

Feedstock Availability

Lucy Hopwood, Director & Principal Consultant

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Alder BioInsights

A specialist strategic business consultancy with over 20 years of bioeconomy experience



Business Planning



Collaborative Research



Feedstock Supply & Sustainability



LCA & Carbon Footprinting



Market Analysis & Strategy



Policy & Strategy



Regulations & Compliance

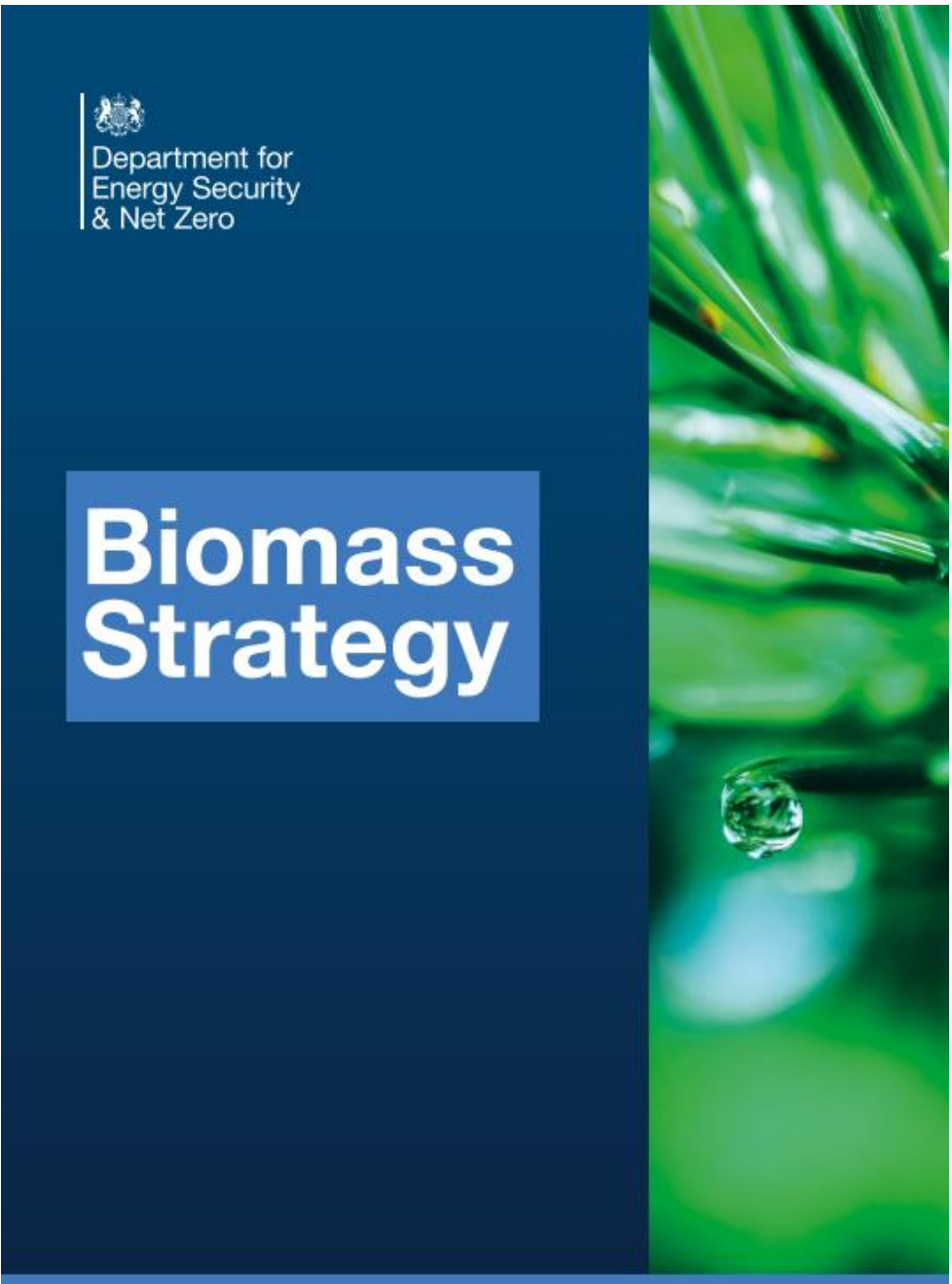
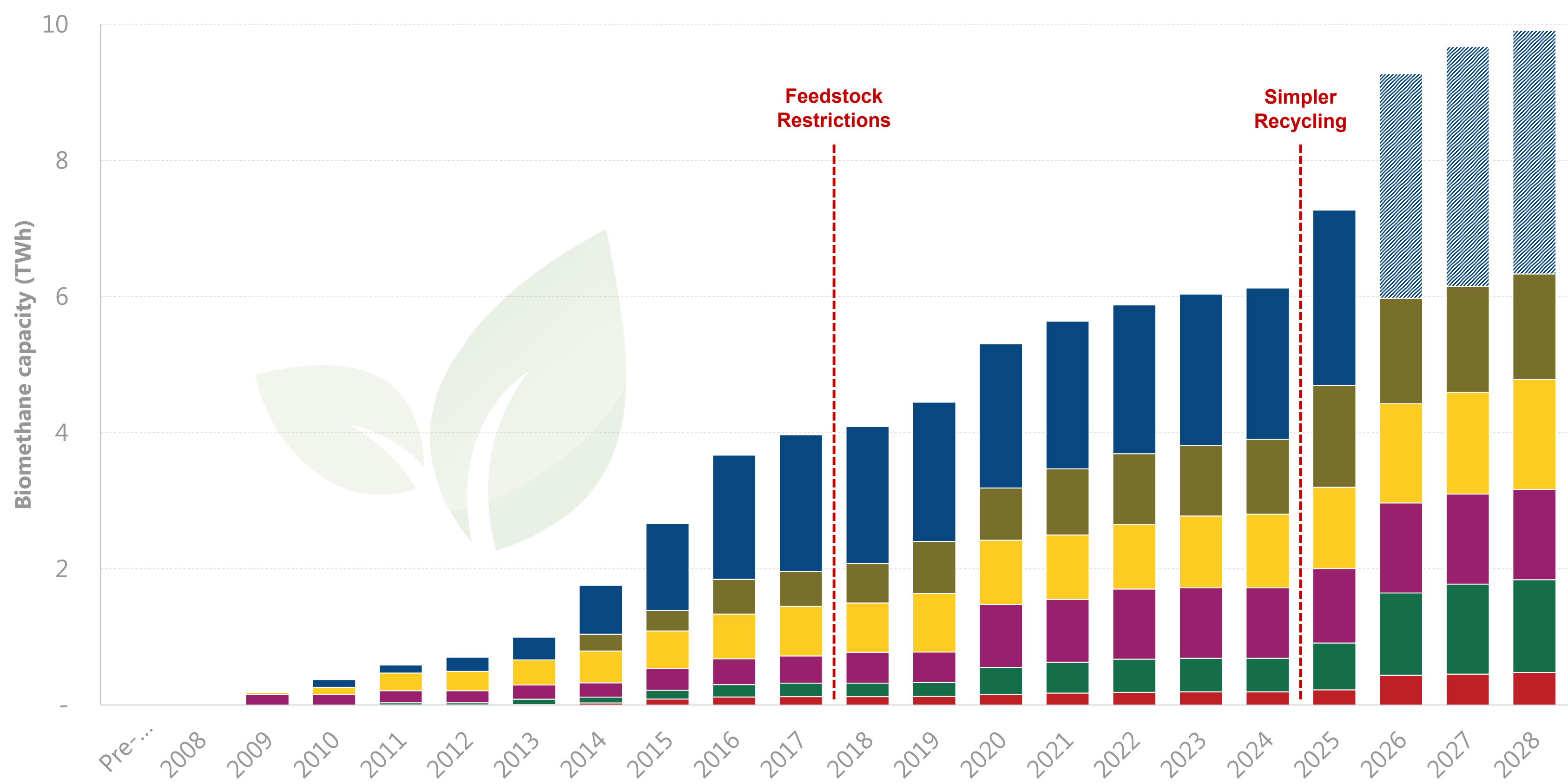


