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# Consultation on carbon dioxide stunning of pigs

Proposal to phase out the use of carbon dioxide gas  
to stun pigs in the UK

October 2026

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# Overview

## Scope

This consultation relates to proposals applying to the whole of the UK. It is issued by Defra on behalf of the UK Government, the Welsh Government, the Scottish Government and the Northern Ireland Executive.

We are seeking views on our proposals to phase out the use of carbon dioxide gas stunning of pigs in slaughterhouses and knacker's yards in the UK. The evidence that carbon dioxide gas stunning causes significant pain, suffering and distress to pigs at the time of killing is well known. There is now clear evidence that alternative permitted stunning methods, such as the use of inert gases, will significantly reduce these welfare issues for pigs. We believe that a ban on carbon dioxide stunning of pigs in slaughterhouses and knacker's yards would result in a significant improvement to pig welfare at the time of killing, and that the transition away from carbon dioxide stunning should be managed in a way that allows the industry to make the necessary technological changes to convert current systems and maintain economic viability.

## Audience

Anyone may respond to the consultation. Those who may have an interest include:

- academic institutions
- animal welfare organisations
- consumers / the general public
- farm assurance schemes
- farming organisations and trade bodies
- industrial gas companies
- pig producers
- pig processors & slaughterhouses
- retailers
- stunning equipment manufacturers
- veterinary profession

## Responding to the consultation

This 8-week-long consultation starts on 26 October 2026 and closes on 21 December 2026. Any responses received after this date will not be analysed.

Please respond to this consultation using the SmartSurvey consultation hub (<https://consultations.defra.gov.uk/phasing-out-carbon-dioxide-stunning-of-pigs>). If you are

unable to use SmartSurvey, you can download the consultation documents and return your response by email to [aw.slaughter@defra.gov.uk](mailto:aw.slaughter@defra.gov.uk) or in writing to:

Carbon Dioxide Stunning of Pigs Consultation, Farm Animal Welfare Team, Department for Environment, Food and Rural Affairs, Seacole Building 2nd Floor, 2 Marsham Street, London, SW1P 4DF.

Please note, any responses sent by post must have arrived at the above address by the closing date of the consultation 21<sup>st</sup> December 2026 to be counted. Any responses received after this date will not be analysed. To ensure your response is included in the analysis, please consider responding electronically, preferably online via SmartSurvey (or by email).

We recognise that respondents may choose to use some standardised text to inform their response. Campaigns are when organisations (or individuals) coordinate responses across their membership or support base, often by suggesting a set of wording for respondents to use. Campaign responses are usually very similar or identical to each other. For this consultation, campaign responses may be analysed separately to other responses to ensure the breadth of views received can be summarised effectively and efficiently. All campaign responses will be taken into account in the final analysis of public views and campaigns help provide an indication of the strength of feeling on an issue. The preferred route for all respondents to provide their views (including where a response is based on a campaign) is via the SmartSurvey consultation hub.

### **After the consultation**

We will summarise all responses once the consultation window is complete. This summary will include a list of names of organisations that respond but not people's personal names, addresses or other contact details.

### **Using and sharing your information**

How we use your personal data is set out in the consultation and call for evidence exercise privacy notice which can be found here

<https://www.gov.uk/government/publications/defras-consultations-and-call-for-evidence-exercises-privacy-notice>

### **Other Information**

This consultation is being conducted in line with the Cabinet Office "Consultation Principles" which can be found at: [Microsoft Word - Consultation Principles \(1\).docx \(publishing.service.gov.uk\)](#)

### **Complaints procedure**

All complaints about the consultation process should be submitted to the Consultation Coordinator via email: [consultation.coordinator@defra.gov.uk](mailto:consultation.coordinator@defra.gov.uk). To meet with Defra's service standard, all complaints will be responded to within 15 days of receipt.



## Background and proposal

We are asking for views on a proposal to ban the use of carbon dioxide for stunning of pigs in slaughterhouses and knacker's yards. We are also asking for views on the appropriate length of transition period before any proposed ban might come into force. We also want to gather more information on impacts on industry.

## Context

High concentration carbon dioxide gas stunning is used to kill 90% of UK pig throughput, or approximately 10 million pigs each year (Slaughter Sector Survey 2024), rising from 50% of pigs stunned using this method in 2013. There are severe and longstanding animal welfare challenges presented by the method. This stunning method is known to cause significant pain, fear, and respiratory distress, usually lasting for around 30 seconds until unconsciousness begins. Pigs experience air hunger and a feeling of breathlessness whilst the carbon dioxide creates painful acidic conditions in contact with moist body membranes (mouth, nostrils, respiratory surfaces, eyes).

## Legislation

Legislation on the welfare of animals at the time of killing generally requires that animals are stunned before slaughter to ensure that they are not subject to avoidable pain, distress or suffering when slaughtered. The permitted methods for stunning animals at the time of killing in the UK are set out in Council Regulation (EC) No. 1099/2009 (Regulation 1099/2009)<sup>1</sup>. Methods currently permitted for the stunning of commercial weight pigs for slaughter are penetrative captive bolt device, firearm with free projectile, head only electrical stunning, head to body electrical stunning, carbon dioxide at high concentration, carbon dioxide associated with inert gases and inert gases. These stunning methods (except for a firearm with free projectile, which may not be practicable in the slaughterhouse setting for health and safety reasons) are defined as simple stunning, which means they need to be followed by a killing method such as bleeding.

Stricter national rules in England, Scotland, Wales and Northern Ireland<sup>2</sup>, also include a requirement that pigs are exposed to gas for long enough to ensure they are killed. This is understood to mean as long as is necessary to ensure that they cannot regain consciousness.

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<sup>1</sup> The assimilated version of Protection of Animals at the Time of Killing (PATOK) applies in Great Britain and the EU version of PATOK applies in Northern Ireland under the Windsor Framework

<sup>2</sup> <https://www.legislation.gov.uk/ssi/2012/321/contents>; <https://www.legislation.gov.uk/nisr/2014/107/contents>; <https://www.legislation.gov.uk/wsi/2014/951/contents>; <https://www.legislation.gov.uk/ukksi/2015/1782/contents>

## Evidence of welfare concerns of using high concentration carbon dioxide

Concerns about the appropriateness of carbon dioxide stunning of pigs are long-standing and documented in reports from respected scientific bodies.

