



# Alternative Proteins: The Opportunity and Benefits for the UK Economy

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# 01 APA President's Foreword

At a time when political consensus seems increasingly rare, one topic on which even the staunchest rivals seldom disagree is the need for the UK to play a leading role in the industries of the future.

Get it right and you unlock the kind of long-term, sustainable economic growth that benefits the whole country: more investment, new jobs, higher wages. And all that and more is within our reach if the UK gets serious about alternative proteins.

As this report shows, alternative proteins have already carved out a lucrative niche both here at home and on the world stage, and it's one that's only going to get bigger.

After all, as scale increases and production costs fall, prices for consumers will come down too. The first-ever cultivated burger cost \$250,000 to produce; 10 years on you can try such products for not much more than the cost of high-end meat, and the price is continuing to fall towards parity as technology evolves.

It's the way forward for increased food security, a lower-emission supply chain, and a healthier population, which is why even the most pessimistic predictions say the global industry will be worth more than a quarter of a trillion dollars by the middle of the next decade.

The UK could find itself with a substantial slice of that pie. From veggie burgers to oat milk, British shoppers are already buying more alternative protein products than most of their European counterparts. They're set to buy even more in the years ahead. But if the government doesn't get behind our home-grown alternative protein industry, it will be products made by foreign companies that fill our supermarket shelves.

Because other countries are already blazing a trail. Just look at cultivated meat – real, biologically identical meat grown by multiplying a handful of cells rather than by rearing and slaughtering an animal. The US, Singapore and Israel have long been leading the way in both R&D and regulation.

When US regulators gave cultivated meat the green light it led to Upside starting work on a \$140 million mass-production plant the size of three football pitches. The world's largest meat company, JBS, recently broke ground on a \$62 million cultivated meat R&D facility in Brazil.

Momentum is building, the future is coming and if we want to see alternative protein products labelled with "MADE IN UK" we need to move now. We have all the ingredients – consumers who want more sustainable food choices, an entrepreneurial culture, cutting-edge startups and world-leading scientists.

We don't need another lesson in the danger of sitting too long on the sidelines. The UK missed the boat on developing battery technology and mass-market semiconductors. We make great use of our boundless supply of wind energy, but most of our turbines and other technology are imported from overseas or manufactured by foreign-owned companies.

But for a small island we're capable of great things: for many years we have punched well above our weight in sectors as diverse as medical research and financial services, and we can do the same with alternative proteins.

It's a future industry that no one nation yet has a lock on, but the longer we dither and delay the greater the odds of us becoming a food taker rather than a food maker – with British farmers and manufacturers forced to look on as private investment and consumer spending goes overseas.

This report shows the incredible potential that alternative proteins have to grow our economy and protect jobs and investment for many years to come. The future is in our hands and the time to embrace it is now –that's something we can all agree on.



Jeremy Coller  
President  
Alternative Proteins Association

## 02 Background

The alternative protein industry represents a significant economic opportunity for the UK. Beyond the well-documented environmental and public health cases for adopting more alternative proteins<sup>1</sup> (those produced from plants, fermentation or through cultivated animal cells), there is a strong economic case for the UK to position itself as a world leader in alternative proteins.

Alternative protein adoption is in line with several key UK government goals, including reaching net zero and ensuring food security. In this report, we highlight how these products have the potential to grow the UK economy, create new jobs, level up key regions of the UK, increase consumer purchasing power, attract foreign investment in UK businesses, and save public money on the NHS and climate change mitigation while providing new opportunities for British farmers.



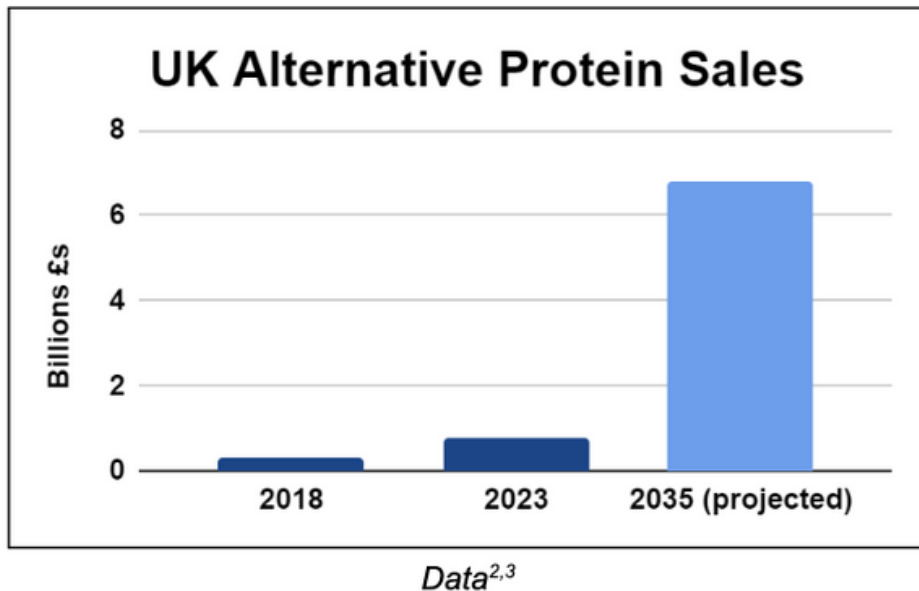
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<sup>1</sup> <https://www.sciencedirect.com/science/article/pii/S2666833522000612>

