] A glossary is available at the end of the report.

				high net-worth individuals	
AMC				Public entities, companies, foundations	Companies with forecastable production capacity
Impact bonds				Foundations, public entities, high net-worth individuals, impact funds	Companies with forecastable production capacity
Concessional Loans				Public entities, foundations, companies	Companies with forecastable future cashflows and healthy balance sheets
IFLs				Public entities	Companies with forecastable future cashflows and healthy balance sheets or with a strategic non-financial advantage
Public innovative financing mechanisms					
Public procurement				Public entities	Companies with forecastable production capacity
Support to parallel industries				Governments	Companies all across the supply chain
Tax credits				Governments	Companies with activities in the scheme's scope
Carbon credits				Governments	Companies with activities in the scheme's scope
Regulations				Public entities	Startups and companies, any stage
Carbon tax				Governments	Companies whose activity is in the scope of a sustainable transition
Lottery				Governments, companies, individuals	Startups and companies, any stage

Blueprint for optimal financing of alternative proteins

This graph summarises all financing mechanisms and showcases their ideal distribution throughout an alternative protein company's life. It highlights how much public involvement is needed at the early stages of development until companies can rely solely on private sources of capital and self-financing.



02 Conventional financing tools

Traditional financing instruments usually focus on companies that have demonstrated commercial viability, established sales records, or can reliably forecast future revenues due to a robust and straightforward business model.

However, these are not preferred options for most early-stage alternative protein companies.

Manufacturing, even in well-established sectors, is challenging to finance due to high capital costs, making it typically viable only for risk-averse lenders and large corporations. When additional risks – such as unproven technology or uncertain customer demand – are introduced, securing financing from large manufacturing operators or accessing low-cost debt becomes even harder. These challenges are inherent to manufacturing and are particularly pronounced in emerging technologies and markets. **Alternative proteins, in our case, exemplify an especially difficult sector to fund**.

Without mechanisms to reduce risks, such as blended finance, securing infrastructure financing, in general, becomes extremely challenging, let alone for facilities at the optimal scale (where larger scale often improves unit economics) and for investments in necessary optimisations (like costly automation that lowers long-term unit costs). Encouraging upstream suppliers and downstream partners to invest in improving overall efficiency is even more difficult. Additionally, higher Weighted Average Costs of Capital (WACCs) resulting from expensive equity or high-risk debt create a lasting financial strain, as the need to repay costly financing increases the product's fully loaded costs.

Venture capital

Venture capital (VC) is a form of private equity financing whereby investors fund early-stage, high-potential startups or emerging companies in exchange for equity stakes. This type of issuance of new equity or convertible securities is referred to as dilutive, as the percentage of the company owned by individual shareholders reduces after the deal.

Depending on the company's maturity stage, VC investors will invest tickets within progressive ranges, depending on the funding round: Seed, Series A, B, C and beyond.

Beyond financial support, venture capitalists often offer mentorship, strategic guidance, technical expertise and valuable industry connections to help startups scale. Their primary objective is to achieve substantial returns by supporting the company's development and eventually exiting through a liquidity event (an acquisition or initial public offering (IPO)).

VCs typically target high returns to compensate for the high risk. The average VC fund usually seeks an annual internal rate of return (IRR) of 20% to 30% over an investment horizon of five to 10 years. Most VC funds follow a "power law" distribution, where a few investments deliver the bulk of the returns.

Relevance for alternative proteins in Europe

Several factors contribute to venture capitalists' reluctance to invest in alternative proteins:

- Market uncertainty regarding consumer interest and purchasing behaviour.
- Disappointment following the initial excitement in 2020-2022 when expectations were overblown (for alternative proteins and many other VC-funded sectors) and did not result in short-term success.
- Poor exit opportunities.
- The challenge of navigating an unfamiliar field.

The food sector's business model, characterised by lower margins and slower growth rates than tech startups, often conflicts with VC expectations. Additionally, the regulatory landscape, including the complexities of novel food approvals, adds an administrative challenge.

However, some VC investment funds dedicated to infrastructure funding stand out as exceptions. An inspiring example for European investors is the US-based Earth First Food Ventures, which focuses on precision fermentation, investing in companies and scalable infrastructure and technologies. In 2025, they announced the launch of PFerrinX26, a facility exclusively for lactoferrin production.

Venture capital may still be applicable in some instances, **particularly for tech and higher-margin companies**. For example, automation or AI products and services with applications beyond food, such as in pharmaceuticals, or B2B enablers focused on cost reduction, could constitute a more straightforward preliminary step into the industry for VCs. Business plans that rely on contract development and manufacturing organisations CDMOs rather than heavy infrastructure capex may also be more in line with VC criteria and stand a better chance of being selected.

However, the economic backdrop is not helpful for alternative protein companies trying to attract VC investment. Venture capital is struggling to bounce back post-2022, as in 2024 the number of active European investors declined by 12.5%, and this tightening investor landscape is not limited to Europe.[4]

[4] NetZero Insights, State of Climate Tech 2024 Report (2025). Available from: https://stateofclimatetech.com/#download. Accessed 7 May 2025.

Nevertheless, experts predict that the worst is behind us and, in recent years, **Europe's share of climate venture capital globally has never been higher** (43% in 2023).[5] Investment funds dedicated to alternative protein deals are scarce (Synthesis Capital, Good Seed Ventures, Unovis Asset Management, to name a few). Still, alternative proteins are included in the scope of most climate VCs.

The trend we noticed in 2024 in the alternative protein space, and climate tech more broadly, is that the volume of deals declined compared to 2023 but the average tickets are increasing again, demonstrating that **investors are willing to write big cheques but, for now, only to companies with strong metrics**. In Q3 2024, La Vie Foods, a leading French plant-based company, raised €25 million[6] and Formo, a Berlin-based precision fermentation startup, successfully raised €55 million in a Series B for its animal-free cheese.[7]

Financial services providers like Springvest offer another interesting form of venture capital financing by acting as an intermediary between companies and investors. The platform performs the due diligence and selection processes and offers investment opportunities to a pool of private investors willing to get involved in the industry while avoiding taking on all the risk. Solar Foods, a Finnish fermentation startup claiming to make "food out of thin air", successfully raised €8 million on Springvest in 2023.

Less than 0.05% of startups are estimated to receive venture capital funding.[8] This highlights that while VC is a significant financing source for high-growth, innovative companies (generally in tech or consumer services), most businesses rely on other sources of capital. Similarly, only 0.91% of startups secure funding from angel investors. The majority rely on personal savings and loans, while 38% seek early-stage funding from friends and family, often referred to as "love money". Both angel investments and love money serve as alternatives – or initial steps – before venture capital, as these investors tend to have personal or emotional motivations. However, the amounted invested are typically much smaller compared to VC funding.

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[5] European Climate Tech in 2023 (2024). Available from: https://dealroom.co/blog/european-climate-tech-in-2023. Accessed 7 May 2025.
[6] La Vie Raises €25M, Reports €19M in Revenue and Significant UK Retail Growth (2024). Available from: https://vegconomist.com/investments-finance/investments-acquisitions/la-vie-raises-e25m/. Accessed 7 May 2025.
[7] Formo raises $61m Series B, launches cheese alternatives featuring koji: 'We aim to become a real challenger brand' (2024). Available from: https://agfundernews.com/formo-raises-61m-series-b-launches-cheese-alternatives-featuring-koji-we-aim-to-become-a-real-challenger-brand. Accessed 7 May 2025.
[8] Where Startup Funding Really Comes From (Infographic) (2013). Available from: https://www.entrepreneur.com/money-finance/where-startup-funding-really-comes-from-infographic/230011. Accessed 7 May 2025.

Key takeaways

Venture capital should not be viewed as the sole or primary funding source for European alternative protein companies. This funding mechanism is only suitable for some business models and generally does not support infrastructure projects, particularly when companies have yet to demonstrate commercial viability. Experts emphasise that VC funding is not typically intended for capital-intensive sectors. Furthermore, it can be an expensive financing option due to the risks involved for investors, especially compared to other funding solutions.

Venture debt

Venture debt (VD) is a loan for high-growth, venture-backed companies that provides additional non-dilutive capital until the next funding round. It does not replace equity but follows it. Most of the time, it takes the form of bond issuance, and the maximum amount is calibrated to the amount of equity the company has raised (25% to 35% of the most recent equity round). VD usually has a maturity of three to four years with a grace period of six to 12 months (interest-only).

Relevance for alternative proteins in Europe

Venture debt receives criticism from capital-intensive industries for many reasons. Firstly, most alternative protein companies could not afford VD's sky-high interest rates, and its short loan tenures make it unsuitable for infrastructure funding. Additionally, venture debt includes warrants, giving investors the right (but not the obligation) to purchase company stock at a preferential price within a specific period. This means that founders can end up giving up equity at a discount years later, when their company is successful. Finally, VD being capped at 35% of the last equity raise entails an unfair debt-to-equity ratio compared to what is seen and accepted in mature industries.

Yet, the public sector keeps expanding its offer of venture debt solutions in response to what is perceived as a market-initiated demand, whereas startups most probably look towards venture debt only because they struggle with accessing private credit. **Policymakers often misinterpret steady demand as market fit**, overlooking the need for improved financing options.

The EIB's venture debt solution appears to be an exception in the public funding ecosystem, as it's structured in a way that works better for startups, though it is still high-cost. This public institution typically offers financing between €5 million and €50 million (although there is no official cap) to venture-backed, highly innovative European SMEs. The solution covers fields such as cleantech, deep tech and digital, life science and biotech. It offers more flexibility in

loan terms and conditions than regular VD, and limited dilution. It also allows companies to stay ultimately accountable for day-to-day management and helps attract additional investors, as EIB's involvement is commonly perceived as a guarantee of quality.

Key takeaways

As it has been provided for the last decade, venture debt is unsuitable for infrastructure financing in general. The industry would need longer repayment periods, lower interest rates, and no correlation with past and future VC rounds.

Corporate debt

Traditional corporate bank debt is the most common source of non-dilutive funding. It refers to a corporation borrowing funds through loans from financial institutions or issuing bonds to investors. In both cases, the company agrees to pay periodic interest and repay the principal either at a set maturity date (known as a bullet) or regularly over a determined period of time.

The contractual terms depend on the company's creditworthiness and market conditions. Unlike issuing equity, debt does not dilute ownership but requires regular payments. Companies use corporate debt to finance operations, expansion, or acquisitions and benefit from the tax-deductibility of interest payments. They are tied to the lenders by various financial and legal commitments.

This mechanism usually tends to be suited to profitable companies with reassuring track records and markets. Indeed, it relies heavily on an in-depth analysis of the company's credit repayment ability based on future annual cashflows and its existing balance sheet, and is often backed by assets as collateral. This minimises the financial exposure and explains the lower interest rates.

Relevance for alternative proteins in Europe

Logically, this financing mechanism should be prioritised because it represents the largest source of funding available. Most traditional businesses rely on mainstream commercial bank debt to finance their development. It is well framed and secured by assets or financial commitments as collateral and, often, it is possible to pair it with public guarantees. The maturity is long, the interest rate is affordable, and the ticket sizes have no ceiling. The pool of lenders is broad and competitive, and it is suitable for long-term infrastructure projects.

On paper, this is the ideal solution for alternative protein companies if combined with public aid (guarantee, grant, subsidy). For example, several commercial banks partner with the EIB to

provide customers with enhanced financing solutions. Borrowers benefit from preferential terms, while banks share the credit risk with Europe's strongest financial institution.

National and European public lenders also represent an interesting pool of capital for corporate debt. The EU's debt involvement in the alternative protein sector was non-existent until Danish firm MATR Foods received a €20 million loan from the EIB in 2024, and German fermentation company Formo followed with a €35 million InvestEU-backed loan in January 2025.[9]

Key takeaways

It is unlikely that banks will grant traditional loans before the alternative proteins market is more stable.

Access to traditional bank loans can be difficult for alternative protein startups. Banks and debt funds expect a strong balance sheet, predictable cash flows, and solid track record – a stage most companies in the sector have not yet reached. Therefore, this pool of capital, especially when private, does not meet the most significant challenge: alternative protein companies are not yet mature enough to be granted traditional loans, and therefore need innovative, adaptive, customised financing mechanisms.

Private equity

Private equity (PE) refers to investment in privately held companies (or the buyout of public companies to take them private) to improve the company's value and ultimately sell it for a profit. PE firms typically acquire mature companies (unlike VC, which focuses on startups), restructure them, and aim to enhance their operations and profitability before exiting through a sale, IPO, or other strategies.

PE deals can leverage debt (LBO: leveraged buy-out), fund listed companies in need of capital (PIPE: Private Investment in Public Equity), support the general development of an established firm (Growth Capital), provide buyout financing, and sometimes help struggling companies by investing in distressed assets.

PE investments are long-term, typically lasting three to 10 years, though some may last longer depending on the company's growth and exit strategy. Investment tickets usually start at €10 million and go up to several billions.

[9] Germany: EIB provides €35 million to Formo to expand production of cheese alternatives free from animal products (2025). Available from: https://www.eib.org/en/press/all/2025-008-eib-provides-eur35-million-to-formo-to-expand-production-of-cheese-alternatives-free-from-animal-products. Accessed 7 May 2025.

As they focus on mature companies that are often cash-flow positive, the risk is lower than for VC. PE firms generally target an IRR of 15% to 25% per year over the life of the investment.

Relevance for alternative proteins in Europe

Private equity typically seeks mature, cash-flow-positive businesses, whereas many alternative protein companies are still in early growth stages, requiring patient capital for R&I and scale-up. By that means, PE isn't currently well aligned with the sector's risk profile and long-term innovation needs.

However, European investors have recently shown growing interest in open real-estate funds, commonly called Real Estate Investment Trusts (REITs). REITs are publicly traded, closed-end investment vehicles focusing on a managed, diversified portfolio of real estate assets, including real estate mortgages and construction loans, rather than traditional financial securities like stocks or bonds. They are very similar to PE but with longer timeframes. Structured as corporations or trusts, REITs are exempt from corporate taxes if they distribute at least 90% of their annual net earnings to shareholders and meet other specified criteria.

REITs manage substantial asset volumes both within the EU and globally. Nevertheless, while a handful of sustainable real estate funds exist, most funds have yet to align their strategies with long-term climate goals. Incorporating sustainability criteria and environmental, social and governance (ESG) principles is crucial to unlocking the real estate sector's vast energy-saving potential. As a result, REITs, and infrastructure funds more broadly, could play a pivotal role in financing building renovations and constructions across Europe, including facilities dedicated to alternative proteins.

Key takeaways

Unlike VC, many private equity firms focus on large infrastructure investments. However, when it comes to the alternative protein sector, there is a scarcity of mature companies with the steady cashflows required to attract PE investors. Private equity is largely unsuitable for the scale-up stage across all industries, so, given the added challenges specific to alternative proteins described above in the VC section above, makes it virtually irrelevant for the sector.

Working capital financing

Working capital (WC) financing is a way for businesses to cover day-to-day operations and expenses, but it can also serve business expansion (hiring, new product lines, new markets). Working capital is the difference between a company's current assets and liabilities, and keeping it healthy is crucial. WC financing can help, as it is usually relatively easy to obtain and

can take the form of a short-term bank loan (1-3 years), an overdraft facility or invoice financing. Such a solution is beneficial for bridging the gap, especially for companies that need to pay suppliers up front, but receive delayed customer payments. It allows them to reallocate their funds to priority projects while establishing and/or nourishing trusting business relationships with financial partners.

Relevance for alternative proteins in Europe

Given its short-term nature, this pool of capital is not well suited to funding infrastructure. However, it could work for more mature companies, as leveraging affordable debt is often part of an efficient corporate strategy. Such an agreement can be helpful when raising capital for infrastructure projects because the prospective lender can rest assured that the company's short-term operational needs are already covered.

There are no specific examples of working capital requirements (WCR) financing for alternative proteins in Europe, but most commercial banks offer this solution to companies. Public investment banks also provide these short-term financing services, such as Bpifrance's Avance+ programme for French companies, which covers prepayment for domestic and international contracts and orders.

Key takeaways

Working capital financing will not cover infrastructure costs. However, such a facility can provide additional security to long-term lenders and act as a complementary tool to infrastructure finance.

Initial Public Offerings (IPOs)

An IPO is when a private company offers its shares to the public for the first time, becoming a publicly traded company. Raising funds in this way involves listing the company's shares on a stock exchange. It is often considered a significant step in a company's development.

Benefits include:

- Access to a broader pool of capital.
- Liquidity for early investors (like founders or VC/PE firms), who can sell some of their shares for profit.
- Enhanced public profile and credibility: this can help companies to get better terms from lenders and boost sales and profits.

Like venture capital and private equity more broadly, IPOs are dilutive. An IPO is relevant as a financing mechanism for infrastructure projects only if paired with a capital increase. As a liquidity event, it could bring value to current shareholders without raising additional funds for further business. Companies would also likely raise debt alongside equity for capex financing needs.

Relevance for alternative proteins in Europe

The IPO market in Europe in general, and more specifically in climate tech, has been struggling for several years. While it started to see a modest recovery in 2024, it remains far below the previous peak in 2021.

More successful IPOs mean more liquidity events for VCs and PE funds to realise their investment gains. Promising IPO exit strategies will positively affect private investors' interest and activity.

