GrowSave Annual Report: 2022-23

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Introduction

In the 2022-23 GrowSave year we delivered our contracted core delivery. In the seventeenth of the programme and the fourth within the current five-year contract, delivery for Horticulture was the focus of the programme and no other sectors were involved in the programme for this period. The hugely volatile and unprecedented changes in the energy market continued on from the previous year and remained a key challenge for growers across UK commercial horticulture, but particularly within the protected sector. Energy costs were one of the primary concerns for protected crop growers, highlighting the importance of provision of support in this area, and of the activity of the GrowSave project. The GrowSave team delivered valuable content on topics across energy to the industry through a range of means, including technical updates, news, workshops, online training courses and videos.

This report summarises the activities and deliverables that were contracted and delivered between September 2022 and August 2023.

Steering Committee

The GrowSave programme continues to be advised by steering committee, which represents various stakeholders. The complementary and diverse mix of people includes project management (AHDB), the technical content delivery (NFU Energy/NFUE) and industry representation (e.g. growers and business owners), shown in Table 1. Regular meetings were again held via Teams this year – which continues to prove a reasonably reliable means of getting good attendance and reducing burden on growers to participate. The steering committees help ensure the programme focuses on topics that are both timely and relevant to the sector.

Table 1: Steering Committees

Sector	Member	Organisation	Role
Management	Debbie Wilson	AHDB	Project oversight
	Jon Swain	NFU Energy	Content delivery manager
	Nathalie Key	NFU Energy	Content delivery manager
Industry steering	Sandy Booth	New Forest Fruit	Industry representative
	James Broekhuizen	Anchor Nurseries	Industry representative
	Andrew Fuller	Neame Lea	Industry representative
	Richard Harnden	Berry Gardens	Industry representative
	Roly Holt	R&L Holt	Industry representative
	Phil Morley	Tomato Growers' Association	Industry representative
	Matthew Simon	Glinwell PLC	Industry representative
	Neil Stevenson	Double H Nurseries	Industry representative

Meetings

The steering committee met bi-monthly online via Teams to allow for more likely and flexible attendance. Meeting minutes are included in the appendix.

Management Teams

The management team (see Table 2) oversees the running of the programme from an overarching and holistic viewpoint, ensuring themes are relevant and aligned to AHDB's goals and the industry. Nathalie Key had project oversight from the AHDB Horticulture side until March 2023, before moving to a role at NFU Energy where she has continued to be involved in the project in a content delivery management function. Debbie Wilson has had AHDB Horticulture project oversight from April 2023. Following Jon Swain's departure from NFU Energy in August 2023, Eirinn Rusbridge (NFUE) will be taking over as technical lead for the project for the 2023-2024 contract year.

Table 2: Management Team

Member	Organisation	Role
Jon Swain	NFU Energy	Content delivery and technical lead
Nathalie Key	NFU Energy	Content delivery manager
Debbie Wilson	AHDB Horticulture	Project oversight

Content and engagement

The GrowSave project contracted content is delivered in multiple ways in an effort to appeal to a broad audience and improve engagement with energy topics. Information typically falls into two categories:

1. Technical reference material, delivered as:
    - Technical updates
    - Topic articles
    - Workshops/Seminars
    - Online training

2. News
    - Blogs
    - Sector publications
    - Sector conferences

Horticulture

GrowSave website

The rebuild of the GrowSave website, transferred back to NFU Energy control following the wind down of AHDB Horticulture, took place in the third year of the project contract - www.growsave.co.uk (see Figure 1). Since it's reestablishment with NFU Energy

in June 2022 we have ensured the archive of technical resources and information from previous years of the project have been included, and to keep the website fresh and live with new content and information, our aim is to update it with news, energy market updates and topic articles a minimum of twice a month.