In 2003, the Farm Animal Welfare Council concluded<sup>3</sup>: 'that the use of high concentrations of CO<sub>2</sub> (80% and above) to stun and kill pigs is not acceptable'; and recommended 'Government and the industry should fund research and development into the use of non-aversive gas mixtures. The use of aversive gas mixtures should be phased out within five years.'

The European Food Safety Authority's Scientific Panel on Animal Health and Welfare (EFSA) in a 2004 report<sup>4</sup> set out that: 'at concentrations above 30% CO<sub>2</sub>, the gas is known to be aversive and cause hyperventilation and irritation of the mucous membranes that can be painful and elicits hyperventilation and gasping before loss of consciousness. Hypoxic stunning induced with 90% argon in air is less aversive than hypercapnic hypoxia induced with 30% CO<sub>2</sub> in argon or nitrogen or stunning with 80-90% CO<sub>2</sub> in air.'; and recommended 'The gas used to induce unconsciousness should be non-aversive. In this regard, the use of argon, nitrogen or mixtures of these gases seems to have animal welfare advantages, because hypoxia induced with these gas mixtures is not aversive to pigs.'

In the EU, evidence of welfare concerns pre-date the adoption of Regulation 1099/2009 as recital (6) of that Regulation makes clear. Recital (6) acknowledged previous recommendations made by EFSA in their 2004 report on welfare aspects of the main systems of stunning and killing the main commercial species of animal<sup>5</sup>, but recommendations to phase out the use of carbon dioxide for pigs were not included in the Regulation due to the conclusion at that time that it would not be economically viable to phase out the use of this method in the EU.

A further EFSA Scientific opinion published in 2020<sup>6</sup> said: 'Exposure to CO<sub>2</sub> at high concentrations (defined in this opinion as higher than 80% by volume) is considered a serious welfare concern by the Panel, because it is highly aversive and causes pain, fear and respiratory distress. The exposure to inert gases and CO<sub>2</sub> with inert gases is less aversive as it causes less pain, fear and respiratory distress compared with exposure to CO<sub>2</sub> at high concentrations'; and recommended that 'direct exposure to CO<sub>2</sub> at high concentration (defined in this opinion as higher than 80% by volume) should be replaced

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<sup>3</sup> <https://www.gov.uk/government/publications/fawc-report-on-the-welfare-of-farmed-animals-at-slaughter-or-killing>

<sup>4</sup> <https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2004.45>

<sup>5</sup> <https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2004.45>

<sup>6</sup> <https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2020.6148>

by exposure to other gas mixtures that are less aversive. More research and development on the composition of non-aversive gas mixtures is needed to eliminate pain, fear and respiratory distress during the induction to unconsciousness.’

## Current use

The Food Standards Agency (FSA) slaughter sector survey published in 2024 showed that 90% of pigs were stunned with direct exposure to high concentrations of carbon dioxide in England and Wales (a similar proportion was reported by officials in Scotland and Northern Ireland). This has increased significantly since 2013 when it was just over 50%. There are 12 slaughterhouses in the UK currently using high concentration carbon dioxide stunning of pigs, 8 in England, 3 in Northern Ireland, one in Scotland and none in Wales.

In 2024 in England and Wales 79 premises made up the remaining 10% of commercial liveweight (110-120kg) pig throughput, with the majority using manual head-only or head-to-body electrical stunning and a small proportion using a penetrative captive bolt device. These are the main alternative stunning methods to carbon dioxide gas currently used at commercial scale. No pig slaughterhouses in the UK are understood to currently use inert gases or automated electrical stunning. Industry reports that no knacker’s yards are using gas to kill pigs.

High concentration carbon dioxide stunning of pigs continues to be used, and has increased to form the dominant stunning method for pigs in the UK, despite the animal welfare challenges, because of industry concerns about the availability and effectiveness of more humane alternatives and the economic feasibility of alternatives at commercial scale (for example effectiveness of stun, meat quality, efficiency, speed of stun, environmental impacts and gas supply). The PigStun project, described below, tested many of these issues. Retaining carbon dioxide stunning would be a cheaper option than converting to alternatives.

Previous research has shown that pigs do not avoid an environment containing high concentrations of inert gases, such as argon and do not find these gases aversive<sup>7</sup>. There are practical constraints to the use of inert gas mixtures that have restricted commercial uptake so far. These include the need to expose pigs for longer periods of time in the inert gas in order for unconsciousness to last until death, and technical challenges in maintaining low residual oxygen concentrations.

Arguments for retaining carbon dioxide stunning of pigs are also made in relation to the balance of welfare impacts from the stunning process and from pre-slaughter handling in

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<sup>7</sup> Ref: [MH0128: Novel and humane gaseous killing methods for pigs](#); [MH0135: Containability & aversiveness of different gas mixtures used for the stunning of slaughter weight pigs](#).

the different slaughter systems. The continued use of high concentration carbon dioxide stunning has been defended on the basis that pigs are moved in and stunned in groups, reducing handling stress in comparison to single file handling for automated electric stunning. The welfare benefit of group handling is argued to be a reasonable trade-off against the pain and distress caused by exposure to high concentration carbon dioxide. This argument might not have the same impact if existing gas systems with these handling advantages can be converted to use inert gas.

We have decided to continue to allow the ability to deploy inert gas mixtures associated with low concentrations of carbon dioxide for depopulation purposes because of the particular circumstances associated with the culling of pigs under field conditions. Due to gas handling dynamics, it may be more technically challenging for equipment used in field conditions using pure inert gas to displace sufficient oxygen to reach levels below 2% (to lead to anoxia) in comparison to a slaughterhouse. We are not consulting on this point.

## Evidence relating to alternative methods

Since EFSA's 2004 report detailing the aversiveness of high concentration carbon dioxide, and the welfare advantages of argon, nitrogen or mixtures of these gases, there has been an active research field regarding slaughter methods of pigs. This has explored a number of alternative methods including different inert gases and inert gas mixtures, including Defra funded projects<sup>8</sup>.