# 03 Helping Businesses and Attracting Investment

## 3A. Market growth

The UK is already a world leader in alternative proteins, and the sector is experiencing significant ongoing growth. With globally recognised brands such as Quorn, Linda McCartney, and THIS, the UK is widely regarded as a leading innovator in meat and dairy alternatives.



The UK has one of the largest markets for alternative proteins in Europe, second only to Germany. UK retail sales of plant-based foods reached £963.8 million in 2022, an increase of 9% compared to 2020<sup>4</sup>. Meanwhile, the UK cultivated meat market is expected to be worth £850 million – £1.7 billion by 2030. With innovation and the right support from government, the UK alternative proteins market is projected to grow over 700% to £6.8 billion by 2035<sup>5</sup>.

<sup>2</sup> <https://www.statista.com/forecasts/1276637/united-kingdom-meat-substitute-market-revenue>

<sup>3</sup> <https://green-alliance.org.uk/publication/appetite-for-change-why-the-uk-should-lead-the-emerging-alternative-proteins-market/>

<sup>4</sup> <https://gfieurope.org/market-insights-on-european-plant-based-sales-2020-2022/>

<sup>5</sup> [https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite\\_for\\_change.pdf](https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite_for_change.pdf)



Globally, the alternative protein market is forecast to grow significantly. Even under the least optimistic scenario, the global alternative proteins market is expected to be worth £226 billion by 2035 – twice the value of the UK construction sector<sup>6</sup>. Even the most conservative projections for the cultivated meat market projects sales to exceed \$100bn by 2040<sup>7</sup>.

Governments around the world are mobilising to ensure that they benefit from this growth, and the UK must follow suit. Denmark has made \$195 million available in grants to plant-based innovators<sup>8</sup>, and the Canadian government has invested \$173 million CAD into its Protein Industries Canada (PIC) Innovation Supercluster<sup>9 10</sup>, an opportunity which the UK has done well to proactively engage with through UK–Canada collaborations<sup>11</sup>. Meanwhile, following Singapore’s approval in 2020, the US became the second country to approve the sale of cultivated meat in 2023<sup>12</sup>.

### 3B. Attracting investment

The UK has several comparative advantages, including world-leading food quality and safety standards and a strong science base, that would allow products developed in the UK to be readily saleable on the global market<sup>13</sup>. The UK, if it capitalises on its ability to foster a strong domestic alternative proteins ecosystem, has the potential to attract foreign investment in British business.

Moreover, there is strong and growing investment in alternative proteins. In 2022, investments in alternative proteins in European companies increased 24% despite a decline in global investment activity<sup>14</sup>.



<sup>6</sup> [https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite\\_for\\_change.pdf](https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite_for_change.pdf)

<sup>7</sup> <https://www.oxfordeconomics.com/resource/the-socio-economic-impact-of-cultivated-meat-in-the-uk/>

<sup>8</sup> <https://www.forbes.com/sites/danieladelorenzo/2023/09/10/denmarks-195-millions-plant-based-fund-receives-overwhelming-number-of-applicants/>

<sup>9</sup> [https://gfi.org/wp-content/uploads/2023/01/State-of-Global-Policy-Report\\_2022.pdf](https://gfi.org/wp-content/uploads/2023/01/State-of-Global-Policy-Report_2022.pdf)

