Farm Advisory Service

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December 2022

News in brief

COP27 spotlights on food & energy security

The political boat in Westminster may have finally steadied, after months of turmoil, but inflation continues to batter both households and businesses. The mild autumn will have come as a blessing to many and helped to keep down costs so far, but all farm businesses will inevitably be seeing rising costs and be considering ways to make efficiency savings.

Last month's Agribusiness News highlighted the impact of Avian Flu on supply of turkeys for this Christmas, and this month's includes a summary of the ongoing challenges facing the pig sector, linked to feed and energy prices and supply chain constraints. Now that we are going into housing time for livestock, tight supply of cereals will become more apparent. Sectors with sufficient export markets, such as the beef and lamb sector, may have more resilience, particularly as a weakened pound continues to make the UK an attractive place to buy from.

Meanwhile, the international climate change summit, COP27, was held in Sharm el-Sheikh, with a large focus on the impact of the energy crisis on climate change targets and how to ensure progress towards green transition while maintaining energy security. The other main attention was on developing countries & adaptation to climate change, which may seem far removed from Scottish farming, but there are some useful lessons to take from this. Adaptation will be crucial for farm business resilience in the face of a changing climate. While Scotland may not be faced with the same heatwaves as other parts of Europe with global temperature rise, more extreme rain, flooding and incidence of drought is likely to become more common. These provide real challenges for Scottish farm businesses. Adaptation has been a secondary consideration to mitigation (emissions reduction) in agriculture, but as it becomes increasingly relevant it would be wise for farmers to consider the co-benefits of adaptation options with evolving environmental payments, what the risks might look like to their farm, and if there are easy or low-cost ways to factor this into activities or investments now.

Contents

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Anna Sellars

Next month:

- Update on global trends
- 2022 year in review & outlook for 2023

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Preparing for Sustainable Farming

The Scottish Government have announced amendments to the Preparing for Sustainable Farming (PFS) guidance:

- Claims should be made annually for work that has been completed between 1st January and 31st December each year.
- Carbon Audits and soil sampling must be completed by 31 December for 2022 year claims.
- Invoices and Payments must be made before the claim is made, all claims must be submitted by 28 February 2023 for 2022 carbon audits and soil samples.
- A separate claim may be made for a carbon audit and soil sampling, or both can be claimed at the same time, but only one claim can be made per option, per claim year.
- Claim window for the 2023 PFS year (1 Jan – 31 Dec 23) opens on 1 March 2023.

Where claiming for soil analysis, paperwork for all claimed samples must include the following:

- Business details of testing company/ laboratory
- Number of samples
- Analysis details for all mandatory elements
    - PH level,
    - Phosphate (P),
    - Potash (K) and
    - Carbon
- Recommendations for lime and fertilisers, based upon the crop(s) intended to be grown reflecting Scottish conditions.
- A bank/credit card statement demonstrating that the associated invoice has been paid.

For further information on PSF click here.

Avian Influenza (Bird Flu) update

Further to the announcement of the UK's Chief Veterinary Officers declaring an Avian Influenza Prevention Zone across Great Britain further outbreaks in Scotland have been reported.

To check where disease control zones are currently located and/or if you are in a zone, the Animal and Plant Health Agency (APHA) has produced an interactive map. Keepers of all birds (including pet birds) should familiarise themselves with the avian flu advice at www.gov.scot/avianinfluenza and report suspicion of disease to your local APHA Field Services Office.

Planning for Net Zero

In order to help combat climate change and restore nature, the Scottish Government have published a revised draft National Planning Framework 4 (NPF4) which sets out sustainable policies against which planning applications would be assessed for the next decade.

Proposals in NPF4 include:

- Enabling more renewable energy generation, outside National Parks and National Scenic Areas, to support the transition away from reliance on fossil fuels;
- Supporting emerging low-carbon and zero emissions technologies – including hydrogen and carbon capture – and developments on land that unlock the transformative potential of offshore renewable energy, such as expansion of the electricity grid. Waste incineration facilities would be highly unlikely to receive permission;
- Helping rural communities grow by enabling more local homes and encouraging a more diverse rural economy.

Further afield:

Black Sea Grain Initiative: The initial agreement allowing exports of bulk commodities from Black sea ports has been extended by 120 days from the 18th Nov. As of the 29th Nov, 12.25m tonnes have been shipped of which 41% was maize, 29% wheat, 7% rapeseed and 6% sunflower oil.

EU Glyphosate: After the EU Appeal Committee on GMOs met on the 15th Nov, the Commission is poised to extend the glyphosate approval by one year. The new regulation is likely to be adopted by 14th Dec 2022. The European Food Safety Authority (EFSA) reassessment of glyphosate is now expected to be published in July 2023 to allow the EFSA time to fully examine all the data.

Key Dates

Date	Action
31 Dec 22	**Scottish Suckler Beef Support Scheme** - Deadline for applications.
31 Dec 22	**Preparing for Sustainable Farming** (PSF) - Deadline for completion of carbon audits and soil sampling for 2022.
28 Feb 23	**PSF** – Deadline for 2022 claims for carbon audits & soil sampling – invoices and payments must be made before claim is made.