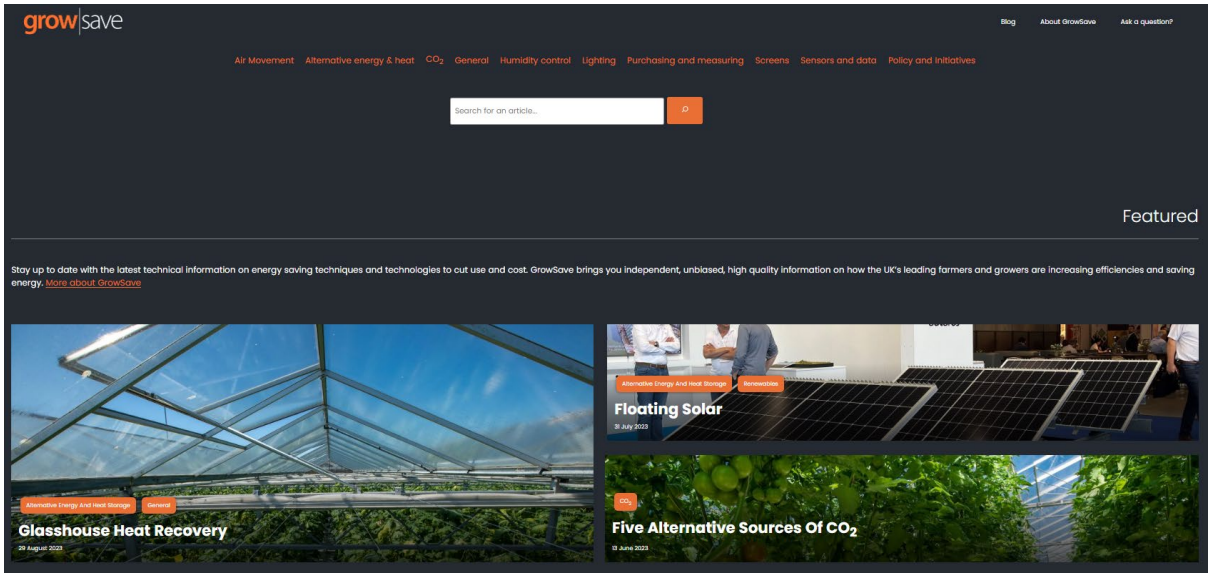

Figure 1. The new GrowSave website format

The thematic sections that were agreed on during the website creation phase have worked well and have allowed us to better display, order and tag content to improve the user experience and accessibility. Upon suggestion from Steering group have added a new section on policy and initiatives. The current themes covered are:

- *Air Movement*
- *Alternative energy and heat*
- *CO2*
- *Humidity Control*
- *Lighting*
- *Energy purchasing and measurement*
- *Screens*
- *Sensors and data*
- *Policy and Initiatives*

In addition, there is a *General* section for the content that does not naturally have a home within this content structure.

Content includes webpage based textual information, pictures, diagrams and videos to enhance the grower experience. Maintaining content in a web format enhances searchability of the content via search engines and allows flexibility for updates and edits as appropriate.

Website analytics

The following website statistics were available to determine the activity on the site, accessed on 30 November 2023:

In the last 12 months the website has had:

- 3,175 website sessions, 2,195 users, 1900 of these were new visitors.
- They spent an average of 1 minutes 27 seconds on the site (for reference, Google analytics states that an average Average Engagement Time on a website across the board is 48 seconds)

Top 5 users broken down by country:

1. United Kingdon – 985
2. United States - 382
3. China – 204
4. Netherlands - 96
5. Germany - 48

Website users of the last 12 months:

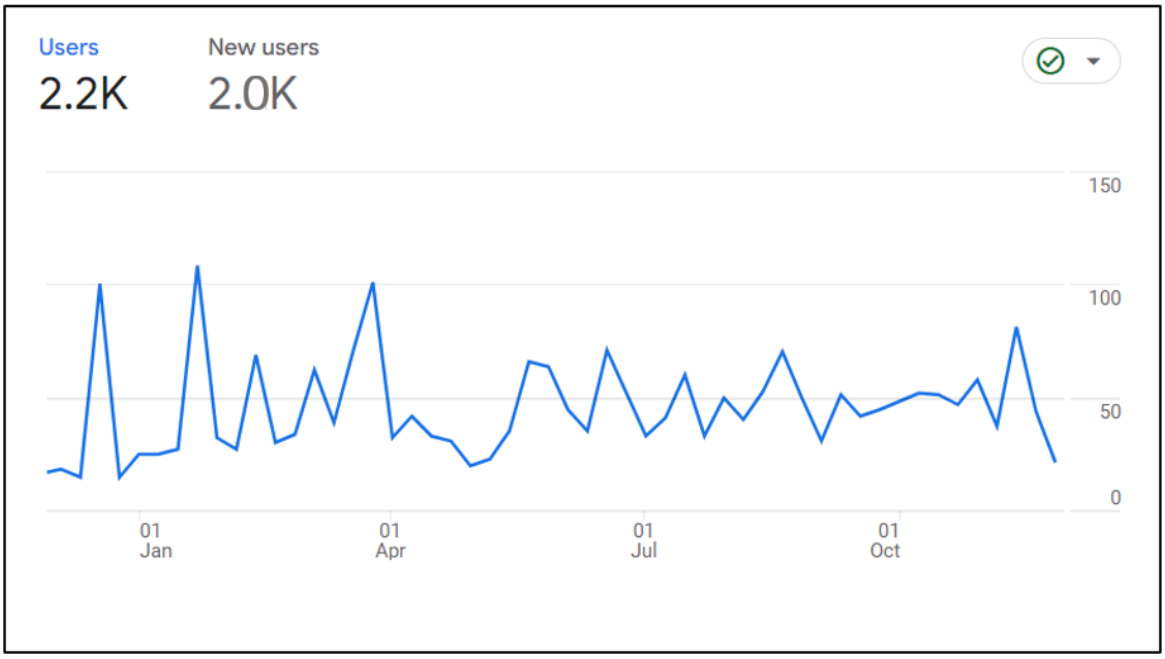

Figure 2: Graph showing GrowSave website users over the last 12 months.

The majority of the visits to the GrowSave website were “direct” (1,900) from shared links or through direct entry onto the website, and 998 were from organic searches.

The most visited pages included:

- Monthly market updates
- Introduction to air circulation fans in greenhouses
- Alternative energy and heat storage
- Spark spread – what is it and what does it mean?
- Agrivoltaics
- Energy Efficiency in Glasshouses.

Content delivery

The delivery of work for the 2022-23 project year was proportional to what was contracted but has had to alter to adapt to the changing circumstance that arose with the wind down of AHDB Horticulture, alongside the energy related challenges experienced by the sector.

As part of the AHDB Horticulture wind down, The Grower magazine initially reduced the number of issues delivered, before halting production completely, thus removing this as an option for an outlet for contracted GrowSave News and any additional delivery of articles in that magazine. The contract has built-in flexibility for this very reason, and to continue delivering content along these lines, relevant replacement content was delivered online via the GrowSave website in the following formats:

- Blogs – short pieces in response to key news in energy relevant to the sector
- Topic articles – 600-800 word articles highlighting key topic areas of interest (these can be explored further via in-depth technical articles if agreed)
- Energy Market Updates – monthly news.

The aim was to keep the website fresh and updated with news-type content, sharing at least 2 new pieces of content per month – an energy market update combined with a blog or topic article.

In addition to contracted delivery, we also made the most of opportunities to write articles for newsletters and speak at other meetings and events to share energy information with the industry and improve the awareness of and access to GrowSave resources. This has included including British Herbs, British Protected Ornamentals Association (BPOA), Tomato Growers' Association (TGA), the Cucumber Growers' Association (CGA) etc, and articles in The Greenhouse Grower.

