

Briefing

The potential to expand fruit and vegetable production across the UK



October 2026

Summary

The UK relies heavily on fresh produce grown overseas. Domestic fruit and vegetable production has [fallen](#) since 2015, and the country now [imports](#) 44 per cent of its vegetables and 86 per cent of its fruit. This leaves the UK's supply of everyday produce highly exposed to extreme weather around the world. Severe droughts and floods overseas have already caused periods of [higher prices](#) and [restricted supply](#). As climate impacts intensify and are compounded by global political instability, shocks to food supply chains are set to become more frequent.

To safeguard the nation's food security, the UK must expand homegrown fruit and vegetable production. Highly productive glasshouses will be [crucial](#) to securing large volumes of fresh produce year-round. But expansion is held back by difficulties locating suitable sites, slow planning decisions and high running costs, which undermine returns.

To help address this, in our previous briefing we recommended that the government develop a national spatial strategy, as part of its Horticulture Sector Growth Plan, to identify where new fruit and vegetable production could be located. Here we expand on how this should identify areas suited to efficient, profitable production, including those with good access to the national grid, and fast track development in these locations. The strategy should also support the potential for co-locating glasshouses alongside other industries, to lower and stabilise running costs.

Why should the UK build more glasshouses?

The UK has untapped potential to expand its domestic fruit and vegetable production and shore up national food security.

[Our analysis](#) has found that, by expanding predominantly indoor domestic fruit and vegetable production to replace half of the amount imported, the UK could return to a level of self sufficiency last seen in 2000.

Because glasshouses are much more efficient than growing crops outdoors, replacement at this level would only require 0.016 per cent of UK land to be given over to glasshouses, which is about three per cent of the land used for golf courses.

Food security would rise as a result, as higher UK production would reduce reliance on the moderate to highly climate vulnerable growing regions abroad, which currently supply [18 per cent](#) of UK fruit and vegetables.

What are the barriers to expansion?

Glasshouse production requires significant upfront investment. A new glasshouse can cost as much as £2 million per hectare to build, meaning investors need confidence that it will deliver an acceptable return over its lifetime. However, high construction costs, long payback times and inconsistent planning authorisations are currently deterring investment in the UK glasshouse sector.

High energy costs add to this challenge. Volatile natural gas prices are encouraging new projects to transition away from natural gas to lower carbon, alternative energy sources. However, limited grid connectivity, high [electricity standing charges](#) and the [exclusion](#) of the sector from energy bill relief is compromising profitability and restricting expansion.

Some UK glasshouse businesses have demonstrated that co-location alongside other industries can cut their running costs and reduce environmental impacts. This involves a glasshouse being built close to another facility, so that waste low grade heat (below 100°C) generated by the partner site is transferred to the glasshouse. Carbon dioxide from industrial processes or food production (eg as a by product of fermentation and brewing) can also be piped into glasshouses to support plant growth.

However, appropriate sites for co-location can be difficult to find. Industry experts have warned that high construction costs, alongside the cost of securing the CO₂ needed for sites where it cannot be captured alongside heat, can be prohibitively expensive. Alongside a spatial plan for the sector, we recommend that the government engages with glasshouse operators to explore how to overcome these challenges.

Examples of co-location

Innovative glasshouse projects across the UK are showing that [wastewater treatment](#) plants, [data centres](#) and [manufacturing](#) facilities can be well suited to this approach. In one instance, a large glasshouse uses heat from a [reservoir](#). The potential to capture both waste heat and CO₂ from industrial areas, such as the [HyNet North West](#) cluster, warrants further investigation.

The Greenhouse Growers, Norfolk

- Two glasshouses in the East of England meet over 90 per cent of their heating requirements using waste heat generated by a nearby wastewater treatment plant. This reduces the greenhouse gas emissions from production by up to [75 per cent](#).
- Heat is transferred 2km to the sites, which produce British peppers, cucumbers and tomatoes.

Humber Tech Park, North Lincolnshire

- A £3 billion, 386 MW data centre has been approved for development in North Lincolnshire and includes a glasshouse on site.
- Liquid cooling systems will enable waste heat to be efficiently captured and transferred to warm the glasshouse.

How could a national spatial strategy accelerate expansion?