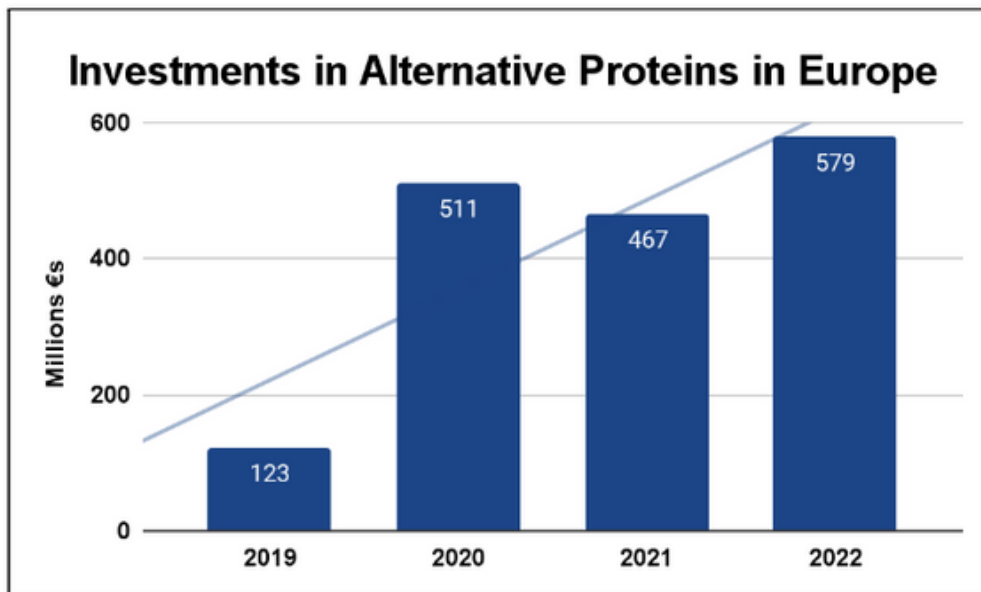
<sup>10</sup> <https://www.realagriculture.com/2018/11/feds-announce-over-150-million-for-protein-industries-canada-supercluster/>

<sup>11</sup> <https://www.ukri.org/opportunity/canada-uk-plant-based-protein-innovation/>

<sup>12</sup> <https://apnews.com/article/cultivated-meat-lab-grown-cell-based-a88ab8e0241712b501aa191cdbf6b39a>

<sup>13</sup> [https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite\\_for\\_change.pdf](https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite_for_change.pdf)

<sup>14</sup> <https://gfieurope.org/blog/2022-sustainable-protein-investment/>



Compared to other leading countries, the UK could be losing out on significant funding opportunities. For precision fermentation and cultivated meat companies in particular, the UK is rarely considered a priority market for seeking product authorisation, with Singapore and the United States (both countries have now approved the sale of cultivated meat for consumers) often seen as more positive options.

Indeed, the mycoprotein company ENOUGH, in part due to EU funding, will produce at a commercial-scale facility in The Netherlands rather than the UK, despite developing their technology at the University of Strathclyde and with support from the Industrial Biotechnology Innovation Centre in Glasgow<sup>15</sup>. Similarly, Ivy Farms, a UK cultivated meat company, are hesitant to seek selling their products domestically in the near future, due to the UK's regulatory process for approving novel foods<sup>16</sup>.

The UK must take action to create a favourable domestic and foreign environment for investors. Failure to do so risks ceding the UK's comparative advantages, and much of the economic potential of this growing industry.

<sup>15</sup> [https://gfieurope.org/wp-content/uploads/2023/08/UK-ecosystem-report\\_Full\\_25aug23\\_final.pdf](https://gfieurope.org/wp-content/uploads/2023/08/UK-ecosystem-report_Full_25aug23_final.pdf)

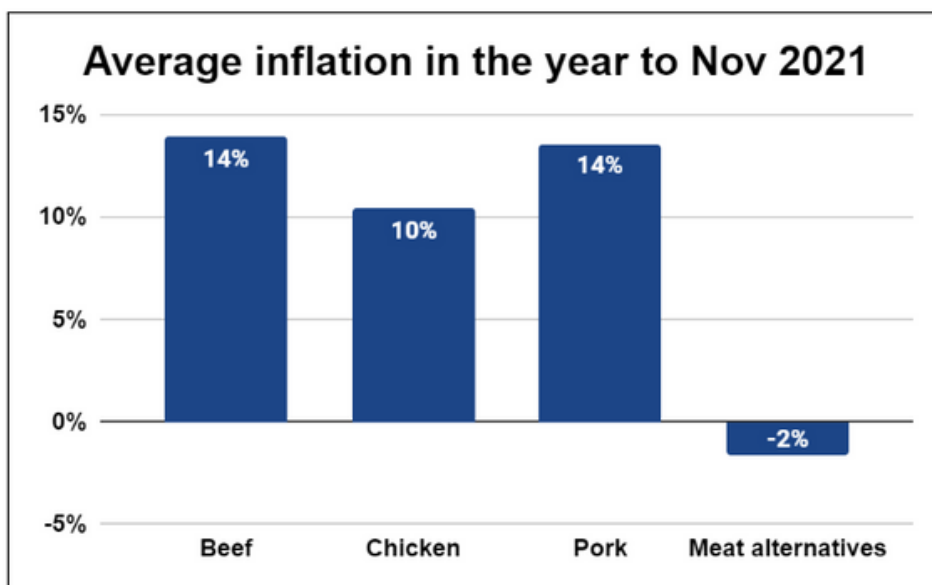
<sup>16</sup> <https://www.foodnavigator.com/Article/2023/09/22/Ivy-Farm-urges-urgent-approvals-overhaul-to-allow-industry-to-flourish>