Table 3: Horticulture Deliverables

	Forum/topic	Content	Date
Additional industry interaction	TGA Tech Committee	Energy Update	March 2023
	CGA Tech Committee	Energy Update	March 2023
	British Herbs	GrowSave update and links in grower newsletter	August 2023
	NFU Horticulture magazine	GrowSave overview and key highlights article	August 2023
Technical Updates	Five alternative sources of CO_2 Series in three parts	1. Biomass	June 2023
		2. Chemical	June 2023
		3. Direct capture	August 2023
Topic articles	1	Agrivoltaics	January 2023
	2	Climate Change Levy Scheme	May 2023
	3	Energy Bill Discount Scheme	May 2023
	4	Floating Solar	July 2023
	5	Glasshouse Heat Recovery	August 2023
	6	Energy Efficiency in Glasshouses – summary of workshop events	August 2023
Blogs	1	Air movement in Greenhouses – online course	November 2022
	2	Conference season round-up	December 2022
	3	Anaerobic digestion: what can it do for you?	April 2023
	4	Have your say on the Green Gas Support Scheme	May 2023
	5	Six reasons you should join the CCL scheme	August 2023
Energy Market Updates	12 monthly updates		Throughout the year
Events	TGA Conference	Energy outlook for the future	September 2022
	CGA Conference	Supplementing CO_2 – the options	October 2022
	Soft fruit growers event	Energy outlook	November 2022

	Forum/topic	Content	Date
	Poinsettia growers event	Energy outlook	November 2022
	British Herbs Association event	Energy outlook	March 2023
	Grower Workshop	Energy Efficiency in Glasshouses + tour Clockhouse Farm water source heat pump	April 2023
	Grower Workshop	Energy Efficiency in Glasshouses + tour of Dyson Farming AD plant and glasshouse	July 2023
Other	Industry awareness	Greentech exhibition – Netherlands (CO_2 direct capture)	June 2023

Event round-up

As well as attending multiple industry events and conferences across the protected cropping sector, highlighting key energy updates and outlook for the industry as outlined above, we also delivered two interactive grower workshops on the 4th April and 11th July 2023. The workshops covered the same topics and took place in a Southern and Northern location to improve access to growers in different parts of the country. The workshops were also combined with site visits. They covered the following topics:

- Basics of Energy Efficiency – delivered by Eirinn Rusbridge (NFU Energy)
- Glasshouse heating systems and improving their energy efficiency – Dan & Matt Blood (Ebtech)
- Ways to improve glasshouse energy efficiency – David Summerfield (Bridge Greenhouses)
- How and why to conduct an energy audit – Eirinn Rusbridge

4th April 2023 – Workshop #1 at Clockhouse Farm, Kent

21 delegates (20 of whom were growers/from grower businesses) attended and we had good engagement, with productive discussion around the presentations.

Following the talks, we were taken on a tour of Clockhouse Farm's blackberry ETFE greenhouse and innovative water source heat pump, which was well-received and proved to be a draw for the event.

Unfortunately, we did not have a formal feedback form in place at the event but request for feedback was sent out following the event via Survey Monkey:

- Only 3 responses were received.
- All sessions were deemed "good" or "very good" for quality and business relevance.
- The respondents would highly recommend the workshop to a colleague – average 9.7/10.
- One suggestion was put forward for future workshops or content – a closer look at how energy saving measures impact emissions and carbon footprint.

11th July 2023 – Energy Efficiency in Glasshouses workshop, Lincolnshire

17 delegates (all growers/from grower businesses) and we had good engagement, with productive discussion around the presentations.

The workshop was followed by a talk and tour of Dyson Farm's AD plant and strawberry production glasshouse.

