



# OVERVIEW: A Net Zero Transition Plan for the UK Food System

*November 2024*

## Scope of the report

### Project origination

In mid-2024, EY, IGD and WRAP agreed to collaborate on a UK Food System Transition Plan report. The aim was to create a robust evidence base to show what it would take for the sector to reach net zero, facilitating a system-wide focus on key actions and highlighting gaps and dependencies that need to be collectively addressed.

By incorporating many of the requirements of the Transition Plan Taskforce for companies to disclose their detailed decarbonisation plans, it is hoped this report will also function as a useful reference and framework for sector and individual company planning.

This report is a basis from which to stimulate collaboration, focus and acceleration towards net zero, leveraging the deep expertise and capability across the system to build upon and enrich this initial thinking and move opportunities into scale implementation together.

### What this report does aim to do

- ✓ Set out a high-level pathway for the UK food system to reduce Greenhouse Gas emissions in line with a 1.5-degree SBTi outcome and to meet the UK's legally binding national decarbonisation goal.
- ✓ Provide an independent, rigorous evidence base for which types of actions at what scale are likely to be required for sector decarbonisation. Individual companies should be able to compare their own transition plans to this model to ensure they will meet or exceed all relevant levers.
- ✓ Focus on actions which are assessed to be technically feasible and economically viable, based on current technologies and those where innovation is likely to offer further opportunities.
- ✓ Indicate overall system costs potentially associated with the transition and point towards sources of funding.
- ✓ Indicate important dependencies, in particular assessing technology readiness and the sufficiency of the policy environment to incentivise key actions.
- ✓ Indicate areas where pursuing net zero may imply trade-offs or impacts on other dimensions such as nature, nutrition and land use.

### What this report has not tried to do

- ✗ Incorporate abatement options which are not yet scientifically proven. As science evolves (e.g., relating to soil carbon), it may be that there are further opportunities for improved supply-side outcomes, which can be incorporated in updated plans.
- ✗ Incorporate abatement from carbon removals related to land-use change, as rules regarding their inclusion in company inventories are to be finalised next year, following which their implications should be reviewed.
- ✗ Present a picture of the best imaginable case wherein every company moves as fast on every dimension as the best in class. It is recognised that many individual companies are more ambitious on some dimensions than the pathway set out here.
- ✗ Offer a complete analysis of dependencies and impacts of decarbonisation actions on related dimensions such as nature, nutrition and land use; further work is proposed here.
- ✗ Offer a complete analysis of the financial implications for separate parts of the supply chain over time, for example where significant upfront capital may be required to unlock cost efficiencies over a number of years. For any individual company, the cost outlook may be very different to the macro aggregate presented here.
- ✗ Propose a target or roadmap for delivering the emissions reduction potential of consumers shifting towards lower-GHG dietary choices.

## Foreword from Sarah Bradbury, Chief Executive, IGD

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### This is the start of a journey, together.

In recent years we have seen first-hand the vulnerabilities in the food system and the increasing risks to its resilience, as here in the UK we have seen temperatures reach record highs of 40°C and some of the wettest months on record last year and this year.

It highlights that climate adaptation planning will need to be central to ensuring food security in the future.

Food production is responsible for around a third of global GHG emissions, so we must play our part in the transition to net zero, the targets we have committed to for 2030 and 2050 are stretching so collective action is what's needed. Decarbonisation is a challenge for any sector and this is compounded for the food system by its enormous complexity and the competitive nature of the industry

Commitments to WRAP's 2030 Courtauld Agreement have helped deliver a significant reduction in food retailers' scope 1 and 2 emissions. The development of a measure by WWF brought together leading food retailers with a commitment to halving the environmental impact of the shopping basket by 2030. Recognising that achieving net zero can't happen in isolation – there is also a nature emergency, so we must prevent further biodiversity loss

This plan shows the challenge that several 2030 targets are at risk of not being met, but that doesn't mean without co-ordination we can't still achieve net zero by 2050. We need a different approach, one that involves the whole end-to-end supply chain, a more aligned dialogue across Industry and with government. A more widely shared view of where we are now, how extensively we can reduce emissions and what will be needed in terms of capabilities, financing and policy support to do this.

That is why we commissioned this Food System Net Zero Transition Plan as an independent, evidence-based review built from the broadest, most robust and proven data available, to align the conversations and progress. The analysis has been conducted by an expert consultancy team at EY with the support of specialists at the Scottish Rural Agricultural College and the support of our partner, global environmental NGO, WRAP.

Our thanks to those who have been involved in delivery of this report and for the engagement we have had through its development – from industry stakeholders including trade associations, from farming sector bodies, and from officials in central government and the devolved administrations.

The report sets out what it will take from now to achieve net zero, facilitating a system-wide focus on the levers and actions, highlighting gaps and dependencies. It makes clear that we need to go further, faster, together. It also makes clear that investing in abatement opportunities now is more affordable than paying for offsetting costs later.

It is important to recognise some of the limitations of this work. By virtue of it taking a whole system approach it does not take into account the diversity of progress across subsectors. Nor does it reflect that some businesses are moving faster by investing sooner or with the benefit of shorter, simpler supply chains. We know that the conclusions drawn from this work will not be universally agreed upon. Indeed, reaching consensus on every element is not practical or realistic.

Our aim is for it to be the basis for collaboration and accelerated progress, providing an aligned framework and measurement, with the same methodology as used by government and the Climate Change Committee to develop carbon budgets. From this we can use our collective expertise and capabilities to align around opportunities to implement solutions at scale.

My ask of you reading this is to ensure we don't use all our energy debating the elements on which we might disagree.

I invite you to join us, to enrich this analysis, and to use it as a catalyst for us to work in partnership – because we will go further, faster, together.

## Foreword from Catherine David, Executive Director of Behaviour Change and Business Programmes, WRAP

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### This report is a clear call to action to achieve our shared goal of a net zero food system by 2050.

We have worked together with stakeholders from across the value chain to synthesize several complex data sets regarding the UK food system, creating and quantifying a strategic plan for the sector to meet its net zero obligations.

We are up against the clock now, which is why this plan lays out both the supply and the demand side actions needed if we are to cross the net zero line in time.