A few successful IPOs have taken place in the European alternative protein space: Berlin-based Veganz, for instance, raised more than €48 million through an IPO in 2021. Oatly, the Swedish oat milk maker, started trading on Nasdaq the same year, raising $1.4 billion (€1.15 billion).[10]

However, a company is ready for an IPO when it has strong and consistent financials, scalable operations, solid governance, a compelling growth story, and the systems in place to meet public market expectations: most alternative protein companies are not yet mature enough to pursue an IPO. That said, there are several ways **public institutions could help make public listings a more accessible and mainstream financing route** in the future:

- Support a harmonised EU capital market by reducing national regulatory fragmentation, encouraging cross-border investment, and simplifying listing requirements through fast-track pathways.
- Offer financial incentives such as tax breaks for newly listed companies and investors, subsidies or grants to offset IPO-related costs, and reduced listing fees.
- Encourage founder and employee participation through favourable tax policies for employee stock ownership plans (ESOPs), which help startups attract and retain talent, and through competitive executive compensation models like performance-based stock grants (common in US markets such as Nasdaq).
- Allow greater use of dual-class share structures, which give founders supervoting rights and help maintain control post-IPO. While already permitted on some exchanges like Euronext Amsterdam, broader adoption across Europe could provide more flexibility.

[10] Information from NetZero Insights.

- Enhance post-IPO liquidity options, as European markets often face longer lock-up periods and limited secondary market activity compared to the US. Improving access to alternatives like SPACs (which offer faster, less volatile listing paths) could also be part of the solution.
- Invest in education and transparency by providing accessible resources, clear explanations of financing tools, sector-specific analyses, and real-world case studies to build confidence and awareness across the ecosystem.

Key takeaways

IPOs are an interesting mechanism to explore, but very few alternative protein companies would be eligible. It might be too early for most companies in the sector at the moment, but should be considered and encouraged as firms mature.

Securities market

The securities market is a financial market segment where individuals and organisations trade financial instruments known as securities. These securities represent either ownership in a company (stocks) or a creditor relationship (bonds) and are used by companies and governments to raise funds. Other types of securities include derivatives, which are financial instruments based on other assets like stocks, bonds, or commodities, and mutual funds or exchange-traded funds (ETF), which pool money from multiple investors to invest in a diversified portfolio of securities.

The securities market serves several essential functions. It supports capital formation by enabling companies and governments to raise funds by issuing stocks or bonds. It also provides liquidity, allowing investors to buy and sell securities quickly and convert their investments into cash when needed. Additionally, it facilitates price discovery, helping determine the value of securities based on market demand and supply. It aids in risk management by offering tools such as derivatives to protect against potential losses.

This market operates in two main forms. The primary market is where new securities are issued and sold for the first time, such as during an IPO (described above), with funds going directly to the issuing entity. Conversely, the secondary market is where existing securities are traded among investors, typically on marketplaces like stock exchanges (eg, Euronext or NASDAQ).

Relevance for alternative proteins in Europe

Only mature or listed companies rely on the securities market to raise funds, so alternative protein startups couldn't realistically use it. However, risk control is still a top priority, and the following innovative instruments for later-stage financing rounds could be relevant for alternative protein companies in the long run.

Asset-backed securities (ABS) are a type of financial investment (bond) collateralised by a pool of underlying assets – typically those that produce regular cash flows, such as loans, leases, credit card balances, or receivables. Essentially, a company can sell its recurring or predictable future revenue streams, linked to receivables, to a financial institution, which then bundles these assets into a portfolio and offers it to investors. This approach provides the company with immediate liquidity, enabling it to pursue new investments. Additionally, it allows the company to reduce its credit risk by removing less reliable assets from its balance sheet.

Tranching is another method used to mitigate risk in asset-backed securities. This process involves dividing the securities into segments based on risk, reward, and maturity, allowing investors with varying risk tolerance levels to participate. These tranches are typically assigned individual credit ratings, ranging from the most senior (lowest risk) to the most subordinated (highest risk).

Surety bonds, provided by insurance companies, serve as a safeguard by reimbursing the asset-backed security for potential losses. For wrapped securities, a third party – often an insurance company – guarantees protection against losses by agreeing to cover a portion of the interest or principal on a loan or repurchase defaulted loans within the portfolio.

Structured finance, in general, involves leveraging various financing tools and mechanisms to create instruments that generate returns for investors with diverse profiles. The subordination and risk reduction principles are not exclusive to the securities market but are integral to the broader framework of large-scale financing strategies.

Key takeaways

The securities market is not a relevant source of capital for most alternative protein companies as it is accessible only to stable and mature corporates. However, it clearly shows that **derisking remains the primary investment goal even at a very advanced stage**, and highly innovative instruments can be designed for that purpose.

03 Private innovative financing mechanisms

Innovative finance refers to new and creative approaches to financing that aim to address social, environmental, or economic challenges. These methods are designed to mobilise capital more effectively, often targeting sectors or populations that traditional financing models might overlook.

Strategic partnerships, corporate venture capital and joint ventures

Corporations usually either invest on or off their balance sheet (regular acquisitions) or through their own VC fund. **Corporate venture capital** (CVC) is a form of venture capital where established companies invest in startups or early-stage companies. Unlike traditional venture capital firms, CVCs are typically strategic in nature, aiming not only for financial returns but also to gain a strategic advantage for the investing corporation. CVC investments are often made in startups that align with the corporate parent's business interests, such as new technologies, products, or markets that complement the company's core operations. In addition to capital, CVC often provides startups access to the corporation's resources, including expertise, market access, infrastructure, and customer networks. Creating a venture capital unit or an incubator is standard practice among the world's largest CPG (consumer packaged goods) companies (Kellogg's, PepsiCo, Danone, General Mills, etc), and CVC deals account for almost 25% (and 45% of later-stage rounds) of all venture capital investments.[11]

Strategic partnerships don't have to be a specific legal, contractual agreement but always involve sharing responsibilities and pooling resources between several operational players. For example, a **joint venture** (JV) is a business arrangement whereby two or more parties collaborate to achieve a specific goal while remaining separate entities. Partners contribute assets, capital, expertise, or technology to the venture to pursue a common objective.

Leveraging corporate funds, whether via CVC to develop the business in-house or through joint ventures and partnerships to capitalise on strategic collaboration, is often advantageous because big industrial players usually have access to cheaper and abundant financial resources and the expertise and facilities to facilitate scale-up. In contrast, startups have the idea, the time, the technical expertise and the skills but no financial levers.

Example 1: Belgian multinational snack food company Lotus Bakeries launched its CVC fund in 2019 and named it FF2032 ("Fast Forward 2032"). After sensing the potential in the health

[11] Bain & Company, Harnessing the True Value of Corporate Venture Capital (2022). Available from: https://www.bain.com/insights/corporate-venture-capital-m-and-a-report-2022/. Accessed 7 May 2025.

and wellness food market, Lotus dedicated €30 million to the fund to invest in promising startups in the United States and the EU.

Example 2: JBS, a multinational meat processing company headquartered in Sao Paulo, Brazil, started engaging in the cultivated meat industry in 2021 by acquiring BioTech Foods, a Spanish biotechnology company specialising in muscle cell cultivation[12]. As part of a $100 million (€85 million) deal, JBS planned to open two cultivated meat R&I centres in Brazil and Spain (providing $41 million – €35 million – for BioTech Foods to increase their production to more than 1,000 tonnes of meat per year). Through these initiatives, the food giant clearly expressed its ambition to remain at the forefront of the evolving food sector.

Relevance for alternative proteins in Europe

Unlocking the alternative protein sector's potential requires strategic navigation within a slow-moving broader funding landscape, emphasising the **importance of pursuing existing financial resources** and the possibility of raising additional funds later. Many major food industry players recognise the promising forecasts and future market possibilities of alternative proteins, and the contribution they could make towards meeting corporate sustainability commitments. They face three distinct choices: deliberately opt out of engaging in this emerging industry to focus on their core business, invest in developing new products in-house, or collaborate with and invest in startups within the alternative protein sector. Partnering with an operational player while providing funding for the project often emerges as the most appealing option, allowing both parties to leverage their strengths and resources. This form of collaboration not only simplifies the process but also enables both the corporation and the startup to reap mutual benefits from their combined efforts and shared vision for the future.

The alternative protein industry would benefit from more CVCs because long-term partnerships are better suited to the sector than VCs with their planned exit windows – but there are some existing examples:

- An active CVC in the European alternative protein ecosystem is Roquette Ventures, which was founded in 2010 as part of the Roquette group. It aims to strategically invest in food and pharma startups, providing funding and leveraging their industry expertise and knowledge.

[12] JBS is entering the cultivated protein market with the acquisition of BioTech Foods and the construction of a plant in Europe (2021). Available from: https://www.prnewswire.com/news-releases/jbs-is-entering-the-cultivated-protein-market-with-the-acquisition-of-biotech-foods-and-the-construction-of-a-plant-in-europe-301428082.html. Accessed 7 May 2025.

- Barilla launched BluFuture in 2017 to invest in sustainable and innovative food solutions. It is more than an investment fund because companies can benefit from Barilla's vast network of contacts, including suppliers, distributors and retailers. They also have access to Barilla's R&I laboratories, research personnel, manufacturing facilities, supply chain logistics, etc, saving startups significant capital investment.

The alternative protein sector has also seen a number of strategic partnerships and joint ventures:

- In 2024, Danone (a world leading food company), Michelin (a tyre and rubber products manufacturer), and Crédit Agricole (an investment bank) announced a partnership to create a precision fermentation platform aimed at promoting sustainable practices in the agrifood and material production sectors.[13] The initiative is part of a broader commitment from the companies to invest in research and development that aligns with their sustainability goals. By leveraging their combined expertise, the partners aim to drive advancements that ultimately contribute to a healthier planet. This project represents an investment of more than €16 million and showcases how various industries can work together to cut costs, pursuing distinct objectives in their respective sectors using pooled resources.
- The Cultured Hub is a JV of Givaudan, Migros, and Bühler. The Swiss initiative focuses on fostering collaboration in the food industry, particularly for alternative protein products. It aims to bring together various stakeholders, including startups, established companies, and research institutions, to join forces in developing innovative and sustainable food solutions that address changing consumer demands. By sharing resources, expertise, and technology, the Cultured Hub seeks to accelerate the growth of the cultivated food sector and contribute to a greener food system.
- Other JV examples include 21st Bio, a spinoff of Danish bio solutions company Novonesis that has access to its 40-year strain library and is designed to target the low-margin, high-volume categories that Novonesis avoids; additionally, Vivici (in the Netherlands) is a joint venture between fermentation specialist DSM (Switzerland) and dairy major Fonterra (New Zealand) aiming to create animal-free milk proteins.

Partnerships across the supply chain are another solution. Unlike strategic investments, these do not involve direct cash flow, but can still result in a win-win situation and ease the financial burden of startups. For example, a mature manufacturing company can host a fermentation startup's production line in their facility in exchange for rent, and valorise their

[13] Danone, DMC, Michelin and Crédit Agricole Centre France join forces to create a cutting-edge biotechnology platform (2024). Available from: https://www.michelin.com/en/publications/group/creation-cutting-edge-biotechnology-platform. Accessed 7 May 2025.

own waste or side products by selling them as feedstock to the hosted fermentation company simultaneously. The startup secures its supplies and saves on significant infrastructure investment, granting more freedom to use its funds for development rather than for fixed assets. In Switzerland, the clever collaboration between the startup planetary and the company Schweizer Zucker AG is a great example of this kind of setup: the sugar manufacturer makes use of unused space, while the young company saves substantial capex by installing its equipment directly on site[14].

Key takeaways

Strategic involvement from major companies should be encouraged and prioritised within the alternative protein sector. Numerous startups in the field have expressed a preference for corporate investors over purely financial investors, as they are looking for benefits such as distribution networks, strategic connections, access to existing infrastructure, expertise, reputation, and mentoring – as well as funding.

Financial and operational leasing

Financial leasing is a leasing arrangement in which a lessee (the user) obtains the right to use an asset, such as equipment, machinery or even infrastructure, without purchasing it outright. These agreements are typically mid-to-long-term, spanning several years (2-7 years for equipment leasing, up to 30 years for property leasing), and often end with the lessee being offered the opportunity to buy the asset under preferential conditions.

For **operational leasing**, the lessee has the right to use the asset for the duration of the lease, but the terms don't include the final transfer of ownership rights from the lessor to the lessee. The lessee makes regular, predetermined payments over the lease term, which can often be structured to include interest and depreciation.

Both financial and operational leases are usually treated as liabilities on the lessee's balance sheet, allowing them to reflect both the asset and the associated debt.

Aside from the most fundamental form of leasing described above, different innovative leasing models exist, including the **'sale and leaseback' mechanism**. This is a strategy for liquidity, whereby a company sells an asset to a financial leasing fund and then rents it back from them. This operation generates easy and quick cash for investment needs without interrupting operations. Unlike traditional bank loans, this mechanism can finance the entire investment,

[14] Available from: https://www.foodaktuell.ch/2024/06/14/praezisionsfermentation-in-aarberg-vom-zucker-zu-alternativen-proteinen. Accessed 17 May 2025.

where loans will typically cover only up to 80% of the CAPEX. Liquidity is generated by realising hidden reserves (for example, assets that have been fully depreciated but whose actual current value is higher). Because the leasing company retains ownership of the asset and can recover it in the case of the lessee's bankruptcy or inability to pay, the contractual conditions are fairly flexible, with no financial covenants (subject to negotiations with the lessor). The lease's maturity can match the asset's useful life (which is not often the case with banks).

Example: As seen above, financing leases are a good solution for small companies that want to operate equipment or infrastructure but lack the financial resources to purchase them outright. China has exploited this common need among innovative industries to develop and support its financial sector and attract foreign investors and companies.

The Chinese government encourages financing leases by creating a favorable ecosystem, supporting the financing leasing industry so institutional stakeholders can easily acquire and lease back infrastructure.

Financing leasing has become an essential bridge between finance and the real economy in China, where the number of financing lease companies has increased from less than 200 in 2010 to over 8,000 in 2024.[15] The Chinese government achieved this by issuing supportive policies, including VAT and tax rate advantages for local companies and even more relaxed market access conditions for foreign financing lease companies.

The demand for financing leases is still growing, especially in fields such as renewable energy, large machinery and medical equipment, manufacturing facilities, and extensive infrastructure.

Relevance for alternative proteins in Europe

Europe could take inspiration from China's early adoption of leaseback arrangements to support its economy. There may be a reluctance to pursue this due to potential government concerns that alternative protein technology involves highly specialised equipment, which would be challenging to sell or lease if the venture doesn't succeed. However, proving that key capital-intensive equipment is relatively standard could make leaseback agreements plausible, especially if there is an anticipated scarcity due to surging demand and existing capacity limitations. According to GFI and Integration Consulting's report on the fermentation manufacturing capacity landscape, globally, 89 companies currently offer 16 million litres of food-grade fermentation capacity – mostly in North America and Europe – enabling the production of up to 400,000 tonnes of alternative proteins annually, or 2.8 million tonnes when broader contract manufacturing (pharmaceutical and bioindustrial) is included. However, rising

[15] Available from: https://www.chinadaily.com.cn/dfpd/2011-05/01/content_12428194.htm and https://mp.weixin.qq.com/s?__biz=MzUyNjM4Njc5Ng%3D%3D&mid=2247570351&idx=1&sn=92243758523dfb6e129125669a08bc07&chksm=fb51c3eae192f381a9725b844c17140fa48119dd31a931984b53b3cb97cac6f0dcd7bc9a9941&scene=27. Accessed 7 May 2025.

demand is expected to require strategic scale-up and improved efficiency to keep pace. That suggests that **fermentation equipment will either be scarce or in high demand, thus maintaining strong residual value to support leaseback deals**.

Leasing options for alternative proteins are available in Europe but remain insufficient to meet the sector's specific needs. While several mainstream banks, such as BPCE Group and BNP Paribas, offer leasing services, their portfolios often lack the necessary adaptation for alternative proteins as they primarily focus on scientific equipment that may not fully align with the industry's requirements. Independent leasing brokers, such as Oaklease in the UK, exist, but they are few in number.

Evosciences, a French company operating throughout Europe and the United States, specialises in providing new and refurbished equipment, predominantly to pharmaceutical firms but potentially to fermentation and cultivated meat companies. Additionally, some equipment manufacturers have begun to offer leasing services, allowing customers to trial machinery before committing to a purchase. That can be particularly beneficial for bridging the gap between lab-scale and commercial-scale production.

For instance, German manufacturer Vemag, traditionally known for sausage-making equipment, has successfully ventured into the plant-based sector, providing machines that can be used for plant-based production without modification. With machine costs ranging from €30,000 to €500,000, Vemag's **finance leasing services not only serve as a new revenue stream** on top of their unit sales **but also help attract potential future clients** by allowing them to test the equipment and offer valuable feedback.

Key takeaways

This mechanism should be prioritised because it would prevent alternative protein startups from advancing substantial upfront investments, and at the same time generate business for equipment manufacturers or investment funds. While leasing may not be a direct funding source, it can optimise budget allocation for startups and emerging companies relying on non-dilutive funding. That is especially crucial for companies that may not have significant financial resources but anticipate upgrading their production capacity soon and face limited access to traditional funding options. However, an important challenge remains: sourcing tailored equipment for specific alternative protein activities can prove difficult.

Project Finance

Project finance is a financing method used to fund large-scale infrastructure and industrial projects, where the repayment of the loan is primarily secured by the cash flows generated by

the project itself rather than by the balance sheet of the project's sponsor. That is a non-recourse financing mechanism: lenders won't rely on the parent company's repayment ability but solely focus on the project's future revenues. Projects are structured through a special purpose vehicle (SPV), a separate legal entity created to isolate financial risk. The SPV owns the project and manages its operations.

Project finance typically involves multiple stakeholders, including equity investors, debt providers, and sometimes government entities. Contracts are negotiated for various aspects, including construction, operation, insurance, and revenue sharing.

Project finance loans are usually long-term, reflecting the long lifespan of the projects (like power plants, toll roads, or mining operations). Most of the time, those are granted by commercial banks and cover a substantial portion of the CAPEX, reducing the need for sponsor equity. They can be paired with mezzanine debt (which falls under the broader category of junior debt): using a layered subordination structure to optimise leverage and improve shareholder profitability even more.