Defra also funded scientific research, alongside the Humane Slaughter Association, into the welfare impacts of Low Atmospheric Pressure Stunning (LAPS) on pigs<sup>9</sup>. The results show that LAPS does not offer a humane alternative to high concentration carbon dioxide stunning of pigs and also demonstrated that both LAPS and carbon dioxide stunning are associated with poor welfare in pigs. This has heightened concern about the current use of high concentration carbon dioxide in stunning pigs. As the report points out: 'Collectively, our results show that both LAPS and CO<sub>2</sub> stunning are associated with several indicators of poor welfare and are equally aversive to pigs. [...]. Humane alternatives to CO<sub>2</sub> stunning for pigs are urgently needed'. LAPS is not a currently permitted method for the stunning of pigs.

More recently, Defra commissioned the Scottish Rural College (SRUC) to undertake a desk-based study of preslaughter handling for electrical stunning<sup>10</sup>. The aim of the project was to assess current and state-of-the-art developments in pre-slaughter handling systems for the electrical stunning of pigs and how they meet/challenge the welfare needs

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<sup>8</sup> Ref: [MH0128: Novel and humane gaseous killing methods for pigs](#); [MH0135: Containability & aversiveness of different gas mixtures used for the stunning of slaughter weight pigs](#)

<sup>9</sup> [Developing an alternative method to the use of high concentration CO<sub>2</sub> for the commercial stunning of pigs - MH0154](#)

<sup>10</sup> [MH014003: Alternative pre-slaughter handling systems for the electrical stunning of pigs - MH014003](#)

of the animals. The project identified available handling systems and systems in development, including an adapted electrical stun system that demonstrated welfare improvements without impacting efficiency. It identified that any slaughterhouse could make incremental improvements to existing systems by implementing well designed automated and semi-automated technologies, investing in species-specific designs. The project also successfully developed an animal welfare assessment that would allow desk-based welfare evaluation of potential systems.

## Evidence from the PigStun project

The EU Commission sponsored a large scale (2 million Euro) research project, PigStun, into humane alternatives to high concentration carbon dioxide stunning of pigs at scale<sup>11</sup> which published results in June 2025. The objective of the PigStun project was to encourage EU pig slaughterhouses using high concentration carbon dioxide for stunning pigs to convert to systems that are less aversive. This was done by testing promising alternative systems and improving strategies with respect to animal welfare. PigStun also sought to address concerns around effectiveness of stun, meat quality, efficiency, speed of stun, environmental impacts and gas supply, which have previously been cited as drivers behind carbon dioxide stunning. PigStun tested novel approaches and stunning systems across two themes: the first looked at different Controlled Atmosphere Stunning (CAS) systems, using inert gases (argon, helium); and the second aimed to reduce stress during pre-stun handling, allowing a calmer entry into the stunner. This second theme applies to electrical stunning systems and innovative gas systems. The project found that the alternatives tested have the potential to improve animal welfare.

PigStun found that pre-stunning stress was reduced in both the Argon Retrofit and Helium systems. Both the Optimised CAS process and the Improved Electrical Stunning very likely reduced pre-stunning stress compared to commercial exposure to carbon dioxide and conventional automatic electrical stunning, respectively.

Additionally, the PigStun project found that stunning systems using argon and helium showed significant potential for reducing stress and improving animal welfare by reducing aversion and respiratory distress compared to high concentration carbon dioxide during induction of unconsciousness (measured until the loss of posture). Although details differed between specific systems, the stunning process overall took longer when exposed to argon or helium than with carbon dioxide, but with the appropriate stunning parameters, effective stunning could be achieved for all systems.

The PigStun project found that meat quality was comparable in argon and carbon dioxide stunning tests, but automated electrical stunning had more meat quality problems. The project noted that automated electrical systems are commercially available and have been

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<sup>11</sup> <https://eurcaw-pigs.eu/dossier/pigstun>

assessed for some time at commercial scale, while argon retrofit in existing carbon dioxide systems was assessed as closest to commercial realisation of the other alternatives. Inert gases were identified as less toxic than carbon dioxide. Argon was shown to be readily available while electrical stunning was assessed as environmentally less impactful. Economic impact was assessed to depend on the stunning system already in place with gas conversion in existing gas systems representing lowest investment cost while running costs would depend on the cost of inputs, gas, electric, and water, for example.

## Animal Welfare Committee's advice

The Animal Welfare Committee (AWC), an independent expert committee which provides advice to Defra and the Devolved Governments was commissioned in November 2024 to assess the evidence regarding the welfare impacts on pigs of high concentration carbon dioxide stunning as well as the evidence of welfare impacts on pigs of potential alternative stunning methods (for example, inert gases, manual electrical, automated electrical). The Committee was also asked to assess and compare the welfare issues at different points in the slaughterhouse specific to different stunning approaches, for example during preslaughter handling and the effects of the stunning method itself. Their report can be found here: <https://www.gov.uk/government/publications/opinion-on-carbon-dioxide-gas-stunning-of-pigs-and-alternative-methods>.

Drawing on the available evidence, including the findings from PigStun, AWC concluded that exposure to high concentrations of carbon dioxide in commercial stunning systems causes pigs to suffer pain, respiratory distress and fear. This is demonstrated through escape behaviour, gasping and vocalisation. AWC recommended that, as a result, high concentration carbon dioxide should be removed from the list of approved methods of stunning for pigs. AWC saw no welfare advantage and potential welfare challenge from lower concentrations of carbon dioxide in inert gas mixtures and recommended their removal from the list also.

They found that inert gases are significantly less aversive to pigs than carbon dioxide and of these, argon is the most suitable alternative for commercial use. They also found that electrical stunning, as used in automated electrical stunning, results in near instant unconsciousness without pain or suffering when the electrodes are placed correctly. Handling for electrical systems has been improved and could be further refined to protect pig welfare. Research at Scotland's Rural College (SRUC) sought to provide some of these handling improvements.

The use of inert gases and electrical stunning are both already permitted stunning methods in the law. In its cover letter submitting its Opinion to Senior Responsible Officers, AWC stated that *'From a scientific point of view, there is no doubt that the evidence base has now grown to the extent that further research is unnecessary and action for change is required.'*

This accumulation of evidence reinforces the welfare challenges of high concentration carbon dioxide stunning of pigs and helps to address industry concerns about alternative

methods of stunning for pigs. This consultation seeks to determine the most viable methods for the pig sector to maintain a sustainable supply chain while phasing out carbon dioxide stunning of pigs in favour of more humane methods.