We can only achieve our net zero, and nature, goals by investing in our farmers. We recognise the many pressures bearing down on farmers, and we share a dependence on a resilient UK food and farming sector, providing affordable nutritious food for all, whilst protecting and restoring nature. Without fairness, security, and sufficient financial rewards for net zero changes reaching our farmers, there can be no meaningful climate action in the food sector.

This report lays out the key actions that need to take place on farms, and at scale. To achieve the pace of change needed, we must see significant increases in investments as well as a step change in the nature of collaboration with farmers, and across the value chain.

On the supply side, the pathway to net zero depends on the rapid decarbonization of electricity, heat, and transport infrastructure, whilst on the demand side, we must ensure that the food we do produce is not wasted and provides people with a healthy, environmentally sustainable diet.

We have made great progress on food loss and waste through WRAP's Courtauld Commitment<sup>1</sup>.

This report highlights how eliminating food waste can help achieve net zero goals and presents unambiguous evidence that this should be a core pillar of net zero planning in the food sector. With the average family throwing away approximately £1000 worth of edible food each year, there is a huge opportunity for change, and the need for a national collective mission to accelerate action on household food waste prevention.

At WRAP, we do not shy away from challenging issues and for the food sector, no issue is more charged than diet change. WRAP has published a 2030 pathway<sup>2</sup> for delivering a 50% reduction in the GHG footprint of UK food and drink that includes significant mitigation from shifting diets towards the Eatwell Guide.

This report restates that need for urgent action on diets, whilst modelling a 2050 scenario that is more conservative than the current recommendation of the Committee for Climate Change. We believe urgent action is needed by industry and government to establish a pathway for diets, with clear targets for 2030 that are rooted in the best current evidence and a range of expert perspectives, including from a nutrition and nature viewpoint.

We call on the sector to come together, work through such differences, and focus UK Food's incredible strengths and talents on solving the greatest challenges of our generation.

As an organisation committed to evidence-based action to drive system change, WRAP stands ready to work with the sector, with flexibility, humility, and determination,

to drive that change and ensure that UK Food leads the way and delivers on its commitments to a net zero future.

<sup>1</sup> [Courtauld Commitment – WRAP](#)

<sup>2</sup> [UK Food System GHG Emissions – WRAP, 2021](#)

## Approach and methodology



### The approach of the report

1. This report starts with the **UK food system carbon footprint** and the WRAP estimate of the food system carbon footprint in 2021, which includes net imports. Emissions related to citizens transporting and using products were removed, some estimates are updated to use alternative sources, and some are recategorized to align with intervention levers.
2. Next, **levers to reduce emissions are assessed** for each part of the footprint, based on bottom-up analysis of feasibility and cost-effectiveness. These levers relate both to the supply-side (production) and demand-side (consumption). The evidence base includes government and Climate Change Committee (CCC) analysis; industry intelligence from interviews with and materials provided by farming representatives, protein processors, manufacturers, retailers, plus logistics, chemicals, science and commodities companies.
3. The **agriculture analysis** uses a Marginal Abatement Cost Curve (MACC) model developed by Scotland's Rural College (SRUC). This is used by the CCC, including for its forthcoming advice on the Seventh Carbon Budget. **Therefore, it is consistent with what will be required from agriculture to meet carbon budgets and the net zero target**, and is used by both government and the private sector. The MACC has been tested through review by independent experts. Abatement potential relative to a baseline is drawn from a longlist of over 300 mitigation measures and an evidence base that has been developed over the last fifteen years by SRUC, from primary and secondary sources. Based on this assessment, a MACC is constructed, showing those options which are applicable to UK conditions, where there is a degree of confidence, they are feasible and do not have negative impacts for other environmental objectives. For measures that meet these criteria, the MACC maps their abatement potential and related cost, the latter including a full assessment of costs (e.g. capital, operating, income foregone). Pathways for agriculture emissions reductions are developed, accounting for barriers to uptake. The focus is on a High Ambition scenario, with very high rates of uptake for key measures by 2035, given the need for ambitious action to meet climate commitments and targets.
4. The **potential opportunities to meet SBTi commitments** are identified for 2030 and 2050 through a mix of supply-side and demand-side interventions from bottom-up analysis, and the conditions that would have to be in place to make these options commercially viable. System emissions pathways are developed with different levels of ambition and delivery-confidence and compared with commitments that the industry has made for 2030 and 2050.
5. The **annual costs** associated with emissions reductions are estimated as being the difference between costs associated with low-carbon technologies and a business-as-usual scenario.
6. Significant **uncertainties and dependencies** are identified with recommendations on how these should be managed.

**The approach is consistent with guidance from the Transition Plan Taskforce (TPT).** In particular, it sets out quantified ambition, identifies key drivers and actions to deliver emissions reductions including action owners, associated costs, dependencies, and some aspects of just transition (inclusiveness, affordability impacts). Further work will be needed as the plan is developed and implemented, e.g. on nature and the just transition, and by sector. Other aspects of transition planning guidance should be covered in company plans (e.g. financing plans, company governance and incentives).

## Importance of a net zero food system and key findings

### Context and importance

**The UK food system is inextricably linked to the climate crisis.** It is both a significant contributor to greenhouse gas (GHG) emissions and other environmental impacts, and completely dependent upon healthy ecosystems to nourish and protect crops.

Food emissions are a large share of total global and UK GHG emissions and **deep cuts will be required to meet climate objectives.** The industry has faced this challenge through wide adoption of net zero targets. Recognising that unilateral action is difficult in a context of intense competition and interdependent supply-chains, the industry has agreed that a **system approach to net zero is required**, while respecting boundaries placed by competition legislation.

This report sets out a system approach with a focus on decarbonisation whilst acknowledging the need to avoid negative consequences for related imperatives like nature, nutrition and livelihoods.