This financing mechanism offers good terms because various risks, such as construction, operational, and market risks, are analysed and managed through contracts, insurance, and financial instruments. All risks are distributed among various parties and mitigated thanks to commitments to financial ratios, financial collateral, guarantees, external due diligence, and so on.

Lenders usually expect guaranteed future revenues and foreseeable costs, which allows them to deduce cash flows available for debt service and sculpt the loan's amortisation schedule accordingly (with a margin of error as an additional security). Offtake agreements with a solid and reliable buyer and signed maintenance agreements are ideal.

Example 1: The Veja Mate offshore wind farm, completed in 2017, is located off the German North Sea coast and comprises 67 wind turbines for a total capacity of 400 MW. This is one of the largest in the world, covering the electricity consumption of around 1 million people.

The project's budget amounted to almost €1.9 billion, with banks funding 67% of the CAPEX through long-term facilities. At the time, it was the largest non-recourse project financing in Germany. The financing structure was complemented by 13% mezzanine debt, leaving 20% of all costs to be supported by shareholders' equity, subsidy schemes, and pre-completion revenues.

The bank loans have a maturity of 12 years, which matches the Feed-in tariff (FiT) period (during which revenues are contractually guaranteed).[16]

[16] Veja Mate reaches financial close (2015). Available from: https://green-giraffe.com/publication/news/veja-mate-reaches-financial-close/. Accessed 7 May 2025.

Example 2:[17] In 1987, Eurotunnel was the world's largest infrastructure deal, and its funding came exclusively from private sources. Tolls were planned to pay back the loan over the tunnel's years of operation.

The deal was sealed for around €10 billion, 75% of which was initially financed through bank loans, and €1.5 billion was brought by shareholders as equity. Construction hazards resulted in an end budget approaching €15 billion. Fifteen private construction companies and banks brought equity.

Although the project also used an IPO and a few other fundraising operations to top up the funds, the most significant part of the financing came from a pool of more than 220 partner banks. Interestingly, Japanese banks made up 25% of the loans, French ones accounted for 18%, Germans for 13%, while British banks represented just 9%.

Relevance for alternative proteins in Europe

The market for agrifood project financing is not yet fully developed, although banks are increasingly showing interest in the sector. Currently, many alternative protein companies lack the maturity that mainstream banks require for infrastructure funding. Furthermore, lenders expect most contracts (engineering, procurement and construction (EPC), maintenance, and insurance, to name a few) and details to be finalised before agreeing to loans. This process can take years and necessitates significant cash advances. Additionally, there isn't yet enough evidence of market size and demand for alternative protein products to guarantee future revenues to pay back the loan.

Just as loans in the renewable energy sector were specifically tailored to its needs, similar **financial products should be designed for agrifood**. However, this remains challenging until the market becomes more secure. Engaging with stakeholders and collaboratively designing future solutions will be essential, ideally with public or reliable industry players' involvement at the outset, providing guarantees or offtake agreements with both suppliers and clients. Alternative proteins could be suitable for project financing if investors were confident in a solid buyer and could predict annual sales volumes, set prices, and estimate operating costs. This enables them to sculpt effective debt solutions – even if it initially requires heavy collateralisation or stringent financial ratios.

For context, the renewable energy industry typically employs a debt service coverage ratio (DSCR) of 1.15 to 1.4 (meaning that banks want a 15 to 40% safety margin when considering

[17] The Channel Tunnel (2020). Available from: https://www.gihub.org/connectivity-across-borders/case-studies/the-channel-tunnel/. Accessed 7 May 2025.

future cash flows for debt sizing), while alternative protein projects might warrant an even larger margin at the beginning.

In the solar industry, panels and converters serve as asset collateral, while alternative protein projects could utilise tanks and equipment or stock pledges. Indeed, there is a burgeoning second-hand market for fermentation equipment, driven by the sector's unmet demands and prolonged production timelines; purchasing pre-owned machinery is often quicker. Tanks can last up to 40 years, which increases the potential value of pledging that equipment as collateral.

Reserve accounts are collaterals created to accumulate emergency cash to anticipate if the cash flow (generated by a solar plant, for example) is insufficient to service the debt. They can take the form of a cash deposit or a credit facility and are used to top up the difference when the activity's revenues aren't covering operational expenses and loan reimbursements. Many adjustments can be considered, including **arrangements with grant providers to fund these accounts**.

Insurance is critical in project financing, with lenders requiring robust contracts before releasing funds. Insurance companies and banks must collaborate to develop tailored insurance solutions that address alternative protein companies' unique needs and characteristics, similar to the adaptive approaches successfully implemented in the renewable energy sector. New Energy Risk and Tuatara Development Capital, to name a few examples, provide innovative insurance policies for emerging technologies, which help improve projects' bankability.

Early-stage projects may also benefit from **partial public guarantee** coverage. The European Investment Bank plays a crucial role in mitigating risks for banks across various industries, notably through a **credit enhancement programme** aimed explicitly at project finance. It includes subordinated financing and contingent credit lines that improve the credit quality of senior debt, thus attracting additional private investment or facilitating access to bank financing. Funding of up to €200 million per deal is available for special purpose vehicles (SPVs) throughout Europe, under certain conditions and exclusively via commercial banks (no direct lending in this programme).

Project Finance is a more realistic tool for large CPG companies than alternative protein startups, for now. The former have the financial resources to pay the upfront costs, stronger relationships of trust with long-standing banking partners, and higher chances of signing offtakes or even contracting agreements internally (one branch of the group commits to purchasing a certain amount of the products over a certain period of time). Additionally, large companies can provide a parent company guarantee, which is standard for high-risk solar projects, while startups can't.

Key takeaways

This financing mechanism might not be considered a priority for alternative protein companies to pursue because it is not adapted to their needs, stage and market, but it definitely has a promising future, especially if paired with market-shaping tools. It could also be a good solution for large corporations that want to expand their alternative protein capabilities.

Offtake Agreements

An offtake agreement is a contractual arrangement whereby a buyer agrees to purchase a pre-determined quantity of a product from a producer at a pre-agreed price in the future, often before the production process even begins. Offtake agreements are commonly used in industries like energy and infrastructure to secure sales and financing for large-scale projects. They provide the producer with the security of knowing there will be a buyer for their goods or services, providing financial stability and certainty for the project. Offtake agreements are generally long-term, often lasting several years, which helps stabilise the producer's cash flow and reduces market risk. Producers can then provide signed offtake agreements to lenders and investors to secure project loans and investments. Lenders are more willing to provide financing when they know there is a guaranteed revenue stream from a committed buyer.

In renewable energy projects (like solar or wind farms), the developer often enters into an offtake agreement with a utility or corporate buyer to sell the electricity generated. These agreements, known as Power Purchase Agreements (PPAs), provide the financial security needed to build the energy infrastructure.

In the food industry, farmers or agricultural producers might sign offtake agreements with food processors or retailers to guarantee the sale of crops at agreed-upon prices.

This financing mechanism doesn't create a market in itself but supports the activity of one specific company by providing precise guidelines so it can develop a product for which there is already demand.

Example 1: Bunge Limited, the largest agricultural exporter in Brazil, now uses long-term offtake agreements to reduce deforestation in its soybean supply chain. In 2018, the group officially partnered with Santander and The Nature Conservancy to provide 10-year loans to farmers (from Bunge's agricultural supply chain) willing to grow soy "without further deforestation or conversion of native vegetation". The loan programme was allocated $50

million (€42.5 million) in funding[18] and allows farmers to initiate substantial land and equipment acquisitions, with an amortisation period that matches the nature of those investments. Pairing an offtake agreement with a long-term contractual loan is a very strategic way of supporting an ecosystem, as the debt service (loan repayment) is to be covered by crop sales (guaranteed offtake).

Example 2: H2 Green Steel (now known as Stegra) secured more than €6.5 billion of funding from public (at national and EU levels) and private investors before they'd sold a single unit.[19] The Swedish company was founded in 2020 and planned to build the world's first large-scale green-hydrogen-based steel plant. The facility in Boden, northern Sweden, should be commissioned in 2026 and lead to a 93% reduction in emissions compared to traditional coke-based primary steelmaking processes.

The fundraising was so successful because H2 was able to secure multiple billion-dollar offtake agreements with companies such as Mercedes-Benz and IKEA, which were looking to secure their pipeline of greener steel.

Relevance for alternative proteins in Europe

Offtake agreements primarily benefit one specific company and do not inherently open up a market – but they do establish a precedent that can be valuable. Alternative protein companies could agree them with restaurant chains, cruise ship cafeterias or airlines, all of which have recurring and reasonably foreseeable protein supply needs.

Corporates could also use offtake agreements to **secure some of their inputs and supply chain**, eg, fermentation-made ingredients. A notable example is Cargill's offtake agreement with fermentation company Enough.[20] Co-located with a Cargill starch facility in Sas van Gent, Netherlands, Enough's facility produces mycoprotein while removing excess water through centrifugation. This process results in sugary wastewater, which is supplied to Cargill's adjacent bioethanol facility, creating a zero-waste cycle. The partnership also sees Cargill work with Enough to co-create food products that incorporate mycoprotein, leveraging Cargill's

[18] Bunge, Santander Brasil and TNC to Offer Soy Farmers Long-Term Loans to Expand Production without Clearing Native Habitat in the Brazilian Cerrado (2018). Available from: https://www.prnewswire.com/news-releases/bunge-santander-brasil-and-tnc-to-offer-soy-farmers-long-term-loans-to-expand-production-without-clearing-native-habitat-in-the-brazilian-cerrado-300704092.html?. Accessed 7 May 2025.

[19] H2 Green Steel secures €6.5 billion for the world's first large-scale green steel plant in Northern Sweden (2024). Available from: https://arcticstartup.com/h2-green-steel-raises-close-to-e6-5-billion/. Accessed 7 May 2025.

[20] Cargill bets on mycoprotein with investment in ENOUGH and signs offtake agreement (2024). Available from: https://agfundernews.com/cargill-bets-on-mycoprotein-with-investment-in-enough-and-offtake-agreement. Accessed 7 May 2025.

expertise in formulations and its extensive portfolio of plant-based proteins, texturisers, and fats.

While this is a significant collaboration, long-term offtake agreements remain relatively rare in the alternative protein sector and the broader food industry, with most agreements typically lasting between one and three years. Encouraging longer commitments could ease investor concerns, but the alternative protein sector is unlikey to see long-term agreements on the scale seen in renewable energy.
Many large CPG companies are hesitant to commit to offtake agreements for novel food products due to uncertainties regarding market response and price fluctuations. Energy suppliers can commit to long-term fixed tariffs (eg, feed-in tariffs), with annual inflation adjustments, because long-term demand is guaranteed – even if electricity prices are well known to be volatile.

Conversely, the demand for alternative proteins, though promising based on recent market studies, remains less certain – and novel foods such as cultivated meat face the additional uncertainty of the regulatory approval process.

A more gradual approach involves establishing trusted relationships with potential buyers, co-developing products to meet their precise needs, and signing **Letters of Intent** (LOI) and **Memoranda of Understanding** (MOU) to progressively strengthen ties.[21]

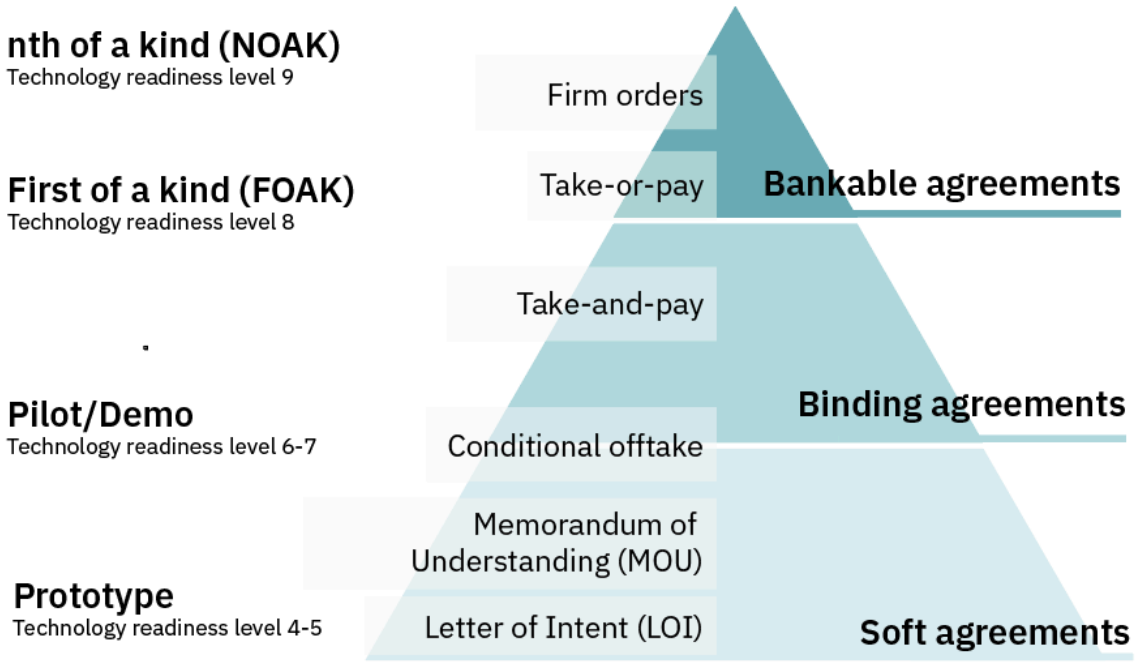
Key takeaways

Offtake agreements could play a key role in funding the scale-up of alternative proteins when paired with subsidy schemes, VAT incentives, or tax benefits, which act as additional financial security and help ensure long-term buyer demand. Philanthropic foundations or governments could also provide partial guarantees over the first few years of the agreement to cover the early risks of delay and unexpected lack of sales. Such measures might facilitate the buyer's entrance into binding contracts, benefiting both parties in the long run.

If offtake agreements could last over the lifespan of the equipment, they would be crucial for unlocking other sources of funding. They should be prioritised alongside other incentives.

[21] Climbing the Pyramid – Key Lessons from Our Ripple at The Drop on Demystifying Offtake Agreements (2024)/ Available from: https://medium.com/extantia-capital/climbing-the-pyramid-key-lessons-from-our-ripple-at-the-drop-on-demystifying-offtake-agreements-54e7a8e151df. Accessed 7 May 2025.

The Maslow Pyramid of Offtakes



This chart illustrates the time-sequenced strategic pathway towards bankable offtake agreements between alternative protein companies and buyers, correlated to the progression of the technology readiness level (TRL).

Infrastructure Bonds

Infrastructure bonds are debt securities issued to finance long-term infrastructure projects such as roads, railways, and ports. Municipalities or corporations can issue these bonds, which are prevalent in countries like Australia, Chile, India, Kazakhstan and the United States. A notable feature of infrastructure bonds is their long maturity period (up to 30 years), aligning with the extended timelines of infrastructure projects. Investors in these bonds, primarily institutional entities like pension funds, insurance companies and credit institutions, benefit from the predictability of stable returns generated from the operation of the infrastructure assets (tolls, fees, PPAs, etc) and diversify their portfolios. The revenue streams serve as collateral for bonds, providing investors with security.

Public policies can sometimes support and promote this instrument. Tax-exempt bonds, for example, also known as municipal bonds or "muni" bonds, provide a unique advantage for investors by allowing them to earn income from certain investments, such as infrastructure bonds, without being subject to federal taxes. This incentive has made tax-exempt bonds

particularly attractive for funding essential projects like transportation infrastructure, where governments seek cost-effective financing solutions. Munis often offer lower interest rates than conventional bonds, but their tax advantages compensate for it.

Banks and financial institutions in India frequently issue infrastructure bonds to secure funding for development projects. These bonds can be designed as tax-saving instruments or regular income bonds, providing investors with tax benefits and steady income. However, challenges like the absence of inflation protection in the Indian market highlight the complexities of infrastructure financing. Despite these hurdles, infrastructure bonds remain crucial in meeting infrastructure demands and supporting global economic growth.

Example: Infrastructure bonds in Brazil, particularly Debêntures Incentivadas ("incentivised bonds"), were introduced in 2012 as a policy measure to stimulate private sector investment in infrastructure.[22] These bonds offer income tax exemptions for individuals and a tax rate reduction of 15% for financial institutions, which enormously helped build their popularity.

By 2019, infrastructure bond issuances reached a peak of $9.5 billion (€8.5 billion), rivalling the Brazilian Development Bank's (BNDES) loans in financing infrastructure, and despite a temporary decline in 2020 due to Covid-19, demand rebounded. While their maturities are shorter than BNDES loans (which can extend to 25-30 years), infrastructure bonds have gradually increased durations, averaging 10 years. The bonds are mostly inflation-linked (ensuring inflation protection for investors), with moderate risk and low default rates. That is due to credit enhancements, guarantees, and collateralisation from the projects' sponsors and because nearly all bonds are rated by major international agencies. The role of banks in this market is essential, acting primarily as arrangers and bridge lenders alongside large corporations during project construction phases.

The Brazilian government anticipated its growing need for infrastructure funding and thus worked to attract foreign investment by proposing a new bond model with tax advantages and USD-denominated options. Brazil's success is a model for other Latin American countries seeking long-term infrastructure financing in local and hard currencies.

