



Innovate
UK

Driving Innovation in UK Agriculture: Precision Breeding, Pest Management and Resilient Cropping Systems

**BCPC Diseases Expert Group industry
update meeting**

Pedro Carvalho, Innovate UK Business Connect
8th October 2026

**We are part of UKRI,
working to advance
knowledge, improve lives,
and create growth**

**We are a strategic delivery
partner to Innovate UK,
working to accelerate
innovation**

**We build the trusted
connections,
collaborations and
intelligence that accelerate
business innovation for
the nation**

How we help innovators



**Make powerful
connections**



Secure funding



**Get expert
insight**



Keep up to date

The Challenge: Crop Diseases in the UK

Disease pressure threatens yield, margins and environmental performance.



Diseases cause significant yield losses and quality downgrades across UK crops



Climate change is increasing disease pressures and variability



Resistance, reliance on limited toolbox and tighter chemical options raise management risks



Threats to food security, farm profitability and environmental health

Wheat

Major Diseases:

Septoria tritici, Yellow Rust, Brown Rust

Disease Impact:

15% to 25% potential yield loss if left untreated



Oilseed Rape

Major Diseases:

Phoma Stem Canker, Light Leaf Spot

Disease Impact:

15% to 20% average yield loss potential



Barley

Major Diseases:

Scald, Net Blotch, Powdery Mildew

Disease Impact:

10% to 20% potential yield loss, dependent on moisture humidity



Potato

Major Diseases:

Potato Late Blight, Blackleg, Common Scab

Disease Impact:

15% to 30% production loss capability



Total income and revenue losses for staple UK arable crops (wheat, barley, oats, and oilseed rape) swing dramatically by over **£1 billion per single bad year**.

Why resilience matters

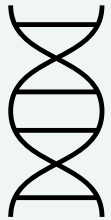
- Stable yields and farmer incomes
- Reduced reliance on imports
- Lower carbon and environmental footprint
- Biodiversity and soil health protection
- Meeting sustainability goals



The novel technology toolbox

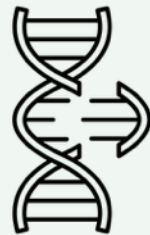
The strongest outcomes come from convergence: genetics, phenotyping, data and surveillance.

Genomics & bioinformatics



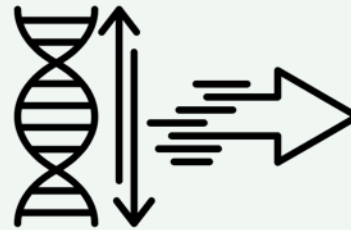
Find resistance genes and predict performance.

Gene editing



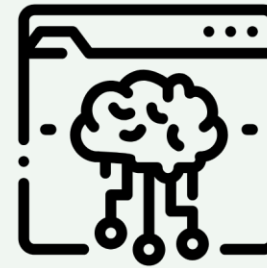
Make precise genome changes without adding foreign DNA.

High-throughput phenotyping



Measure field responses rapidly and accurately.

AI & machine learning



Link complex disease, weather and breeding data.

Diagnostics & surveillance



Detect pathogens early and track resistance.

Farming Innovation Programme

Flagship Defra scheme research and innovation in farming since 2021.
Commitment to invest at least £200 million in agricultural innovation by 2030.