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Black Sea exports hold & eyes on China

It seems that for most of 2022 we have been reporting on diminishing world grain stockpiles, and now according to the International Grains Council we are currently at an eight-year low for global grains stocks and a ten-year low for global maize stocks. At the same time, the World Agricultural Supply and Demand Estimates (WASDE) report from the USDA increased its estimated figures for global supply, consumption, trade and ending stocks. Global supply (by way of example) is raised to 782.7 Mt, however South America supply remains a key concern with persistent dryness forcing the USDA to lower its Argentinean wheat crop estimate by 1.5 Mt to a new total of 15.5 Mt.

The report kept Russian wheat production at 91 Mt despite most estimates from the trade being closer to 100 Mt. The exports estimate remains at a sizeable 42 Mt, which would require an average of 3.5 Mt of exports each month to realise. Ukraine's grain exports by contrast reached 15.6 Mt by mid-Nov, down 31% on the year. This total includes 6 Mt of wheat, 1.3 Mt of barley and 8.3 Mt of maize. In October, around 4.2 Mt of grain left Ukrainian ports. It's expected that this figure will not reach 3 Mt for Nov; a key watch point for markets.

Global supply remains understandably tight, and markets continue to react to this news from Ukraine. Slower than expected Ukrainian exports could support markets, but recessionary concerns and questions over Chinese demand outweigh this in the short-term.

For maize, tight global supply keeps prices elevated in the long and short-term, but recessionary concerns could limit any rises. South American plantings will be something to monitor over the next few weeks.

UK Wheat & Barley Supply v Demand

The UK picture remains fluid with a large crop and surplus chasing limited consumer demand. What looks like continued lower demand in most sectors in the UK, from livestock to ethanol, means we will continue to follow global pricing trends. However, prices remain relatively strong as questions around global supply reaching the market persist.

The AHDB recently released early balance sheet estimates for UK wheat and barley for 2022/23 (Fig 1&2). Larger wheat carry-in stocks, combined with a rise in production outweighs the increase in usage, leading to a substantial exportable surplus for 2022/23 of circa 2 Mt. With the UK being the cheapest or second cheapest wheat in the world since harvest, we could see all our surplus exported by the Spring; any imports required thereafter would however be very costly; note to the feed sector.

Fig 1: 2022/23 UK Wheat trade (Source: AHDB)

	UK Wheat		
	2021/22	2022/23	% Change on 2021/22
Opening Stocks	1,416	1,846	+30%
Production	13,988	15,664	+12%
Imports	1,994	1,225	-39%
Availability	**17,398**	**18,735**	**+8%**
Human and Ind consumption	7,112	7,579	+7%
Animal feed consumption	7,248	7,287	+11%
Domestic Consumption	**14,710**	**15,224**	**+3%**
Balance	**2,688**	**3,511**	**+31%**
Exports	511		
End-Season Stocks	*1846*	*1500*	
Surplus available for export	**857**	**2,011**	**+135%**

For barley,(Fig2), lacklustre demand from the animal feed sector (-5%) and higher production (+3%), is expected to lead to a larger surplus, but the balance sheet remains relatively tight in a historical context.

Fig 2: 2022/23 UK Barley trade (Source: AHDB)

	UK Barley		
	2021/22	2022/23	% Change on 2021/22
Opening Stocks	1,058	964	-9%
Production	6,961	7,190	+3%
Imports	89	75	-16%
Availability	**8,108**	**8,229**	**+1%**
Human and Ind consumption	1,883	1,923	+2%
Animal feed consumption	4,227	4,031	-5%
Domestic Consumption	**6,309**	**6,154**	**-2%**
Balance	**1,799**	**2,075**	**+15%**
Exports	*764*		
End-Season Stocks	*964*		
Surplus available for export	**928**	**1,275**	**+37%**

UK maize usage is expected to continue to be capped by higher domestic availability of other grains. Oats, meanwhile, have seen another bumper crop leading to another year of high exports forecast.

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Indicative grain prices week ending 30th November 2022 (Source: SAC/Graindex)

£ per tonne	Basis	Dec '22	**Mar '23**	**Nov'23**
Wheat	Ex farm Scotland	258	268	237
Feed Barley	Ex farm Scotland	223	229	217
Malt. dist. Barley	Ex farm Scotland	300		
Oilseed Rape	Delivered Dundee	475	480	485

Prime cattle price eases backwards

A lift in prime cattle prices last month as processors looked to secure enough prime cattle to fulfil Christmas orders was short lived. Finished prices have started to ease over the past weeks, due to processors nearing half way through their Christmas kill. For week ended 19th Nov the R4L price for Scotland was 461p/kg. This is likely to drop further in the coming weeks as processors report slow demand (beef sale volumes continue to be down on the year - the only beef seeing growth in volume is mince) and switch back to killing more cows each week.