Relevance for alternative proteins in Europe

Infrastructure bonds offer a compelling financing mechanism due to their tax exemptions, which create a dual positive impact on the market. While the public sector can be involved (and could use them to finance their part of a PPP), the mechanism can also remain private, making it a flexible alternative to traditional bonds or debt. These bonds align well with infrastructure project maturities, and, instead of relying on a single lender, they pool multiple lenders

[22] IDB, Infrastructure Bonds: The Case of Brazil (2022). Available from: https://publications.iadb.org/en/infrastructure-bonds-case-brazil. Accessed 7 May 2025.

together, often using collaterals similar to project finance structures. Realistically, they are best suited for mature companies with access to securities markets, though direct issuance to identified investors could be considered.

In Europe, infrastructure bonds remain underdeveloped and are exclusively publicly issued: the UK Municipal Bonds Agency (UK MBA) provides services for borrowing by municipalities, and municipal bonds agencies, also known as bond banks or local government funding agencies, exist in a few other countries, such as Sweden and Finland. They hold strong potential, though, particularly if European governments introduce tax incentives to support them.

To date, there is a conceptual overlap between green bonds and infrastructure bonds when considering the assets funded by green bonds (renewable energy, energy efficiency buildings, water infrastructure). However, unlike green bonds, which primarily fund renewable energy and climate adaptation projects, infrastructure bonds could provide broader support for public and private sector infrastructure development, including in the alternative protein industry. In addition, the added layers of complexity with issuing and investing in green bonds, such as governance and application scope, could make infrastructure bonds a more attractive option for investors.

Key takeaways

While municipalities and public entities currently dominate issuance of infrastructure bonds, expanding this model to the private sector – initially backed by public tax advantages – could accelerate adoption before transitioning to a fully private market-driven approach. Infrastructure bonds represent the next logical step after project finance in alternative protein companies' development, as both mechanisms are similar but at different scales.

Crowdfunding

Crowdfunding is a method of raising capital by gathering small amounts of money from a large number of people, typically via online platforms. It enables individuals, startups, or organisations to fund projects, products, or ventures without relying solely on traditional financing methods. There is a variety of models: reward-based (non-financial reward), equity-based (stake in the company), donation-based (funds are contributed as gifts with no expectation of returns), and debt-based (repayment with interest). Successful crowdfunding campaigns can validate a product idea before it goes to market, indicating consumer interest. Campaigns can also generate buzz and visibility, often leading to broader media coverage and customer engagement.

An expert team performs financial analysis before the deal is offered to the public for investment, and due to their high-risk nature, projects usually promise an increased annual return. All industries are represented on crowdfunding platforms, but tickets are too small to cover the totality of an infrastructure project's costs, so mixing several funding sources remains necessary.

Example: It is common to rely on crowdfunding to finance some of the equity needed for a renewable energy project. In some countries, governments encourage this initiative to involve citizens in the low-carbon transition. In France, for instance, renewable energy project developers can commit to using crowdfunding to finance part of the Capex when applying for national tenders emitted by the CRE. Under certain conditions, they will benefit from an increased electricity sale tariff (also called feed-in tariff) for the duration of the contract.

One notable example of an infrastructure project funded through crowdfunding is the Graig Fatha wind farm in Wales (UK), developed by Ripple Energy. This platform allows members of the public to invest directly in renewable energy, effectively becoming co-owners of the wind farm. Ripple Energy utilised crowdfunding to raise approximately £5 million (€4.4 million), partly enabling the purchase and development of the wind farm. The plant was commissioned in March 2022, and investors now receive monthly electricity savings for their share of the wind farm's generation. This community-driven approach means the energy produced is used to supply members with green electricity at lower rates, promoting both sustainability and cost savings for consumers.

Relevance for alternative proteins in Europe

In the aftermath of the 2008 financial crisis, startups and SMEs sought alternative financing options, leading to the rise of crowdfunding across Europe. Within the European Union, regulations permit a maximum of €5 million per issuer over a 12-month period, which can limit the application of funds. While crowdfunding may not cover all costs associated with scaling, it is **a valuable means of diversifying funding sources**. This approach attracts startups seeking smaller amounts and larger companies aiming to complement their existing capital mixes.

Crowdfunding can be strategically paired with marketing campaigns, as investor bases are composed of individuals and potential consumers, making it particularly appealing for novel food companies. Mosa Meat's ultra-successful crowdfunding operation in February 2025 was motivated by its strong will to involve consumers and retail investors as they got closer to commercialisation[23]. The Crowdcube campaign offered various rewards to backers depending on their investment amount, including attendance at tastings, free burgers, or skip-the-line

[23] Mosa Meat Smashes Crowdfunding Goal, Raising €1.5M in Just 24 Minutes (2025). Available from: https://cultivated-x.com/investments-finance/mosa-meat-smashes-crowdfunding-goal-raising-e1-5m-24-minutes/. Accessed 07 May 2025.

passes for future restaurants. This strengthens the sense of belonging to a shared project for financial supporters and heightens their excitement about the product's market launch.

Several other notable deals have recently taken place in the alternative protein space. For instance, Clean Kitchen Club, a plant-based restaurant chain, successfully raised £2.8 million (€2.5 million) on the crowdfunding platform Seedrs in 2022 to fund the opening of 40 new locations in the UK[24]. Similarly, THIS, a UK-based company specialising in plant-based meat alternatives, raised over £14 million (€12.3 million) from more than 5,000 individual investors on the same platform over three rounds[25].

Crowdfunding can lead to remarkable success stories. A prime example is the Polish startup Plenty Reasons, which launched a crowdfunding campaign in 2016 to develop plant-based cold cuts, burgers and sausages. With the support of 1,500 investors, the company raised funds to finance research and development, ultimately enabling it to launch its first products. Eight years later, Plenty Reasons has grown organically, reinvesting its profits and never again relying on external funding, and its products are now available across eastern Europe, France and the UK.

However, a challenge remains – compared to the renewable energy sector, there are relatively few platforms with a well-educated investor base in the agrifood space. Nonetheless, sustainable crowdfunding platforms increasingly demonstrate interest and curiosity in this burgeoning sector.

Key takeaways

Although technically available already, few alternative protein startups have resorted to this solution. While crowdfunding represents an accessible funding source and serves as an effective market test, it is unlikely to provide sufficient capital for all capex needs and should therefore be viewed primarily as a supplementary financing solution.

Green bonds

Green bonds are a subset of ESG bonds, which include green, social (which benefit under-served populations or minorities) and sustainability bonds (which finance a combination of green and social projects). They are a fixed-income financial instrument specifically designed to fund projects with positive climate benefits. They function like traditional bonds, but the proceeds are earmarked exclusively for projects that support sustainability and

[24] Available from: https://europe.republic.com/clean-kitchen. Accessed 07 May 2025.
[25] Available from: https://europe.republic.com/this1. Accessed 07 May 2025.

environmental goals. Various entities, including governments, corporations, financial institutions, and development banks, can issue green bonds. As with traditional bonds, they pay a fixed interest (coupon) to investors over a specified period, and the principal is repaid at maturity.

Green bonds often follow established guidelines, such as the Green Bond Principles (GBP) issued in 2014 by the International Capital Market Association (ICMA). These principles outline transparency, reporting, and environmental impact criteria. Some green bonds may also be certified by third parties to ensure they meet sustainability standards.

The green bond market has grown significantly in recent years, driven by global efforts to combat climate change and the increasing demand for sustainable finance.

The so-called 'greenium' is the difference in price between a green bond yield and its conventional counterpart. It can be seen as the premium investors are ready to pay for holding a green bond over a comparable conventional bond, often linked to requirements around shaping their investment portfolio according to their ESG goals. The greenium can also be explained by the additional costs of complying with more stringent processes for the issuer.

Example 1:[26] ASICS Corporation, a Japanese manufacturer and distributor of sports goods, issued sustainability-linked bonds in 2019 and 2021, detailing their uses of proceeds as follows:

- Research at the ASICS Institute of Sport Science: designing eco-friendly products, development of foot disease care products, initiatives to help elderly and people with disabilities participate in sports activities.
- Developing a nursing care business (Tryus).
- Equiping, building and/or reconstructing production facilities, notably installing solar panels on the roof of a logistic centre.

ASICS demonstrated the social and environmental impacts of its projects as a justification for its issuance of sustainable (green and social) bonds. The bonds had a five-year maturity, and the interest rate (0.1% in 2021) was much lower than comparable straight bonds issued by similar companies around the same time.

[26] ASICS Corporation Sustainability Bond Case Study (2020). Available from: https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Social-and-sustainability-bond-case-studiesJune-2020-090620.pdf. Accessed 7 May 2025.

Example 2: In 2018, Danone, a world-leading food company, issued a first-of-its-kind €300 million social bond.[27] This was dedicated to funding research on food projects (agricultural practices and responsible breeding), the emancipation of various populations (farmers, people living under the poverty line, rural communities) and improving health coverage and parental policies within the group. The programme, with a maturity of seven years, attracted plenty of ESG investors and reflected Danone's growing commitment to sustainable development.

Relevance for alternative proteins in Europe

Europe is the world's largest issuer of green bonds, accounting for nearly half of green bonds issued worldwide to date.[28] In 2024, green bond issuances represented more than 15% of all euro-denominated bond issuances.[29] There is a rising interest in providing financial products that promote sustainability and a growing demand from investors to fund environmentally sustainable initiatives. The issuance of green bonds is expected to rise in light of the environmental and climate objectives outlined in the European Green Deal, which aims to make the EU climate-neutral by 2050.

Alternative proteins were long out of the scope of green bonds, but they are now being included. Since Q3 2024, technical and industrial working groups led by the Climate Bonds Initiative (CBI) have started establishing best practice standards and working on alternative protein-specific guidelines[30]. This is encouraging as it shows alternative proteins are finally being recognised as key to reducing the environmental footprint of our food systems.

Even if alternative protein projects were not eligible for sustainable bond issuances, utilising clean energy to power the facility or creating jobs for underprivileged populations, for example, could be. At least part of the total investment could then be financed this way.

In 2021, Orkla ASA, a leading Norwegian agrifood company, issued two green bonds totalling €130 million.[31] The funds were used to refinance investments in the production of plant-based foods, among other things. The factories were proven to save significant amounts of CO_2, as they used hydropower energy and sustainable packaging in the form of plastic from sugar cane.

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[27] Danone's social bond report (2018). Available from: https://www.danone.com/content/dam/corp/global/danonecom/investors/en-social-bond/2018/socialbond/Danone_2018_Social_Bond_Reporting.pdf. Accessed 7 May 2025.
[28] Available from: https://www.climatebonds.net/market/data/. Accessed 7 May 2025.
[29] The Green Bond and ESG Chart Book (2025). Available from: https://www.research.unicredit.eu/DocsKey/fxfistrategy_docs_2025_187250.ashx?EXT=pdf&KEY=KZGTuQCn4lsvclJnUgseVBsff64YAua7yLSyMUPa9LvTjbpVZkIZrw==&T=1. Accessed 7 May 2025.
[30] Alternative Protein Criteria (2025). Available from: https://www.climatebonds.net/standard/alternative-proteins. Accessed 7 May 2025.
[31] Orkla Green Bond Investor Report (2023). Available from: https://s29.q4cdn.com/711870714/files/doc_downloads/2024/03/240321_orkla-green-bond-investor-report-2023.pdf. Accessed 7 May 2025.

ESG bonds, in general, represent yet another funding option for larger alternative protein companies. Still, they would not drastically change the game, as large corporates would be able to find funding in typical financial markets otherwise. However, **these bonds could help attract funds from ESG investors**, and the issuer could benefit from the 'greenium'. They could also motivate big food companies, who have access to this pool of capital, to invest in alternative protein projects.

Key takeaways

Alternative proteins are not yet a primary target of green bond issuers, but if ESG bond guidelines change in the future, it could incentivise corporates to initiate alternative protein projects as part of their broader commitment to sustainability.

Supplier debt / private agreements

This mechanism reflects the possibility of negotiating a debt agreement with a contractor (supplier, landlord). It is the equivalent of a bank overdraft facility, where terms are discussed (maximum amount, maturity, special conditions, payment schedule) and applied over a certain period. The company can, for example, postpone its rent, raw materials purchase payments, or other expenses up to a certain limit and instead use its funds to finance other projects in the meantime.

Relevance for alternative proteins in Europe

This often-overlooked funding avenue presents a convenient option for startups and young companies. It is typically **easier to secure support from industrial partners than mainstream banks, particularly where there is a foundation of trust** within an existing business relationship. While this approach does not constitute a direct funding source, it offers increased flexibility and autonomy in budget allocation. Industry stakeholders are encouraged to engage more closely and collaborate on designing tailored contracts that reflect their unique circumstances and requirements. Alternative protein companies, especially those involved in strategic partnerships with other players – such as utilising shared facilities or purchasing by-products – could greatly benefit from such arrangements.

Key takeaways

Supplier debt agreements are case-by-case negotiations, covering short-term needs rather than large investments. They represent a smart and strategic way to manage an early-stage budget and can serve as additional reassuring factors for conventional lenders.

04 Blended finance

Although the concept of blended finance is not new, it has multiple definitions and uses. It can primarily be summarised as a financial strategy that combines catalytic capital from public or philanthropic sources with private sector investment to unlock funding for projects that contribute to sustainable development and social good. To date, it has primarily been implemented in the global south. The goal is to attract private investment to sectors or regions that are typically considered too risky or unprofitable by improving the risk-return profile through concessionary public or philanthropic support.

Blended finance is commonly used to fund renewable energy, infrastructure, healthcare, education, and poverty reduction projects. Usually, public, philanthropic or other concessional capital will take on more risk and/or accept lower returns to make the project more attractive to private investors. It mainly comprises guarantees, subsidised loans or grants, or first-loss capital (when an investor agrees to take the first financial hit if an investment doesn't perform well).

One of the most common blended finance structures is Catalytic First-Loss Capital (CFLC), a purpose-driven credit-enhancement tool designed to mitigate risk and attract more risk-averse investors. Standard CFLC instruments include grants, equity, subordinated debt, and guarantees. Unlike pari passu guarantees or general-purpose grants, which also help reduce investor risk and catalyse additional capital, CFLC always absorbs the first losses (up to a specified limit) if the project underperforms. In many cases – but not always – the goal of CFLC is to demonstrate the commercial viability of investing in new or emerging markets.

Instruments commonly used to provide CFLC[32]

Instrument	Description
Equity	By taking the most junior equity position in the overall capital structure, the provider takes first losses (but perhaps also seeks risk-adjusted returns). This includes common equity in structures that include preferred equity classes.
Grants	A grant provided for the express purpose of covering a set amount of first-loss.
Guarantees	A guarantee to cover a set amount of first-loss.
Subordinated debt	The most junior debt position in a distribution waterfall with various levels of debt seniority (with no equity in the structure).

[32] Reproduced from GIIN, Catalytic First-Loss Capital (2013). Available from: https://missioninvestors.org/sites/default/files/resources/CatalyticFirstLossCapital.pdf. Accessed 7 May 2025.

The concept of blended finance is broad, and its scope includes several financing mechanisms explored in this document. Given the complex nature of blended finance, many examples in this report showcase one or more financing mechanisms. The whole concept and strategy lies in combining different public and private funding sources in an optimised way.

Blended finance constitutes the most promising lever for the alternative protein sector, just as it previously unlocked many other innovative industries' potential.[33]

Guarantees

Financial guarantees are commitments made by a third party (often a financial institution or a government agency) to cover a borrower's financial obligations in case they default. It is estimated that more than 30% of all guarantees have some form of state ownership.[34] The guarantor agrees to pay a specified amount (all or a portion of the debt) if the borrower fails to meet its repayment duties.

Financial guarantees reduce lenders' risk, making them more likely to approve loans and offer better terms, such as lower interest rates. They can cover various obligations, including loans, bonds, leases, and other financial agreements. The borrower usually pays a fee to the guarantor for providing the guarantee, compensating the guarantor for taking on the risk.

An econometric study commissioned by the European Court of Auditors evaluated the actual performance outcomes of EU-guaranteed loans provided to SMEs in France between 2002 and 2016.[35] On average, French SMEs that received these loans saw a 9% increase in asset growth, a 7% rise in sales, and an 8% boost in employment compared to the control group. These figures represent a significant supportive measure when applied across the entire industry.

Example 1: Established in 2005, the US Department of Energy's (DOE) Loan Programs Office (LPO) helps to facilitate the development of new technology by offering loans and loan guarantees. The LPO aims to support technology that isn't yet widely available or hasn't yet found a commercial market to help it reach commercial viability, often by filling gaps in private sector investments and creating a bridge to financeability for the cleantech market.

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[33] For further information:
https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/
https://thegiin.org/

[34] Are Public Guarantees Worth the Hype (2017). Available from: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/431261511201811430/are-public-credit-guarantees-worth-the-hype. Accessed 7 May 2025.

[35] EIF, The Effects of EU-Funded Guarantee Instruments on the Performance of SMEs: Evidence from France (2018). Available from: https://www.eif.org/news_centre/publications/eif-wp-52.pdf. Accessed 7 May 2025.

The LPO massively contributed to scaling up the solar PV industry in the United States. In 2011, the country's first five utility-scale solar projects (larger than 100MW) benefited from these public loan guarantees. Four years later, in 2015, the initiative had helped to build a market by expanding and securing the private investment ecosystem. It was estimated that an additional 17 solar PV projects larger than 100MW had been financed without DOE loan guarantees, many of them by the financial institutions that the LPO initially supported.[36]

Example 2: The USDA Business & Industry (B&I) Loan Guarantee programme aims to support rural businesses, and projects must be located in areas with less than 50,000 residents. The programme's average loan guarantee size is $3 million (€2.78 million), with a maximum guarantee of $25 million (€23.1 million).

Liberation Labs is a US corporation that aims to build strategically designed and purpose-built facilities to be rented by biotech startups and companies. Its first project should be operational in 2025 and represents a total expected cost of $115 million (€106.4 million).[37] Liberation Labs is the first alternative protein company to receive a B&I loan guarantee. The USDA awarded the lender Ameris Bank a $25 million (€23.1 million) loan guarantee for Liberation Labs' precision fermentation biomanufacturing facility in Richmond, Indiana.

