



NFFN Position on Net Zero Farming

Net zero carbon refers to achieving an overall balance between emissions produced and emissions taken out of the atmosphere. Achieving net zero is required to meet the Paris Agreement, which aims to keep global temperatures below a 1.5°C rise above pre-industrial levels.

NFFN Key Principles for Achieving a Net Zero Carbon Farming Sector

- The UK agricultural sector should be net zero carbon by 2040 at the latest. Every farmer can make changes to reduce carbon emissions and store carbon on their farm.
- Achieving net zero carbon will help protect UK agriculture from the worst impacts of climate change¹.
- Land well managed for nature also stores carbon and helps mitigate climate change. For example, increasing the species diversity of grasslands (especially deep-rooted plant species) can sequester more carbon.
- Many of these measures can contribute to adaptation to a changing climate, e.g. herbal leys are more resistant to drought, constant soil cover can protect against erosion, and trees can assist in flood prevention.
- The NFFN recognises that a range of measures will be required for different farm types and geographies. Advice and support across the sector will be important to help farmers select the right measures.
- All businesses should have a baseline carbon audit to provide a broad understanding of the situation on their farm and help to track progress. Good online tools include the Farm Carbon Cutting Tool (FCCT)² and Cool Farm Tool³.
- The NFFN want to encourage uptake of the most effective practical actions which farmers can do to help cut emissions and sequester carbon– to demonstrate that farmers are part of the solution.
- Many actions to reduce a farms carbon footprint can make economic sense, for example simple changes to a crop rotation to include legume crops or leys can reduce the need to buy artificial fertiliser. Reducing livestock numbers and so also emissions, can also be a route to increase profitability, helping to reduce input costs and maximising returns.
- Farmers can lead the way, however, recovering our wildlife and achieving a net zero carbon agricultural sector will require more than the easy wins and this must be underpinned by comprehensive policy and legislative frameworks in each of the four countries. All four

¹ Committee on Climate Change (2019) Net Zero: The UK's contribution to stopping global warming <https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf>

² <https://www.farmcarbontoolkit.org.uk/>

³ <https://coolfarmtool.org/>

countries should introduce policies which effectively reward farmers that deliver environmental public goods.

- All UK countries can and should be making a meaningful contribution to achieving a net zero UK agricultural sector.
- We need a system that ensures food is affordable rather than cheap. It is important to look at the whole food and farming system to ensure farmers earn a fair return whilst ensuring food is healthy, affordable and sustainably produced.

Measures the NFFN Support to Achieve Net Zero Farming

All farmers across the UK can help our UK wildlife to recover and achieve a net zero agricultural sector. Whilst some nature and carbon friendly farming changes will be simple, many will require support including funding and advice. It is important to note that achieving net zero carbon from agriculture and land use will require a range of mechanisms. Realising net zero will require change, it is not possible to just tweak around the edges. Trade-offs are inevitable; however, it is possible to plot a course to net zero carbon that also delivers thriving wildlife, a vibrant farming sector and good quality food whilst avoiding seductive tech-no fixes which may lock in unsustainable approaches.

A clear first step is to undertake a baseline carbon audit using one of the many online tools such as the Farm Carbon Cutting Tool or Cool Farming. We also recommend that farmers engage with local wildlife enthusiasts to build an even deeper understanding of the nature they have on their farm. What happens next will depend on farm type and location. Options include^{4,5}:

- **Changing agricultural practices, including a shift towards agroecological system thinking:**
 - Lowering livestock emissions, including reducing stocking densities and feed supplements and shifting to pasture or home-produced feed.
 - Improved crop and soil management (such as reduced tillage and changes to rotations)
 - Improved manure management and storage
 - Undertaking and implementing nutrient management planning to boost efficiency
 - Incorporating trees into farms through agroforestry
- **Reducing energy and fuel use**
 - Switch to renewable energy sources
 - Where possible use energy efficient vehicles and machinery
 - Reduce vehicle emissions through changes in agricultural practices such as reduced tillage.
- **Managing and enhancing carbon and wildlife rich habitats, including**
 - Peatlands
 - Species rich-grasslands and heathland
 - Thick hedges and scrub areas
 - Blue carbon such as wetlands and saltmarshes
- **Habitat creation and carbon storage including,**
 - Native woodland and tree planting
 - Wetlands, and
 - Species rich meadows and grasslands