## Proposal

The evidence that carbon dioxide stunning of pigs (whether at high concentration or in combination with inert gases) has serious negative animal welfare impacts is well known. Prohibiting carbon dioxide gas stunning would improve welfare at slaughter for an estimated 90% of pigs which are currently slaughtered using this method (9.7m annually). Evidence of the feasibility of alternative permitted stunning methods continues to develop (for example, the PigStun project reported above) and we are seeking additional views on the most viable alternative methods for industry to implement.

We propose to ban the use of carbon dioxide to stun pigs in the UK following an appropriate transition period to allow slaughterhouses that currently use carbon dioxide to stun pigs to convert to suitable alternative stunning systems, such as inert gas or electrical stunning. What might be an appropriate transition period is a key part of the consultation.

If the proposal to ban the use of carbon dioxide to stun pigs is taken forward, domestic legislation would be introduced to ban any method using carbon dioxide to stun pigs in slaughterhouses and knacker's yards at the end of the transition period specified in the legislation.

Under the forthcoming UK-EU SPS Agreement, GB would be dynamically aligned with EU animal welfare at slaughter rules; NI already align under the Windsor Framework. EU Regulation 1099/2009 allows Member States to put in place more extensive protection of animals at the time of killing in relation to the methods of stunning in their territories. Defra and the Devolved Governments expect that a ban on the use of carbon dioxide to stun pigs would be implemented under EU Regulation 1099/2009 as stricter national measures in the four UK territories.

## Options

Based on Defra's modelling in the Consultation Impact Assessment, the proposed options to consult on are:

1. Do nothing.
2. Ban carbon dioxide stunning of pigs.

with transition periods considered:

- a) Transition in 2 years.
- b) Transition in 3 years.

Note that for every additional year in the transition period an additional c.10 million pigs will be subjected to the negative welfare consequences of carbon dioxide stunning.

We considered other vehicles for promoting the replacement of carbon dioxide stunning with more humane alternatives such as influencing industry, taxing pig products from carbon dioxide stunning and retailer, consumer and assurance scheme awareness

campaigns. These options were assessed as not having the potential to achieve the policy objective of replacing carbon dioxide stunning of pigs with a more humane alternative. Voluntary options to achieve the policy goal have not been successful over the last 20 years despite the animal welfare challenges being widely known.

Our preferred policy option is to ban carbon dioxide gas stunning of pigs in slaughterhouses and knacker's yards following a three-year transition period. The accompanying Consultation Impact Assessment sets out the potential impacts of the preferred policy option on society, including businesses, alongside options to do nothing and to ban carbon dioxide gas stunning of pigs following other transition periods. Prohibiting carbon dioxide gas stunning would improve welfare at slaughter for an estimated 90% of pigs which are currently slaughtered using this method (9.7m annually). Based on our assessment, providing a three-year transition would strike an appropriate balance between the animal welfare benefits from prohibiting carbon dioxide stunning and for industry to convert to the use of more humane methods. In particular, we believe that a three-year transition period would allow an adequate amount of time for pig processors to gain any necessary planning permissions and carry out the works required to install additional stunning equipment necessary to maintain current throughput levels. The consultation will enable further views on the appropriate transition period to be gathered. We are also interested in views on whether shorter transition periods would be feasible.

## Consultation Impact Assessment

A Consultation Impact Assessment has been produced and is available at (<https://consultations.defra.gov.uk/phasing-out-carbon-dioxide-stunning-of-pigs>).

Details of the options are set out in the accompanying Consultation Impact Assessment which measures the potential impacts on society, including businesses, as a result of the proposal to introduce changes to the welfare of animals at the time of killing legislation to ban carbon dioxide gas stunning of pigs.

Our economic modelling, based on information provided by industry and equipment manufacturers, estimates the costs of both continuing with carbon dioxide gas stunning and moving to the available higher welfare alternative systems across the 11 high throughput UK pig slaughterhouses using carbon dioxide (8 in England, 1 in Scotland, 2 in Northern Ireland, 0 in Wales). 1 slaughterhouse using carbon dioxide in Northern Ireland is significantly smaller and has not been included in the modelling. Cost of conversion data is also sought from low throughput plants, which as outliers did not form part of the core analysis. See section on Feasibility and economic impacts of alternatives.

## Feasibility and economic impacts of alternatives

As a result of Defra modelling and conversations with industry, our analysis assumes that if industry were to move to an alternative, UK sites would choose argon gas stunning, over

automated electrical stunning and other inert gases, as the alternative because of lower cost compared to other alternatives, fewer gas handling and conversion challenges, and there is more research into argon than other gases. However, there are both one-off and on-going costs from doing so.

On the one-off costs, moving to argon would allow slaughterhouses to continue using their existing gas stunning pit after replacing carbon dioxide gas sensors for oxygen sensors and installing of argon tanks/modifying the gas injection systems with the attendant costs.

Additionally, if moving to argon gas stunning, some slaughterhouses would need to install additional gas stunners in order for total pig throughput to be maintained given the longer time argon stunning takes. This would include the costs of digging an additional gas stunning pit, the gas stunning equipment, any building or ground works required and any associated planning permission costs as well as potential plant downtime whilst work was being completed.

There would also be on-going costs as argon is more expensive than carbon dioxide and more labour would be required to operate the additional stunning equipment.

## AHDB report

We are grateful to the Agriculture and Horticulture Development Board (AHDB) for providing us with their report: Economic analysis of the conversion from carbon dioxide (CO<sub>2</sub>) to an alternative system as a primary method of killing pigs within a commercial UK-based pig processing facility of March 2026<sup>12</sup>, as well as meeting with us to discuss their findings.

Baseline CO<sub>2</sub> stunning costs differ notably between the AHDB analysis and Defra's Consultation Impact Assessment. AHDB estimates substantially lower CO<sub>2</sub> costs (£0.42 per pig) than those used in Defra's analysis (£1.49 per pig), reflecting different assumptions on CO<sub>2</sub> pricing and plant throughput. AHDB's estimates are based on industry-provided data, including long-term gas supply contracts and a high-throughput plant assumption (around 450 pigs per hour). In contrast, Defra's estimates use national slaughter statistics, evenly distributed throughput across operating plants, and CO<sub>2</sub> pricing provided by industry suppliers. In addition, AHDB's costs are expressed in 2024 prices, whereas Defra's costs have been inflated to 2026 in line with HM Treasury Green Book guidance; this difference contributes modestly to, but does not fully explain, the divergence.