Investment Support



Feedstock Use

Feedstock, by type and energy contribution (TWh), in the UK



RHI – Now closed
6 TWh

GGSS
+ 3 to 4 TWh

...to 2050
30 to 40 TWh ??



Biomethane Potential

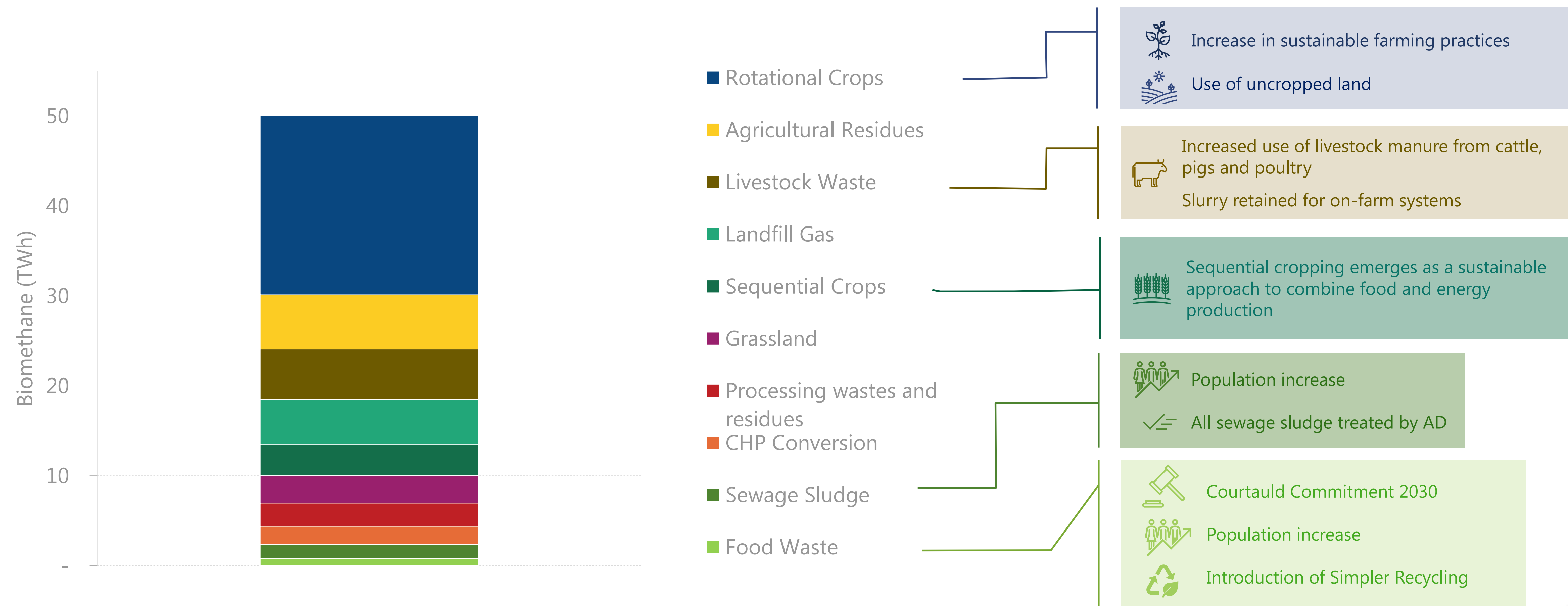
Is feedstock availability hampering growth potential to 2050?

- Literature review
- Feedstock availability and use, by type:
 - Commercial, industrial, household food waste
 - Agricultural crops and residues
 - Livestock manure & slurry
 - CHP conversions
 - Sewage gas
 - Landfill gas
- Impacts and benefits
- Lifecycle analysis
- Policy recommendations



