

GreenPrint Modelling Summary Report

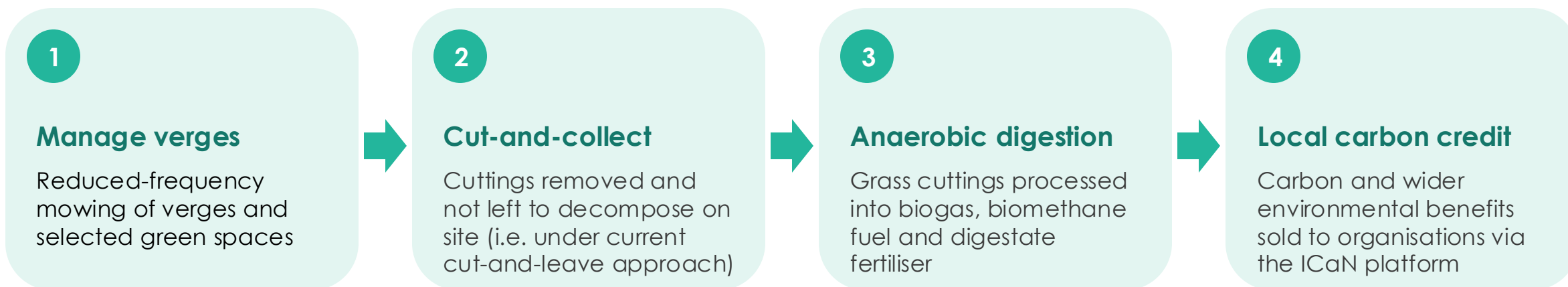
Natural Economy
Circular Economy
Low Carbon Economy



Project Summary

This report presents the outcomes of research conducted for **South Gloucestershire Council (SGC)** on the development of a bespoke carbon credit, available for purchase by organisations seeking to demonstrate positive local climate action, through the Investing in Communities, Climate and Nature (ICaN) platform.

The emission savings are delivered via **Greenprint** - a carbon-negative systems model for green infrastructure management:



Environmental benefits



Enhanced biodiversity

Wildflowers flourish under less frequent mowing



Increased soil carbon

Greater carbon storage in healthier soils



Reduced emissions

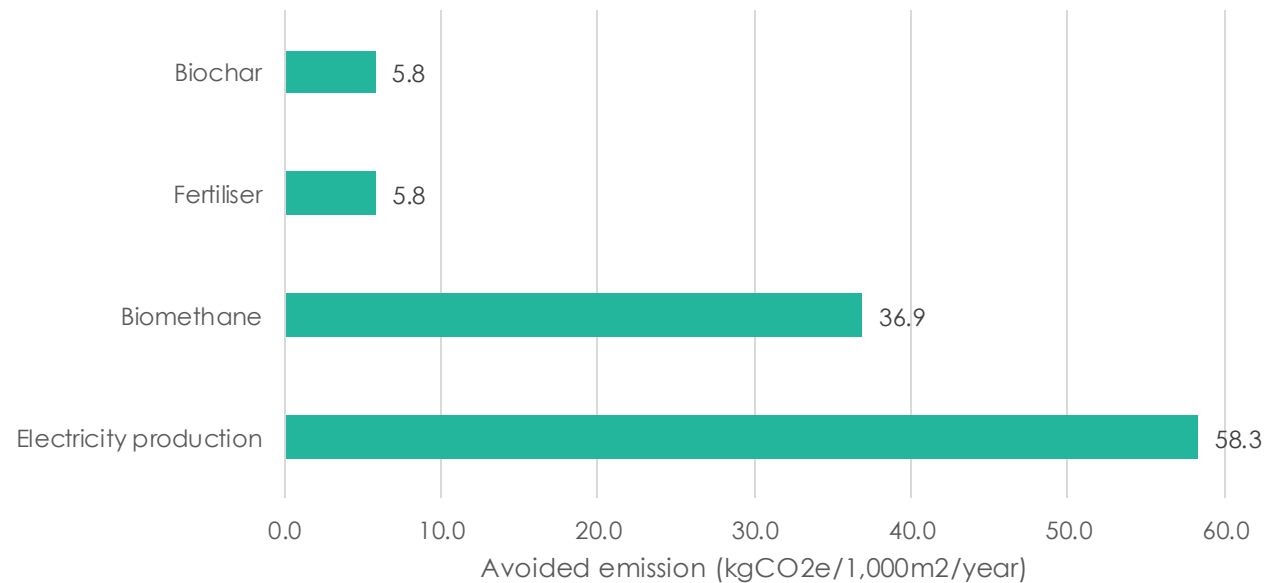
Lower fugitive carbon vs. traditional mowing regimes