These differing baselines lead to contrasting estimates of the cost impact of switching to argon. Defra estimates an increase of £0.87 per pig, equivalent to a 58% increase relative

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<sup>12</sup> <https://ahdb.org.uk/news/new-evidence-led-analysis-on-co2-stunning-in-the-uk-pig-processing-sector>

to its CO<sub>2</sub> baseline, while AHDB estimates an increase of £1.07 per pig, representing a substantially larger proportional increase due to its lower assumed baseline CO<sub>2</sub> and utility costs rather than higher absolute argon costs. Both analyses draw on utility cost estimates from the PigStun report, which includes low, medium and high scenarios, although it is unclear which elements benefited from stakeholder input, potentially contributing to variation.

Overall, Defra does not currently have sufficient evidence to justify replacing current estimates. At this stage, we are therefore retaining existing estimates, which are grounded on national slaughter statistics, data provided directly by slaughterhouses, and supplier-reported CO<sub>2</sub> prices, and remain a reasonable and robust basis for the Consultation Impact Assessment. Through the consultation, we are seeking further evidence from AHDB and other stakeholders to understand whether their cost estimates should replace or refine Defra's estimates, and to assess the extent to which wider industry data aligns with AHDB's assumptions. The consultation questions have been designed to allow stakeholders to provide alternative cost estimates, enabling us to assess these alongside current estimates and AHDB's estimates, and refine the current assumptions where the evidence supports doing so.

## Estimated impact on consumer prices and imports

Based on Defra modelling, moving from carbon dioxide gas stunning of pigs to argon gas stunning would result in an increase in slaughter cost by 87p a pig over a 20-year period or 0.35% of the price a slaughterhouse receives for the value of a butchered pig carcass. This percentage is even smaller when considering the retail value at supermarkets of various pork cuts from a single pig carcass, where the increased production cost accounts for just 0.22% of the total retail price. See the Consultation Impact Assessment for more information on costs of carbon dioxide and alternative systems.

Defra modelling shows that the impact on consumers buying pork and pork products would be negligible. From our modelling, the additional cost of the preferred policy if allocated evenly across all pork products, equates to approximately 0.1p per sausage, or up to 0.2p if the additional cost of the preferred policy is applied only to sausages (and no other pork products).

Using the same methodology as the previous paragraph but for other pork products: additional cost of preferred policy if evenly spread across all pork products equates to 0.2p per pork belly slice, or 0.9p if cost is applied only to belly slices; 0.2p per pork chop if spread across all pork products, or 1.3p if applied only to pork chops; and 0.2p per loin steak if spread evenly, or 0.9p if applied only to loin steaks.

The above modelling on consumer prices assumes that 100% of the additional cost is passed through to consumers. Given current evidence of price sensitivity, this full pass-through is unlikely. Retailers also face menu costs, meaning it is not economically rational to adjust prices by only a few pence. As a result, there is very limited scope for prices to increase under the preferred policy, and we therefore judge a price effect to be

unlikely and have not monetised it. In practice, broader cost drivers, such as feed prices and electricity, are likely to have a far greater influence on the price of pork and pork products.

Based on our assessment in the Consultation Impact Assessment (6. Regulatory Scorecard), we do not believe that imports will undercut British farmers. Switching from CO2 stunning to alternative methods would have a negligible impact on consumer pork prices. As a result, the policy is unlikely to affect the UK domestic industry's competitiveness against imports. However, to enable ongoing monitoring HMRC trade data will be used to monitor and track imports of different pork products entering the UK, as well as from which countries to understand what stunning method was used. We are keen to hear feedback from industry on the strength of this assumption in the trade section of this consultation, including any evidence that suggests a different impact on prices or import dynamics.

Any ban on the use of carbon dioxide to stun pigs would only take effect at the end of a transition period, the length of which is subject to consultation and would be at least two years from the date that the legislation to introduce the ban is made. These proposals are therefore not expected to have any impact on consumer prices in the immediate or short term.

## Part 2 – Consultation

### About You or Your organisation

**Q1: Would you like your response to be treated as confidential? (mandatory)**

- ☐ Yes
- ☐ No

**Q2: What is your full name?**

[Single line answer component]

**Q3: What is your email address?**

[Email address answer component]

**Q4: Are you responding as an organisation or an individual? (mandatory)**

- ☐ Individual – You are responding with your personal views, rather than as an official representative of a business, business association or other organisation
- ☐ Organisation – You are responding in an official capacity as a representative of a business, business association or other organisation

**Q5: Which of the following best describes you?**

*Please select all that apply*

- ☐ Member of the public
- ☐ Academic
- ☐ Animal welfare organisation
- ☐ Farm assurance scheme
- ☐ Farming organisation
- ☐ Food manufacturer
- ☐ Food service (for example, restaurant, café, catering service, school, hospital, cafeteria)
- ☐ Industrial gas company
- ☐ Local authority
- ☐ Pig farmer
- ☐ Pig processor
- ☐ Retailer (for example, supermarket, grocery store, convenience store, online food retailer)
- ☐ Slaughterhouse operator
- ☐ Stunning/slaughter Equipment manufacturer
- ☐ Trade body
- ☐ Veterinarian
- ☐ Other – please specify below

[Single line answer component]

## About you (individual)

[If Q4 answer: individual]

### Q6. Where are you based?

- ☐ England
- ☐ Wales
- ☐ Scotland
- ☐ Northern Ireland
- ☐ Not UK-based (Europe)
- ☐ Not UK-based (Outside Europe)

## About your organisation

[If Q4 answer: organisation]

### Q7. Where is your organisation's headquarters?

- ☐ England
- ☐ Wales
- ☐ Scotland
- ☐ Northern Ireland
- ☐ Not UK-based (Europe)
- ☐ Outside Europe

### Q8. What is the name of your organisation?

[ Single line answer component]

## General questions

Our aim is to improve pig welfare by prohibiting carbon dioxide stunning of pigs. Pigs would need to be stunned instead by an alternative stunning method which is permitted by current legislation.