We received 11 feedback forms summarised as followed:

- In response to the question, *Would you recommend the workshop to a colleague*? - the average response was a strong "yes" at 9.25/10.
- In response to the question scoring the quality and business relevance of the presentations, the average score was "good" or "very good" at 8.7/10.
- Multiple suggestions were given for future improvements and topics, which have already been raised with the steering group and will be incorporated into the future programme where possible:
    - Further information on PV panels
    - Heat pumps specifics
    - EV charging
    - Most efficient boilers on the market and various heat sources
    - Horizon scanning of future greenhouse builds
    - Irrigation energy efficiency and water usage.

Online training

The online training platform was created in 2021, and so far contains modules on humidity control, air movement and lighting calculators. These have not been further developed in 2022-2023 contract year but will be considered for further development in 2023-2024 with steering group input and depending on how the budget is used. The courses can be accessed via the link below:

https://ahdbgrowsavetraining.thinkific.com/collections

Engagement

Given the wind down of AHDB Horticulture and the loss of their industry newsletters and magazines, we have made efforts to improve our engagement and communication with industry through other forums. This has included growers' associations newsletters, such as for British Herbs, NFU horticulture email newsletters, and the NFU Horticulture Magazine. We have also had GrowSave representatives attend relevant events and discuss the GrowSave project on NFU Energy stands, such as at the Festival of Fresh event.

Additionally, in May 2023, we established a GrowSave WhatsApp group for growers and relevant industry members interested in receiving updates from the project and from the energy sector in a more informal and flexible format. Steering group members were given the opportunity to join initially, and the group has broadened out through promotion at industry event and in articles. The group currently has 19 participants and we have received positive feedback from the Steering Group members regarding the content and the rate at which this is shared. We will continue to review progress.

Similarly in June 2023 we established a GrowSave LinkedIn group to improve our network and use it as a forum to provide project updates and information about events to the wider industry. We have 45 members so far. We will also continue to review engagement via this group.

The Impact of GrowSave

Financial Benefit

Quantifying the impact of GrowSave is never easy, given that the primary output of the programme is knowledge. It is incumbent on the industry to take the information provided and to apply it to business processes. There is no agreed strategy to benchmark energy consumption and measure subsequent energy savings of those engaged by GrowSave. Therefore, the following describes how the GrowSave programme could be perceived to deliver tangible direct benefit to the industry.

The cost of delivery of the GrowSave programme is £60,000 per annum, to achieve a return on investment a 1% reduction in gas bills for 40 Hectares of high temperature edible production would be needed – simple measures such as those described in the training courses on Humidity control, air movement and basic energy efficiency will deliver significantly more than this. In addition the highlighting and explanation of incentive schemes such as the Climate Change Agreements available to growers and the energy market movements – allowing growers to make good purchasing decisions will deliver significant cost benefit many times in excess of the cost of the programme without altering energy consumption too. Therefore, it is with no surprise and a great deal of pride to hear from growers directly about how the programme has helped their business – such as has been shown in the recent video production made to support a continuation of funding for the scheme.

This GrowSave year has seen the climbdown of energy prices from the highs of September 2022, however gas prices remain at double the long term average which is hugely impactful for the industry. In addition, whilst many growers with CHP benefited from the big spark spread between gas costs and electricity export in early 2023, these opportunities have dwindled significantly.