Cut-and-Collect Pathways

The modelling considered two main pathways, both of which divert the cuttings to an anaerobic digestion facility and yield fertiliser as a by-product:

- **Electricity production** from biogas (plus fertiliser)
- **Biomethane production** for vehicle fuel (plus fertiliser)

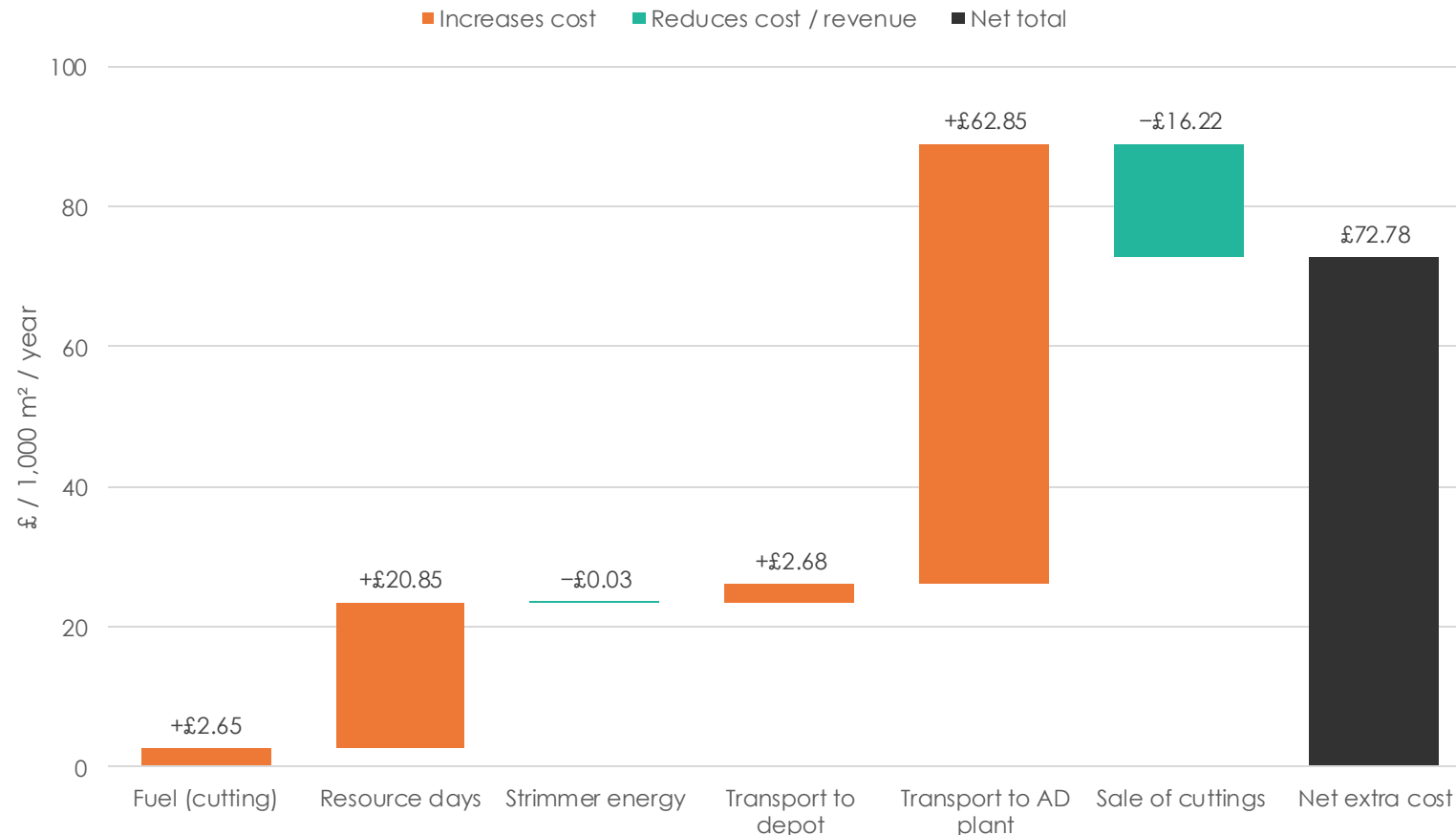
Electricity generation from biogas was found to deliver greater avoided emissions than biomethane production, and so is presented for the remaining analysis.



Biochar production via a pyrolysis plant was also considered. However, this pathway is not currently financially viable for SGC due to the lack of local pyrolysis facilities.

Operational Costs to SGC

Cut-and-collect is more expensive than cut-and-leave, by **£72.78 per 1,000m²** of cut area per year, driven by the considerable cost to transport the cuttings to the anaerobic digestion plant.