### Q9a: Should the use of carbon dioxide when stunning pigs be banned?

- ☐ Yes
- ☐ No
- ☐ Don't know

### Q9b: Please explain your response and provide evidence where possible

[ Multiple line answer component]

**Q10a: If the use of carbon dioxide when stunning pigs is going to be banned, do you agree that a three-year transition period should be given?**

- ☐ Agree
- ☐ Disagree, it is too long
- ☐ Disagree, it is too short
- ☐ Don't know

**Q10b: Please explain your response and provide evidence where possible**

[ Multiple line answer component]

**Q11: What barriers, if any, do you foresee with transitioning to an alternative stunning method for pigs?**

[Open box for response]

**Q12: The Consultation Impact Assessment assumes that industry would move to argon gas stunning as an alternative to carbon dioxide. What is your preferred alternative stunning method to carbon dioxide?**

- ☐ Argon gas
- ☐ Other inert gas (please specify)
- ☐ Automated electrical stunning
- ☐ Manual electrical stunning
- ☐ Other (please specify)
- ☐ Don't know

[Single line answer component]

**Q13a: The Consultation Impact Assessment explores options such as increasing working hours or installing additional equipment to help maintain the number of pigs processed if alternative stunning methods are introduced. How likely do you think that these options would maintain current processing levels?**

- ☐ Very likely
- ☐ Fairly likely
- ☐ Neither likely nor unlikely
- ☐ Fairly unlikely
- ☐ Very unlikely
- ☐ Don't know

**Q13b: Please explain your answer (if possible)**

[Multiple line answer component]

## Economic and feasibility questions for those involved in pig processing

The following sections relate to costs and feasibility. These sections are only relevant to those who work in certain roles or industries.

If the following sections are not relevant to your role then they will be automatically skipped.

**Q14: Are you currently a pig processor or part of an organisation representing or supplying pig processors? (required)**

- ☐ Yes
- ☐ No [skip to Q44]

## Questions about costs

[If Q14 answer: Yes]

Many of the following questions ask for estimated costs, timings or volumes. If exact figures are unavailable, please provide a best estimate or range and briefly explain the basis for your answer.

**Q15: If the use of carbon dioxide gas stunning of pigs was banned, what alternative stunning method would you expect your slaughterhouse(s) to adopt instead?  
Please specify for each site and select more than one method if relevant**

- ☐ Argon gas
- ☐ Automated electrical stunning
- ☐ Manual electrical stunning
- ☐ Other inert gas (please specify below)
- ☐ Other alternative method (please specify below)

**Q16: Please explain the expected effects on throughput at your site(s) in the short-term and long-term**

[Multiple line answer component]

**Q17a: The Consultation Impact Assessment assumes that, under a transition to argon stunning, some plants would install a second gas stunner to maintain overall throughput. Do you agree or disagree with this assumption?**

- ☐ Agree
- ☐ Disagree
- ☐ Don't know

**Q17b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q18a: If your site adopted argon stunning, would you anticipate installing an additional stunner to mitigate any reduction in throughput, or would you address this impact through alternative measures?**

- ☐ Yes – we would install an additional argon stunner
- ☐ No – we would use alternative mitigation measures (please specify)
- ☐ No – we would not implement any mitigation measures
- ☐ Not applicable – we would not adopt argon stunning
- ☐ Don't know

**Q18b: Please explain your response and provide evidence where possible. Please specify mitigation methods at each site where possible**

[Multiple line answer component]

## **Costs for moving to argon gas stunning**

We have estimated the one-off costs for retrofitting each existing gas stunning system to work with argon to be £13,000 (plus additional piping and storage) and the cost of installing each additional gas stunner at around £5 to £7 million. The AHDB study reported an estimate of £2.8m for the installation of an additional stunner; and we are keen to have further input on these estimates.

We estimate the additional on-going cost to slaughterhouses at around £0.65 per pig.

For the following questions please provide as much detail as possible and explain the evidence used to inform your answers. Please provide ranges if uncertain. Please estimate in terms of your slaughterhouse(s). We will seek to use answers to the first four question to help understand the key differences between Defra modelling and the findings of the AHDB Report, in relation to the cost of conversion to argon stunning in existing stunning systems and the price of carbon dioxide and argon gas.

**Q19a: At what price per metric tonne (£) do you buy carbon dioxide in the UK?**

[Numerical answer component]

**Q19b: Please describe the price per metric tonne you have bought over the past three years, if available. Please provide a range, if easier.**

[Multiple line answer component]

**Q20a: At what price per metric tonne (£) could you buy argon in the UK?**

[Numerical answer component]

**Q20b: Please describe the price per metric tonne you have bought over the past three years, if available. Please provide a range, if easier.**

[Multiple line answer component]

**Q21a: How much do you estimate to be the costs (£) of converting existing gas stunning equipment to operate with argon?**

This includes retrofitting gas sensors and gas delivery to the existing gas systems, extra piping and gas storage.

Do not include costs of installing a second stunner in this question (see Q24) or downtime (see Q27)

[Numerical answer component]

**Q21b; Please explain your response, any breakdown of estimated costs and provide evidence where possible**

[Multiple line answer component]

**Q22a: How many weeks do you estimate would be needed for your slaughterhouse to convert its existing gas stunning equipment to use argon?**

[Numerical answer component]

**Q22b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q23a: What would be the expected building costs (£) when adding an additional gas stunner in parallel with the existing stunner?**

This could include adjusting the existing building footprint, or fixtures, additional buildings or floor space for example.

Please exclude the machinery costs of a new gas stunner and the cost associated with digging a second pit in this question (see Q24). Please exclude the cost of any downtime in this question (see Q27).

[Numerical answer component]

**Q23b: Please explain your response, any breakdown of estimated costs and provide evidence where possible**

[Multiple line answer component]

**Q24a: What would be the estimated cost (£) of digging the required stunning pit, new machinery and installation for an additional gas stunner?**

Please exclude building costs (see Q23). Please exclude cost of any downtime in this question (see Q27).