Policy is needed to bring about a step change and accelerate the expansion of domestic glasshouses to build a more resilient UK food system. As part of the government's Horticulture Sector Growth Plan, the Department for Environment, Food and Rural Affairs (Defra) should develop a national spatial strategy that identifies priority 'horticulture growth zones' best suited to glasshouse development, based on factors including grid capacity, land availability and co-location potential.

Glasshouses within these zones should benefit from access to required infrastructure, as well as a more supportive local planning environment that prioritises national food production.

At the same time, local authorities should require developers of new infrastructure (eg data centres, wastewater treatment plants and energy plants) within these zones to assess whether they can offer waste heat to glasshouses.

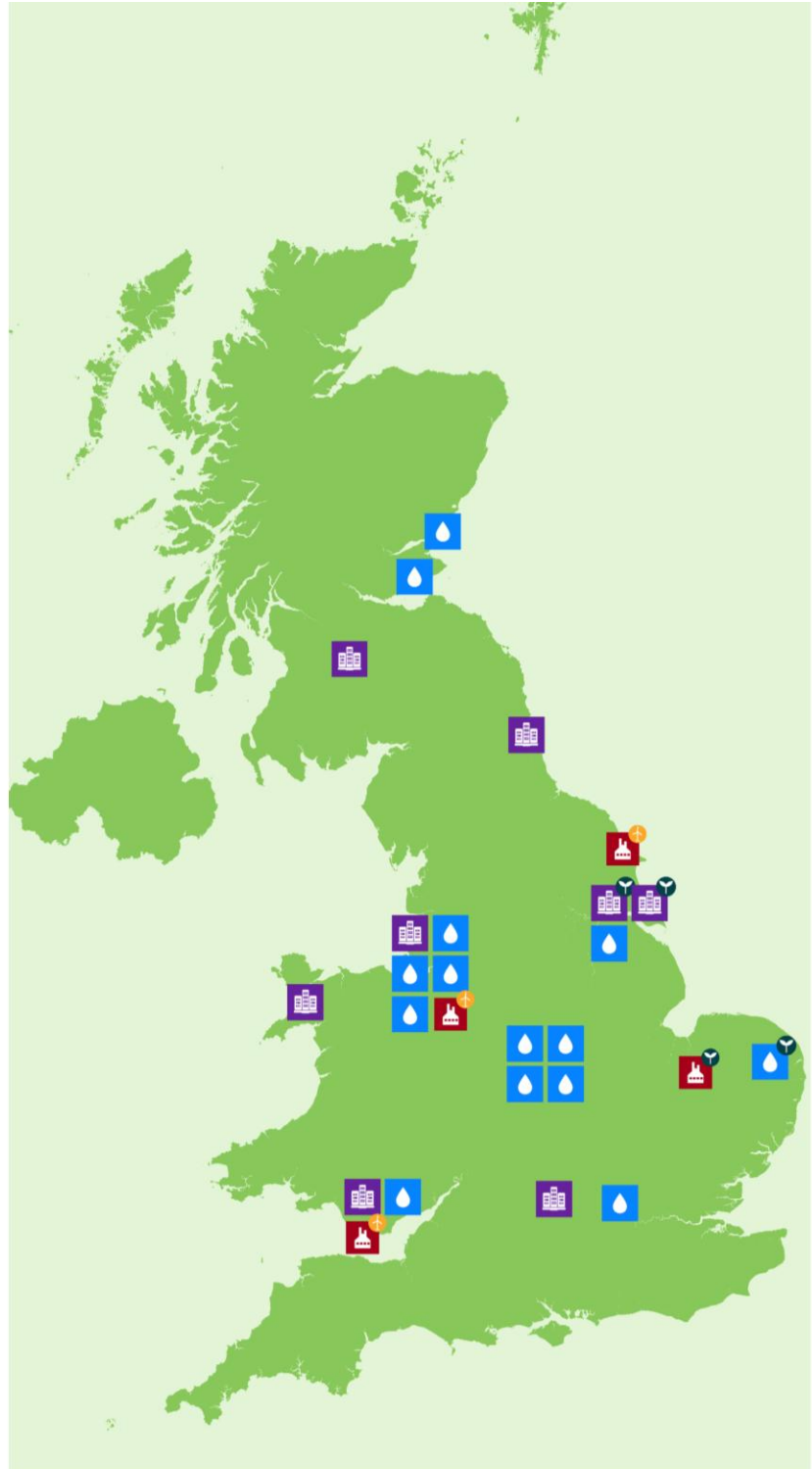
An effective spatial strategy should be developed to align with Defra's [Land Use Framework](#), as well as spatial plans currently under development, such as the [Strategic Spatial Energy Plan](#) (SSEP) and Spatial Development Strategies (SDSs). This offers the government an opportunity to co-ordinate any expansion with plans for the energy system, housing, transport and nature recovery strategies, and drive delivery of cross government priorities, including regional growth.