⁴ Brandmayr, C., Kelsey, T., Petersen, M. and Gordon, B. (2019) Cutting the Climate Impact of Land use, Green Alliance

⁵ Crane, E. (2019) Sustainable climate change mitigation in UK agriculture. A review of evidence for the RSPB unpublished

- **Changing demand**
 - Producing less but better livestock products and encouraging similar consumption patterns
 - Reducing food waste
 - Supporting robust trade policy to avoid offshoring the UK's carbon footprints and
 - Promoting transparent, environmentally sustainable supply chains

It may not be possible to adopt all necessary actions immediately; funding and advice are required to support a careful transition towards nature and climate friendly farming.

NFFN Position on Potential Mechanisms

Bioenergy

- Although bioenergy enterprises are driven by good intentions, they can often deliver perverse outcomes. For example, deforestation in North America to fuel Drax plants in the UK⁶, the facilitation of intensive livestock (e.g. pig and poultry through associated anaerobic digestion units to process waste) which causes air pollution⁷ and can contribute to the antibiotic crisis and the dedicated growing of maize for Anaerobic digestion which can be detrimental to soils⁸. The NFFN are also concerned about the Committee on Climate Change's (CCC) warning about displacing food production outside the UK, which could potentially increase the UK's ecological footprint⁹.
- Restrictions should be placed on crops grown for bioenergy to ensure they are managed in a nature friendly way.
- Improved compliance with regulatory standards could help control some of the issues with bio-energy crops (e.g. soil erosion issues with maize cultivation).
- NFFN has concerns over the feed stocks and licensing terms for Anaerobic Digestion (AD) plants. In England at least, many seem to use 20-year agreements, meaning farmers are locked in.
- A robust planning response is required when new applications for AD plants are proposed, enabling a holistic assessment of the environmental implications of the plant beyond its physical footprint to be made.
- NFFN are keen for an independent audit to be undertaken looking at the energy balance or shape of the market, to ensure that future development of biofuel and AD is carbon and nature friendly.

Carbon capture and storage

- The technology has promised much but as yet failed to deliver. The NFFN think it is dangerous to assume this technology will be able to reduce CO₂ emissions in time to keep

⁶ Howe, F (2017) No Drax! There's nothing 'sustainable' about big biomass
The Ecologist, <https://theecologist.org/2017/apr/10/no-drax-theres-nothing-sustainable-about-big-biomass>

⁷ <http://www.arc2020.eu/cap-ammonia-eu-northern-ireland/>

⁸ Vogel, E. et al (2016) Bioenergy maize and soil erosion — Risk assessment and erosion control concepts, *Geoderma*, 261, pp 80-92

⁹ Committee on Climate Change (2018) Land use: Reducing emissions and preparing for climate change
<https://www.theccc.org.uk/wp-content/uploads/2018/11/Land-use-Reducing-emissions-and-preparing-for-climate-change-CCC-2018.pdf>

global temperatures below the 1.5°C target set in the Paris Agreement. This technology is not a silver bullet, and we must not let it distract us from decarbonising all sectors.

Livestock consumption

- Livestock numbers should be within the productive capacity of the landscape in balance with other requirements, including nature conservation. New research suggests that reducing stocking densities can boost the profitability of a farm business (Clark and Hart, 2019).
- Grazing is an important conservation tool, stocking densities should be managed to deliver positive carbon and nature outcomes, in some cases this may mean tackling under grazing.
- The NFFN supports a shift to less but better meat. This means supporting varied diets, in which less but high-quality meat is consumed (e.g. produced to high environmental and animal welfare standards such as organic and pasture fed animals) along with UK vegetable and pulses.
- The NFFN supports a shift to livestock fed on pasture or feed produced on farm (e.g. high-protein legume crops).
- More scrutiny of feed used in intensive systems should take place to ensure that the Carbon and Environmental footprint is captured at home and overseas.
- Proportionate but effective regulation and inspection regimes are required to ensure that systems are well regulated to reduce emissions (e.g. manure handling).