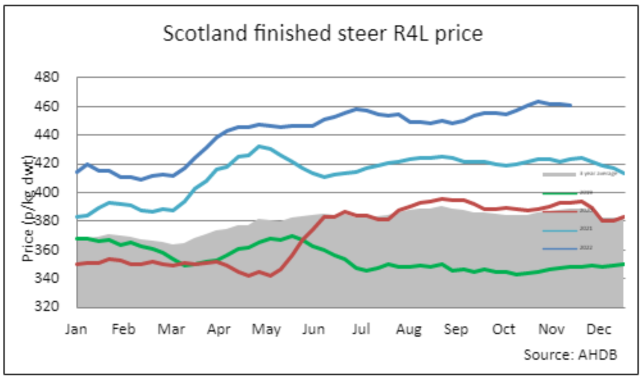
In line with seasonality, as processors focus on prime cattle for their Christmas kill, cull cow prices have fallen back in recent weeks, although prices are still substantially higher than this time last year and above the 5-year average. However demand remains strong for cows which is likely to continue into the New Year, as following Christmas consumers will look to make cost savings, turning to cheaper cuts after the Christmas spend in addition to the pressures of the cost of living crisis.

The cost-of-living crisis is also affecting cattle hide prices as retail sales of finished leather have slowed reportedly linked to economic pressures. UK cattle hide prices over the past few weeks have continued to fall, with tanners affected by rising processing costs, in particular, energy, labour and chemicals. The concern now is that slaughter rates may increase over the winter, as cattle finishers contend with the pressures of high feed costs.

Store cattle

Store cattle prices have also generally eased over recent weeks, with the leaner, lighter types being met with resistance, due to finishers mindful of the longer keep time and cost to feed these types.

Although feed prices have eased from pre-harvest highs, tight supplies are keeping prices supported as we enter winter peak demand. Quality prevails in the store ring with well-bred suckled calves, with good bone and shape and good weights for their age continuing to sell well. With such a strong trade for suckled calves, many farmers have chosen to sell more calves this backend as farmer margins continue to feel the pressure of high input costs.



Looking ahead to 2023

Food security remains a concern for the industry, the Covid-19 pandemic, the fallout from Brexit and the impact of Russia's invasion of Ukraine have placed greater strain on both domestic and global food supply chains. The UK is barely 60% self-sufficient in food production and all this comes at a time when the agricultural industry is at a crossroads. Farmers are under pressure to tackle climate change while being faced with challenging economics with input costs remaining significantly higher than last year.

There may have to be some tough decisions made in 2023, with the continuing pressures of feed, fuel and fertiliser price hikes all taking their toll on businesses. We are still no further forward with policy and future support which only adds further to the uncertainties of what lies ahead.

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Scotland prime cattle prices (p/kg dwt) (Source: drawn from AHDB and IAAS data)

Week Ending	R4L Steers (p/kg dwt)			-U4L Steers			Young Bulls -U3L		Cull cows	
		Change on week	Diff over North Eng.		Change on week	Diff over North Eng.		Diff over North Eng.	R4L	-O3L
05-Nov-22	**461.8**	-1.7	8.8	**462.7**	-1.4	12.3	453.0	1.7	389.9	363.9
12-Nov-22	**461.6**	-0.2	7.3	**463.3**	0.6	12.5	446.4	-6.1	387.6	360.1
19-Nov-22	**461.0**	-0.6	6.8	**460.0**	-3.3	8.7	451.3	4.2	385.3	354.0

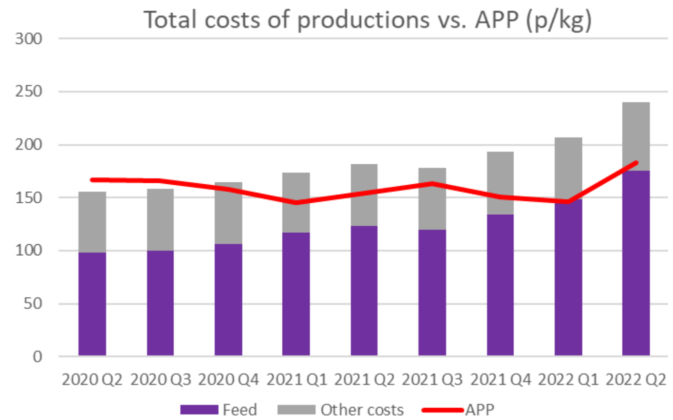
Record prices but tough times ahead

The pig sector is still very much in the doldrums with increasing costs continuing the long period of negative margins despite pig meat prices now being at record levels. In October, AHDB estimated that the UK pig sector has cumulatively lost £700 million since autumn 2020, when the current crisis began.

Prices have undoubtedly improved during 2022 – the Standard Pigs Price (SPP) has climbed from a low of 137 p.p.kg in February, reaching 200 p.p.kg in September driven by falling supplies at home and in Europe. Since then, however, it has plateaued and the harsh reality is that due to the complex pricing mechanisms in place, producers are receiving prices well below this. Pig meat prices in Europe have also risen considerably in this time, although it is still cheap enough to undercut home-produced pork in UK supermarkets. AHDB revealed that, compared with July 2021 imports had increased by 19% year on year although exports, particularly of offal had also increased.