Opportunities for co-location across the UK

An effective national spatial strategy would consider many factors. Although the government should develop this approach in detail, below we have identified where there may be potential for co-location alongside industries generating waste heat and CO₂. This includes sites that already feature existing or planned co-located glasshouses. (See the appendix on page six for more detail).

-  Planned AI data centre or AI Growth Zone
-  Wastewater treatment plant
-  Industrial site or cluster
-  Existing or planned co-located glasshouse
-  Low carbon energy generation and carbon capture

Note: Locations are approximate. Some icons refer to regions rather than specific locations.



Recommendations

We recommend that the government produces a national spatial strategy as part of its Horticulture Sector Growth Plan.

This strategy should set out where in the country conditions are most amenable to state of the art glasshouses. To do that, we recommend that the national spatial strategy considers:

- **Opportunities for co-location alongside sites producing renewable waste heat and CO₂**

The feasibility of co-locating a glasshouse alongside another industry depends on various factors, including the consistency and quality of heat and the amount of CO₂ available, the suitability of nearby land, the longevity of the site and additional costs of the development. Technical assessments will be required for individual developments, but a national spatial strategy can identify those sites with high potential to be viable.

- **Grid connectivity**

Glasshouses require grid access for power, lighting and climate control systems, and many sell surplus energy back to the market, making grid access essential. Alignment of spatial planning with energy system upgrades will be crucial.

- **Water security**

Modern glasshouses can operate circular water systems which drastically reduce water usage relative to open field production. New sites use rainwater harvesting and storage, alongside on-site reservoirs for a secure water supply. However, precautions should still be taken during the planning stage to ensure sites do not exacerbate local water stress. The cumulative impact of the water use of co-located industries must be considered.

- **Geographic and climatic conditions**

Glasshouses need large areas of flat land and the need to level sites can quickly make construction costs unmanageable. Growing conditions, including hours of sunlight, are also an important consideration affecting output and running costs. An effective spatial strategy should avoid the use of high quality farmland, peat soils and land already prioritised for other uses, such as nature recovery.

- **Transport networks**

Glasshouse growers require access to supermarket distribution centres to sell their perishable fresh produce. Glasshouses located near industrial centres benefit from existing extensive road networks.

Through a national spatial strategy, the government can support the growth of efficient, resilient and sustainable British food production. Prioritising the glasshouse industry will support British growers and regional growth opportunities, and help to make the UK more food secure.

For more information, contact:

Katie Jones, policy adviser

kjones@green-alliance.org.uk

Appendix

All locations identified on the map on page four are approximate and intended to illustrate the diversity of potential opportunities for glasshouse co-location across the UK. Further assessments would be necessary to determine which sites are most suited to co-location.

Locations identified included:

- **Wastewater treatment plants**

We assessed the largest wastewater treatment plants in England, Wales and Scotland respectively, based on public information on treatment plant locations and capacity. For each, we used satellite imagery to determine whether there is undeveloped land within 2km that could be suitable for a glasshouse. Also included is a wastewater treatment plant in Norfolk, which heats two glasshouses in Norwich and Bury St Edmunds.

- **Industrial clusters**

All industrial clusters featured on the map are industrial decarbonisation clusters. These are prioritising the energy transition, which is expected to provide companies with the longevity needed to power glasshouses long term. These regions also have the potential to supply CO₂ from carbon capture. The locations highlighted are: the East Coast Cluster, HyNet North West Cluster and the South Wales Cluster. A glasshouse heated by a British Sugar factory in Norfolk is also shown.

- **Planned AI data centres and AI Growth Zones**

The government has designated six AI Growth Zones where the development of data centres will be fast tracked. We have highlighted these regions on the map. Two planned data centres: [Humber Tech Park](#) and [Elsham Tech Park](#), have glasshouses included in their designs.