### Key findings

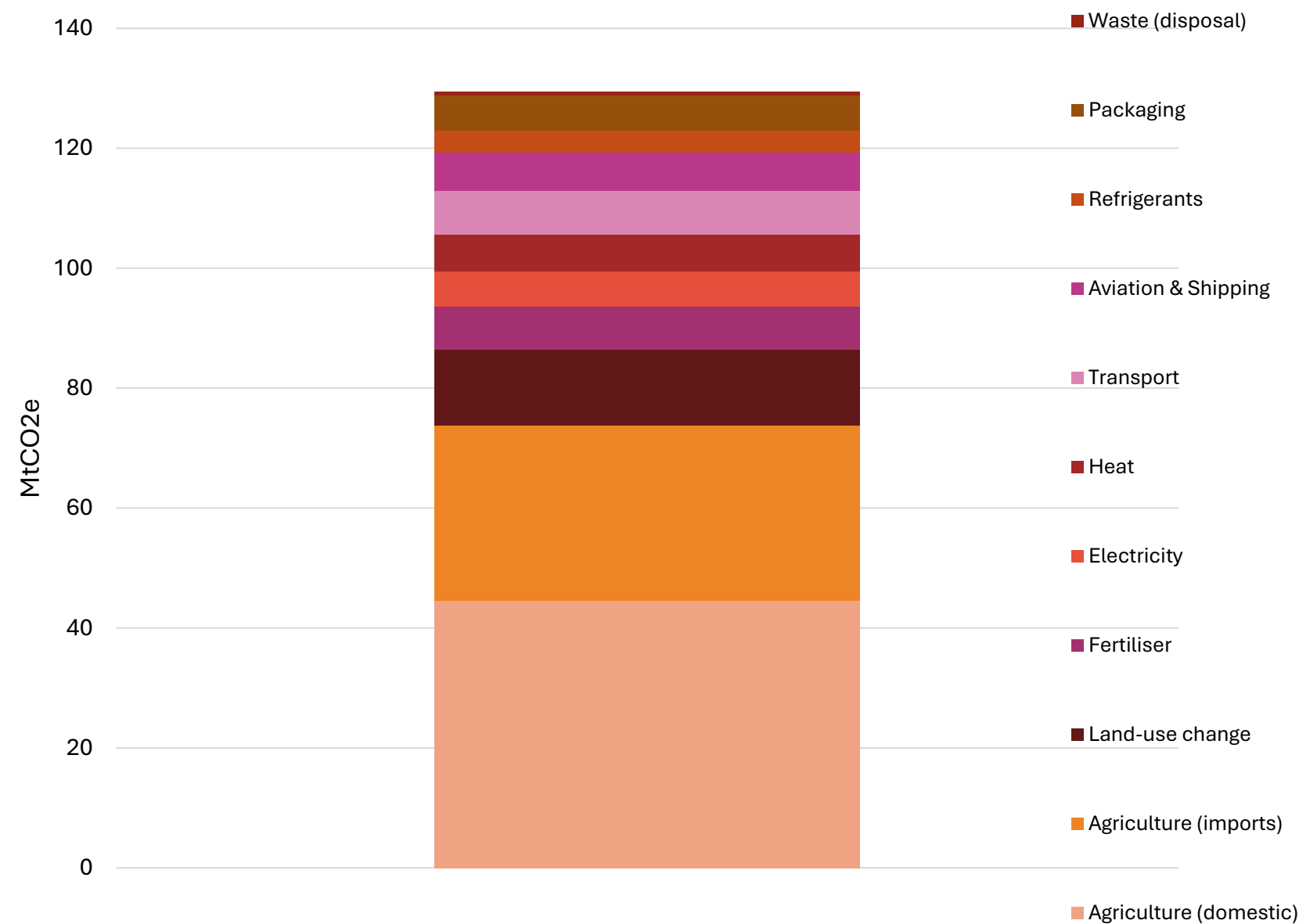
1. Achieving sector net zero targets by 2030 and 2050 will be extremely stretching, but is possible with urgent focus and partnership throughout the system.
2. Major transformation is called for in all aspects of the food system's supply side, most notably:
  - Very high uptake of lower carbon farming practices in UK and overseas agriculture.
  - Effective regulation and processes to eliminate deforestation from supply chains.
  - Major infrastructure and capacity provision for renewable energy, zero emission logistics and low carbon heating and cooling.
3. Demand-side change will be key to reaching targets, specifically:
  - Significant reductions in household food waste could deliver major benefits.
  - Shifting dietary choices towards lower carbon foods that are equally nutrient rich and/or the Eatwell Guide represents a significant GHG abatement opportunity.
4. Innovation is a key driver of emissions reductions in the plan, offering opportunities in agriculture, low-carbon heat and logistics, and production of green fertiliser.
5. Common methodologies for carbon footprinting, more reliable data and integrated systems are required to support emissions reductions and improve accuracy of reporting.
6. Action is required by government to strengthen policies and incentives for: agriculture in England and the devolved administrations (DAs); investment in low-carbon heat and logistics; power sector decarbonisation; and development of the hydrogen economy. A land-use strategy is urgently needed, with a request that a draft for consultation be published in the first quarter of 2025.
7. Industry collectively can accelerate progress by supporting farmers on their net zero journey, developing approaches for overseas sourcing, and supporting consumers with changes to their food waste and diet behaviours. Individual companies can drive decarbonisation of energy, transport and refrigerants.
8. Analysis in the report suggests significant costs to 2030 of the agriculture transition, together with reducing land-use change emissions and making packaging more sustainable. There will be further significant costs associated with decarbonisation of heat, logistics and fertiliser production in the period 2030 – 2050. Throughout, there will be significant financing requirements for energy efficiency improvements, replacement of old refrigeration equipment, and over time, for investment in relatively capital-intensive low-carbon technologies.

## Executive summary

There are huge opportunities to reduce the carbon footprint of the UK food system.

The UK’s food system carbon footprint is 129.5 MtCO<sub>2</sub>e, equivalent to around 30% of territorial emissions. As at the global level, the UK system footprint is dominated by agriculture and land-use change, with fertiliser production, energy and transport being significant components.