Backlogs have started to appear on farms again with slaughter weights beginning to creep up over the last two months. Slaughter weights have crept back down to just over 87kg in August, following the rise to 95.8kg in January with pandemic and staffing issues. More recently, however slaughter weights have increased to 90kgs with several issues cited, from lack of demand to plant reliability.

Figure 1. GB APP vs. Cost of production April 2020 to Jun 2022, (Source: AHDB Pork)



Data from AHDB relating to pig producer margins estimates that producers were losing £52 per pig with prices 58 pence per kg (p.p.kg) below the cost of production in Q2 of 2022 (Figure 1). This represented the seventh consecutive quarter of negative margins. Despite feed costs easing over the early summer, cereal and proteins are firming again, energy prices are jumping, with increases in terms of labour and other costs. Rising interest rates will also now begin to take their toll, especially as overdrafts continue to grow. A recent AHDB estimate suggests that even with much improved prices there is still an average loss of £28 per pig.

While losses are not as bad as earlier in the year, a large hole still remains and cash flows will again be stretched as home grown grains get used up and barley and wheat needs to be bought in. Feed wheat and barley are beginning to rise again though and soya also remains expensive with the events in the Black Sea adding further volatility. Feed is by far the biggest cost for pig producers and figures from AHDB show that feed has gone from 63% to 73% of production costs over the past 2 years. This translates to a rise from £86 per pig to just under £156 per pig in the same period.

Cull sows are now worth between 65 – 70 p.p.kg. and with the EU being the main outlet, the weakening pound has helped support this market despite plenty sows coming forward as herds are dispersed and cut back. Rising feed prices and concerns over future margins means that weaners continue to be a hard sell as specialist finishers remain very cautious.

Census reveals effects of crisis on pigs

The sustained period of losses has inevitably seen a reduction in the UK breeding herd as producers cut back or in many cases leave the sector altogether. DEFRA's latest census revealed that while pig numbers dropped 4% overall on the year, this was driven largely by a drop in the breeding herd of 18%. With the typical pig production cycle of 5 months, this will result in reduced numbers of finishing pigs before the end of the year, tightening supplies greatly, which may provide the impetus to start prices rising again. One of the dangers of a falling breeding herd is the infrastructure that supports it also shrinks to fit rather than leave capacity for the sector to bounce back. This has been seen in recent weeks with one processor announcing the closure of two plants and a reduction in output of another.

Falling consumer demand has also been blamed for some of the sector's woes, with AHDB Outlook predicting a 2% fall before the current cost of living crisis. With household budgets stretched, pork may be seen as a cheaper and tasty alternative compared to the more traditional and expensive festive meats, helping arrest the decline in demand. When combined with the expected contraction of supply, it may help kick start some much-needed price rises and offer hope for a happier new year for pig producers.

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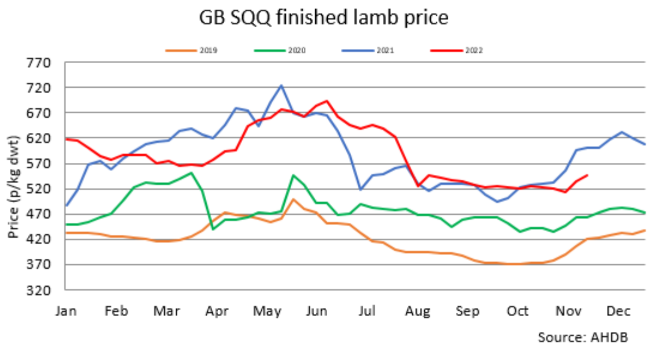
Sheep

The finished lamb trade has held well, compared to the high prices of 2022. It stabilised through much of October, but has shown a continual lift throughout November starting with an SQQ at the week ending 05/11/22 of 512.6p/kg to 547.2p/kg for the week ending 19/11/22. Now at the end of November the Christmas kill has started, which should further strengthen the price. Combined with a strong demand from the continent.

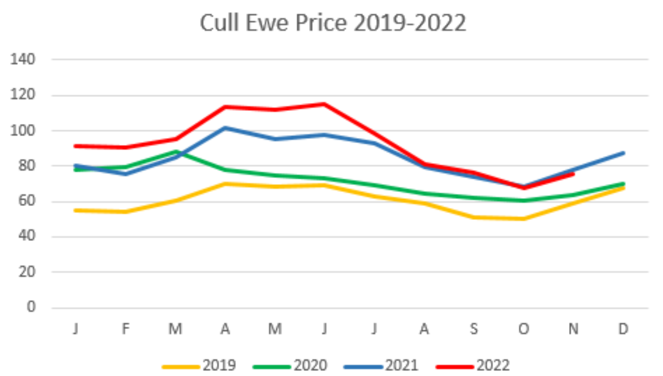


The live ring has shown less stability, shadowed by lambs lacking a finish coming through. Well finished lambs are and will remain to make a premium.