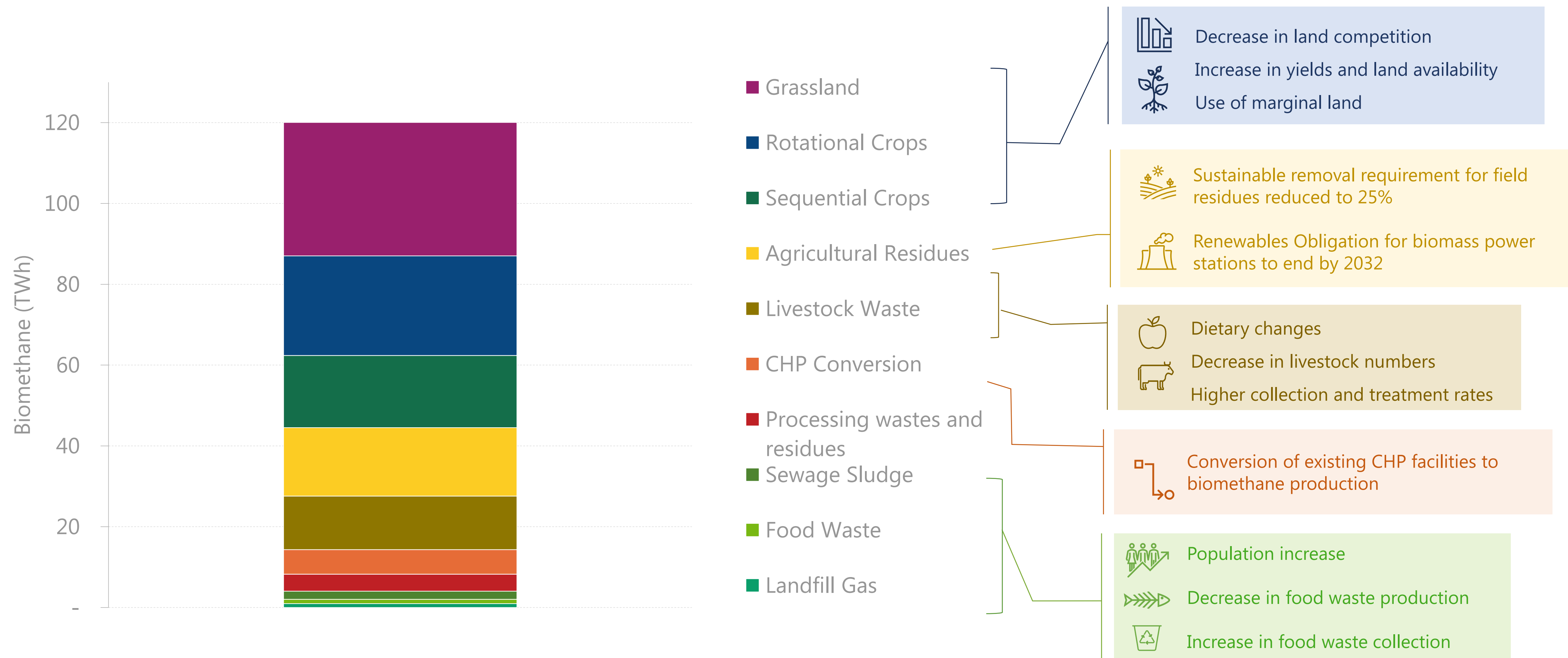
Biomethane Potential in 2030

Most immediate growth from wastes and residues with an evident increase from agricultural feedstocks