Breakdown of emissions baseline (2021)\*



### Supply-side abatement opportunities

- **Agriculture:** change farming practice, end land-use change for imported commodities, green fertiliser
- **Energy:** grid decarbonisation, energy efficiency improvements, low-carbon heat
- **Refrigerants:** fridges and freezers with minimal F-gas emissions
- **Transport:** fuel efficiency improvements, logistics efficiency improvements, low-carbon vehicles
- **Packaging:** increase recycling, alternative materials, reuse

### Demand-side abatement opportunities

- **Food reduction:** opportunities throughout supply chain, but particularly at household level
- **Diet change:** eating less of the most carbon intense foods and replacing these with low-carbon alternatives, while maintaining nutrition, accessibility and affordability

\*The scope of this footprint excludes emissions associated with household energy and consumer transportation. As a result, it is different to that presented by WRAP in its report ‘Tracking UK Food System Greenhouse Gas Emissions: 2015-2021’. Aside from this, the footprints are consistent subject to small adjustments relating to agriculture emissions based on new SRUC analysis and recategorising some data (e.g. fertiliser use for imported goods).

## Executive summary

### Deep cuts in emissions are required to meet SBTi targets and carbon budgets.

Industry has made ambitious commitments under SBTi, comprising targets for Forest Land and Agriculture (FLAG) and non-FLAG emission sources. Deep cuts in food system emissions will be needed to meet legislated carbon budgets.

#### SBTi non-FLAG targets (energy, transport, heat, food waste, packaging, refrigerants)

- **2030:** deep cuts required
- **2050:** net zero (100% reduction)

#### SBTi FLAG targets (agriculture practices, LUC associated with imported commodities, fertiliser production)

- **2030:** 30%+ reduction
- **2050:** 70% reduction

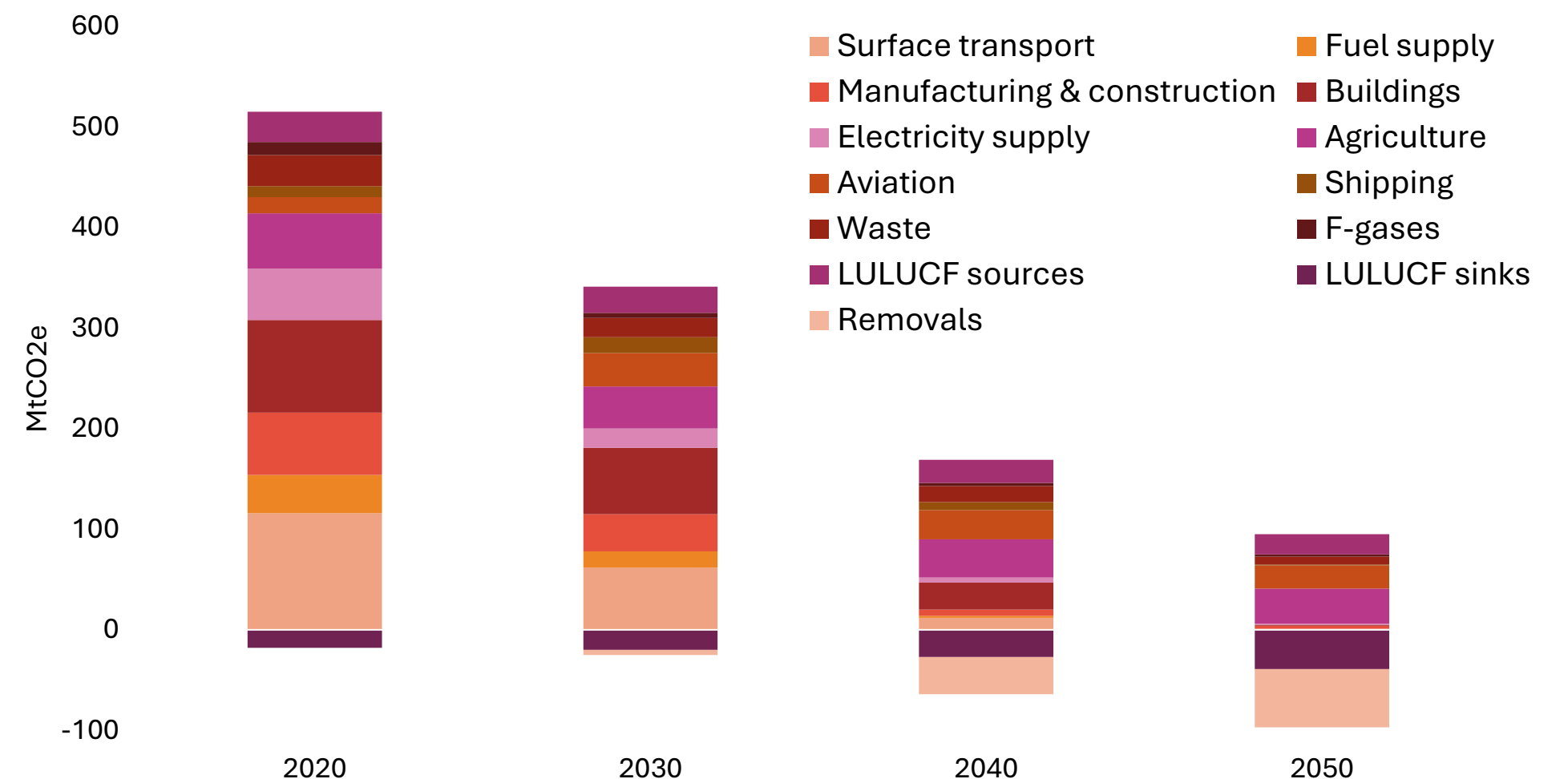
#### Population growth

- The Office for National Statistics (ONS) projects population growth from 67m in 2021 to 77m in 2046 (extrapolated in the modelling to 78m in 2050)
- Food demand is assumed to increase with population growth
- This implies the need for further emissions reductions in order to meet absolute reduction targets

#### Carbon budgets

Carbon budgets are designed based on sector pathways for emissions reductions. The food system should at least keep pace with these pathways. Over time, emissions from electricity, heat and transport fall to zero in pathways underpinning budgets. The agriculture pathway assumes widespread adoption of low-carbon practices, together with food waste reduction and diet change – though with flexibility of the balance of effort across levers, which are considered in this report.

UK economy emissions by source towards net zero<sup>1</sup>



<sup>1</sup> The Sixth Carbon Budget – Climate Change Committee, 2020



## Executive summary

There are significant supply-side opportunities to cut emissions close to zero for non-FLAG and to make deep cuts for FLAG.