Cull sales

DEFRA figures show for Jan-Oct 2022 the UK adult kill of sheep to have reached 1 million, an increase of 5% compared to the same period in 2021.

The cull ewe trade has firmed again, following a very similar pattern to 2021. There are now fewer ewes coming forward as producers focus on the next breeding season, which has reduced the supply coming forward, aiding the price rise.



Global demand, price & carbon credentials

French and Spanish lamb has continued to climb in value now breaking the €8/kg barrier for French lamb. New Zealand lamb has come back in value and the price gap has reduced between Australian and NZ lamb.

	€/kg DW w/e 12/11/22
Australia	4.81
New Zealand	5.00
Northern Ireland	5.73
Great Britain	6.11
Ireland	6.18
Spain	7.53
France	8.15

Beef and Lamb NZ and the Meat Industry Association produced a document looking at the carbon footprint of exported meat. The findings were that the carbon footprint of NZ exported lamb was either lower or similar to lamb produced domestically in the countries they used as comparison. 1 kg of NZ sheep meat is reported to have a carbon footprint of just under 15 kg CO_2 equivalent emissions per kg.

When comparing to other countries the report looked at the footprint associated with the footprint attached to the transporting, chilling, storage, distribution, purchase and cooking of the lamb within the destination country. The greenhouse gas emissions for these were 0.96 kg CO_2 equivalent emissions per kg. Shipping contributed 43% of this, and cooking followed this at 38%.

In the document a domestically produced lamb in the UK is quoted production through to cooking as 13.88 kg CO_2 equivalent emissions per kg. BLNZ_review_report.pdf (beeflambnz.com)

These figures and research are very interesting at a time when trade deals are being continued through our parliamentary process and consumer's choices will continue to be persuaded through environmental credentials. With New Zealand's farming systems largely being pasture based.

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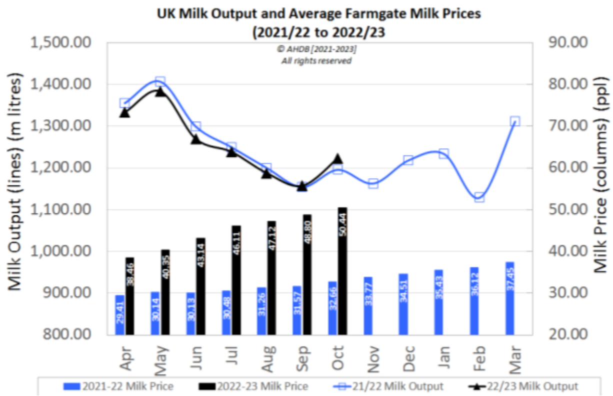
Week ending	GB deadweight (p/kg) 16.5 – 21.5kg				Scottish auction (p/kg)				Ewes (£/hd) Scottish	Ewes (£/hd) Eng&Wal
	R3L	Change on week	Diff over R2	Diff over R3H	Med.	Change on week	Diff over stan.	Diff over heavy	All	All
01-Oct-22	**525.5**	-2.8	-0.3	2.1	**228.50**	-5.2	15.4	0.6	67.15	68.85
08-Oct-22	**522.7**	-2.8	-0.7	2.1	**233.90**	5.4	24.7	2.1	67.61	67.63
15-Oct-22	**527.5**	4.8	-1.6	1.6	**233.00**	-0.9	19.5	6.0	67.84	67.46

Deadweight prices may be provisional. Auction price reporting week is slightly different to the deadweight week. Source: AHDB and IAAS
Standard weight 32.1 - 39.0kg; Medium weight 39.1 - 45.5kg; Heavy 45.6 - 52.0kg

Prices freeze as production increases

- *With UK farmgate milk prices on a high, milk production has shown a recovery during September and October 2022 (see chart).*
- *As dairy wholesale prices weaken (see article below), milk buyers may struggle to maintain farmgate milk prices at their current level.*
- *Most UK milk buyers have opted for a price hold for non-aligned contracts during December 2022.*

AHDB milk production data shows that output for October 2022 is estimated at 1,222.98m litres (before butterfat adjustment) – an increase of 27.50m litres on a year-on-year basis. Cumulative UK production for the 2022/23 milk year to the end of October 2022 stands at 8,791.32m litres (before butterfat adjustment), which is 67.74m litres lower output compared with the same time last year. The UK average milk price for October 2022 is estimated at 50.44ppl. This represents a 1.64ppl increase from the previous month (48.80ppl) and a year-on-year increase of 17.78ppl from October 2021.