# 04 Creating Jobs and Levelling Up

## 4A. Cutting the cost of living

In the past year, inflation and the increased cost of living appears to have had a negative impact on UK sales of plant-based products, which are typically still more expensive than their animal-derived counterparts. However, a closer look reveals that relatively high inflation on animal products and relatively low inflation on alternative proteins means that the price gap is closing. In the year to November 2021, the price of beef and pork was +14%, and the price of chicken was +10%; meanwhile, the price of meat alternatives was -2%<sup>17</sup>.



It is expected that plant-based and fermented alternative protein products will reach price parity with animal-based products by the mid-2020s<sup>18</sup>. In some cases, alternative proteins have already undercut conventional meat prices: in July 2022, plant-based burgers in The Netherlands were 78 cents cheaper per kg than animal meat burgers<sup>19</sup>. Government interventions such as increased alternative proteins funding could accelerate price parity significantly.

<sup>17</sup>[https://gfi.org/wp-content/uploads/2021/12/Reducing-the-price-of-alternative-proteins\\_GFI\\_2022.pdf](https://gfi.org/wp-content/uploads/2021/12/Reducing-the-price-of-alternative-proteins_GFI_2022.pdf)

<sup>18</sup> [https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite\\_for\\_change.pdf](https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite_for_change.pdf)

<sup>19</sup> <https://www.foodnavigator.com/Article/2022/07/26/plant-based-now-cheaper-than-meat-in-the-netherlands-vegan-burgers-are-on-average-78-cents-cheaper-per-kg>

Moreover, the cost of all staple foods can be reduced if we reduce the proportion of our grain fed to animals. We currently use 59% of global corn and 70% of global soybean production as animal feed. Even a modest adoption of alternative proteins, enough to displace 4% of animal meat production, would result in crop price declines of 13%–23%. Higher animal meat displacement could decrease the price of corn and soybeans by as much as 23% and 35% respectively<sup>20</sup>.

## 4B. Creating new jobs

Alternative proteins also represent a significant opportunity for the UK jobs market. The National Food Strategy estimated that developing and manufacturing alternative proteins in the UK, rather than importing them, would create 10,000 new factory jobs and secure 6,500 jobs in farming (to produce inputs for manufacturing processes)<sup>21</sup>. A report by Oxford Economics predicts that the cultivated meat industry alone will support 9,200–16,500 jobs across the UK in 2030.

Whilst these figures do not account for potential displacement effects, the fact that the UK is currently heavily reliant on imports (60% of pork and 35% of beef consumed in the UK is produced overseas) implies that cultivated meat production could complement UK domestic food production, reducing our need for imports rather than displacing domestic animal protein production<sup>22</sup>. This implies that a protein transition that maintains farmers' job security and bolsters domestic production is achievable.

## 4C. Levelling up

Importantly, due to the regional diversity of the UK's alternative protein industry, new jobs would be distributed around the country, and often concentrated in rural regions, with the value added accruing locally<sup>23</sup>. Lincolnshire is the site of Europe's largest plant-based meat factory, Plant & Bean, which supports around 500 factory jobs<sup>24</sup>, while Yorkshire is home to Quorn, which employs over 900 people in the UK<sup>25</sup>.