Relevance for alternative proteins in Europe

At the EU level, the InvestEU programme aims to enhance investment, drive innovation, and create jobs across Europe between 2021 and 2027, with the goal of initiating a new investment wave totalling €372 billion through an EU budget guarantee. Within the InvestEU SME window, the Commission facilitated a unified guarantee facility managed by the European Investment Fund (EIF), part of the EIB. This initiative focuses on SMEs deemed high-risk or lacking sufficient collateral, including innovative businesses.

In most European countries, **many national public investment banks provide partial guarantees to support startups and SMEs** as part of their domestic programmes to foster dynamic entrepreneurial systems, regardless of the company's field of business (with a few logical exceptions). Eligible companies may even receive more favourable terms if their activity is classified as innovative.

[36] Loan Guarantee Recipient Awarded Top Renewable Plant (2015). Available from: https://www.energy.gov/lpo/articles/loan-guarantee-recipient-awarded-top-renewable-plant. Accessed 7 May 2025.
[37] Legacy US biomanufacturing network unfit for next wave of bioproducts, says Liberation Labs CEO (2024). Available from: https://agfundernews.com/liberation-labs-on-legacy-us-biomanufacturing-capacity-it-can-make-the-next-wave-of-products-but-not-at-the-scale-or-cost-structure-thats-needed. Accessed 7 May 2025.

Export Credit Agencies (ECAs) are another form of public guarantee that can secure lenders. **Many countries have ECAs that offer financing solutions or guarantees for domestic companies that export goods and services**. ECAs typically provide insurance against risks such as non-payment by foreign buyers, political instability, or currency fluctuations, encouraging companies to operate internationally. This could support alternative protein companies in finding the best suppliers across Europe.

Key takeaways

Guarantees can play a crucial role in mitigating risks within the alternative protein industry. Unlike grants from institutional funds, government entities or the EU, guarantees require no direct investment and less financial effort while further attracting private investors.

Public-private partnerships

A public-private partnership (PPP) is a collaborative arrangement between a government (public sector) and a private company (private sector) to finance, build, and operate projects that are typically public in nature. These projects often occur as part of a national strategy to promote a particular industry or foster domestic competitiveness. They involve large-scale infrastructure like highways, bridges, hospitals, or utilities but can extend to other services such as education and healthcare. In a PPP, both the public and private sectors share the responsibilities and risks involved in a project. The private partner typically takes on the role of financing, designing, building, and sometimes operating and maintaining the project. The public sector focuses on regulation, oversight, and ensuring the project aligns with public interests. PPPs are generally long-term arrangements, often lasting between 20 and 30 years. That allows the private company to recover its investment and earn returns over the contract's lifespan.

The revenue model is as follows: the private sector often recovers its costs through various means such as user fees (eg, tolls on roads), government payments, or a combination of both.

Usually, the private entity finances, builds and operates the project for a set period before transferring ownership to the government. That is common in infrastructure projects like toll roads and power plants. Concession agreements, for instance, involve the private company financing and operating the project for a specified period. In return, it collects revenues through user fees. In other cases, the operator of the PPP can be remunerated by a rent paid by the public entity over a period defined by the contract.

Example 1: Paris's Eiffel Tower was one of the first examples of modern project finance and public-private partnerships.[38] The 300m-high tower cost the equivalent of €20 million today. The state provided 23% of the total budget, and the balance was to be repaid through ticket sales over 20 years of operation. Eiffel created a limited liability company specifically for the project and issued convertible bonds. Creditors got their money back just one year after the monument opened, benefiting from incredible profitability from then on.

This technique is known today as the build, operate and transfer (BOT) approach, as the Eiffel Tower was to be turned over to the city of Paris at the end of the concession.

Example 2:[39] AGWA is a public initiative in the United Arab Emirates that aims to fight water scarcity and food insecurity. It is governed by ADDED (the Department of Economic Development) and ADIO (the Investment Office).

Believer Meats is a biotechnology company based in Israel specialising in cultivated meat. It is building the world's largest cultivated meat facility in the United States.

Both stakeholders are engaging in a win-win partnership around cultivated meat:

- Believer Meats wishes to expand its presence in the MENA region and have access to the UAE's financial resources and market.
- AGWA supports innovative technologies to solve local forecasted issues linked to water scarcity, food insecurity and dependence on imported foods, and fosters a fertile ecosystem (job creation and economic growth).

Local headquarters will be created to explore opportunities for market expansion, R&I, and product manufacturing. Another project is to launch an academy (Believer Meats Innovation Academy) dedicated to sustainable food technologies, which will consist of a partnership with local universities and research institutes. Another goal is to prepare regulatory pathways for halal certification of cultivated meat in the UAE.

By 2045, AGWA is expected to contribute approximately $24.5 billion (€21.6 million) in incremental GDP to Abu Dhabi's economy, create 60,000+ new jobs and attract around $34.85 billion (€30.65 billion) in investments.

Relevance for alternative proteins in Europe

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[38] The Eiffel Tower, the first project finance project (2015). Available from: https://medium.com/having-some-time/the-eiffel-tower-the-first-project-finance-project-c3e7b4890313. Accessed 7 May 2025.

[39] AGWA and Believer Meats partner to advance cell-based meat capabilities in Abu Dhabi (2024). Available from: https://www.newtechfoods.com/news/agwa-and-believer-meats-partner-to-advance-cell-based-meat-capabilities-in-abu-dhabi. Accessed 7 May 2025.

Alternative proteins have benefited from several PPPs. One example is the PLENITUDE project, a €16 million project to build a first-of-its-kind, large-scale, zero-waste biorefinery for mycoprotein production. It was funded through the Circular Bio-based Europe Joint Undertaking (CBE JU), a €2 billion partnership between the European Union and the Bio-based Industries Consortium (BIC) that funds projects advancing competitive circular bio-based industries in Europe. It is the successor to the Bio-based Industries Joint Undertaking (BBI JU), which significantly contributed to supporting the ecosystem between 2014 and 2024, notably by derisking investments and organising value chains.

Once again, **public participation is the most effective way to mitigate investment risks and attract additional private funding**. Quorn, the UK leader in mycoprotein, has a robust history of collaborations with public institutions (universities, national institutes and research centres), which has significantly contributed to its success.

Ferments du Futur[40] represents a unique European PPP – a state-of-the-art centre designed to accelerate research and innovation in the fermentation sector, supported by dozens of public and private stakeholders: higher education and research institutions, companies of all sizes, trade unions, interprofessional organisations, technical institutes, and competitiveness clusters.

Additionally, Biotech Heights is a collaboration involving Lund University, the packaging firm Tetra Pak, and Sweden's national innovation agency, Vinnova, to support domestic protein diversification.

Key takeaways

Public-private partnerships in alternative proteins should be encouraged as a perfect example of risk sharing for investors in innovative industries.

Grants and subsidies

Grants are financial awards governments, foundations, or other organisations give to support specific projects or initiatives. Unlike loans, grants do not need to be repaid but must be used for defined purposes, such as research, education, community development, or social services. Most of the time, grants are one-time payments, and recipients must report on how the funds were used and the outcomes achieved to ensure accountability.

[40] Presentation of Ferments du Futur. Available from: https://www.fermentsdufutur.eu/en/presentation-of-ferments-du-futur/. Accessed 7 May 2025.

A subsidy is a form of financial assistance governments provide to support specific sectors, activities, or groups by offsetting operating costs over a lengthy period. Designed to be ongoing rather than one-time funding, subsidies provide continuous support to businesses. They can take various forms, such as direct payments, tax breaks, loan guarantees or reduced prices for goods and services.

Grants are typically awarded for specific projects or initiatives, while subsidies are broader financial supports to enhance certain economic activities. Both mechanisms can be issued at different levels, from local public programmes to worldwide measures from institutions like the World Bank.

Example 1: The Israel Innovation Authority (IIA) is the support and investment arm of the Israeli government, in charge of planning and executing the country's innovation policy, promoting technological innovation and Research and Development (R&D) in the State of Israel.

The IIA offers various investment programmes that provide non-dilutive resources for entrepreneurs and companies of all sizes and stages within Israel. Most programmes require matching funds from the private sector.

In 2023, IIA announced it wanted to award a $14 million (€12.9 million) grant to finance a fermentation facility for local and foreign companies looking to experiment with R&D and product manufacturing.[41] They called for proposals and ended up selecting YDLabs to lead the construction work.

Founded in 2022, YDLabs and its CTO, Dr Moti Rebhun (one of Israel's renowned fermentation experts and CEO of the Israeli Fermentation Society), provide fermentation process development and optimisation services for food tech companies.

The facility will help companies transition from development to production. It will also provide batch testing, feasibility studies, and legal and regulatory assistance. It will facilitate collaboration between startups and researchers, providing essential resources to advance sustainable food production. This project is part of a broader effort to enhance Israel's global food technology sector position.

Example 2: Hydrogen is traditionally produced using natural gas as a feedstock, resulting in 12 tonnes of CO_2 emissions per tonne of hydrogen. These emissions could be eliminated if water and renewable energy were used, but this shift entails higher costs (between €4 and €6 per

[41] Israel Innovation Authority Selects YDLabs to Build $14M Fermentation Facility (2023). Available from: https://vegconomist.com/fermentation/israel-innovation-authority-ydlabs-14m-fermentation-facility/. Accessed 7 May 2025.

kg). In 2022, the European Commission launched the European Hydrogen Bank (EHB), a subsidy mechanism to create investment security and business opportunities for European and global renewable hydrogen production. It was not designed to be a physical institution, but a financing instrument run internally by European Commission services.

This support measure took the form of a **'pay-as-bid' auction system.**

The first round of auctions started on 23 November 2023 and closed on 30 April 2024, with an initial €720 million in allocation, a revenue from emissions trading (EU ETS) made available through the Innovation Fund (the EU fund for climate policy, focusing on energy and industry). The EHB set a ceiling price of €4.50/kg. Producers' offers represented the remuneration they hoped to receive in exchange for producing renewable hydrogen for 10 years with new construction projects, in addition to their own income from the sale of the gas. The EHB, therefore, aims to reduce the gap between grey and green hydrogen by indirectly subsidising the investment (CAPEX) and operating (OPEX) costs of new renewable hydrogen production assets.

The Commission selected seven projects in four different countries for the first round of auctions among the 132 submitted bids. They will each receive grants of between €8 million and €245 million, and collectively aim to produce 1.58 million tonnes of renewable hydrogen over 10 years, avoiding more than 10 million tonnes of CO_2 emissions. They submitted much lower bids than expected, between €0.37 and €0.48 per kg of renewable hydrogen produced, while meeting the other qualification conditions. That means the EHB pot could support greater volumes than anticipated.

Relevance for alternative proteins in Europe

The EU's annual budget amounts around €200 billion and encompasses various forms of financial support for strategic industries, including but not limited to grants.[42] Grants are also distributed at national, regional, and local levels.

The Bio Base Europe Pilot Plant was supported by a mix of multi-level public grants. Significant investment milestones include the initial €13 million investment by INTERREG Flanders-Netherlands for converting an old fire station into a state-of-the-art pilot facility in 2008. Since then, BBEU benefited from co-financed fermentation capacity expansions through the European Regional Development Fund (ERDF), the Province of East-Flanders and the City of Ghent, and a €28.33 million investment from the Flemish Resilience Plan to triple fermentation capacity by 2023. Since its inauguration in 2008, the pilot facility for innovative bio-based products has evolved into a well-established organisation, employing over 180 staff

[42] EU Budget for 2025. Available from: https://www.consilium.europa.eu/en/policies/eu-annual-budget/2025-budget/. Accessed 7 May 2025.

and successfully completing more than 450 bilateral private projects with over 150 companies. It represents a flagship example of how public funding can create a thriving ecosystem.

There are several examples at the national level that, while seemingly scarce compared to support programmes for other innovative and sustainable sectors, are nonetheless encouraging. For instance, the French startup Standing Ovation secured €2 million from the French government (60% of which will be in the form of a grant), as well as a €1 million loan from Bpifrance called the InvestEU Green Investment Loan, to accelerate its production of animal-free caseins through precision fermentation.[43]

Elsewhere, Spanish plant-based company Heura received a €250,000 grant from NEOTEC, a government-backed fund of funds[44]. And in December 2023, Denmark's 1.1 billion DKK (€150 million) Plant Fund, as part of its national action plan for transitioning to a plant-based food system, announced 36 recipients for its first funding round, totalling €7.76 million in grants.[45]

However, this financing mechanism faces several challenges. While the hydrogen pay-as-bid auction system fosters competitiveness and cost reduction, it is less applicable to the alternative protein sector, as only the most mature projects can effectively lower their rates. Startups and scale-ups have limited chances of being selected in such processes.

Grants may not adequately support the industry unless "**investibility**" is factored into the selection criteria. Requiring matching private funding could help ensure public funds are not allocated to non-viable projects. **Performance-based grants**, as they are contingent on achieving specific objectives, might also be an option.

Additionally, the grant application process can be time-consuming. Alternative protein companies often express concerns about a lack of transparency in selection processes and insufficient knowledge about available opportunities that suit their needs.

While grants should be prioritised, they are rarely sufficient to fund infrastructure projects. However, **they can cover preparatory costs**, as project management and development for a commercial facility are high-risk and require expensive engineering.

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[43] Paris-based Foodtech Standing Ovation Receives €3 Million to Begin Industrialization Phase of Non-animal Casein (2024). Available from: https://www.eu-startups.com/2024/01/paris-based-foodtech-standing-ovation-receives-e3-million-to-begin-industrialization-phase-of-non-animal-casein/. Accessed 7 May 2025.
[44] Spain's Government Just Made Its First-Ever Investment in Vegan Meat. Available from: https://www.livekindly.com/spains-government-just-made-its-first-ever-investment-in-vegan-meat/. Accessed 7 May 2025.
[45] Denmark Announces First 36 Projects Receiving $8.4M as Part of Plant-Based Fund (2023). Available from: https://www.greenqueen.com.hk/denmark-plant-based-fund-national-climate-plan/. Accessed 7 May 2025.

Recurring subsidies for ingredient procurement or sustainable food products, rather than one-time financial support, could also have a significant impact. Government subsidies have made solar panels more affordable and popular by reducing upfront costs or enhancing feed-in tariffs for electricity producers. Given their considerable environmental and health advantages, it is essential to consider how subsidies can also support alternative proteins to promote a fair and prosperous food market.

Key takeaways

Grants and subsidies contribute to derisking projects and attracting more private investors. They are widely accessible in Europe; however, the amounts available are often insufficient to cover the majority of capital expenditures. An exception can be found with grants from the World Bank, which significantly contribute to reducing risks for large-scale projects, although they typically do not target innovative startups.

Market shaping tools – advanced market commitments

An advanced market commitment (AMC) is a financial incentive mechanism designed to stimulate the development and production of products that address critical global needs, particularly in areas where market demand might otherwise be uncertain or insufficient. It is commonly used in the healthcare and pharmaceutical sectors to encourage investment in developing vaccines or treatments for diseases primarily affecting low-income populations. AMCs create a guaranteed future demand by committing to purchase a certain quantity of a product at a pre-agreed price. That ensures that manufacturers will have a viable market for their products once they are developed, and it reduces the financial risk of investing in R&I for products that might not otherwise be profitable due to uncertain demand.

AMCs are typically funded through partnerships between governments, international organisations, and private foundations. These alliances provide the capital and guarantees needed to incentivise private companies to develop these products and encourage private-sector investment.

Unlike offtake agreements or public procurement, multiple companies can benefit from an AMC as it opens a market rather than a bilateral partnership – making this financing mechanism particularly powerful.

Example: The first AMC targeted pneumococcal disease and was launched in 2009 by GAVI, the World Bank, WHO, UNICEF, five national governments, and the Gates Foundation.[46]

[46] Advance Market Commitments: Insights from Theory and Experience. Available from: https://scholar.harvard.edu/files/kremer/files/amc_pp_20_20_01_13.pdf. Accessed 7 May 2025.

It amounted to $1.5 billion (€1.32 billion), with an initial price of $3.50 (€3.08) per dose. GSK and Pfizer each committed to supplying 30 million doses each year. The AMC officially ended in 2020, with contracts with manufacturers lasting until 2029.

The AMC did not speed up the creation of new vaccines, but it did lead manufacturers to produce larger batches, cutting the cost per dose.

COVAX, with UNICEF as a key partner, was the second-largest AMC to occur during the Covid-19 pandemic. In February 2021, 200 million vaccine doses were eventually delivered to nearly 140 countries. The largest recipient countries were Bangladesh, Pakistan and Indonesia. The donors were principally western countries (the EU plus 30 individual states), primarily governments, but there were also private and philanthropic contributions. This AMC totalled $12.4 billion (€10.91 billion) in donations.

Relevance for alternative proteins in Europe

While it may seem like an idealistic or unrealistic solution for alternative proteins at present, AMCs represent a goal worth striving for and could be transformative. The key again is to reduce risk in the industry, and this approach promotes organic growth by supporting, encouraging, and shaping the industry rather than backing it 'artificially'. Furthermore, committing to a product with well-defined guidelines appears more manageable than tying commitments to a specific company.

In the alternative protein sector, **potential sponsors could include governments and large industrial players**, such as food conglomerates, who aim to ensure the stability of their ready-to-eat production lines for example. These entities possess the scale and influence necessary to create markets, and they enjoy financial advantages. Opening a market holds a far greater impact than merely entering into a short-term purchase agreement with a single company. As market uncertainty continues to be a significant concern for investors, there is a need for innovative blended finance solutions.