Farmgate prices: December 2022

The main price updates for December 2022 include:

- Arla Foods amba – After a late 1.5-euro cent increase to the November milk price, Arla has confirmed a hold on the November milk price going into December 2022. The liquid standard litre price for December holds at 50.24ppl. The manufacturing standard litre (4.2%BF & 3.40% protein) holds at 52.24ppl.
- Arla Foods organic – No change for December 2022. The organic manufacturing standard litre holds at 57.02ppl. The liquid standard litre price holds at 54.85ppl.
- Müller Direct – No change for December 2022 farmgate milk price. See Milk Price table, right.
- Müller organic – The Müller organic milk price will hold at 56.00ppl for December 2022.
- First Milk – FM will hold the November 2022 milk price for December 2022. See Milk Price table, below. FM has also confirmed a hold on prices from December 2022 into January 2023.
- Fresh Milk Company (Lactalis) – Following a late announcement at the end of October, the Lactalis milk price for November increased by 0.42ppl taking the manufacturing standard litre milk price up to 50.12ppl. The liquid standard litre milk price increased by 0.41ppl to 48.21ppl. Lactalis has confirmed a hold on November prices going into December 2022.
- Sainsburys (SDDG) – The retailer has confirmed a 0.50ppl increase for December 2022. The price for Müller members of SDDG increases to 47.50ppl for the liquid standard litre, whilst Arla members increase to 47.38ppl. Both prices incorporate a booster payment (currently 3.00ppl) which will continue up until spring 2023.
- Co-op – The Co-op farmgate milk price will increase by 0.16ppl for December 2022, on the back on the SDDG price increase, above (the Co-op price tracks Müller TSDG, SDDG and Müller Direct prices). The liquid standard litre price increases from 47.67ppl to 47.83ppl for December 2022.

Annual average milk price estimates for December 2022 (ppl)	
Milk Prices – Scotland	**Standard Ltr***
Lactalis / Fresh Milk Co. (No profile or seasonality) [1]	48.21
First Milk Liquid [1, 2]	48.02
First Milk Manufacturing *(4.2% Butterfat & 3.4% Protein)* [2]	49.69
Müller - Müller Direct - Scotland [1, 3]	47.75
1 *Liquid standard litre – annual av. milk price based on supplying 1m litres at 4.0% butterfat, 3.3% protein, bactoscan = 30, SCC = 200 unless stated otherwise.*	
2 *The FM member premium is set to remain at 0.50ppl from April 2022.*	
3 *No monthly supplementary payment included in the price estimate. Includes 1.00ppl Müller Direct Premium and additional 0.25ppl haulage charge for Scottish suppliers.*	

Weak wholesale prices cause concern

During the first quarter of the year (Jan-Mar), world market dairy product prices were supported by tight supplies coupled with limited growth in global milk production. Since the end of the first quarter, the situation has changed. High product prices combined with rising inflation have impacted on consumer demand, leading to a softening in price levels for all dairy commodities. With product prices on a downward trajectory, some milk buyers may struggle to maintain current farmgate prices in the absence of improved returns from the market.

UK dairy commodity prices (£/ tonne)	Nov 2022	Oct 2022	May 2022
Butter	5,280	5,860	5,890
SMP	2,610	2,980	3,310
Bulk Cream	2,357	2,807	2,579
Mild Cheddar	4,760	4,860	4,650
UK milk price equivalents (ppl)	**Nov 2022**	**Oct 2022**	**May 2022**
AMPE (2021)	44.69	51.27	55.10
MCVE (2021)	52.29	53.95	53.14

Dates for the Diary

- Semex Conference, 15th – 17th January 2023, Radisson Blu, 301 Argyle Street, Glasgow G2 8DL Details online here.

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Developments to date

While natural gas prices have fallen to levels consistent with previous years, the future of Europe's energy markets remains uncertain. A strong rebound in demand in 2021 followed by the outbreak of the war in Ukraine in 2022 caused natural gas prices to increase sixfold in one year, peaking in the UK at 702.95 p/therm on 26 August.

The price has been driven up due to the ongoing economic battle between Russia and the West. Russia accounted for 45% of Europe's gas imports in 2021, however they have been shutting off the tap: Russia has decreased its gas supply to EU states by 88% over the past year, closing the Nord Stream pipeline indefinitely in August. The EU has responded by sourcing its gas from elsewhere and is scheduled to cease all seaborne imports of Russian gas this December.

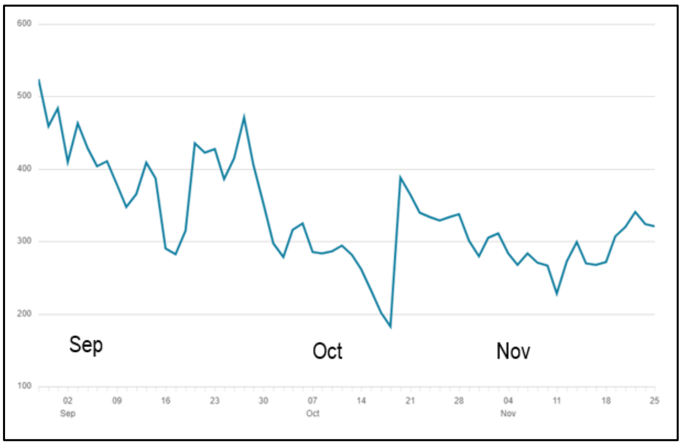

Figure: UK national benchmark price of natural gas, Sep-Nov 2022. Units are pence per therm, where 1 therm = ~100 cubic feet of gas = ~100k BTUs. Source: BBC.