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### **Agriculture:** 40 – 55% cut against 2021 baseline by 2050

- 40% reduction requires:
  - Widespread adoption of low-carbon farm practices
  - Land-use change emissions reduced to zero through sustainable growing
  - Fertiliser emissions reduced to zero through use of hydrogen
- 55% reduction requires the deployment of the above, alongside less mature and more challenging approaches:
  - Feed additives for grazing animals
  - Biostimulants
  - Low-carbon feed
  - Inter-cropping

### **Electricity:** close to zero emissions by 2035 or earlier

- Grid decarbonisation through investment in renewables and nuclear
  - Government to clarify ambition and drive the decarbonisation
- Grid expansion, including to support electrification of heat and transport

### **Heat:** close to zero emissions by 2050

- To 2030, focus on energy efficiency and trialling of renewable heat
- From 2030, electrification through electric technologies, predominantly heat pumps and electric ovens

### **Transport:** close to zero emissions by 2050

- To 2030, focus on fuel efficiency of HGVs and electric delivery vehicles for retail
- From 2030, deployment of low-carbon HGVs, most likely to be battery HGVs

### **Packaging:** emissions cut by at least 50% by 2050

- Reductions through the period to 2050, based on increased recycling, alternative materials and reuse

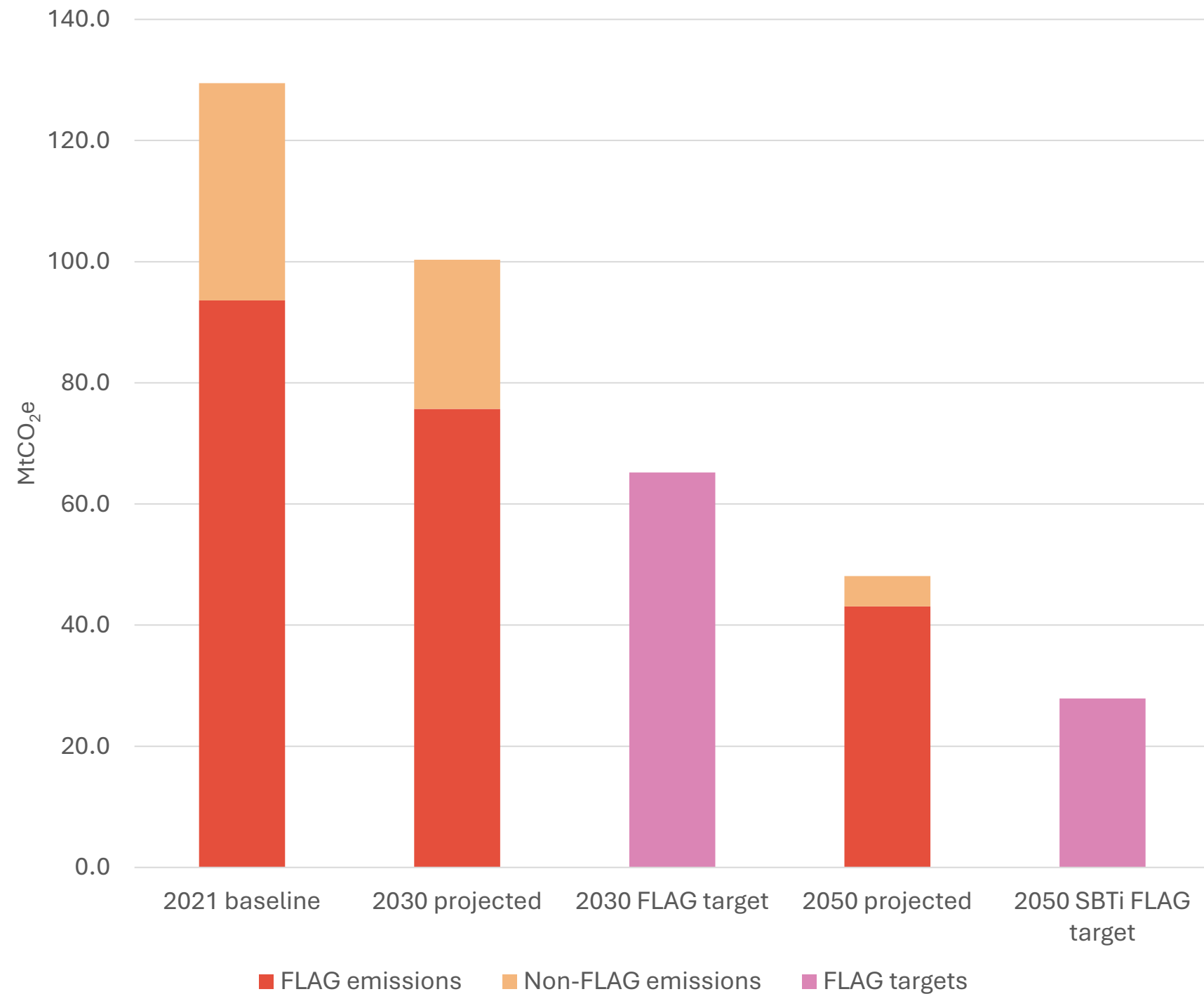
### **Refrigerants:** emissions cut by at least 83% by 2050

- Replacement of old, polluting refrigerators and freezers with modern technologies that have lower F-gas emissions

## Executive summary

Supply-side opportunities are sufficient to meet non-FLAG commitments and to make important contributions to meeting FLAG targets and carbon budgets – but demand side action will also be needed.

FLAG and non-FLAG emissions projections against FLAG targets



### Demand-side action

The chart shows maximum potential from supply-side action, which makes significant contributions to SBTi FLAG targets – but demand side action will be required to meet these and to contribute to carbon budgets. There are important demand-side opportunities relating to food waste reduction and diet change.

### Food waste reduction

- Currently around 25% of food is wasted<sup>1</sup>, with the biggest single contributor being household food waste.
- The Courtauld Commitment aims for a 50% per capita reduction in food waste by 2030 vs the UK 2007 baseline.
- The industry should aim to deliver the Courtauld Commitment and go beyond it, reducing food waste to very low levels by 2050.
- The lever for this is collective industry action working in partnership with government.
- Food waste reduction would make an important contribution to meeting SBTi FLAG, but would still leave a gap.