This first AMC was criticised for providing excessive subsidies to the already self-sufficient pharmaceutical companies. While it would be difficult to credibly level the same attacks against relatively early-stage alternative protein companies, this highlights how important the structure of the deal and the communication around it are.

A current initiative based on the Clinton Health Access Initiative (CHAI) is the closest the alternative protein sector has come to establishing such a tool. This market-shaping effort seeks to tackle key industry bottlenecks while creating a sustainable market for alternative proteins. CHAI, a nonprofit organisation founded in 2002 by former US President Bill Clinton, aims to increase access to healthcare and improve health outcomes in low- and middle-income countries.

By negotiating volume guarantees and facilitating technology transfers, CHAI has effectively lowered costs and increased the availability of health products. This has culminated in more than 150 agreements that have drastically slashed prices – often by 50-90% – while rapidly scaling production to improve global access to vital treatments.

A dedicated team, supported by GFI as a knowledge partner, is now working to replicate several of these strategies to increase alternative protein production. This involves collaborating with manufacturers to enhance production capacity, reduce costs through technology transfer, securing volume purchase guarantees from governments and private sectors to ensure consistent demand, and incorporating concessional capital through loan guarantees and subsidised financing. The project aims to **consolidate non-binding agreements into a pool that can be supported by a third-party donor** (such as a government or philanthropic organisation), which can then serve as collateral for securing debt or attracting strategic manufacturing partners.

Key takeaways

Advanced market commitments are an ideal but rather long-term solution at the moment. Experts are being inspired globally and working on similar market-shaping tools that could be applied in the alternative protein field.

Impact bonds

Impact bonds (IBs) are results-based contracts where private investors pre-finance programmes, and public or donor agencies repay the principal plus a return only if specified outcomes are achieved. Depending on the country and use, they can have multiple terminologies and scopes: environmental, social, development, and pay-for-success impact bonds.

IBs often resemble equity investments more than debt investments. While debt investments require repayment with interest regardless of performance, equity investments involve purchasing shares, with returns dependent on dividends and long-term share value. Similarly, in IBs, investor returns hinge on the success of the funded programmes, emphasising their risk-sharing and outcome-focused nature.

IBs generate financial returns as compensation for taking on the risks that public agencies are unable or unwilling to bear. By transferring risk to private investors, IBs enable innovative, results-focused social programmes that might otherwise be underfunded due to uncertainties. Additionally, private sector involvement can improve efficiency, performance monitoring, and adaptability.

IBs might resemble performance-based grants or AMCs to some extent. They build on existing results-based funding mechanisms by introducing private investors who provide upfront financing, addressing the challenge of limited pre-financing for smaller organisations or developing countries. Unlike other results-based financing instruments, IBs shift the financial risk from service providers or governments to investors while maintaining a strong focus on achieving results. Additionally, tying investor returns to social outcomes creates a distinct stakeholder group incentivised to ensure efficient and effective programme delivery.

Example: In 2019, Atlanta's (Georgia, US) Department of Watershed Management issued a $14 million (€12.31 million) Environmental Impact Bond (EIB) to fund six green infrastructure projects along Proctor Creek.[47] These initiatives aimed to remediate polluted waterways in low-income neighbourhoods, reduce residential flooding, create community green spaces, and provide local employment opportunities in installation and maintenance. Unlike traditional bonds, EIBs offer variable returns based on environmental performance, sharing the financial risk of innovative projects between municipalities and investors.

Atlanta's 10-year EIB features a two-tiered performance structure with a base interest rate of 3.55%. Since the bond was available in minimum increments of $100,000, it primarily attracted large traditional investment firms looking to diversify their risk while generating a positive impact. If, after six years, the project surpasses its high-performance threshold – capturing an additional 6.52 million gallons (24.68 million litres) of stormwater, equating to $1.8 million in potential cost savings – the effective interest rate increases to 4.67%, and investors receive an additional $1 million, resulting in a net savings of $800,000 for the city.

This pay-for-success model encourages investment in innovative solutions by aligning financial returns with environmental outcomes.

Relevance for alternative proteins in Europe

Impact bonds represent an excellent blended finance opportunity for innovative sectors such as the alternative protein industry. They are likely to attract socially motivated investors, such as trusts, foundations, development finance institutions, and high-net-worth individuals willing to take on higher risks in exchange for social returns. Traditional private institutional investors may hesitate to participate until IBs establish a proven track record of success.

In Europe, most impact bonds finance social programmes rather than infrastructure projects and emerging businesses. While IBs might not be used as such, the underlying mechanism could be easily adapted and applied to alternative protein scale-up objectives.

[47] Atlanta: First Publicly Offered Environmental Impact Bond (2019). Available from: https://www.quantifiedventures.com/atlanta-eib. Accessed 7 May 2025.

The involvement of private investors, who expect a financial return in addition to social benefits aligned with their ESG goals, means **projects will be more closely monitored and driven than they might be with only public funding**.

This financing mechanism is interesting for the alternative protein sector as it features a public-private collaboration again but shifts the risk onto the private side at first, recognising their expertise in project selection and management.

Key takeaways

While impact bonds are rarely used to finance infrastructure projects yet, it is worth exploring this financing mechanism for its highly plausible applications for alternative protein scale-up purposes.

Concessional loans (or soft loans)

Concessional loans are offered on more favourable terms than standard market loans, often designed to support development projects or assist specific groups. Interest rates on concessional loans are typically lower than market rates, reducing the overall borrowing cost. These loans often come with extended amortisation periods, and borrowers may be granted a grace period during which they are not required to make reimbursements, helping them stabilise their finances before starting to repay. Concessional loans usually aim to finance development projects, infrastructure, and education, or support low-income countries and vulnerable populations. They target high-impact projects responding to significant development challenges.

As the financial conditions are favourable, lenders might expect other non-financial returns, such as geopolitical collaboration or economic industrial advantages.

Example 1: Green concessional financing is particularly important and valuable for countries looking to meet environmental goals and commitments.

A substantial concessional loan made the 750MW Rewa Ultra Mega Solar plant possible in India.[48] A dedicated company, a public joint venture, carried out the project. Following an auction, three private companies were contracted to build and operate 250MW each.

The plant was inaugurated in 2019 as a large-scale solar project in accordance with the Paris Agreement and aligned with India's commitment to shift to renewable energy (with its then

[48] Solar Power in India: A Report on Rewa Ultra Mega Solar Power Project (2021). Available from: https://www.cenfa.org/wp-content/uploads/2021/05/Rewa-Report-Final.pdf. Accessed 7 May 2025.

100GW objective of solar capacity by 2025). Two 25-year power purchase agreements (PPAs) were signed, and the project was funded by the International Finance Corporation (the largest global development institution focused on the private sector in emerging markets) through a $437 million (€384 million) loan split in 3 transactions, with a maturity of 20 years. The loan covered 75% of the CAPEX, while the remaining 25% of funding came from shareholder loans and equity.

Additionally, the project benefited from a Clean Technology Fund (CTF) loan ($23 million – €20.6 million – at 0.25% interest over 40 years and $2 million – €1.8 million – of interest-free grant).

This significant infrastructure project showcases an interesting mix of many innovative financing mechanisms. It is a PPP, leveraging project finance mechanisms to structure investments, benefiting from public grants and World Bank interest-free and soft loans. It features strong governmental involvement, notably via a state guarantee or moderate charge for the land required for the construction and authorised deferred payments for development and administration costs.

Example 2: Concessional financing is typically designed for low-income countries, but some examples show how adaptable this mechanism can be.

Jordan and Lebanon faced significant costs of hosting when they opened their borders to Syrian refugees fleeing war and oppression. The urgent infrastructure needed for more than two million people would result in an enormous debt burden for the two middle-income nations, neither of which qualified for concessional financing from multilateral development banks (MDBs), which usually allocate the lowest-cost funding to the world's poorest countries.

Given the project's pressing humanitarian nature, the World Bank developed a tailor-made financial solution: the Global Concessional Financing Facility (GCFF) was established in 2016 to offer Lebanon and Jordan, among others, access to cost-effective financing to allow them to achieve their long-term development objectives.[49]

This innovative mechanism is based on a unique formula that assesses the necessary funding required to lower the non-concessional interest rate to concessional levels. Donor contributions mostly take the form of grants; as of June 2017, they amounted to around $280 million (€248 million). The GCFF leverages donor resources to create concessional financing:

[49] World Bank Group, New Support for Refugees and Host Communities in Jordan and Lebanon Brings Total Concessional Financing to US$1 Billion (2017). Available from: https://www.worldbank.org/en/news/press-release/2017/04/21/new-support-for-refugees-and-host-communities-in-jordan-and-lebanon-brings-total-concessional-financing-to-us-1-billion. Accessed 7 May 2025.

each dollar in donor grant unlocks approximately $4 in concessional loans. This solution resulted in $1 billion (≈ €0.9 billion) in concessional financing in Jordan and Lebanon.

This example of the World Bank's developing a tailor-made concessional solution shows how flexible, innovative and reactive global public institutions can be when an imminent challenge is identified.

Relevance for alternative proteins in Europe

Concessional loans are among the most effective means for a government to support an industry. These loans typically offer higher amounts than grants – since they are expected to be repaid – and feature lower interest rates than conventional loans, as governments can access inexpensive funding. Additionally, they often come with longer repayment periods, making them well-suited for capital-intensive industries.

Currently, purely concessional loans in the EU are primarily reserved for impactful projects at a macro level, such as supporting a country like Ukraine amid Russia's invasion, or for larger initiatives like promoting clean energy on EU islands.

Nevertheless, such solutions should be prioritised for alternative proteins. They could benefit both parties: by supporting sustainable, impactful projects, nations would enhance their reputation and image while improving their economy, job situation, and competitiveness. In the case of large infrastructure projects, public financing sources not only ensure financial viability but also make these projects more appealing to private investors by mitigating risk. That creates a win-win scenario, enabling countries to bolster their image, support domestic industries, innovation and the green transition, enhance infrastructure, and improve the livelihoods of their citizens while achieving environmental goals. For companies, it offers access to more affordable funding for substantial projects and allows subcontracted firms to be engaged in larger initiatives as well.

The flexibility of this solution should be stressed, as **concessional terms can be achieved through strategic collaborations between different profiles of funders**, packaging their offers to allow market-aligned conditions to be balanced with more favourable complementary instruments.

Key takeaways

Concessional loans would be issued by public institutions with preferential conditions and could be viable for alternative proteins as efforts can be limited to remuneration adjustments. They represent one of the easiest and most efficient ways for governments to get involved in a sector and mitigate risks.

Interest-free loans

Interest-free loans (IFLs) do not require the borrower to pay any interest over the life of the loan – only the principal is to be repaid without any additional interest costs. Certain organisations, governments, or nonprofits may offer them, often targeting low-income communities, students, or specific community projects. Business-wise, interest-free loans are primarily used either as support measures for entrepreneurs and startups or at a macro level between countries. In both cases, they serve an economic, societal or political purpose.

Example 1: In the context of Abu Dhabi's Economic Vision 2030, IFLs are being implemented with various applications ranging from healthcare to education and agriculture.[50] They were launched by the Khalifa Fund for Enterprise Development and consist of three main programmes: startup funding, expansion funding, and agritech funding. Amounts range from 150,000 dirham (€36,000) to 3 million dirham (€750,000), and the loan can last up to seven years (with a grace period of up to two years).

The goal is to foster innovation and help local companies reach a competitive advantage.

Example 2: In 2024, the Indian government launched an initiative to revive the startup ecosystem with IFLs.[51] It committed a total of ₹1.5 lakh crore (€10.3 billion) to new technologies and innovative businesses, available for researchers and with a maturity of up to 50 years. The scope of activity is focused on, but not limited to, green energy. India aims to achieve "net zero" by 2070, via solar and wind farms, among other things.

Example 3: On a larger scale, China is known to propose IFLs to African countries with clear political, strategic, diplomatic, and economic interests.[52] Between 2000 and 2020, 212 IFLs were committed in 38 countries, representing 18% of total Chinese loans to African countries (the others being lent by mainstream commercial banks). IFLs are considered a part of China's foreign aid funds, in addition to grants and concessional loans. Usually, the repayment period is spread over 5-20 years, with a 5-10-year grace period, bringing the total loan maturity to 10-30 years. The average size of an IFL across 21 years is $10.5 million (€9.7 million), which compares to $135 million (€125 million) for standard loans from policy or commercial banks.

These IFLs do not generate interest and are often not backed by collateral, and would fall into the category of political tools rather than pure financial instruments. They are used for projects

[50] How Will Interest-Free Loans Boost UAE's Priority Sectors? (2024) Available from: https://www.sme10x.com/10x-industry/how-will-interest-free-loans-boost-uaes-priority-sectors. Accessed 7 May 2025.
[51] Interest-free research loans announced in India's budget (2024). Available from: https://www.nature.com/articles/d44151-024-00013-x. Accessed 7 May 2025.
[52]Boston Univeristy, China's Interest-Free Loans to Africa (2022). Available from: https://www.bu.edu/gdp/files/2022/09/GCI_PB_015_FIN.pdf. Accessed 7 May 2025.

that improve people's livelihoods, while concessional loans (described in the next section) are used to fund profitable manufacturing projects. IFLs are mainly used to help recipient countries' development: infrastructure, facilities, transportation, industrial projects, and agriculture. The Chinese Ministry of Commerce administers these loans as part of the "Economic and Technical Cooperation Agreement".

IFLs are meant to fill the financing gap of medium-sized projects that are too big for grants but too small for concessional loans. Cancellations are frequent (much more than for usual loans).

Relevance for alternative proteins in Europe

In its current forms (macro cross-country loans or micro public loans to startups), IFLs are not applicable to alternative proteins, but many elements could be reimagined for the industry. For instance, governments could support alternative proteins by offering IFLs and incorporating non-financial conditions, such as requiring domestic contractors or pairing these loans with offtake agreements – provided those requirements comply with EU competition law and other applicable rules.

While IFLs are available for entrepreneurs in most European countries, they typically cap at around €20,000, which is far from sufficient to finance the construction of a facility. This highlights the necessity for larger loans to be backed with significant non-financial requirements for public entities to consider them, as these measures help mitigate risk and align interests. However, convincing any funders to lend money without some form of financial remuneration is consistently challenging. Concessional financing might be better suited to meet the sector's needs.

Additionally, with the possible exception of specific cases as part of a broader policy programme, interest-free does not imply that loans are be granted to anyone who applies; eligibility criteria are likely to mirror those of conventional loans, meaning that only mature companies would be able to access these funds.

Key takeaways

Realistically, interest-free loans for alternative proteins are not going to happen easily nor in the near future, so this may not be the mechanism the sector should prioritise. Although impactful, they are challenging to implement. However, IFLs could be used alongside a conventional loan to reduce the compounded interest rate and mimic concessional terms.

05 Public innovative financing enablers

Innovative financing enablers are public incentives that trigger private investments as a natural consequence. They focus on improving the regulatory and financial environment so that companies in a specific industry can flourish.

Public procurement

Public procurement is when government institutions and local public authorities purchase work, goods or services from private companies. It plays a crucial role in government operations and is a significant driver of domestic economic activity. Public procurement is typically governed by strict rules and regulations to ensure transparency, fairness and accountability, and prevent corruption, favouritism, and inefficiencies. Governments often use competitive bidding processes (like tenders) to select suppliers to achieve the best value for taxpayers. Many countries have specific legal frameworks that outline how public funds should be used for procurement.

Procurement can help the public sector boost jobs, growth and investment and create an economy that is more innovative, resource- and energy-efficient, and socially inclusive. In fact, governments increasingly use public procurement to achieve broader policy goals, such as promoting environmental sustainability, supporting small businesses, or improving labour standards. This is called sustainable procurement or Green Public Procurement (GPP). Governments can foster innovation and support emerging economies by creating demand for new technologies or solutions through GPP.

Public procurement can influence food systems by acquiring food products for public institutions such as school and university canteens, hospital cafeterias, prisons, and military facilities. Policies can enhance diets by promoting healthier options, ensuring equitable and inclusive sourcing practices, and educating young people about sustainability and the environmental impact of food systems.

Example 1: In Germany, a tariff for renewable energy (RE) was introduced in 1979 to stimulate market demand, but had no significant impact at that time.

In 1991, the government implemented the first Electricity Feed-in Act for renewable energies. Together with the subsidies from various state programmes, it generated interest from investors. They also introduced the obligation for power companies to purchase renewable energy from producers at fixed rates.

The strong involvement of the German government, notably through its guaranteed offtake (initially a 10-12 year PPA for the first 250MW installed, with a much higher rate than the commercial rate), allowed the German wind turbine industry to boom.[53]

It was also a strategic political move as Germany did not need more power (coal and nuclear were enough then). The initiative was a green incentive disguised as an instrument of research (rather than what it indeed was: market support).

Example 2: The Policy for Sustainable Development and Food in Malmö, Sweden, sets specific targets and implements GPP.[54] Since 2010, all public canteens have aimed to serve high-quality, sustainable, climate-friendly food. As of today, Malmö's food consumption-related greenhouse gas emissions have dropped by 30% (the announced goal was to reduce GHG emissions by 40% by 2020 compared to 2002 levels), and it is estimated that 70% of the food in public kitchens is organic.

Relevance for alternative proteins in Europe

Over 250,000 public authorities in the EU spend around 14% of GDP (around €2 trillion per year) on services, works and supplies every year.[55] They are the principal buyers in many sectors, such as energy, transport, waste management, social protection and health or education services.

Green public procurement for plant-based foods exists in Europe already but is not very widespread: Portugal's law compelling all public canteens to have at least one plant-based option on their daily menus, or Freiburg's policy of serving only vegetarian food in primary schools and daycare centres. Most of these initiatives received a positive response from consumers.

GPP is a smart way for public entities to reach their environmental goals and care for their citizens' health while supporting an emerging industry and economy.