A (brief?) respite

The squeeze on supply has subsided for the moment and gas prices have come back down. Record-breaking imports of liquified natural gas (LNG) from the USA, a warm October, and a strong supply from wind power have contributed to the UK price falling 66% from the August peak, now similar to last year's prices. There is continuing uncertainty about how prices will move in the near term. High pressure forecasted for December could bring less wind and colder temperatures, pushing prices back up somewhat. European states are scrambling to dismantle their reliance on Russian gas, both seeking deals with alternate suppliers like Qatar and building input terminals or floating plants at ports, which are required to turn the LNG back into useable gas. However, these changes will take time to come online and, if Russia cuts all gas supply to Europe in 2023, there will be a shortfall of 140 billion cubic meters of gas (equal to 27% of the current LNG market). This type of economic war of attrition hurts both parties – decreasing use of cheap Russian gas will lead to rationing and deepening economic recession.

Knock-on effects

Synthetic fertiliser price is driven by natural gas, which accounts for 60-80% of input costs to this industry in Europe. Skyrocketing gas prices have caused many facilities to reduce or halt production, including CF Industries at their Billingham site in late August. Decreased domestic production has made the UK dependent on expensive imported ammonium nitrate (AN) (£870/tonne in Sep, 120% increase over Sep 2021). Because of its link to natural gas, fertiliser price is similarly uncertain. Continued price volatility and the weakness of sterling means imports will remain expensive. There are a few mitigating circumstances for farmers: Dry weather before this year's harvest reduced fertiliser application for some and grain prices are strong. In the 2023 season, the trade-off between additional yield from increased fertiliser application and input cost of fertiliser requires close attention. High winter rainfall this year may reduce UK soil nitrogen supply; Farmers should plan to do soil pH tests in the spring to optimise fertiliser use.

Looking ahead

While natural gas prices have come down, the summer price spike has lingering effects. The closure of facilities like the CF Industries site means fertiliser prices will be slower to fall; other dependant products like AdBlue, required in diesel engines to neutralise nitric oxide emissions, face major shortages. Finally, electricity and heat generation has reverted to coal in some countries, which releases at least twice the CO_2 per unit of electricity produced, plus other harmful air pollutants. A major takeaway from this energy crisis is the urgent need to accelerate our energy transition to a mix of local and renewable sources. This change will be expensive, as well, but will result in massive long-term savings through protecting countries from costly price shocks and mitigating the worst of climate change fallout.

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SAC Farm Management Handbook 2022/23

With the importance of forward budgeting and seeking to minimise carbon emissions by maximising technical efficiency, the 43rd Edition of the SAC Farm Management Handbook (co-funded by the Scottish Government) is now available to download free on the Farm Advisory Service website at https://fas.scot/publication/fmh2022

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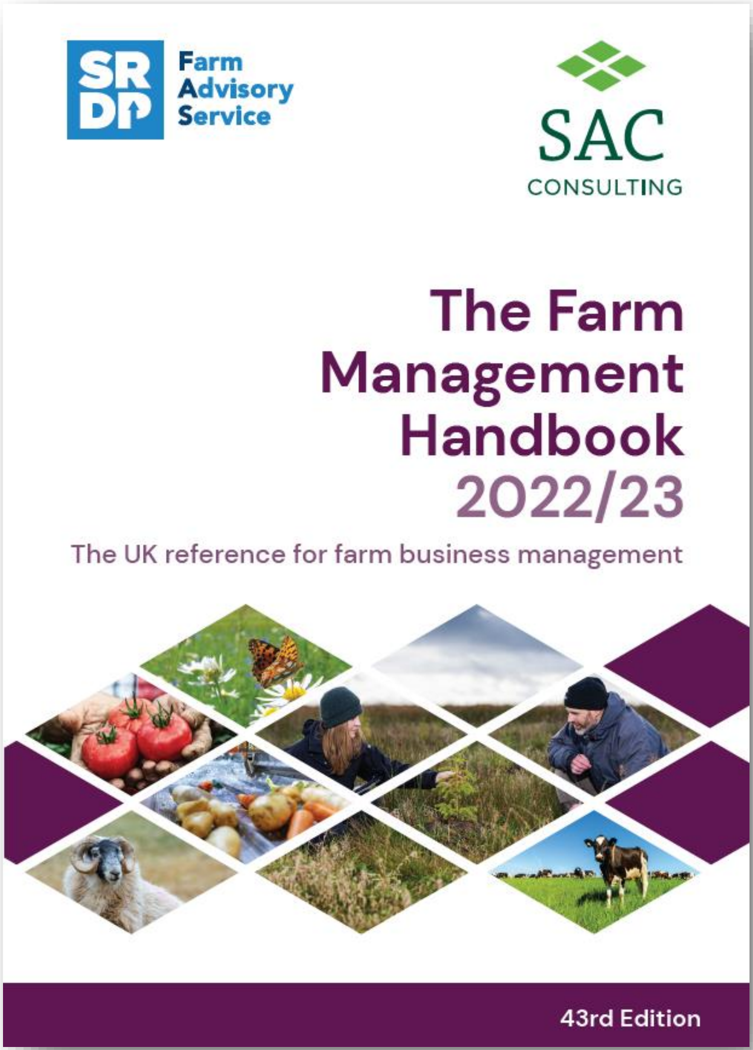