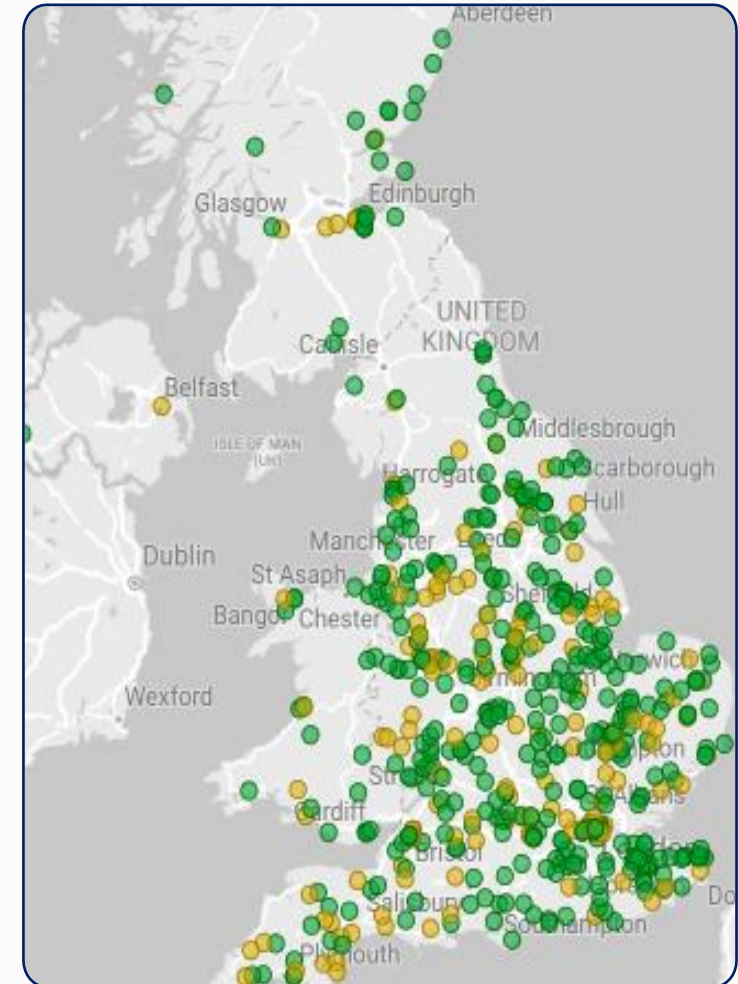
Aims to make farming sectors more profitable, productive, sustainable and resilient.

Funding is competitive, for high quality, innovative projects.

To date it has supported over 300 projects involving more than 600 organisations, enabling nascent technology development and creating a long-term pipeline of future businesses.

FIP has committed over £188m of Defra funding and attracted over £65m of private investment to date.

Interim delivery evaluation published in 2025 shows that the programme is on the right track to deliver long term improvements to productivity and the environment.



Farming Innovation Programme grant funding locations.

Farming Innovation Programme till date

October 2021

£1m - Research Starter Projects (round 1)
£8m - Feasibility Projects (round 1)
£11m - Small Partnership Projects (round 1)

March 2022

£8m - Large Partnership Projects (round 1)
£12.5m - Climate-smart farming

May 2022

£1m - Research Starter Projects (round 2)

July 2022

£12.5m - Sustainable farm-based Proteins

Autumn 2022

£5.5m Feasibility Projects (round 2)
£11m Small Partnership Projects (round 2)

January 2023

£12.5m - Automation and Robotics
£1m Research Starter Projects (round 3)

February 2023

£8m - Large Partnerships Projects (round 2)

May 2023

£12.5m On Farm Environmental Resilience

July 2023

£5m Investor Partnerships Projects

August 2023

£9.8m - Small R&D Partnership Projects (round 3)

September 2023

£4.5m - Feasibility Studies (round 3)

December 2023

£850k – Research Starter (round 4)

January 2024

£7.8m – Large Partnership Projects (round 3)

May 2024

£15m – Nutrient Management

April 2025

£20.6m – ADOPT (round 1)

May 2025

£12.5m – Precision Breeding

£12.5m – Low Emissions farming

June 2025

£5m Investor Partnerships Projects ADOPT (round 2)

August 2025

ADOPT (round 3)

September 2025

£7.8m Small R&D Partnerships (round 4)

October 2025

£4.8m Feasibility Studies (round 4) ADOPT (round 4)

December 2025 to July 2026

ADOPT (rounds 5 to 8)