[Numerical answer component]

**Q24b: Please explain your response, any breakdown of estimated costs and provide evidence where possible**

[Multiple line answer component]

**Q25a: How many weeks do you estimate would be needed to install a second gas stunner at a slaughterhouse?**

[Numerical answer component]

**Q25b: Please provide details separating the different stages (for example planning approvals, time to complete building works, time to dig a second pit, installation). Provide a range if uncertain**

[Multiple line answer component]

**Q26a: What, if any, downtime (estimated number of weeks) would be required of existing killing operations to complete the work necessary to install a second gas stunner?**

[Numerical answer component]

**Q26b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q27a: What would the estimated cost of that downtime be (£)?**

[Numerical answer component]

**Q27b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q28a: What would the estimated additional annual labour costs (£) of operating a second gas stunner using argon at a slaughterhouse be?**

[Numerical answer component]

**Q28b: Please explain your response and provide evidence where possible. For example, the number of additional staff required, hourly wage and hours worked**

[Multiple line answer component]

**Q29a: The Consultation Impact Assessment applies electricity (£0.0083 per pig) and water (£0.018 per pig) cost estimates from the EU PigStun project (in 2026 prices). To what extent do you agree with using these figures?**

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree (please provide alternative estimates or sources below)
- ☐ Strongly disagree (please provide alternative estimates or sources below)
- ☐ Don't know

**Q29b: Alternative estimates or sources**

[Multiple line answer component]

**Q30: We are interested in the feasibility of transition periods shorter than three years. What, if any, would be the particular risks of a shorter two-year transition period if moving to argon gas stunning?**

[Multiple line answer component]

**Q31: What, if any, would be the particular benefits of a shorter two-year transition period if moving to argon gas stunning?**

[Multiple line answer component]

## **Costs for moving to automated electrical stunning**

From discussions with stakeholders and through economic analysis we have estimated the one-off costs for a slaughterhouse of converting to automated electrical stunning systems to maintain existing throughput at around £5 to £10 million depending on the number of automated electrical stunning units used in parallel. We have estimated the additional on-going cost to slaughterhouses at around £4.83 per pig, driven mainly by higher yield loss when moving from carbon dioxide to automated electrical stunning. For the following questions please provide as much detail as possible and explain the evidence used to inform your answers. Please provide ranges if uncertain.

**Q32a: What are the expected building costs (£) for adapting a slaughterhouse currently using carbon dioxide stunning to use automated electrical stunning that maintains existing throughput levels?**

[Numerical answer component]

**Q32b: Please explain your response, any breakdown of estimated costs and provide evidence where possible**

[Multiple line answer component]

**Q33a: How much would the estimated machinery and installation costs be for a slaughterhouse moving to automated electrical stunning?**

Please exclude building costs covered above. Please exclude costs of downtime.

**How many stunners would you expect to install?**

[Numerical answer component]

**Q33b: Estimated machinery and installation cost (£)**

[Numerical answer component]

**Q33c: Please explain your response, any breakdown of estimated costs and provide evidence where possible**

[Multiple line answer component]

**Q34a: How many weeks do you estimate would be needed for a slaughterhouse to convert from carbon dioxide gas stunning to automated electrical stunning?**

[Numerical answer component]

**Q34b: Please provide details separating the different stages (for example planning approvals, time to complete building works, time to install new equipment). Provide a range if uncertain**

[Multiple line answer component]

**Q35a: What, if any, estimated downtime (weeks) would be required of existing killing operations to complete the work necessary to convert to automated electrical stunning?**

[Numerical answer component]

**Q35b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q36a: What would the estimated cost (£) of that downtime be?**

[Numerical answer component]

**Q36b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q37a: What would the estimated additional labour costs (£) be to operate a slaughterhouse using automated electrical stunning (at the same throughput levels) compared to carbon dioxide?**

[Numerical answer component]

**Q37b: Please explain your response and provide evidence where possible. For example, the number of additional staff required, hourly wage and hours worked**

[Multiple line answer component]

**Q38: As noted above, we are interested in the feasibility of transition periods shorter than three years. What, if any, would be the particular risks of a shorter two-year transition period if moving to automated electrical stunning?**

[Multiple line answer component]

**Q39: What, if any, would be the particular benefits of a shorter two-year transition period if moving to automated electrical stunning?**

[Multiple line answer component]

## Other costs

**Q40a: To what extent do you agree/disagree that the accompanying Consultation Impact Assessment appropriately accounts for all of the types of costs that may occur to businesses in response to the policy proposal?**

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly Disagree
- ☐ Don't know

**Q40b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q41a: Are there any other relevant costs not accounted for in the Consultation Impact Assessment?**

- ☐ Yes
- ☐ No
- ☐ Don't know

**Q41b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q42a: We are seeking further information on costs that have been recognised in the Consultation Impact Assessment but are difficult to value. Are you able to provide any evidence about the potential costs of the following?**

*Please select all that apply*

- ☐ Costs associated with obtaining planning permissions and associated permissions, such as environmental permits
- ☐ Additional cost to increase capacity at sites where a second gas stunner is installed, such as extra chillers

**Q42b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q43a: Familiarisation and administration costs are estimated in the Consultation Impact Assessment. Could you provide any figures or evidence on familiarisation and administration costs for training?**

Cost estimates can be approximate and may be based on typical staff time and salary assumptions

**Training and familiarisation costs for those who will need to read the legislation**

**Q43b: Number of staff**

[Numerical answer component]

**Q43c: Type of staff**

*Please select all that apply*

- ☐ Slaughter staff
- ☐ Animal Welfare Officers
- ☐ Company vets
- ☐ Company auditors
- ☐ Technical managers
- ☐ Trainers
- ☐ Other (please specify)

**Q43d: Estimated total hours to read legislation**

[Numerical answer component]

**Q43e: Estimated total cost (£)**

[Numerical answer component]

**Training and familiarisation for those who will need to be informed in your business**

**Q43f: Number of staff**

[Numerical answer component]

**Q43g: Type of staff**

*Please select all that apply*

- ☐ Slaughter staff
- ☐ Animal Welfare Officers
- ☐ Company vets
- ☐ Company auditors
- ☐ Technical managers
- ☐ Trainers
- ☐ Other (please specify)

**Q43h: Estimated total hours to inform staff**

[Numerical answer component]

**Q43i: Estimated total cost (£)**

[Numerical answer component]

**Training and familiarisation for those who will require retraining to add the required code to their certificate of competence to stun pigs with alternative methods**

**Q43j: Number of staff**

[Numerical answer component]

**Q43k: Type of staff**

*Please select all that apply*

- ☐ Slaughter staff
- ☐ Animal Welfare Officers
- ☐ Company vets
- ☐ Company auditors
- ☐ Technical managers
- ☐ Trainers
- ☐ Other (please specify)

**Q43l: Estimated total hours to retrain staff**

[Numerical answer component]

**Q43m: Estimated total cost (£)**

[Numerical answer component]

## Questions for companies supplying carbon dioxide or argon gas

These questions are primarily for companies supplying argon or carbon dioxide gas commercially. If the following sections are not relevant to your role, then they will be automatically skipped.