### Diet change

- The Climate Change Committee has developed scenarios for diet change to help meet carbon budgets. Without diet change, the food system would not be able to make its contribution here, and would not meet SBTi FLAG targets.
- Given the assessment of supply-side opportunities and scope for food waste reduction, moderate diet change away from the most carbon intense foods – red meat and dairy - could be sufficient, e.g. equivalent to a 20% reduction across these categories, but with no set balance of effort.
- Diet change also has important health considerations, which are beyond the scope of this report.
- The food industry should work urgently to develop an approach to diet that balances net zero and health objectives; the absence of a position stands in the way of progress and leaves the industry vulnerable to having policies imposed upon it.

<sup>1</sup> UK Food Waste & Food Surplus – UK Key Facts – WRAP, 2023

## Executive summary

**Costs of decarbonisation:** Funding of at least £500 mn annually will be required to support low-carbon agriculture measures – without this, key measures will not be adopted by farmers.

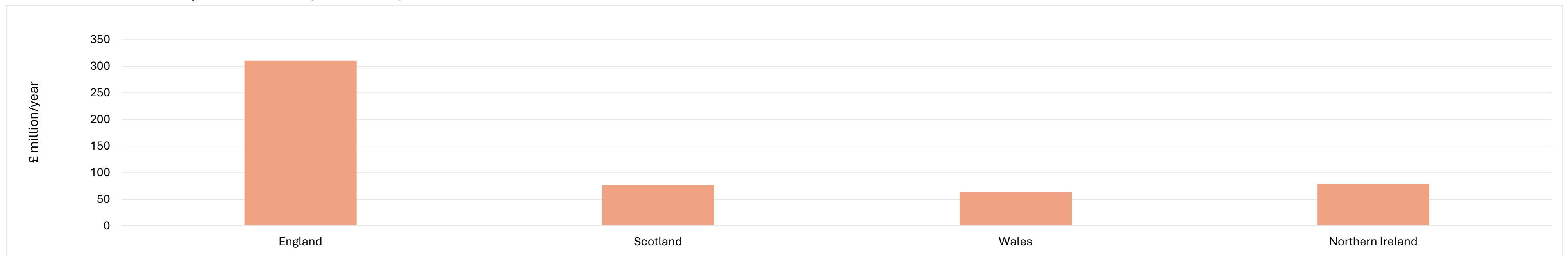
There are two categories of measures for agriculture abatement: those that save money and those that cost money on a net basis.

Even for the former, farmers will need to be supported in their net zero transition. For example, it is recommended that funding should be made available for farm-level carbon audits, benchmarking and planning; in Northern Ireland, these are funded in effect through direct payments, for which they are a qualifying condition. There are some measures where there is lag between investments and payoffs. Again, these will have to be funded.

Measures which cost money will have to be funded or they are highly unlikely to be adopted. While a net cost, these pass a value-for-money (VfM [return on public investment]) test: abatement costs are well within the UK Government’s carbon values, and there are significant nature co-benefits. Annual costs are estimated of the order £500 mn, which are distributed across England and the DAs as shown in the chart below. These are funded in England under ELM, and it is recommended that these should similarly be funded in the DAs. Funding would typically be in the form of ongoing payments, given the vast majority of costs are operating. For the fewer measures where there are significant capital outlays, these should be funded through grants; for example, grants are available for slurry investment in England and Scotland. Over time, grants for low-carbon mobile machinery are likely to be needed.

There are much higher costs associated with supporting the broader farming transition and meeting national environmental objectives, which requires a more extensive scope of changed farming practice together with taking land out of production (e.g., for forestry, peatland restoration and nature recovery). For example, a recent NFU report estimated this cost to be over £4 bn annually<sup>1</sup>.

Positive abatement cost per DA in 2050 (Section 3.4)



<sup>1</sup> [An agricultural budget that delivers for the environment – NFU asks of government – NFUonline, 2024](#)

## Executive summary

**Costs of decarbonisation:** There are significant costs of decarbonisation currently facing the food system. These relate to imported agriculture, sustainable feed and commodities procurement, and sustainable packaging.

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Net cost and capital cost are differentiated: the former reflects any operating cost savings associated with the latter. Costs of low-carbon options are compared with business-as-usual alternatives. Costs are assessed on an annual basis to allow comparison with system revenues and consequently infer potential price impacts, as is the convention in effective transition planning.

### To 2030:

#### **Net costs:**

In addition to domestic agriculture, there are three significant areas of cost related to decarbonisation facing the food system:

- **Imported agriculture:** Where the recommendation is that farming costs in the UK should be funded by government, there is not an equivalent mechanism for imported products. It is recommended that an industry programme should be considered to reduce emissions from imported products. While this would be costed as part of scoping work, based on UK costs and a comparison of farming products in the UK and foreign supply chains, funding of several hundred million pounds annually could be required.
- **Commodities caught by deforestation regulations:** There will be a premium associated with sustainable soy and commodities. This is currently uncertain, with a wide range of estimates in the market related to cost premia for EUDR. However, across the range of commodities, this could be in the hundreds of millions of pounds at the system level. It should only be temporary, because costs associated with establishing new supply chains and traceability systems are non-recurring.
- **Sustainable packaging:** There are a range of policies to drive sustainable packaging (e.g., EPR, plastics tax, PRNs), which together would add around £2.5 billion annually according to industry estimates.

#### **Capital cost:**

There are significant capital costs in the near term related to energy efficiency improvement. While related investments should have short payback periods, they still need to be funded (e.g., for waste heat recovery). Replacing ageing cold storage also requires large investments. These have typically been costed at the company level and included in financing plans. For purposes of illustration, the CCC estimates an annual investment requirement of £300 million across all industry for energy efficiency improvement. Costs associated with Anaerobic Digestion (AD) and renewable heat will need to be funded if they are to happen.

## Executive summary

**Costs of decarbonisation:** Beyond 2030, there will be further costs equivalent to 1-2% of system revenues, related to heat, transport and fertiliser decarbonisation. There will be significant capital requirements throughout the period for low-carbon investments.