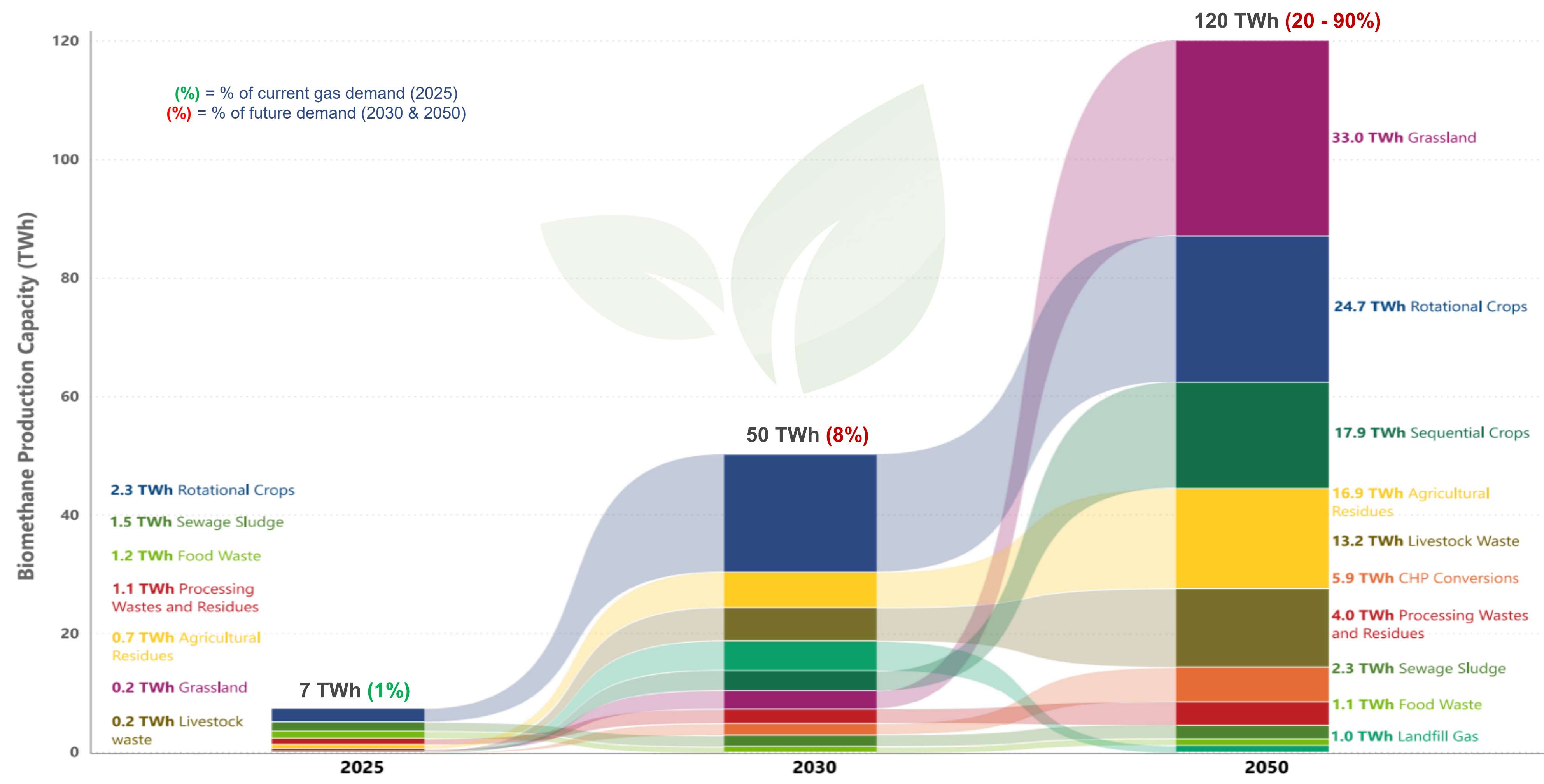
Biomethane Potential in 2050

Significant growth from agricultural feedstocks resulting from a transition to more sustainable farming practices