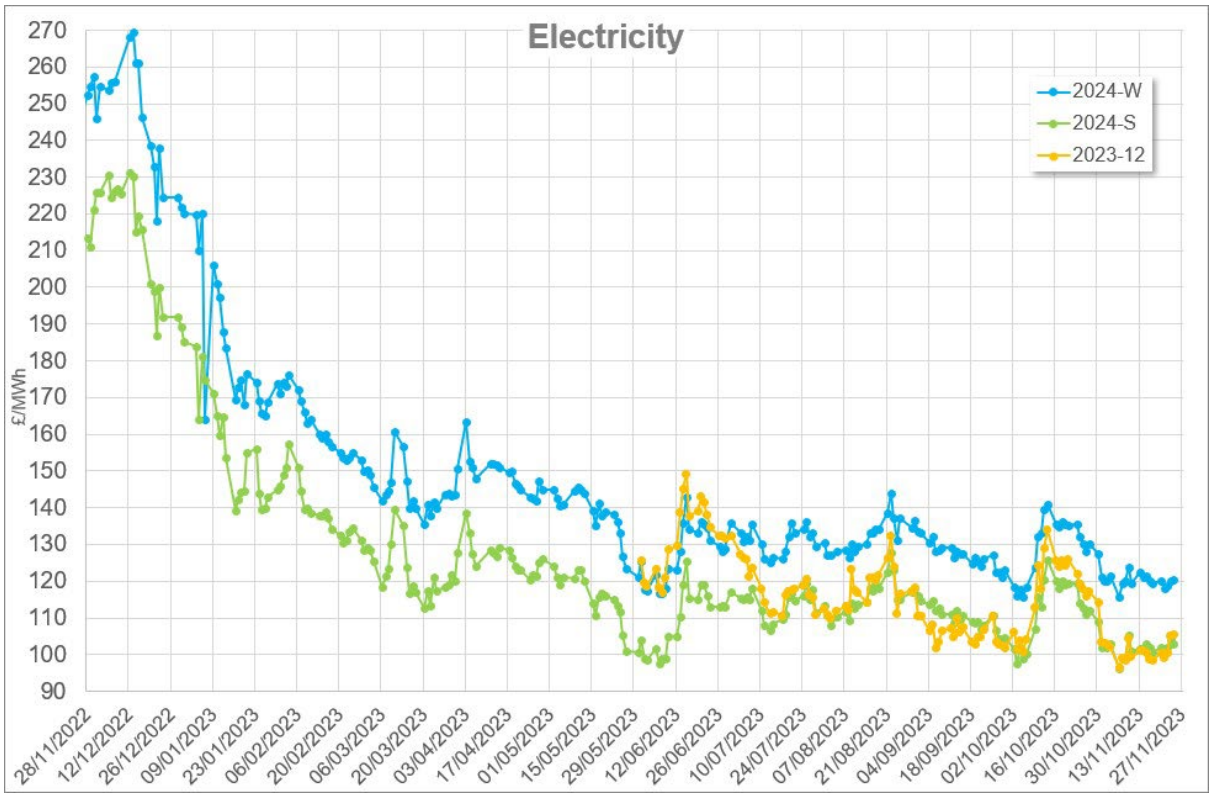

Figure 1. Electricity: whole season import prices (2024-Winter; 2024-Summer; 2023-December)