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[53] 30 Years of Policies for Wind Energy: Lessons from Germany (2013). Available from: https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2013/GWEC/GWEC_Germany.pdf?la=en&hash=DD3A50E77910814C87F7E9B783273289F64F0F76. Accessed 7 May 2025.
[54] Sustainable Food in Malmö. Available from: https://malmo.se/Welcome-to-Malmo/Sustainable-Malmo/Sustainable-Lifestyle/Sustainable-food-in-Malmo.html. Accessed 7 May 2025.
[55] The Public Procurement Data Space. Available from: https://single-market-economy.ec.europa.eu/single-market/public-procurement/digital-procurement/public-procurement-data-space-ppds_en. Accessed 7 May 2025.

Key takeaways

Public procurement in the alternative protein sector would be an impactful tool and address many challenges. It would be key to opening a market, reaching consumers and reassuring institutional investors.

Support measures for related industries

Sometimes, supporting a parallel product or market is the first step if the targeted industry is not considered mature enough to attract substantial investment. The growth of the first sector will trigger interest in the second one and eventually stimulate investments through vertical and horizontal integrations or increased demand and then involvement from external investors.

Example: Governments supporting solar panel manufacturers played a massive role in domestic industries outperforming their competitors.[56]

Japan, once the solar industry leader, let its companies independently design their manufacturing processes, making it almost impossible for them to share production lines. Germany anticipated that problem by developing third-party suppliers of production equipment that could be adopted by several companies and combined with other equipment suppliers' machines.

In 2000, the German Parliament passed the Renewable Energy Law (EEG in German). From 2004 to 2012, the EEG supported the adoption of over 30GW of solar PV projects in Germany with a subsidy programme totalling over €200 billion. Equipment manufacturers, as well as energy producers, also benefited from this considerable support from the government.

The size of this new market interested private investors (investment banks and funds). It helped startups hold IPOs, raise hundreds of millions, and invest in scaling up. It reduced the costs of solar PVs, and lower prices attracted new adopters, enabling further scale.

Germany became the biggest solar PV producer in the world, surpassing Japan. Automation, standardisation and scaling up of German and ultimately global PV manufacturing were key elements of the solar success story.

Relevance for alternative proteins in Europe

This financing enabler represents a very indirect funding method. The industry must recognise that the market operates as it does, and inevitably, **investors may initially show greater interest in funding a parallel industry**. Establishing the broader market is essential. If

[56] Gregory Nemet, How Solar Energy Became Cheap (2019)

executed correctly, this approach could significantly impact the ecosystem. In the context of alternative proteins, this would involve supporting equipment manufacturing (such as tanks and fermentors), and feedstocks and culture media production. It could also extend to assisting stakeholders from other related industries, including leasing companies and CDMOs. **Standardisation throughout the supply chain** would lead to cost reductions, ultimately resulting in price parity for alternative proteins and attracting greater interest from consumers and investors.

Key takeaways

Investing in other parts of the supply chain or complementary industries can indirectly support alternative proteins financially.

Tax credits

Tax credits are financial incentives that reduce the amount of tax owed by individuals or businesses. Unlike deductions, which lower taxable income, they directly reduce the tax liability euro-for-euro. Tax credits usually incentivise behaviours that align with government policies, like promoting clean energy or education.

For early-stage companies, which don't have significant tax liabilities yet, tax credits are valuable only if they are refundable (and thus reduce the tax liability below zero, resulting in a tax refund – which is rare) or transferable. Transferability is key for any tax credit. By selling a tax credit to another corporation looking to reduce their tax bill, companies can cash in more useful forms of capital to support their development, which actually makes refundable and transferable tax credits very similar to grants.

The tax equity market is an alternative form of investment widely used to finance energy-generating assets. Investors finance eligible projects to get cash returns (typical expectations) but also take advantage of income tax benefits. As a result, both parties enter a win-win partnership, as the developer doesn't have to rely on debt or equity to fund the project. At the same time, investors benefit from tax savings in addition to the classic return on investment (ROI).

Logically, though, transferable tax credits are much more convenient as they require a one-time deal (vs a costly and time-consuming mid-term partnership).

Example: First Solar, a US solar panel manufacturer, secured up to $700 million (€615 million) by transferring tax credits generated by the Inflation Reduction Act (IRA), which enables

renewable energy companies to benefit from tax credits of up to 16 cents per watt for solar panels that are manufactured locally.[57]

In December 2023, it was announced that these credits were sold to Fiserv, a global fintech company, allowing First Solar to access liquidity sooner than traditional tax credits would allow. For it to be of interest to both parties, the purchase price is usually slightly lower than the nominal price. In that case, Fiserv paid $0.96 per $1 of tax credit. This deal was among the first in the solar manufacturing sector to utilise the IRA's new tax credit transfer provisions, supporting First Solar's plans for expansion and investment in R&I and US manufacturing facilities.

Relevance for alternative proteins in Europe

Tax credits, particularly those with transferability features, are highly appealing, but unfortunately, they are not yet available in Europe. The Green Deal Industrial Plan sought to be the European counterpart to the IRA, but the overall programme does not concentrate on tax incentives as the IRA does (although it is important to note that the production of alternative proteins does not currently qualify for IRA transferable tax credits). Both programmes are subject to change and ongoing development.

There is potential for **the European model to take inspiration from the IRA**, as has happened in the solar industry: countries have shared market and technology advancements over decades, fostering a competitive environment where nations learn from and improve upon each other's successful policies. In Europe, tax credits without a transferability option do not effectively finance infrastructure, as most alternative protein companies are not yet profitable and thus lack taxable income.

The IRA represents a strategic move by the US government to shield its companies from foreign competition, particularly from China, by enabling them to nearly achieve price parity with Chinese solar panels. In 2024, China produced more than 600GW of solar panels[58] compared to just 50GW in the United States.[59] This type of subsidy clearly signals government

[57] First Solar Cashes In with Sales of IRA Tax Credits Worth up to $200M (2024). Available from: https://www.canarymedia.com/articles/climatetech-finance/first-solar-cashes-in-with-sale-of-ira-tax-credits-worth-up-to-700m. Accessed 7 May 2025.
[58] China's Solar Module Shipments Hit 680 GW in 2024, Raising Concerns over Growing Warehouse Stockpiles (2025). Available from: https://solarquarter.com/2025/03/13/chinas-solar-module-shipments-hit-680-gw-in-2024-raising-concerns-over-growing-warehouse-stockpiles/. Accessed 7 May 2025.
[59] U.S. Solar Manufacturing Capacity Meets National Demands: 50 GW (2025). Available from: https://syncarpha.com/2025/02/us-solar-manufacturing-reaches-50-gw-capacity/. Accessed 7 May 2025.

support for the domestic industry. The question then arises: how can we replicate this dynamic for the alternative protein sector in Europe?

Key takeaways

If tax credits were transferable and alternative proteins were included in their scope of application, they would be game-changing for the sector.

Carbon credits

Carbon credits, or carbon allowances, are permits that allow a company or organisation to emit a certain amount of carbon dioxide or other greenhouse gases. One carbon credit typically represents one tonne of CO_2 emissions.

Under cap-and-trade systems, governments cap total emissions and distribute or auction off carbon credits to companies. Those who reduce their emissions below their allocated credits can sell the surplus credits to others that exceed their limits. This system incentivises companies to invest in cleaner technologies or promote sustainable practices, as they can profit from selling unused credits.

Another type of carbon credits, also called carbon offsets, comes from projects that remove or mitigate greenhouse gases (GHG), such as reforestation or renewable energy initiatives. Other companies can then purchase these credits to offset their emissions.

Cap-and-trade programmes exist worldwide in Canada, China, the EU, Japan, Mexico, New Zealand, South Korea and the UK.[60] In the United States, only the state of California operates a carbon market.

Example 1: The construction of the KWP wind farm in Bulgaria, commissioned in 2008, was handled and financed through a Japanese-Bulgarian joint venture.[61] Mitsubishi Heavy Industries Ltd (MHI) owned 70% of it, and Inos, a Bulgarian engineering firm, owned the remaining 30%. This project resulted from the Kyoto Protocol sanctions on GHG emissions. It simultaneously contributed to the renewable energy use target in Bulgaria, especially after it joined the EU in 2007, and to the acquisition of carbon credits by Japan to work towards its 6% GHG reduction goal.

[60] Carbon pricing instruments around the world (2024). Available from: https://carbonpricingdashboard.worldbank.org. Accessed 7 May 2025.
[61] Carbon Credit from MHI Wind Power Business in Bulgaria Transferred to Japan (2010). Available from: https://www.mhi.com/news/1007121364.html. Accessed 7 May 2025.

Located on the Black Sea coast, the KWP project reduced CO_2 emissions by 85,000 tonnes annually compared to conventional thermal power generation, resulting in the allowance of significant carbon credits. Those were set to be sold to Japan Carbon Finance Ltd (up to 350,000 tonnes), and MHI would buy the surplus.

Example 2: Workday, a US enterprise software provider, is entering into offtake agreements with high-impact carbon reduction and removal projects to bridge the financing gap that hampers their progress.[62] The company is also a member of Frontier Climate, a coalition of more than a dozen companies that committed to purchasing $1 billion (≈ €0.9 billion) in durable carbon removal by 2030, significantly aiding the growth of the carbon removal industry.

With these agreements, carbon buyers pledge to purchase carbon credits from specific projects once those credits have been verified. The agreements often last several years, providing carbon buyers with a reliable, long-term carbon credit supply. By securing an end buyer through an offtake agreement, carbon project developers are in a stronger position to obtain the development capital needed to launch their projects.

This approach enabled Workday to achieve carbon neutrality for its cloud and even offset the company's entire historical emissions in 2021 while fostering the development of a sustainable market that traditionally faces challenges when seeking funding through conventional methods.

Relevance for alternative proteins in Europe

The European Union Emissions Trading System (EU ETS) is a key component of the EU's climate change policy aimed at cost-effectively reducing greenhouse gas emissions. Launched in 2005, it operates on a cap-and-trade principle to limit emissions of specific sectors, including power generation, manufacturing and aviation. This market-based approach incentivises emissions reductions and encourages investment in low-carbon technologies while promoting economic efficiency across the EU member states. The EU ETS is continually undergoing reforms to align with the EU's increased climate ambitions, including reaching climate neutrality by 2050.

This is an example of a new source of funding, as some of the revenues raised by the ETS are reinvested through the Innovation Fund into programmes for innovative low-carbon technologies. The current EU ETS plays a vital role in financing the scale-up of cleantech innovations through this fund.

[62] How Workday Uses Carbon Offtake Agreements to Scale Climate Impact (2024). Available from: https://trellis.net/article/how-workday-uses-carbon-offtake-agreements-scale-climate-impact/. Accessed 07 May 2025.

Unfortunately, alternative proteins are not included in its scope and cannot currently benefit from it. **As conversations progress towards creating a separate agrifood carbon credit market, food biotech must become part of these developments**. This inclusion could provide essential funding opportunities for the sector, helping it to thrive within this emerging market. Nevertheless, a strong methodology needs to be developed as a first step.

Key takeaways

The EU must create an agrifood carbon emissions trading scheme. Similar to transferable tax credits, allocated carbon credits that alternative protein companies could resell would provide a straightforward method for raising funds when necessary. Carbon offtakes would also help with upfront investments, as they could be used as collateral for funders. While this solution should ideally be prioritised, it may not be implemented quickly.

Government support through regulation

Governments can support an industry even without direct financial support. By implementing laws and regulations that shape the market and open pathways for innovation, they can likely attract more private investment to the sector.

Through this indirect financing mechanism, often driven by national ESG commitments and sustainability goals, governments can, for example, reduce administrative burdens to support innovative companies, create obligations to rely on specific products and services to support an emerging industry, or promote transparency and consumer protection. They can develop efficient frameworks for novel foods and ingredients, with precise requirements and agendas and rapid approval processes, and also work towards fair labelling laws.

Example 1: Regulation-free special zones (RFSZ) are areas in South Korea designated to allow firms to conduct business freely without restrictions from regulations and to carry out tests for innovative technologies. Innovative firms are also fostered through support measures such as R&I funding and tax breaks.

They were announced as a world-first in July 2019 by the minister of SMEs and startups. The government initially identified seven zones, focusing on areas such as digital healthcare, e-mobility and battery recycling. Each zone benefits from special exemptions.

On 30 April 2024, South Korea announced the creation of an RFSZ dedicated to cultivated meat:[63]

- The government committed to invest $14.37 million.
- It will be operational for five years, starting June 2024.
- The zone will harbour 10 cultivated meat companies.
- It will consist of two major projects: the establishment of a cell bank and mass production and the demonstration of commercialisation.

This is the first RFSZ to address food, highlighting the government's growing interest in the cultivated meat industry. In South Korea (and most of Asia), the absence of regulation does not automatically allow activities to be carried out. Activities would need to be backed by a specific law to be explicitly authorised. Special exemptions in this RFSZ cover activities that would not be possible outside the zone, including procurement of tissue, biopsy, and tasting for R&I purposes. It does not include sales, which will need approval from the Ministry of Food Drug Safety (MFDS). The supply of fresh cells is crucial to commercialising high-quality cultivated meat, as is overcoming taste and texture challenges and boosting cell growth performance.

These proactive government measures demonstrate an openness to the industry and provide an enabling demonstration environment. While they may not be exactly transferable to Europe given the legislative and regulatory frameworks that exist for the bloc, they could provide inspiration for proactive regulatory innovation that could be used to support producers in coming to market.

Example 2: In 2023, France passed a law[64] requiring car park owners to equip their outdoor spaces with solar shade houses if the surface is larger than 1,500m^2. This policy indirectly funds the solar industry, as no financial cash flow is included, but it supports the sector by compelling other businesses to rely on those specific products and services.

Relevance for alternative proteins in Europe

A European alternative to South Korea's RFSZ could be modelled on the regulatory sandboxes underway in the UK, which offer a framework for businesses to test new products and services in a controlled environment with eased regulatory requirements. In October 2024, the Food Standards Agency (FSA) launched an innovative sandbox programme for cultivated foods to ensure their safety for consumers before they receive approval for sale. The initiative was granted £1.6 million (€1.88 million) in government funding.

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[63] (2024). Available from: https://www.foodingredientsfirst.com/news/south-korea-stimulates-cultivated-meat-growth-with-regulation-free-special-zone.html. Accessed 7 May 2025.

[64] France Rules on Mandatory Solar for Car Parks (2025). Available from: https://www.pveurope.eu/e-mobility/france-rules-mandatory-solar-car-parks. Accessed 7 May 2025.

While these initiatives are positive steps, they remain limited in scope. Governments could consider **including alternative proteins in broader research and development projects** alongside other R&I topics to capitalise on that innovation trend – rather than explicitly identifying their support as dedicated to this specific industry. This approach would enable them to promote national competitiveness in an emerging market. **Alternative proteins could be included in broader sustainability programmes**, economic and industrialisation programmes, and health programmes: they should be mainstreamed across various policy objectives that go far beyond the sole focus on novel foods.

Additionally, **harmonised VAT policies** could address the unequal playing field confronting alternative proteins, which currently face significant disadvantages under existing VAT structures in some EU Member States. For instance, in Germany, plant-based milks are typically subjected to the standard VAT rate of 19%, while their animal equivalents benefit from a reduced rate of 7%.

Key takeaways

Given that regulatory challenges are among the primary barriers for investors, implementing such facilitating policies could prove invaluable in galvanising enthusiasm within the private investment ecosystem.

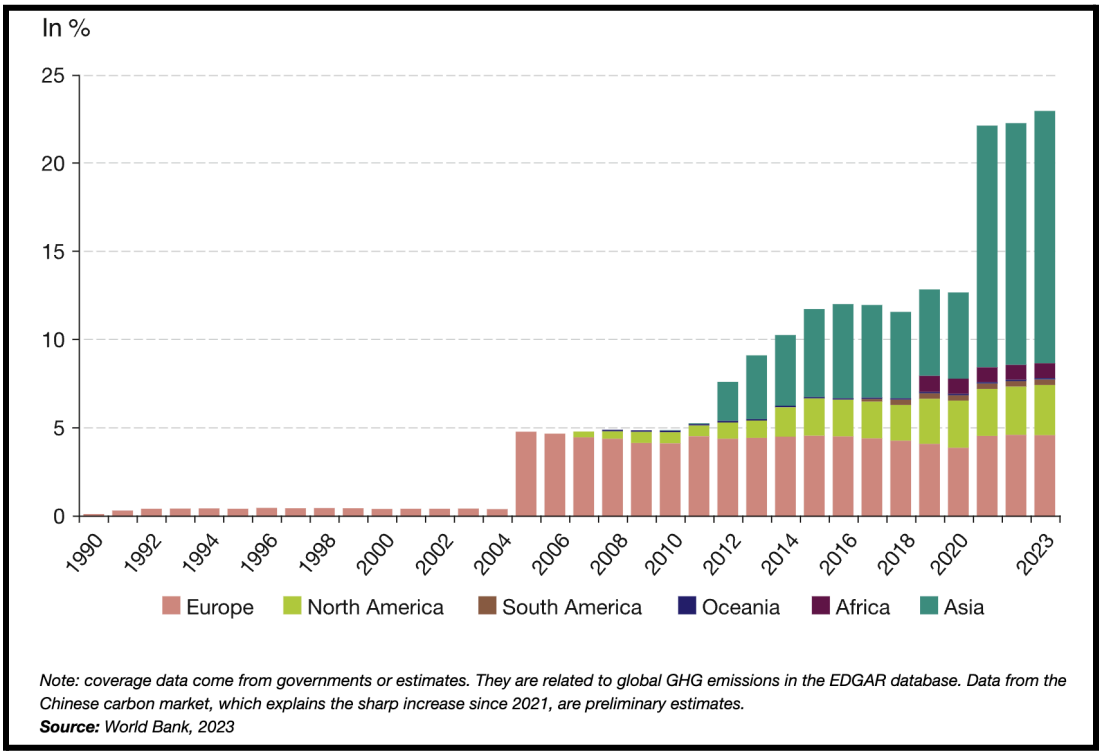
Carbon tax

A carbon tax is a financial charge aimed at reducing greenhouse gas emissions. It creates a direct economic incentive for emitters to reduce their carbon emissions. It is designed to encourage businesses and individuals to decrease their carbon footprint by using cleaner energy sources and adopting more efficient practices. Carbon taxes create indirect new funding sources for a low-carbon transition, as governments can use revenue generated from the carbon tax to finance sustainable industries and projects, such as renewable energy infrastructure, energy efficiency programmes, clean public transportation, or to offset other taxes (a concept known as ‘revenue recycling’).