Over 300 projects to date in Funds 1 & 2, over 250 in ADOPT

Over £188m in grants awarded

Over £61m in leveraged private investment

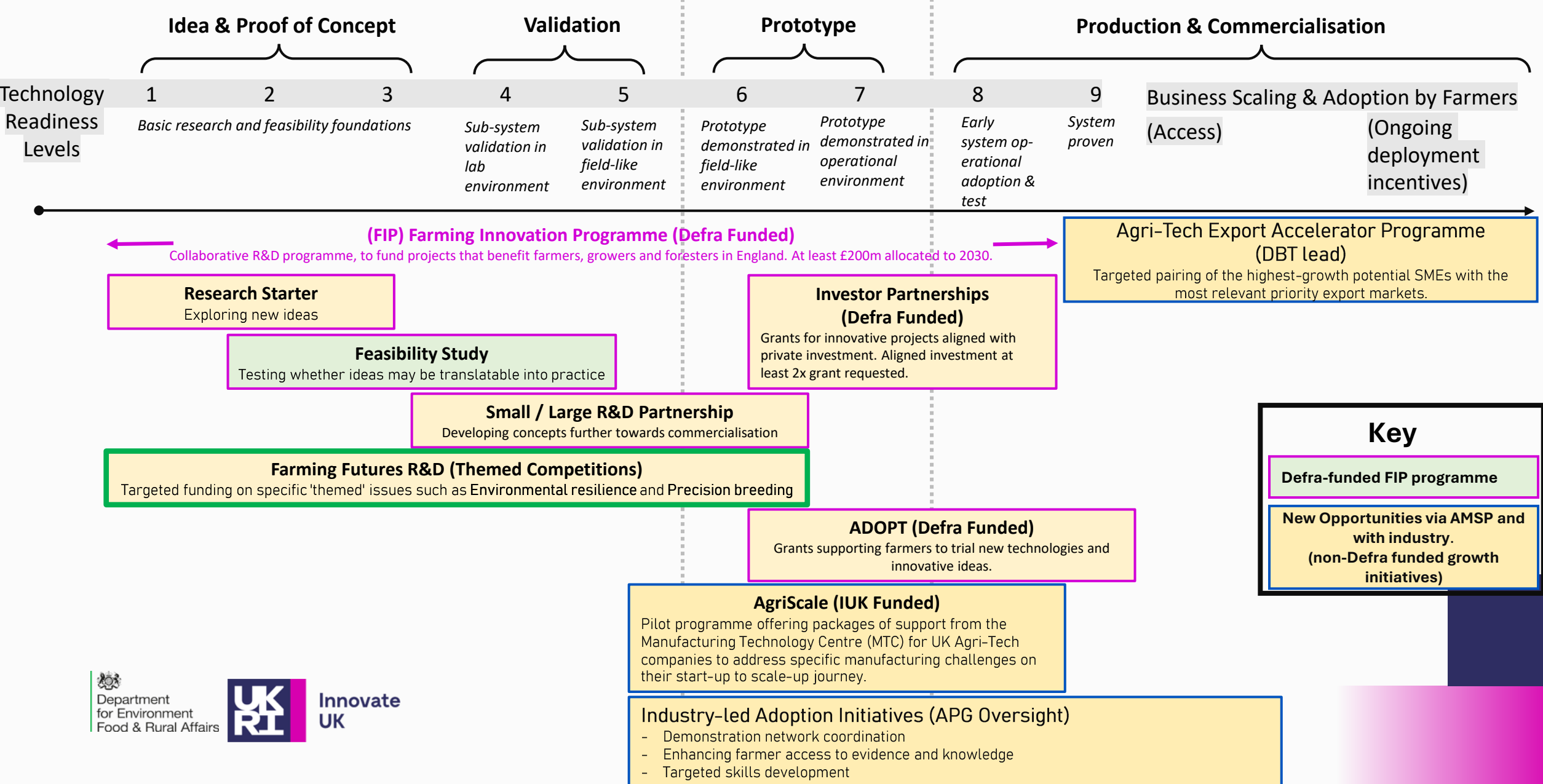
Interim delivery evaluation published in 2025 shows that the programme is on the right track to deliver long term improvements to productivity and the environment.

*Programme 'additions'

£6.3m assigned to follow on funding (invite only)

£2m assigned to funding 7 additional projects from previous Feasibility round (invite only)

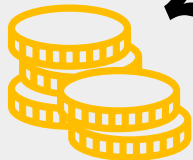
Where Precision Breeding sits across Farming Innovation Programme TRLs



Environmental resilience competition (closed 20 July 2023)

Competition Summary

Total budget

 **£12.5**
Million

Total project costs

£200k to
£500k

Duration

12 to 24 months

1 Jan 2024
31 Dec 2025



have a **minimum of 50% of any grant requested** by farmers, growers or foresters, **allocated to farmers, growers or foresters based in England**