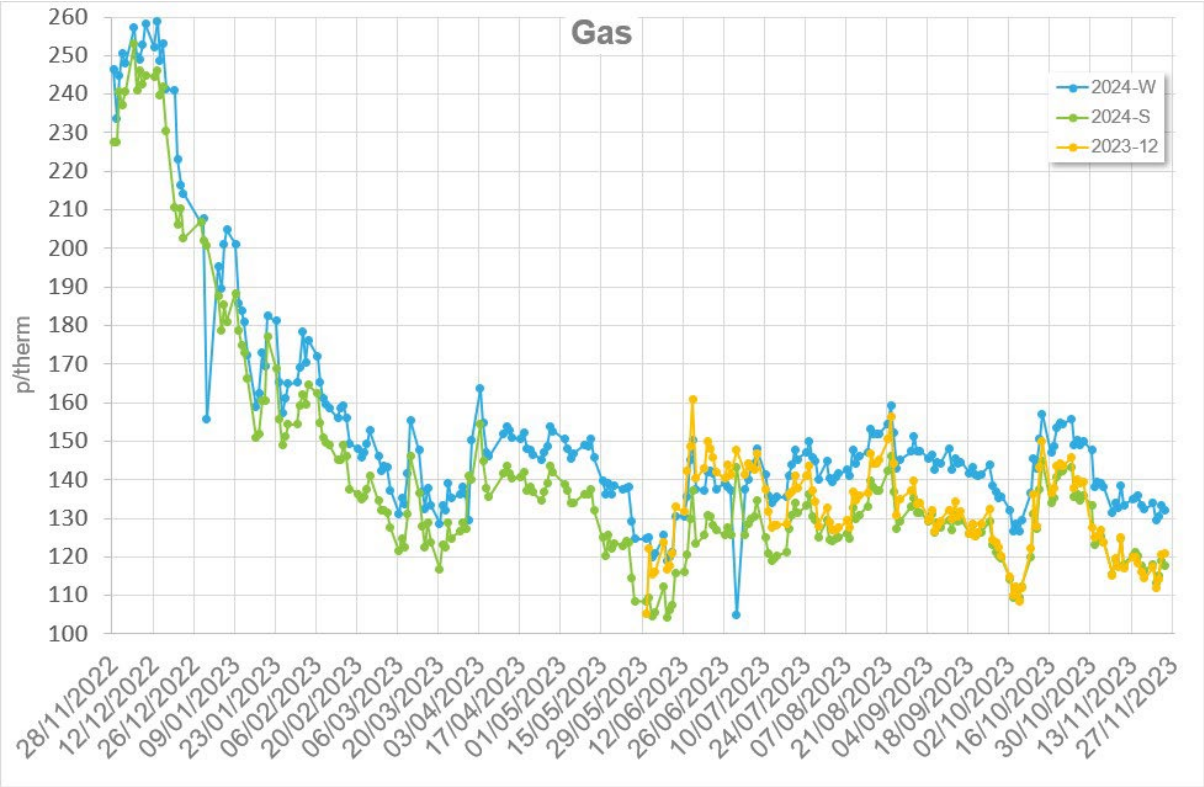

Figure 2. Gas: whole season import prices (2024-Winter; 2024-Summer; 2023-December)

The rise of renewable wind generation capacity means that often electricity is very low cost or indeed valueless during high wind periods, at weekends or in off-peak hours. Managing energy sources to take best advantage of this – such as operating heat pumps preferentially or manipulating patterns of supplementary lighting demonstrates a key role for GrowSave in highlighting the opportunities.

One of the major focusses of the GrowSave team in this year has been on alternate CO_2 sources, building on the study tour of the prior year. The liquid CO_2 market is still leveraging costs more than double historic levels (£300/tonne still being quoted), whilst the gas price remaining at above 100p/therm means that back of boiler CO_2 is £178 per tonne when the heat is not worthwhile. Seeking alternatives and/or understanding better how to apply limited quantities has been discussed in technical literature and at conferences/events. To put this into perspective - £60,000 annual GrowSave cost would be paid for by a 200 tonne reduction of consumption of CO_2 from boilers by just one single grower.

Looking forward, GrowSave plays an important role in disseminating the existing and new technical understandings applicable to the horticultural industry. The recently published report by the House of Lords into the status of UK Horticulture highlighted that:

36. The annual increases in gas and electricity prices to October 2022 were 129 per cent and 66 per cent respectively.[63] The NFU reported to us that cost inflation for farm inputs reached at a record high with energy prices up by 165 per cent .[64] Alex Charrington, an apple grower, told us that their energy costs rose by a staggering 1400 per cent between September and October 2022.[65]

37. In another example, the Lea Valley is a 3450-acre area north of London which grows around 65 per cent of the UK's cucumbers and peppers. In 2021, 8 per cent of their glasshouses were empty because growers could not afford to heat them. This had not happened in 40 years.[66]

And that the government should respond by taking the industry seriously for its energy use:

44. ***The Government must recognise horticulture as an energy intensive industry and add it to the list of sectors eligible for the ETII scheme.***

The GrowSave programme therefore demonstrates an increasingly important role to ensure that government, stakeholders and industry alike understand what Controlled Environment Horticulture requires, and that support and innovation is targeted towards the sector for the greatest benefit.

Appendices

Appendix 1: 2022-23 steering group meeting agendas and minutes