The difference between a carbon tax and a cap-and-trade programme is that carbon taxes don’t foreshadow the level of emissions reduction to be achieved, but provide a higher level of certainty about cost (which is the opposite of cap-and-trade).

Globally, carbon pricing instruments (carbon taxes and carbon markets) generated $86 billion (€76 billion) in revenues in 2022, compared with $11 billion (€9.7 billion) in 2010.[65]

Evolution of the share of global greenhouse gas emissions covered by a carbon pricing instrument



Note: coverage data come from governments or estimates. They are related to global GHG emissions in the EDGAR database. Data from the Chinese carbon market, which explains the sharp increase since 2021, are preliminary estimates.
Source: *World Bank, 2023*

Example 1: The Swedish carbon tax was introduced in 1991 with an initial rate of €25 per tonne of CO_2 emitted, which increased to €125 in 2024. The progressive rate has allowed households and companies to prepare and adapt to change. Today, it generates substantial revenues for the Swedish general budget.

Example 2: In 2014, Mexico introduced a tax on sodas (1 peso per litre), which has led to a price rise of around 11% for soft drinks.[66] This is not a carbon tax, but is similar in its nature and goals: influencing consumers' choices and shaping the food environment to nudge them

[65] Key Figures in Climate: France, Europe and Worldwide (2024 edition). Available from: https://www.statistiques.developpement-durable.gouv.fr/edition-numerique/chiffres-cles-du-climat-2023/en/17-carbon-pricing-around-the-world. Accessed 7 May 2025.
[66] Countries and jurisdictions that have taxes on SSBs (2025). Available from: https://www.obesityevidencehub.org.au/collections/prevention/countries-that-have-implemented-taxes-on-sugar-sweetened-beverages-ssbs#:~:text=international%20case%20studies-,Mexico,increase%20for%20other%20sweetened%20beverages.&text=In%20turn%2C%20the%20price%20increase,purchases%20and%20consumption%20of%20SSBs. Accessed 7 May 2025.

towards healthier options. It resulted in a drastic decrease in sugar-sweetened beverage (SSB) purchases in the country (-37% within one year), especially among poorer households, most affected by the obesity crisis. Between 2014 and 2022, Mexico went from being the first to the fourth-largest consumer of soda globally.

Interestingly, the implementation of the tax has resulted in health care savings of almost $4 per dollar spent on its implementation.

The tax's success has prompted dozens of countries to follow the example globally. Today over 130 jurisdictions have implemented taxes on SSBs.

Relevance for alternative proteins in Europe

Carbon taxes exemplify how a government can indirectly support an industry while also considering the needs of others. It facilitates a transparent and smooth transition – ensuring it is as seamless as possible. **The revenues generated from carbon taxes could be used to retrofit existing capacities or assist industries in transition to net zero**, including in the alternative protein sector.

In 2024, Denmark approved plans for a carbon tax specifically targeting emissions from the agricultural sector, intending to reduce those emissions by 70% by 2030.[67] This decision followed five months of negotiations among all parties and was accompanied by a 43 billion Danish kroner (€5.8 billion) investment to facilitate the green transition. The initiative garnered a positive response from farmers because it was approached thoughtfully: implementation is set for 2030, allowing them ample time to adjust, and the revenue generated from the tax will be reinvested to support their transition. Additionally, an increase in meat prices for Danish consumers is planned, which could affect demand and consumers' purchase decisions.

Similar to how tobacco taxes are reinvested in the healthcare sector, this initiative creates a new pool of capital to be used intelligently rather than reallocating existing funds. **Progressivity is essential in this context**, allowing stakeholders the necessary time to plan for the future and recalibrate their operations.

Most countries are governed by fundamental budget principles that make it difficult to track the allocation of state revenues. However, it is logical to expect carbon tax revenues to be allocated to green transition projects, and **transparency should be encouraged**.

[67] Denmark to Impose World's First Carbon Tax on Agriculture, With Each Cow Costing $100 Per Year (2024). Available from: https://www.greenqueen.com.hk/denmark-carbon-tax-agriculture-meat-dairy-cattle-farmers/. Accessed 7 May 2025.

Additionally, the scope of application must be relevant as most carbon taxes focus solely on fossil fuels. For alternative proteins to benefit from carbon taxes, they must apply to the agrifood sector.

Opponents fear that carbon taxes may negatively impact employment. However, according to a 2020 study by economists from the Organisation for Economic Co-operation and Development (OECD), based on an analysis of 8,000 French companies between 2001 and 2016, the carbon tax did not lead to an increase in unemployment.[68] Employees are not laid off but instead transferred from energy-intensive companies to more energy-efficient ones. It would be optimal, though, if such initiatives were accompanied by parallel professional training programmes for green jobs.

Key takeaways

A carbon tax is a complex initiative to implement, but it could create a new pool of capital to partly finance the transition to a more sustainable food system.

Lottery

Lotteries can be used to source funds for sustainable projects. Many governments and organisations run lotteries specifically to raise money for various public goods, including environmental and sustainability initiatives. This is an example of creating a new funding source rather than reallocating existing funds. Individuals will participate in a game for a good cause by purchasing lottery tickets, and their money will help support ethical projects and pay off in a big way if they win the jackpot. By launching targeted calls for tenders, governments can select and influence which sectors they want to lift.

Example: Generally, the Belgian National Lottery returns the most part of its revenues to winners in the form of prizes, while about 10-20% is allocated to operational expenses. The remaining funds (all profits) are designated to various humanitarian projects.

The Belgian Lottery was created in 1934 by the government to reduce Congo's budget deficit and fund social and humanitarian work there. It evolved over time, but always kept its primary objective of allocating all benefits to supporting cultural and societal initiatives. Now, thematic calls for projects are regularly launched, and benefits are distributed through grants. For

[68] OECD, The joint effects of energy prices and carbon taxes on environmental and economic performance: Evidence from the French manufacturing sector (2020). Available from: https://www.oecd.org/content/dam/oecd/en/publications/reports/2020/02/the-joint-effects-of-energy-prices-and-carbon-taxes-on-environmental-and-economic-performance-evidence-from-the-french-manufacturing-sector_3e81ffce/b84b1b7d-en.pdf. Accessed 7 May 2025.

example, in 2024, the Belgian Lottery called for projects on the theme of "social inclusion and the fight against poverty". More than €2 million was raised and granted to 124 organisations.[69]

Relevance for alternative proteins in Europe

While it may be unrealistic to expect this approach to be implemented on a large scale, it offers an intriguing option for countries and subnational entities aiming to promote a more sustainable world without directly allocating their own resources to achieve that goal. **It effectively creates a new source of funding**.

Some food-related projects have been financed in this manner. For example, Sustain, an alliance of organisations and communities advocating for a better food system, received approximately £1.5 million from the National Lottery Community Fund in the UK[70]. Lotteries can also take the form of private initiatives, like Veggie Lotto, which was established to raise funds for the Vegetarian Society.

Lotteries stimulate curiosity and interest, serving as an innovative method of engagement. Although they shouldn't be a primary focus, it is an interesting way to get citizens involved in the industry's development.

Key takeaways

Lotteries shouldn't be a focus area, but a fun, additional potential funding source for alternative protein startups seeking to raise small amounts. They could be issued by governments and benefit any eligible company in the ecosystem or directly by companies themselves under certain regulatory conditions.

[69] Available from: https://www.loterie-nationale.be/bien-plus-que-jouer/bonnes-causes/organisations-soutenues/appel-a-projets. Accessed 7 May 2025.
[70] Sustain Receives National Lottery Funding to Help Make Climate Friendly Diets Open to All. Available from: https://www.foodsensewales.org.uk/sustain-receives-national-lottery-funding-to-help-make-climate-friendly-diets-open-to-all/. Accessed 7 May 2025.

06 Conclusion

According to the GINA report on protein diversity, funded by the ClimateWorks Foundation and the UK Foreign, Commonwealth & Development Office, a shift away from livestock products, diversifying the world's protein supply could generate up to $5.5 trillion (€5.1 trillion) in climate mitigation benefits by 2050. However, to fully realise the potential of alternative proteins, global public spending on research, development, and demonstration (RD&D), as well as on commercialisation, needs to rise to at least $4.4 billion (€4.1 billion) and $5.7 billion (€5.3 billion) per year, respectively.

As with many innovative industries that are capital-intensive and typically low-margin, traditional financing methods often fall short, making the scaling-up and commercialisation processes challenging. Fostering a vibrant and creative investment ecosystem is therefore essential for the growth of the alternative protein sector, which requires forward-thinking investors and long-term strategies.

Although alternative proteins, like many industries, have seen a decrease in funding in recent years, it is essential to view this decline in context, as fluctuations in funding levels are normal for emerging sectors – particularly during a global economic downturn. This reduction in funding can lead to natural and beneficial consolidation within the industry. Talents displaced by liquidity challenges or closures may transition to more stable startups, while under-resourced companies may facilitate tech transfers.

The situation in Europe is encouraging:

- More and more professionals and organisations are focusing on this issue and trying to solve alternative protein investment challenges.
- The industry is currently building its track record with innovative initiatives and convincing new products, having learnt from investors' and consumers' feedback following the 2021 hype.
- The market is growing as consumer demand is on the rise.
- ESG commitments from public and private entities suggest that sustainable food might be on the radar in the coming years.

The world is moving rapidly on alternative proteins, and other parts of the globe are already ahead. Singapore and the United States have authorised cultivated meat sales, instilling confidence in investors. Meanwhile, China is poised to strategically position itself as a sector leader, much like it did in solar energy – leveraging large-scale investment, cost advantages,

coordinated industrial policy, and strong state support. It is urgent to ensure that Europe remains at the forefront of innovation and does not fall behind in this high-potential industry.

Priorities for investors

To achieve the full potential of alternative proteins to help build a more sustainable and resilient food system, investors should focus on four main priorities:

1. Create a market

This is one of the primary challenges to investing in the alternative protein sector. Investors are waiting for proof of commercial viability, while startups require investment to develop successful products, creating a vicious cycle. At this juncture, the priority is to identify ways to initiate progress. Encouraging **market-shaping tools** such as offtake agreements, advanced market commitments, public procurement, and even regulations, can guarantee future cash flows and mitigate risks for wary investors.

Additionally, **it is critical to understand that building a market is not always a linear path**. Before a market for solar energy for individual consumption existed, solar panels were initially used on spacecraft and then in calculators on a small scale. This attracted funding and established the technology's reliability, paving the way for their eventual adoption as mainstream energy sources.

For alternative proteins, it might mean that investments in related industries (such as equipment or machinery), in products with slightly different applications (such as pet food or pharmaceuticals), or through alternative commercialisation strategies (such as private label products, B2B, or food service) are key enablers.

These investments lead to cost reductions, which are essential for alternative protein companies to achieve price parity with conventional products, and they generate sales revenue, which can help convince lenders when there is another strategic shift in the future.

2. Derisk

Engagement from all types of investors is essential for success, with public-private collaborations through **blended finance solutions** being the ideal approach.

Historical evidence repeatedly demonstrates that public involvement effectively supports emerging industries. For instance, in the wind turbine sector, the early actions taken by the German government – particularly through guaranteed offtake agreements and subsidy programmes – significantly impacted the industry's growth. Denmark also adopted similar strategies, whereas the UK did not. Despite comparable wind turbine technologies across all three countries at the time, the absence of national protections in the UK resulted in the

industry's decline. In contrast, German and Danish technologies progressed to dominate the European market.

Public involvement attracts greater interest from private investors, as it often signals the likelihood of long-term governmental support, as governments seldom provide substantial one-time funding without a broader economic framework. Public initiatives can unlock significant private capital influxes by showcasing a sector's potential and agreeing to share risks. For example, the Clean Technology Fund (CTF) invested around $55.5 million (€48.8 million) in concessional financing for Kazakhstan's clean energy sector.[71] This investment directly facilitated approximately $200 million (€176 million) in additional funding from multilateral development banks (MDBs) and an extra $500 million (€440 million) in follow-up financing from international private firms, resulting in an impressive leverage ratio of about 12:1.

3. Collaborate

Investors find it challenging to strategise about their investments in what is perceived as a highly fragmented market. Collaboration is essential across all sector stakeholders. Pooling public and private financial resources mitigates risks for all funders.

There is also a pressing need for **investment in open-access pilot plants** equipped with state-of-the-art facilities to promote knowledge sharing and to encourage communication and partnerships among startups, associations, and food companies.

In numerous other disruptive industries, **drawing inspiration from successful strategies** implemented in different countries or regions has proven effective. Governments have often replicated policies from other countries, adapting and enhancing them, ultimately cooperatively creating a support framework for a sector.

Cross-collaboration between funders and startups should be encouraged to design tailored funding solutions that address both their needs and expectations.

Strategic partnerships also have the potential to benefit the entire alternative protein industry. The collaboration between Believer Meats and GEA, one of the largest global suppliers of production-scale equipment and systems for the food, beverage, and pharmaceutical sectors, is a good example.[72] Their agreement to co-develop technologies and

[71] What You Need to Know About Concessional Finance for Climate Action (2021). Available from: https://www.worldbank.org/en/news/feature/2021/09/16/what-you-need-to-know-about-concessional-finance-for-climate-action. Accessed 7 May 2025.
[72] GEA and Believer Meats Join Forces to Scale Up Cultivated Meat Production (2024). Available from: https://www.gea.com/en/news/corporate/2024/gea-and-believer-meats-join-forces-to-scale-up-cultivated-meat-production/. Accessed 7 May 2025.

processes aims to improve the unit economics and sustainability of cultivated meat production. The impact of Believer and GEA's partnership will go beyond just their private interests. Together, they will contribute to reducing production costs, streamlining technology transfer, and scaling operations effectively to make cultivated meat more affordable and accessible.

The alternative protein industry is too new and disruptive for individual companies to tackle every challenge alone.

4. Be creative

Finally, there is no such thing as one single ideal solution to fund alternative protein scale-up. The goal should be to navigate all financing mechanisms available to create a **customised hybrid solution** that fits the project's stage, size, ambitions and investors' motivations and yield objectives.

Glossary

ABS: asset-backed security

AMC: advanced market commitment

AI: artificial intelligence

B2B: business to business

BBI JU: Bio-based Industries Joint Undertaking

BIC: Bio-based Industries Consortium

BOT: build, operate, transfer

CAPEX: capital expenditure

CBE JU: Circular Bio-based Europe Joint Undertaking

CBI: Climate Bonds Initiative

CC: carbon credit

CDMO: contract development and manufacturing organisations

CEO: chief executive officer

CHAI: Clinton Health Access Initiative

CPG: consumer packaged goods

CRE: Commission de régulation de l'énergie (French commission for energy regulation)

CTF: Clean Technology Fund

CTO: chief technology officer

CVC: corporate venture capital

DOE: Department of Energy (US)

DSCR: debt service coverage ratio

ECA: export credit agency

EHB: European hydrogen bank

EIB: European Investment Bank

EIB (2): environmental impact bond

EIC: European Innovation Council

EIF: European Investment Fund

EPC: engineering, procurement and construction

ERDF: European Regional Development Fund

ESG: environmental, social and governance

ESOP: employee stock ownership plan

ETF: exchange-traded fund

EU: European Union

EU ETS: European Union Emissions Trading System

FSA: Food Standards Agency (UK)

FiT: feed-in tariff

GBP: green bonds principles

GCFF: global concessional financing facility

GDP: gross domestic product

GHG: greenhouse gas

GPP: green public procurement

GFI: the Good Food Institute

GW: gigawatt

IB: impact bond

ICMA: International Capital Market Association

IFL: interest-free loan

IIA: Israel Innovation Authority

IPO: initial public offering

IRA: Inflation Reduction Act (US)

IRR: internal rate of return

JV: joint venture

LBO: leveraged buy-out

LOI: letter of intent

LPO: Loan Programs Office (US)

MDB: multilateral development bank

MENA: Middle East and North Africa

MOU: memorandum of understanding

MW: megawatt

NOAK: nth of a kind (as opposed to FOAK – first of a kind)

ODA: official development assistance

OECD: Organisation for Economic Co-operation and Development

OPEX: operational expenditure

PE: private equity

PIPE: private investment in public equity

PPA: power purchase agreement

PPP: public-private partnership

PV: photovoltaic

QRTC: qualified refundable tax credits

R&D: research and development

R&I: research and innovation

RD&D: research, development and demonstration

RE: renewable energy

REIT: Real Estate Investment Trusts

RFSZ: regulation-free special zones

ROI: return on investment

SME: small- and medium-sized enterprises

SPAC: special purpose acquisition company

SPV: special purpose vehicle

SSB: sugar-sweetened beverages

TRL: technology readiness level

TTC: transferrable tax credits

UN: United Nations

VAT: value added tax

VC: venture capital

VD: venture debt

WACC: weighted average cost of capital

WC: working capital

WCR: working capital requirements