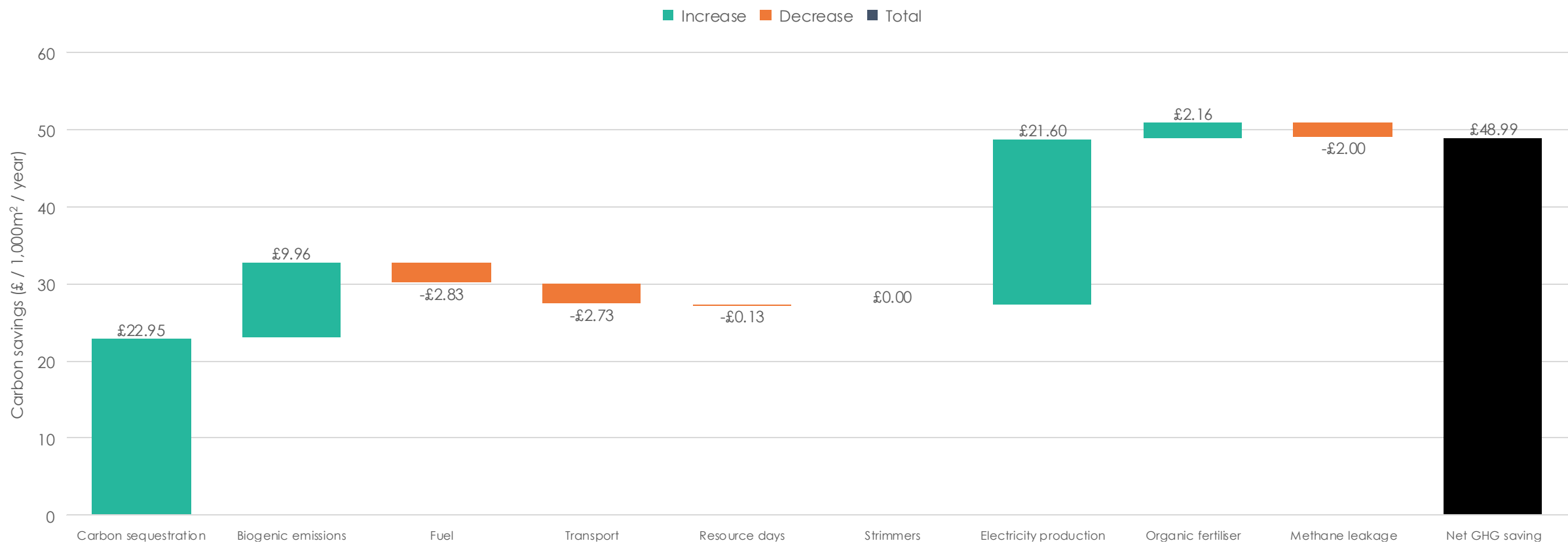


Environmental Benefits

Two key environmental benefits were assessed quantitatively:

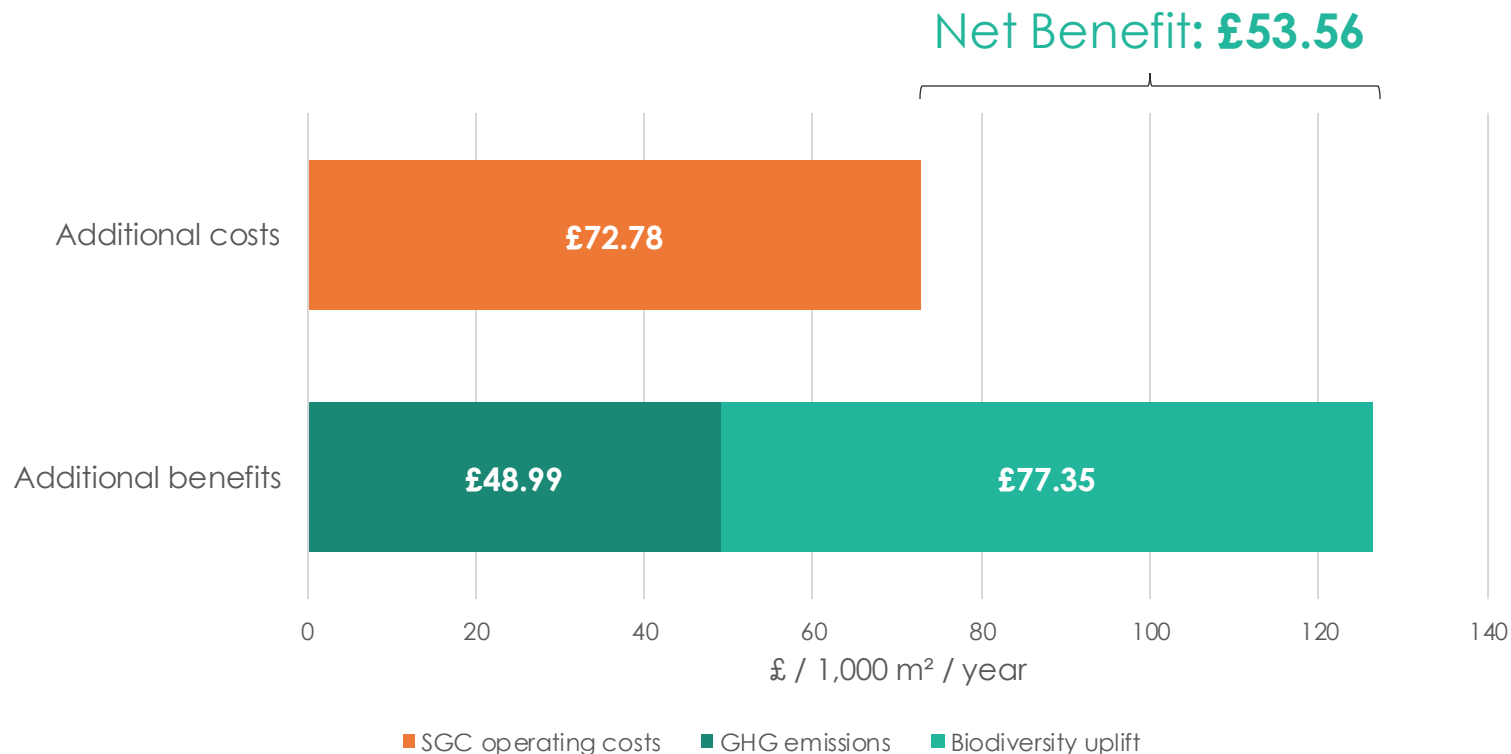
- GHG emission savings: **£48.99 per 1,000 m² per year** (presented below).
- Expected biodiversity uplift: **£77.35 per 1,000m² per year**.

Additional benefits include potential improvements to local amenity and a reduction in wildfire risk.



Net Social Benefit

- Adopting a cut-and-collect approach is successful in reducing carbon emissions and could deliver meaningful biodiversity uplift. Applying Natural Capital Accounting principles, the value of these combined benefits would exceed the additional operational costs to SGC, providing a net theoretical benefit of **£53.56 per 1,000m² per year** or **£19,763 / year** over the 36.9ha pilot area.
- Importantly, the transition promotes circular economy principles, does not require land use change and works within the boundaries of already ongoing management practices.



Recommendations

Our study identified several ways to improve the scheme's net benefits further:

- **Prioritisation of cut and collect sites:** Costs associated with cut-and-collect are unlikely to be uniform across all sites. Some areas may incur higher costs due to greater transport distances or more challenging terrain. Prioritising sites with lower collection and transport costs could improve overall cost-effectiveness, rather than assuming full participation of all potential land parcels.
- **Optimisation of cutting regimes:** As the project matures, there may be opportunities to reduce costs through less frequent cutting regimes. Scaling based on existing data, it is estimated that this reduction in cut frequency would reduce the cost of cut and collect by approximately £11 per 1,000m² of cut area per year, bringing the overall operating costs more in line with the cut and leave scenario.
- **Explore potential for economies of scale:** If a greater area of land area is made part of the project and subject to cut and collect, the operational costs may reduce per m² from potential economies of scale e.g. the use of larger mowers or deploying their own transport infrastructure rather than using an external contractor.



About Eunomia

Eunomia is an independent sustainability consultancy driven by a genuine passion to make a positive change to the clients we work with and the communities they operate in. Founded in 2001, we have been pioneers in the sector - early advocates for helping NGOs as well as leading public and private sector organisations in the UK and overseas to adapt their approach and adopt more sustainable processes.

Our consultants are experts in the field, deeply immersed in the subject with the technical knowledge and skill to offer clients innovative, clear and practical recommendations. We are committed to finding solutions to better protect the planet, while supporting the wider aims and needs of our clients.

Each client is treated as an individual, with consultants taking the time to understand their objectives and how best we can support them. This personal service ensures a strong relationship is forged, based on honest and regular communication. It also ensures if these objectives change, there is the flexibility to adapt.

As an established leading independent consultancy, clients can have complete confidence that consultants will offer evidence-led solutions based on robust, impartial thinking that offer both pragmatic and positive outcomes.