### To 2050:

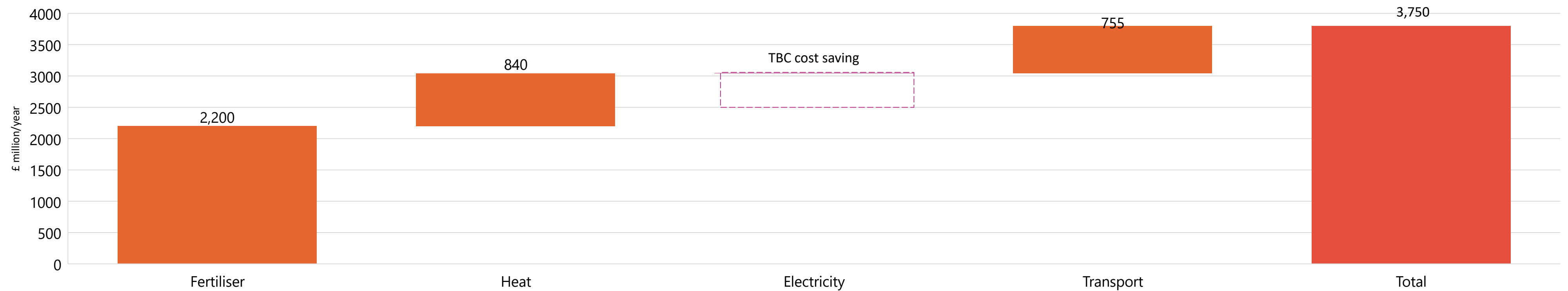
#### **Net costs (additional to 2030):**

Net costs will be added to the system through renewable heat, low carbon-HGVs and green fertiliser. For full abatement approaching 2050 across these three categories, the associated costs are estimated to be around £3.5 bn annually, which is equivalent to around £1.5 bn in present value terms, i.e. 1-2% of annual food expenditure of £140 bn. New policies will be required, with these costs to be funded by government (e.g., grants) and/or consumers (e.g., carbon pricing impacting food prices).

#### **Capital cost:**

There will also be significant capital outlays required for these technologies. For example, heat pump capital costs are around 4-8 times those of gas boilers, and battery HGVs are currently 3.5 times the capital costs of conventional alternatives, with further investment required for charging infrastructure. This raises a question about how investments can be financed within capital constraints. Opportunities to be considered further here are the roles for sustainable finance from banks (i.e. finance dedicated to support sustainability) and for government finance, to complement commercial finance.

Annual cost of decarbonisation 2050



## Executive summary

Strengthening of government policy and support will be required to deliver emissions reductions across the food system.

| Agriculture area   | Specific ask   |
|--|--|
| Farming budget   | Confirm farming budget to support net zero and wider sustainable farming practices; and publish a land-use framework, including ambition and funding.  |
| Farm-level carbon planning                                     | Strengthen incentives for farm-level agri-environment practices through funded carbon audits, benchmarking and plans for farmers, to buttress their engagement with sustainable farming and related schemes.   |
| Sustainable Farming Incentive uptake                           | Assess impact on uptake from uplifting payment rates in the Sustainable Farming Incentive scheme and consider the case for a further increase to improve uptake across farming types.  |
| Feed additives   | Extend farming support schemes to include full or partial payment for use of feed additives to support rollout.  |
| Anaerobic digestion (AD)                                       | To commit a new round of funding to support farm AD for farm waste (not crops).  |
| Stacking of benefits / framework for accessing private finance | Develop a framework for farmers to access private finance, namely through generating revenue from carbon and nature markets and selling of ecosystem services, over and above what they are paid for through ELM, in order to monetise benefits of sustainable farming. This should take into account any new industry schemes.                              |
| Farm regulation  | Undertake a regulatory review with respect to three objectives for farming: food production, net zero, nature.   |
| Deforestation legislation                                      | Introduce a regulation that prevents land use change from imports of soy and tropical commodities consistent with the EUDR, while managing risks related to land conversion.   |
| Farm data  | Standardise carbon calculations, data and reporting through agreeing common methodologies and standards. These should differentiate between different types of farming practice and, as a matter of urgency, reflect improvements due to SFI participation. With more confidence in data, reporting should be mandated, to support consumer decision making. |
| Trade policy   | Ensure a level playing field between domestic produce and imports through common environmental standards, border tariffs for carbon-intense products, and trade preferences in Free Trade Agreements related to environmental standards and animal health/welfare; export promotion and trade facilitation for British products.                             |
| Agriculture – Welsh Government                                 | Ensure that net zero measures are funded under the new Welsh framework, by testing them against the key net zero measures identified in this report to ensure that there are no gaps.  |
| Agriculture – Northern Ireland Government                      | Provide financial incentives for the key measures identified in this report to drive down emissions from dairy and beef farming, which dominate Northern Ireland's farming carbon footprint.   |
| Agriculture – Scottish Government                              | Provide financial incentives for the key measures identified in this report to drive down emissions from dairy and beef farming, which dominate the carbon footprint of farming in Scotland.   |

## Executive summary

Strengthening of government policy and support will be required to deliver emissions reductions across the food system (cont.).

| <b>Supply-chain area</b>                       | <b>Specific ask</b>   |
|--|---|
| Grid decarbonisation                           | Clarify target date for grid decarbonisation (2030 vs 2035) and disclose credible plans to achieve this.<br><br>Change regulatory guidance to support running of freezers at 15 degrees, to unlock energy efficiency savings.   |
| Heat   | Incentivise decarbonisation of heat processes in the food system by extending the Industrial Energy Transformation Fund (IETF) to support interim investment in low-carbon heat technologies. Rebalance gas and electricity prices, adding carbon costs to the gas price and removing policy cost uplifts from the electricity price. |
| Grid connection                                | Food companies and logistics companies should be prioritised for grid connection from the 2030s, which is when electrification becomes an important part of food system decarbonisation.  |
| Transport decarbonisation and hydrogen economy | Building on participation of food companies in current programmes for transport decarbonisation (vehicles and infrastructure) and development of the hydrogen economy, ensure continued uptake as efforts are scaled up.  |
| Packaging                                      | There is an ongoing policy dialogue between the industry and government with the objective of a joined-up and streamlined approach across England and the DAs. This is detailed and technical in nature and therefore out of scope of the report.   |
| <b>Demand-side area</b>                        | <b>Specific ask</b>   |
| Food waste reduction                           | To be developed by industry group, but will include mandatory food waste reporting and addressing date labelling and pre-packaging of fresh produce.  |
| Diet change                                    | To be developed by industry group, but will include information provision, education, and revision of the Eatwell Guide including updating for latest evidence on consumption patterns.   |

## Executive summary

### Implementing the System Plan: Areas for Action

#### Asks of government

**What:** In this strategic plan there are 19 asks of government (see previous pages), which are key to supporting a level playing field and providing incentives for action to net zero.