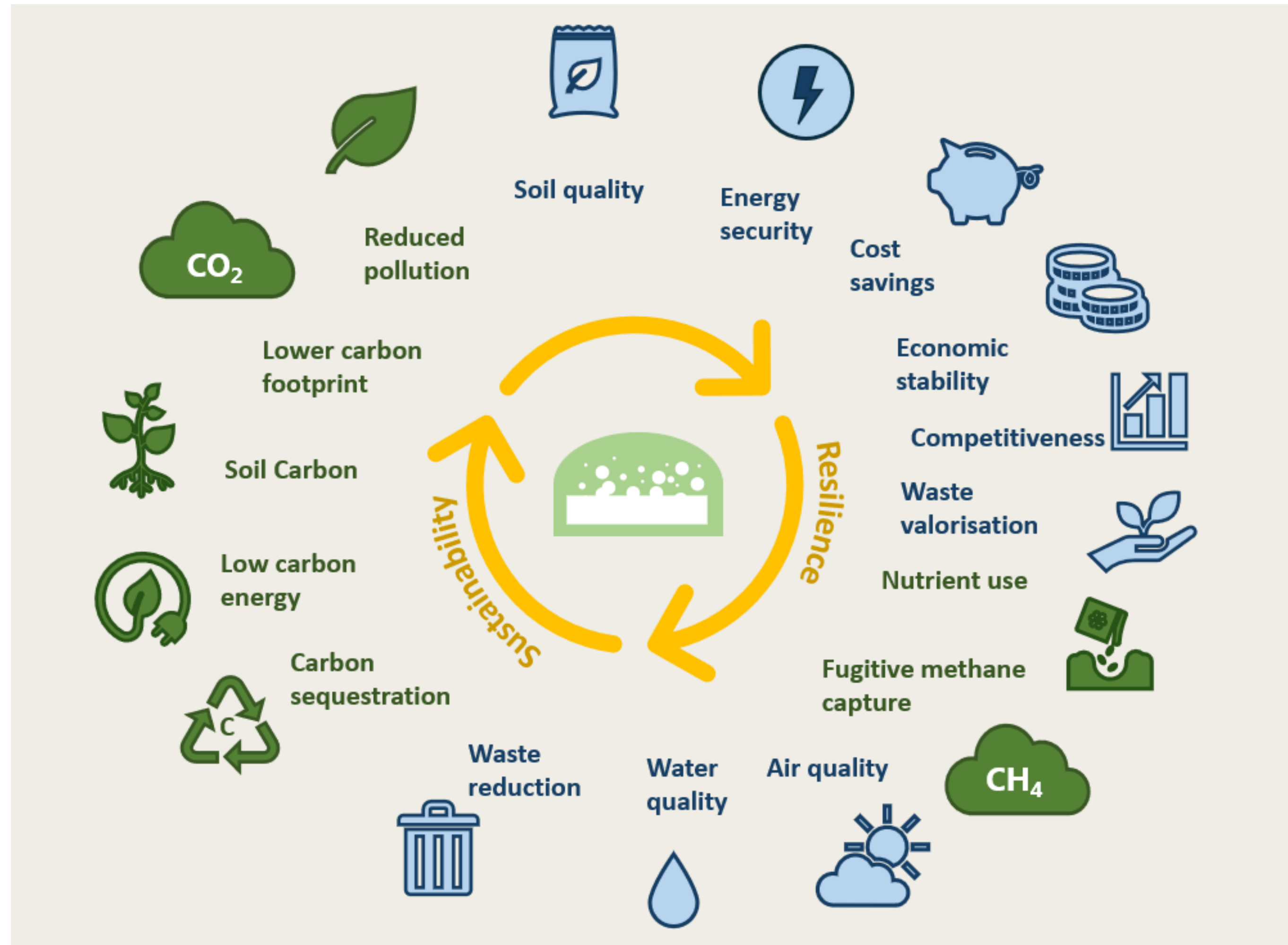
Biomethane Potential

Biomethane production could increase tenfold by 2050 based on feedstock availability



Impacts and Benefits

Need to think beyond energy and better recognise, value and reward the wider benefits



Agricultural Transition

Agriculture is responsible for 12% of the UK's GHG emissions. The transition is supporting a move from subsidies for land ownership towards improving the financial offer to farmers to improve productivity and to encourage more sustainable farming practices