Pigs, Poultry & Dairy

- There are a range of carbon friendly actions that can be taken by pig, poultry and dairy enterprises. Such as:
 - Reduce use of imported feedstocks
 - For dairy, avoid maize cultivation and ensure good soil management practices where it is grown.
 - Reduction or better management of stocking densities
 - Reduce ammonia emissions through manure management
 - Practice sustainable soil management
 - Create and maintain on farm wildlife habitats where possible. Pig and poultry enterprises have not benefited from agri-environment schemes under the CAP. This should be changed under future agricultural policies across all four UK countries.
- All farm businesses should be compliant with regulatory standards.

Manure management

- Support and guidance are needed to help farmers design and implement effective manure storage and handling systems to reduce emissions. This should include soil testing to ensure manure is only applied to soil using appropriate methods and only when needed. This will also have benefits for water and air quality.
- Payments should incentivise best practice rather than pay for capital investments for machinery. Loans may be required to support slurry storage infrastructure.

Management of peatlands/woodlands/other habitats

Peatlands

- Lowland peatland - NFFN recognises the importance of the carbon stored in lowland peat and are keen to seek pragmatic solutions to rewet peat where possible and relocate

production and build supply chains elsewhere. Continued Government support is required in all four countries to enable this transition.

- Peat extraction: The NFFN supports the immediate cessation of peat extraction, the restoration of extraction sites and measures to improve the quality and sustainability of peat alternatives.
- Upland peatlands: All upland peatlands should be protected, restored and enhanced to a healthy functioning condition.

Trees, woodland and woodland management

- NFFN recognises the role trees can play in storing carbon, through woodland, agroforestry and hedgerows.
- NFFN is supportive of agroforestry as a valuable practice to capture carbon, increase productivity and diversify production.
- NFFN advocates a policy of the right tree, right place and for the right land management reasons (e.g. ensure carbon and biodiversity benefits).
- NFFN encourages hedgerow planting and better hedgerow management. Farmers should aim to provide a diversity of hedges around the farm, including tall, thick hedges and scrubby areas.

Encourage 'rewilded areas'

- Farmers should aim to 'Rewild areas' on farm. By this we mean encouraging scrubbed up field corners or flower rich habitat. The habitat type really depends on what's needed in the wider landscape.
- Scrubby edges – we encourage farmers to leave rough edges to hedges to increase standing carbon and to create a range of habitats for different farmland wildlife.

Carbon capture in Soil

- NFFN supports a 'greener landscape' – we need to encourage greater biomass above ground (dependent on biodiversity requirement of the area). Farms need to have green cover for as long as possible – avoiding bare soil. Although the NFFN recognises that weedy winter stubbles can be beneficial for wildlife including seed eating birds.
- Targeted and reduced tillage where possible using the best machinery choice
- Reduce fertiliser use
- Improve soil health to improve crop health.
- Choose better crop varieties which are resilient.
- Promote knowledge transfer between farmers to encourage confidence in new approaches.

The Role of Governments

Transition: Governments across the four UK countries need to introduce a comprehensive package of measures to help farmers shift towards both carbon and wildlife friendly farming. Particularly bridging the gap between current CAP and post-CAP policies.

- Regulation: NFFN supports the use of effective regulatory standards to underpin carbon and wildlife friendly farming. Regulatory standards must be enforced to drive up standards and protect investment in environmental delivery.
- Incentives: All four UK countries should introduce:

- Environmental land management schemes focused on public money for public goods including those delivered through nature and carbon friendly farming practices.
- Environmental productivity grants – loans and grants to support a shift to agroecological practices e.g. shift to different tillage system, and support manure and fertiliser management
- Innovative mechanism such as linking inheritance tax relief to environmental land management should also be explored.
- Research, advice and support – to provide and disseminate the latest guidance will be key mechanisms to support a transition to carbon and nature friendly farming. For example, on the best crop varieties to choose or new tillage techniques.