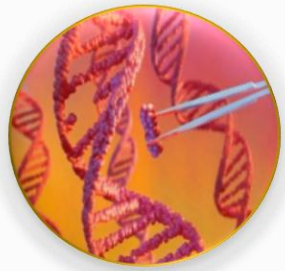


 For **UK registered businesses** wishing to **collaborate** with other UK organisations

Biotic and Abiotic Challenges:

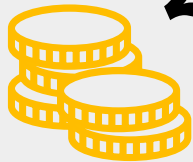
- integrated pest management
- detection, prevention and management of diseases
- agro-ecology
- gene editing and breeding
- regenerative cropping, livestock and mixed systems-livestock housing, nutrition, health and management
- innovative fertiliser practices
- soil resilience
- water management and innovation

Precision Breeding competition (closed 25 June 2025)



Competition Summary

Total budget

 **£12.5**
Million

Total project costs

£1–2.5
Million

Duration

Up to 36 months

1 Jan 2026
31 Dec 2028



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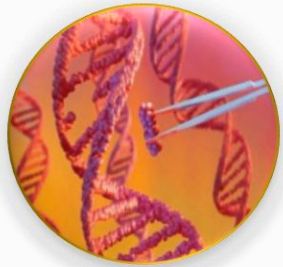


 For **UK registered businesses** wishing to **collaborate** with other UK organisations

- increased crop yield: quality and quantity
- **increased plant resilience to pests, diseases and pathogens**
- increased plant resilience to climate change, resistance to abiotic stresses
- enhanced photosynthesis or reduced crop growth cycles
- improved crop harvesting and storage characteristics
- improved nutritional value of crops, for example, biofortification
- reduced allergens and toxins in crops
- improved palatability and visual appeal of crops
- increased shelf life of crops

Competition application analysis

→ Precision Breeding competition



Number of applications received

Number of applications submitted:	21
Number of applications assessed:	20
Total project costs:	£35m
Total grant requested:	£27m
No of businesses involved:	50
No of universities involved:	22

Number of applications invited to interview

Number of applications:	16
Total project costs:	£27m
Total grant requested:	£21m
No of businesses involved:	39
No of universities involved:	20

Number of fundable applications

Number of applications:	8
Total project costs:	£14m
Total grant requested:	£11m
No of businesses involved:	23
No of universities involved:	9

Number of funded applications

Number of applications	8
Total project costs:	£14m
Total grant requested:	£11m
No of businesses involved:	23
No of universities involved:	9

21 applications were received; 1 application was ineligible.
20 applications were sent for assessment, and 8 applications were funded

FIP Overview of Biologicals and Crop Protection

Biologicals grant by main theme

Category	Projects	Grant Value (£)
Biopesticides & biocontrol	24	£11,313,171
Biostimulants	10	£5,968,799
Biofertilisers & nutrient-efficiency microbes	11	£5,693,922
RNAi & gene silencing	3	£1,612,879
Enabling / adjacent biologicals	9	£3,209,963

Biologicals grant by FIP Comp mechanism

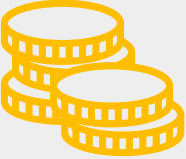
Category	Projects	Grant Value (£)
FIP R&D	6	£1,951,195
Farming Futures: Low-emissions R&D	1	£966,228
Farming Futures: Precision Breeding R&D	1	£1,159,352
Feasibility study	19	£5,318,065
Follow-on funding	3	£569,877
Industrial research (CR&D)	13	£7,826,545
Investor Partnership	3	£2,090,251
Large R&D partnership (CR&D)	1	£2,390,995
Research Starter	6	£270,232
Small R&D partnership (CR&D)	4	£5,255,994

FIP: Funding Opportunities

Full ADOPT Grant: Round 9

<https://apply-for-innovation-funding.service.gov.uk/competition/2544/overview/fe16ecd4-5413-4fa5-8ccc-4bfdcb390944>

Opened: 14 Aug and Closed: 7 Oct 2026 at 11:00am

Total budget	Total project costs	Duration
 £5 Million	£50k to 200k	6 to 24 months 1 Feb 2027 31 Mar 2030 

Lead: English farming, growing or forestry business **Collaborate:** with at least one UK farming, growing or forestry business.



Can collaborate with other UK registered organisations.