5 Core Principles of Regenerative Agriculture



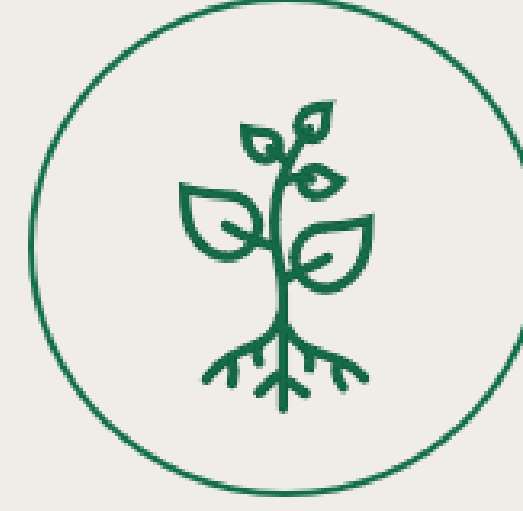
**Minimise
soil disturbance**



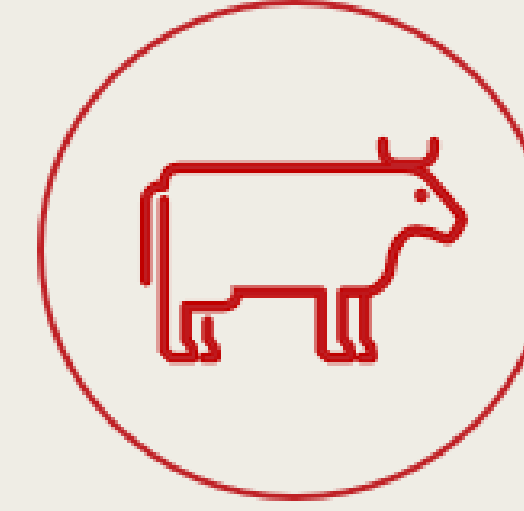
**Maximise
crop diversity**



**Keep
the soil covered**

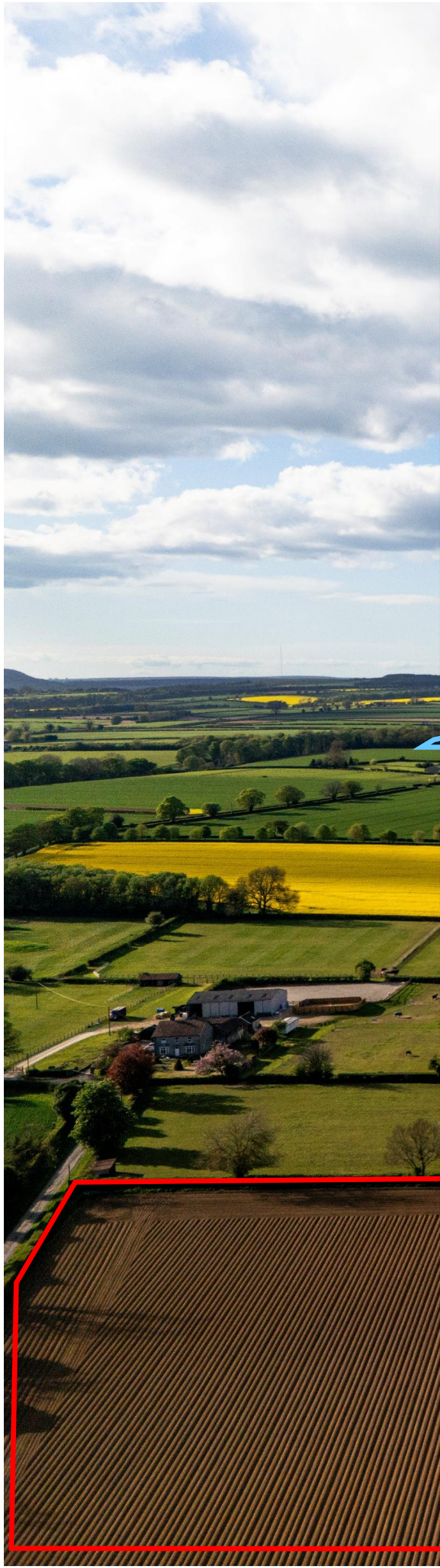


**Maintain
growing roots**

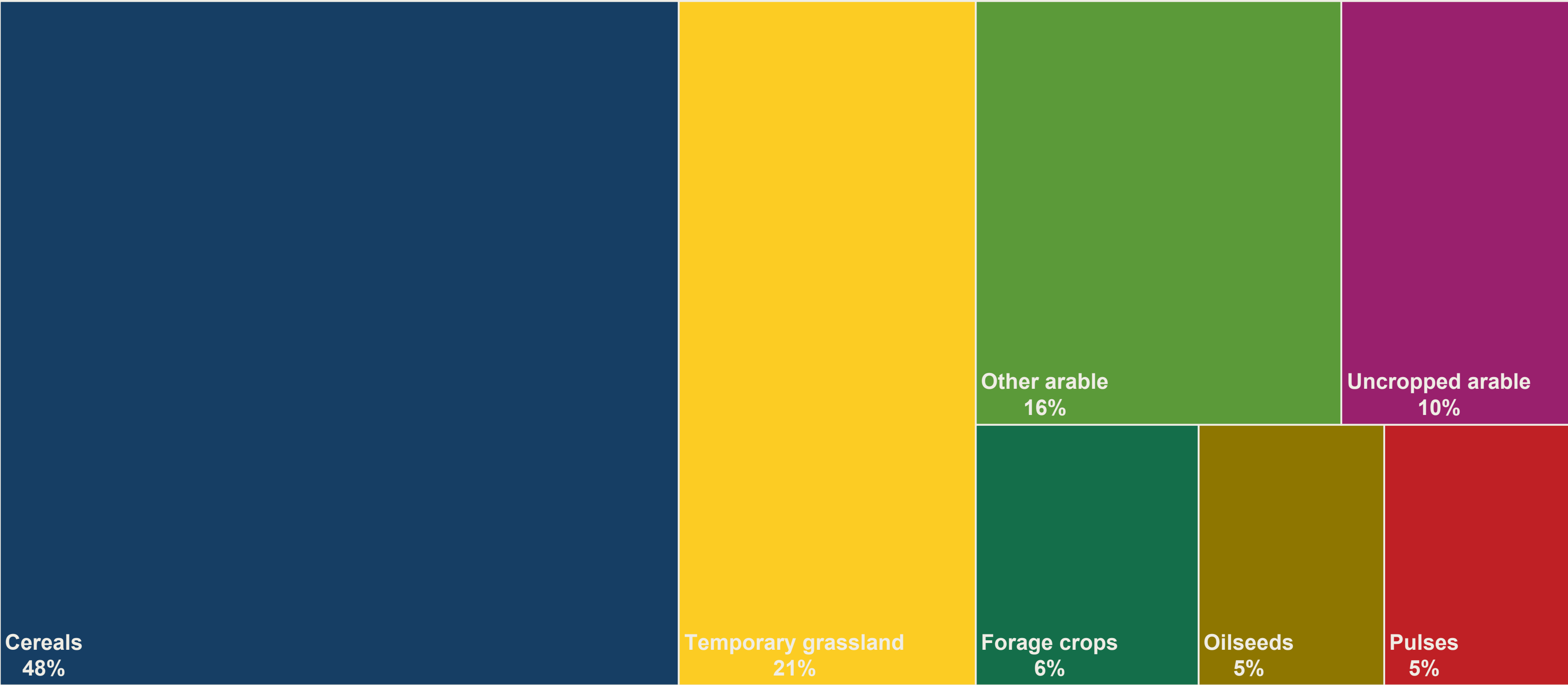


**Integrate
livestock systems**





UK Arable Land Use (2024)

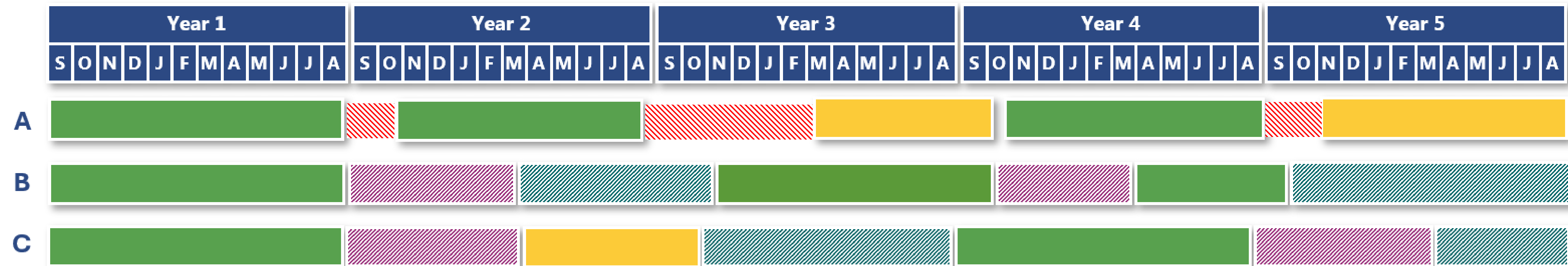


Source: Defra June Census (2024): Land Use data



Improving Productivity & Building Resilience

Rotational and sequential crops can be grown for biomethane production without impacting negatively on food production, presenting viable local market opportunities well aligned with sustainable farming policies



Key:

-  Cereal crop, e.g. wheat or barley
-  Break crop, e.g. potatoes or beans
-  Rotational crop, e.g. maize or rye
-  Sequential crop, e.g. vetch or clover

Adding 12 months to the
production system
= 1 year in 5
= **20% productivity increase**



Conclusions



Need to think beyond energy

- To reach full potential, future policy should **integrate the agricultural, environmental, and economic benefits**.
- This would **distribute financial support** more evenly across sectors, strengthen the economic case for AD, and **position biomethane more competitively** alongside other renewables.
- Support schemes should **incentivise sustainable feedstock use** and recognise whole system benefits.



Can achieve improved energy and food security

- Biomethane production **should not compromise food production**; it can in fact enhance agricultural productivity.
- This presents a timely opportunity for the agricultural sector to develop local markets, diversify crop options, and **build business resilience** at a time of volatile prices and high input costs, while contributing to national sustainability goals and **improving both energy and food security**.



Need a cohesive policy framework

- Greater **cross-government coordination** is essential to realise these opportunities.
- Policy interests are dispersed across departments, covering energy, waste and slurry management, water quality, and air quality - **clear central leadership** is necessary.
- In isolation these benefits can be modest, but collectively **significant and unrivalled** by other low carbon technologies.



Need clear and ambitious targets

- Clear targets to 2030 and 2050 are essential to provide **investor confidence and drive sector growth**.
- Biomass Strategy ambition should be considered an interim 2030 target, whilst a much more **ambitious target** for 2050 should be considered, **up to tenfold current capacity**.
- A change of mindset is needed, and **feedstock should not be considered a barrier to growth**.

Feedstock availability should not be a barrier to growth



Thank you



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over 20 years of bioeconomy experience**

Website: www.alderbioinsights.co.uk

Email: I.hopwood@alderbioinsights.co.uk