**Action:** Industry to engage with government on policy asks at the earliest opportunity.

**How:** Structured discussions between industry and government convened by IGD.

#### Collective industry action

**What:** The areas for collective action are many, but prioritisation is needed in those which will generate faster progress to net zero and model ways of driving system change, taking account of the nature emergency and human health. There are a set of proposed areas, which have been under discussion with representative sector organisations from across industry since April this year.

##### Action:

##### *Supply*

1. Supporting farmers to join schemes through facilitation and incentives, in order to boost adoption of low-carbon practices (reduced fertiliser use, feed additives, etc.).
2. Convening on soil carbon, to understand the evolving evidence base and draw out implications for transition planning in the sector, including potential opportunities for farmers.
3. Aligning and further driving detailed design of regulation for deforestation-free soy and its implementation, to minimise costs while achieving policy objectives.
4. Consultation on establishing an import standard platform and programme for adoption of low-carbon practices in foreign supply chains.

##### *Demand*

5. Recommitting to reducing household food waste with greater adoption of all proven tactics across businesses.
6. Aligning industry to a position on diet change that balances net zero and health objectives, including an action plan.

**How:** IGD in partnership with WRAP to convene working groups to identify approaches for developing strategies and action plans in each of the above areas. These should be done on the basis of clear mapping of existing forums/initiatives/working groups to avoid duplication and ensure efficiency.

#### Sector and company transition plans

**What:** Sector and company transition plans should be aligned with – or go beyond – the strategic plan.

**Action:** Review sector and company plans against the strategic plan and update as appropriate, and be open to sharing learnings.

**How:** IGD to support this process and to facilitate greater sharing of learnings through lifting outputs into progress reporting (see below).

#### Review of progress

A first overall review of progress from the plan and the areas for action above will be publicly shared via a Webinar and Food System Net Zero Transition Plan Progress Report in June 2025, then bi-annually with a focus on the progress of actions.



# Appendices

## Appendix A: Acronyms/Glossary

| Acronym           | Meaning  | Acronym             | Meaning                                     | Acronym            | Meaning  |
|-------------------|--|---------------------|---|--------------------|--|
| 3NOP              | 3-Nitrooxypropanol                               | FLAG                | Forest, Land and Agriculture                | N <sub>2</sub> O   | Nitrous Oxide                                      |
| AD                | Anaerobic Digestion                              | FSA                 | Food Standards Agency                       | NHS                | National Health Service                            |
| AD cattle         | Anaerobic Digestion for cattle                   | GHG                 | Greenhouse Gas                              | NZBA               | Net Zero Banking Alliance                          |
| bn                | Billion  | GW                  | Gigawatt                                    | OpEx               | Operational Expenditure                            |
| CAP               | Common Agricultural Policy                       | GWP                 | Global Warming Potential                    | pH                 | Potential of Hydrogen (acidity/alkalinity measure) |
| CapEx             | Capital Expenditure                              | H2                  | Hydrogen                                    | PPAs               | Power Purchase Agreements                          |
| CCC               | Committee on Climate Change                      | HaFS                | Hospitality and Food Service                | SBTi               | Science Based Targets initiative                   |
| CCS               | Carbon Capture and Storage                       | HAR2                | Hydrogen Allocation Round                   | SDG                | Sustainable Development Goals                      |
| CCUS              | Carbon Capture, Utilisation, and Storage         | Heat pump LT        | Heat Pump Low Temperature                   | SFI                | Sustainable Farming Incentive                      |
| CDP               | Carbon Disclosure Project                        | Heat pump MT/HT     | Heat Pump Medium/High Temperature           | SRUC               | Scotland's Rural College                           |
| CH <sub>4</sub>   | Methane  | HGVs                | Heavy Goods Vehicles                        | tCO <sub>2</sub> e | Tonnes of Carbon Dioxide Equivalent                |
| CO <sub>2</sub>   | Carbon Dioxide                                   | HPBM                | Hydrogen Production Business Model          | TPT                | Transition Plan Taskforce                          |
| CO <sub>2</sub> e | Carbon Dioxide Equivalent                        | HPP                 | Hydrogen Power Plant                        | UAE                | United Arab Emirates                               |
| COP               | Conference of the Parties                        | IETF                | Industrial Energy Transformation Fund       | UK                 | United Kingdom                                     |
| DA                | Devolved Administration                          | IGD                 | Institute of Grocery Distribution           | UKDR               | UK Deforestation-free Regulation                   |
| Defra             | Department for Environment, Food & Rural Affairs | NUE                 | Nitrogen Use Efficiency                     | WRAP               | Waste and Resources Action Programme               |
| EI                | Emissions Intensity                              | Industrial NRMM     | Industrial Non-Road Mobile Machinery        |                    |  |
| ELM               | Environmental Land Management                    | LRVC                | Long Run Variable Cost                      |                    |  |
| EMR               | Electricity Market Reform                        | LUC                 | Land Use Change                             |                    |  |
| EUDR              | EU Deforestation-free Regulation                 | LULUCF              | Land Use, Land-Use Change, and Forestry     |                    |  |
| FDTP              | Food Data Transparency Partnership               | LWG                 | Live Weight Gain                            |                    |  |
| FEED              | Front End Engineering Design                     | MtCO <sub>2</sub> e | Million Tonnes of Carbon Dioxide Equivalent |                    |  |
| FIs               | Financial Institutions                           | MW                  | Megawatt                                    |                    |  |



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