On-farm trial and demonstration projects, to improve adoption of new ideas or solutions in the agricultural sector.

Round 10 opens:

- 8 Oct 2026

- Closes 2 Dec 2026

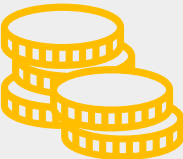
FIP: Funding Opportunities

Small R&D Partnership Projects Rd 5

<https://apply-for-innovation-funding.service.gov.uk/competition/2568/overview/b30aae16-96ab-45c1-9e27-11ebf9d41969>

Closes: 14 Oct 2026 at 11:00am

Total budget



£13
Million

Total project costs

£1–3
Million

Duration

Up to 30 months

1 Apr 2026
31 Mar 2030



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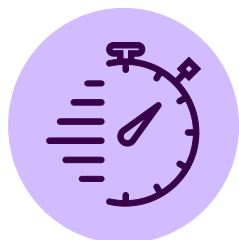
For **UK registered businesses** wishing to **collaborate** with other UK organisations

Farming Futures

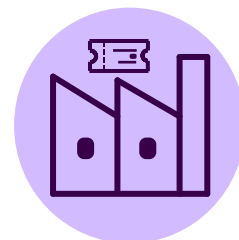
Healthy Soils and Water for a Sustainable Environment

Opens: TBC

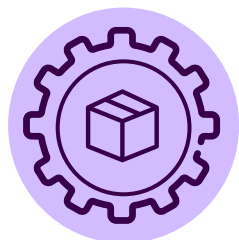
Engineering Biology Programme Innovation Funding



Accelerator to support to entrepreneurs/ founders to develop initial USPs and test concepts.



Support to access Infrastructure for scale up and validation of solutions through a **pilot access scheme**



Feasibility projects to continue building the pipeline of innovations through which new high growth potential companies emerge.



Addressing priority challenges set by government and public bodies as the end users through **Contracts for Innovation**



Helping high-growth potential SMEs build partnerships, address problem statements, supply chain gaps & challenges to scale market opportunities through **collaborative R&D**



Investor Partnerships to target the first significant raise from private investors

Engineering Biology Programme Innovation Funding



Focus areas



Agriculture and food

Contributing to food security and minimising greenhouse gas emissions.



Materials and chemicals

Reducing reliance on petrochemicals in manufacturing and addressing challenges associated with end-of-life.



Energy and low carbon fuels

Creating a sustainable and green transport and energy sector.



Waste recycling

Contributing to the circular economy by transforming waste into valuable products.



Health

Enabling the development of precision medicine, cell therapies and innovative solutions to fight diseases.

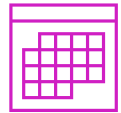


Tools

Developing synthetic biology tools and methodologies that support application of engineering biology.

Engineering Biology Access to Infrastructure Pilot

UK registered businesses can apply for a share of up to £5 million for Engineering Biology pilot scale and validation projects.



Competition opened:

7 Sep 2026



Competition closes

21 Oct 2026

Projects start by:

1 Feb 2027



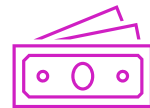
Projects end by:

31 Jan 2029



Length:

Up to 24 months



Project size:

£200k to £750k

Total funding:

£5m



<https://apply-for-innovation-funding.service.gov.uk/competition/2546/overview/d8b3252c-a147-4088-89ab-7991141da64a>



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Engineering Biology Collaborative R&D: Round 3

UK registered businesses can apply for a share of up to £8.5 million to develop and scale Engineering Biology platforms, products and services. This funding is part of UKRI's Engineering Biology Programme.



<https://apply-for-innovation-funding.service.gov.uk/competition/2542/overview/b687b240-4dff-4149-889b-308e61447460>

Engineering Biology Investor Partnerships Round 1

UK registered SMEs can apply for a share of up to £8 million to develop engineering biology products and services with selected investor partners.

<https://apply-for-innovation-funding.service.gov.uk/competition/2580/overview/8881af18-31f4-4db3-9483-cbb047163164>



Thank you

Farming Innovation Programme

<https://www.farminginnovation.ukri.org>

Signup to the AgriFood mailing list:

<https://r1.dotdigital-pages.com/p/2VFU-7B5/agrifood-mailing-list>

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Visit the website for more information

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