This year's handbook includes:

- Gross margins and technical details for livestock, crop and organic enterprises,
- Information on Direct payments (Basic Payment Scheme, Greening, Grant Schemes) and Rural Development Programmes,
- The Carbon section which discusses the main greenhouse gases in agriculture, explains how the carbon footprinting process works, identifies mitigation measures, and provides farm benchmarks, and
- Guidance on diversification, building and machinery costs, renewable energy, farm woodland, crofting and small farms, new entrants, finance, taxation and much more.

C O P   2 7   U p d a t e

Unlike in 2021, when Glasgow hosted the global climate change conference, COP26, this year's conference in Egypt seems to have flown slightly under the radar. Coming out of COP 26 last year, climate finance was one of the main unresolved areas which looked likely to be a main focus of this year's summit. However, the energy crisis triggered by Russia's war on Ukraine has since shifted priorities on the agenda, and demanded a much more nuanced discussion around reducing global emissions. In particular, issues of global food and energy security now have greater importance, reflecting economic instability and recession, and there is arguably greater resignation to the role of fossil fuels in the short-medium term for transition to low-carbon energy system in the long term. This year saw greater representation of fossil fuel delegates, with mixed views, some feeling that it was necessary to find solutions to current, complex energy problems, and others feeling it allowed greater influence of vested interests of an unsustainable and carbon-intensive energy system.

Climate finance was still a large theme for COP27, (and was in the lead up to the event, especially given various extreme weather events in recent months around the world), but the focus was on adaptation and remuneration, rather than on mitigation (as per previous years). This perhaps reflects the interests of the host country and of Africa more broadly, to which much current available climate finance is in the form of (more) loans (a continent that is burdened with decades of existing development loans from western nations), along with an array of conditions on finance (adding further burden). The adaptation and remuneration (or 'Loss & Damage') focus also crucially reflects the increased struggles of developing countries to adopt green transition in the current economic and energy crisis, and their willingness but limitations to advance low-carbon trajectories.

In summary, Loss & Damage would entail developed/'Western' countries paying developing countries for historic carbon emissions (essentially a sort of climate polluter pays compensation), which would allow developing countries to invest in their own low-carbon transition and green infrastructure. Crucially, COP27 outlined that a global carbon windfall tax on fossil fuel companies would be a main source of revenue for a Loss & Damage fund. Arguably, Loss & Damage also provides ongoing greater financial incentive for developed countries not to continue emitting, assuming a long-term picture is considered.

The scale of such finance however is hard to grasp. Recent analysis suggests that around 4 trillion USD would be required every year to finance climate mitigation (emissions reduction) and adaptation (resilience to climate change), and this excludes Loss & Damage. To put this into context, that's around 10% of all money circulated globally each year. What is clear from this is that private sector investment is absolutely essential to meet climate goals, and public legislation is not sufficient. Currently there is no obligation for the private sector to set or meet green targets, leaving two options for governments – one, to regulate to hold the private sector to account, or two, to adjust the incentives for green investment and adaptation. While we are seeing a huge increase in interest and availability of green finance, it could be argued that the majority is not yet fundamentally adjusting incentives to catalyse sustainable & green financial decisions.

Linking back to Scottish agriculture, there are implications of the above in relation to scope for and assurance required for offsetting emissions, where agriculture sits as both a contributor to emissions (requiring offsetting) and also a potential source of offsetting. COP27 also highlights the importance of climate change becoming a critical part of food sourcing and security in the future, the need for adaptation of agriculture systems and increased efficiency, and the role of agriculture in fossil fuel transition.

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Key economic data

General Indicators	
Base interest rate	3% (1.75% Sept 22)
ECB interest rate	1.50% (0.75% Sept 22)
UK (CPI) inflation rate	11.1% (target 2%)
UK GDP growth rate	-0.2%% (Q2 '22)
FTSE 100	7,512.00 (29 Nov 22)

Price indices for Sept 2022 (Defra 2015 = 100)			
Output Prices		**Input Prices**	
Wheat	222.0	Seeds (all)	123.8
Barley	217.6	Energy	201.8
Oats	197.5	Fertiliser	299.0
Potatoes	138.2	Agro chemicals (all)	162.0
Cattle and Calves	134.5	Feedstuffs	179.9
Pigs	152.4	Machinery R&M	133.7
Sheep and Lambs	135.5	Building R&M	160.2
Milk	199.5	Veterinary services	118.2

This publication is funded by the Scottish Government and EU as part of the SRDP Farm Advisory Service