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<sup>20</sup> [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3940081](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3940081)

<sup>21</sup> <https://www.nationalfoodstrategy.org/the-report/>

<sup>22</sup> <https://www.oxfordeconomics.com/resource/the-socio-economic-impact-of-cultivated-meat-in-the-uk/>

<sup>23</sup> [https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite\\_for\\_change.pdf](https://green-alliance.org.uk/wp-content/uploads/2023/08/Appetite_for_change.pdf)

<sup>24</sup> <https://www.bbc.co.uk/news/uk-england-lincolnshire-55263924>

<sup>25</sup> <https://www.thenorthernecho.co.uk/news/18975281.quorn-gears-biggest-veganyear-yet-north-east-north-yorkshire-factories/>

The Department for International Trade has acknowledged that 'companies in the North East will be in a prime position to take advantage of the growing demand for plant-based and alternative protein products' as a result of their world-class universities, abundance of land, and manufacturing cluster<sup>26</sup>.



The UK's thriving alternative protein industries also provide opportunities for British farmers. British farmers will find growing markets for protein crops used for plant-based products (peas, wheat, oat, and soy) as well as a range of crops required for cultivated meat inputs.

<sup>26</sup> <https://plantbasednews.org/opinion/alternative-protein-food-insecurity-britain/>



# 05 Saving Public Money

## 5A. Climate change mitigation

Investing in alternative proteins represents extremely good value in terms of climate change mitigation. According to a report by Boston Consulting Group, investments in alternative proteins offer the highest CO<sub>2</sub>e savings per dollar invested of any industry – three times higher than the comparable return in the cement, transport, or aviation industries<sup>27</sup>. The report highlights that increasing the global market share of alternative proteins from today's 2% to 8% by 2030 could yield an emissions reduction equivalent to the almost total decarbonisation of the aviation industry. Therefore, investment in alternative proteins represents a cost-effective opportunity to catalyse progress towards net zero emissions without the need for increased environmental taxes.

## 5B. NHS savings

Reducing our consumption of meat and dairy would reduce the incidence of the most significant health problems in our society, including heart disease, cancer and obesity<sup>28 29 30 31</sup>. Researchers at the University of Oxford found that shifting to a healthier flexitarian diet in line with recommendations from the EAT-Lancet Commission could reduce UK healthcare costs by £12 billion per year by reducing the burden of diet-related diseases<sup>32</sup>. As well as saving money for the NHS, a lower disease burden is associated with other economic benefits, such as less lost productivity through sick leave<sup>33 34</sup>.

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<sup>27</sup> <https://web-assets.bcg.com/4b/00/756db9ea46ffb75cdb842b416604/bcg-taking-alternative-proteins-mainstream-feb-2023.pdf>

<sup>28</sup> <https://www.sciencedirect.com/science/article/pii/S1877782118301310>

<sup>29</sup> <https://pubmed.ncbi.nlm.nih.gov/21139125/>

<sup>30</sup> <https://www.tandfonline.com/doi/full/10.1080/10408398.2021.1949575>

<sup>31</sup> <https://www.sciencedirect.com/science/article/pii/S0033062018300872>

<sup>32</sup> <https://goodfood.finance/2023/02/15/good-food-system-transition-repurposing-agricultural-support-to-promote-fiscal-resilience-human-and-planetary-health/>

<sup>33</sup> The estimated cost of cardiovascular disease to UK economy in 2004 was £30 billion – see <https://heart.bmj.com/content/92/10/1384>

<sup>34</sup> In Taiwan, the estimated healthcare costs of Buddhist vegetarians are lower than omnivorous Buddhists and 15% lower than the general population – see <https://www.mdpi.com/2072-6643/11/11/2688>

# 06 Summary & Recommendations

The UK is one of the largest markets for alternative proteins in Europe, and is forecast to continue its impressive growth. As the industry grows, it will create tens of thousands of new jobs across key regions of the country. As the price of alternative proteins continues to fall relative to animal products, these products will offer consumers the chance to save money on their groceries. As well as this, the environmental and public health benefits of meat reduction will save billions in spending on climate change mitigation and the NHS.

In order to realise the economic benefits on offer from alternative proteins, the UK government should:

## 1. Modernise novel food regulations

- Establish a formal process for pre-application consultations to increase information and reduce risk for companies.
- Provide an expedited approval process for products which are already approved overseas.

## 2. Ensure common-sense and informative labelling

- Permit the use of common-sense labels like 'oat milk' and 'plant-based sausages' for alternative proteins.

## 3. Make alternative proteins work for British farmers

- Support upskilling for British farmers through new rural skills programmes in alternative proteins and nature restoration.
- Incentivise alternative protein companies to use British-grown crops through conditional investments.

## 4. Support innovation and growth in the UK

- Prioritise alternative protein innovation in UKRI funding, ring-fencing funds for the sector.
- Create a worldwide product development hub by investing in a regulatory sandbox.

# Thank you

**Alternative Proteins Association**

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