We will seek to use answers to these questions to help understand the key differences between Defra modelling and the findings of the AHDB Report on baseline carbon dioxide

costs. AHDB's estimates, while using the same methodology as Defra to annualise gas consumption, differ from supplier-provided evidence to Defra. We are keen to have input and further evidence from stakeholders on the price of CO2 and argon.

**Q44: Are you a supplier of either carbon dioxide or argon gas**

Required. Please select one option.

- ☐ Yes – Carbon Dioxide
- ☐ Yes - Argon
- ☐ Yes - Both
- ☐ No [Skip to Q53]

**Questions for companies supplying carbon dioxide**

[If Q44 Answer: Yes – Carbon Dioxide]

**Q45a: At what price per metric tonne (£) do you sell carbon dioxide in the UK?**

[Numerical answer component]

**Q45b: Please describe the price per metric tonne you have sold over the past three years, if available. Please describe your pricing model. Please use a range if that's easier.**

[Multiple line answer component]

**Q46a: What is your current domestic annual carbon dioxide production in metric tonnes?**

[Numerical answer component]

**Q46b: What is your expected future domestic annual carbon dioxide production in metric tonnes?**

[Numerical answer component]

**Q46c: Where is your carbon dioxide produced?**

*Please select all that apply*

- ☐ UK
- ☐ EU
- ☐ Rest of world

**Q46c: Please specify volumes for each gas production site**

[Multiple line answer component]

## Questions for companies supplying argon

[If Q44 Answer: Yes – Argon]

**Q47a: At what price per metric tonne (£) do you sell argon in the UK?**

[Numerical answer component]

**Q47b: Please describe the price per metric tonne you have sold over the past three years, if available. Please describe your pricing model. Please use a range if that's easier.**

[Multiple line answer component]

**Q48a: What is your current domestic annual argon production in metric tonnes?**

[Numerical answer component]

**Q48b: What is your expected future domestic annual argon production in metric tonnes?**

[Numerical answer component]

**Q48c: Where is your argon produced?**

*Please select all that apply*

- ☐ UK
- ☐ EU
- ☐ Rest of world

**Q48d: Please specify volumes for each gas production site**

[Multiple line answer component]

## Questions for companies supplying both carbon dioxide and argon

**Q49a: At what price per metric tonne (£) do you sell carbon dioxide in the UK?**

[Numerical answer component]

**Q49b: Please describe the price per metric tonne of carbon dioxide you have sold over the past three years, if available. Please describe your pricing model. Please use a range if that's easier.**

[Multiple line answer component]

**Q50a: What is your current domestic annual carbon dioxide production in metric tonnes?**

[Numerical answer component]

**Q50b: What is your expected future domestic annual carbon dioxide production in metric tonnes?**

[Numerical answer component]

**Q50c: Where is your carbon dioxide produced?**

*Please select all that apply*

- ☐ UK
- ☐ EU
- ☐ Rest of world

**Q50d: Please specify volumes for each gas production site**

[Multiple line answer component]

**Q51a: At what price per metric tonne (£) do you sell argon in the UK?**

[Numerical answer component]

**Q51b: Please describe the price per metric tonne of argon you have sold over the past three years, if available. Please describe your pricing model. Please use a range if that's easier.**

[Multiple line answer component]

**Q52a: What is your current domestic annual argon production in metric tonnes?**

[Numerical answer component]

**Q52b: What is your expected future domestic annual argon production in metric tonnes**

[Numerical answer component]

**Q52c: Where is your argon produced?**

*Please select all that apply*

- ☐ UK
- ☐ EU
- ☐ Rest of world

**Q52d: Please specify volumes for each gas production site**

[Multiple line answer component]

## Questions for retailers, food manufacturers or those in food services

**Q53: Are you a retailer, food manufacturer or involved in food services? (required)**

- ☐ Yes
- ☐ No [skip to Q57]

**Q54a: Do your products contain pork or pork products?**

- ☐ Yes
- ☐ No

**Q54b: What proportion of your production cost do pork products represent? (%)**

[Number answer component]

**Q55: Do you currently import pork or pork products?**

- ☐ Yes
- ☐ No

**Q56: Will you start importing or import more pork or pork products in the event of a ban on high concentration carbon dioxide stunning of pigs?**

- ☐ Yes
- ☐ No
- ☐ Not sure

**Q56a: Please explain your response and provide evidence where possible**

[Multiple line answer component]

## Questions for others

[If Q14 & Q44 & Q53 Answers: No]

**Q57: Do you have any additional information or evidence that you wish to share in relation to costs or feasibility?**

[Multiple line answer component]

## Trade

[All respondents]

The UK is a world leader in animal welfare standards, and the government is proud of the high animal welfare standards that underpin our high-quality produce. The UK's reputation

for high-quality products drives demand for UK goods and we want to improve and build upon that record, working in partnership with industry to establish higher welfare animal systems.

According to HMRC data, the UK imported 697 thousand tonnes of pig meat (including ham, bacon, sausages and other related products) in 2025, with Defra data showing domestic production totalled 975 thousand tonnes in 2025. However, the UK imports and exports different cuts of pork because domestic consumers favour high-value cuts such as loins and bellies, while overseas markets demand other parts of the carcass, leading to the UK also exporting 288 thousand tonnes to other markets.

**Q58a: Do you think that introducing a ban on high concentration carbon dioxide stunning of pigs would increase imports of pork and pork products to the UK?**

- ☐ Yes
- ☐ No
- ☐ Not sure

**Q58b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

**Q59a: Do you think that introducing a domestic ban on high concentration carbon dioxide stunning of pigs would increase exports of pork and pork products from the UK?**

- ☐ Yes
- ☐ No
- ☐ Not sure

**Q59b: Please explain your response and provide evidence where possible**

[Multiple line answer component]

## Final questions

**Q60. Please provide any comments or evidence on the environmental impacts the proposed policy may have.**

[Multiple line answer component]

**Q61. Please provide any comments or evidence you feel should be considered concerning the socio-economic impact the proposed policy may have on both producers and consumers.**

[Multiple line answer component]

**Q62. Do you have any further comments you wish to make on the proposal?**

[Multiple line answer component]