



Llywodraeth Cymru
Welsh Government

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Welsh Government's preferred policy on carbon capture, utilisation and storage

We are seeking your views on the draft policy on carbon capture, utilisation and storage (CCUS).

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Overview

Carbon capture, utilisation and storage (CCUS) refers to methods of reducing atmospheric carbon dioxide (CO₂) emissions by capturing CO₂ and then either using the CO₂ in another industrial process, or permanently storing the CO₂ in secure geological formations. It is clear that CCUS will have some role to play in addressing the climate emergency, but the extent of that role is not yet clear. This consultation explores the issues surrounding CCUS in Wales and presents the Welsh Government's preferred policy position. Questions to answer in order to respond to the consultation are provided at the end of this document.

Purpose of the consultation

This consultation document sets out our preferred policy position on carbon capture, utilisation and storage, as part of the **Welsh Government's response to the climate and nature** emergencies. These emergencies require us to rapidly, deeply and sustainably decarbonise our industries and energy supply, whilst supporting economic activity and employment, avoiding passing problems on to future generations, and ensuring a just transition for those citizens and business affected by the change.

The Climate Change Committee (CCC), who advise the UK and Welsh Governments on emission targets, has described carbon, capture, utilisation and storage (CCUS) as a 'necessity, not an option' for the transition to net zero. However, the CCC also recognises the Welsh Government is not able to meet its target without the right policy and financial commitments from Westminster as the UK Government holds many of the powers and levers related to CCUS. We will continue to engage with the UK Government on its developing CCUS policies, and also industry and energy producers, to ensure they take account fully of the needs of Wales. Making a clear policy statement on CCUS is part of

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this process.

We are now seeking the views of industry, the public and other stakeholders on our preferred policy position that supports CCUS where:

- it makes a clear contribution to decarbonisation and the economy,
- there are no reasonable alternatives to reduce emissions, and,
- its deployment does not unnecessarily prolong the use of fossil fuels.

Subject to the outcome of this consultation, the policy position will initially be published as a written statement, followed by detailed guidance for decision makers and developers.

Context in which the policy has been developed

To address the climate emergency we must rapidly and sustainably reduce our emissions of greenhouse gases. Following advice provided by the CCC, on 17 March 2021, the Senedd made regulations, collectively referred to as ‘the Climate Change (Wales) Regulations 2021’ [The Environment (Wales) Act 2016 (Amendment of 2050 Emissions Target) Regulations 2021; The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations 2021; The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021; and The Climate Change (Net Welsh Emissions Account Credit Limit) (Wales) Regulations 2021].

These regulations set challenging targets for emissions to be reduced by 63% by 2030, 89% by 2040 and at least 100% by 2050, based on 1990 levels. Industry, including power generation, accounts for more than half of current emissions in Wales, so decarbonising industry is critical to meeting these carbon budgets, and it must happen quickly.

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It is equally important that we avoid “offshoring” emissions by driving industry overseas, as this will impact on our ability to build a greener economy in Wales and may result in industry moving to countries with lower environmental standards. We must find ways to urgently reduce emissions whilst retaining sustainable industry in Wales.

The development of CCUS in Wales will be driven in large part by the needs of industry and the decisions that they take regarding their optimum decarbonisation pathways. Industry and energy generation operators have been clear that in addition to improved efficiency and fuel-switching, CCUS is part of their overall strategy for decarbonising the economy to address the climate emergency.

At the present time, most proposals for large scale CCUS involve geological storage rather than utilisation. The focus of this consultation is therefore primarily on Carbon Capture and Storage.

Carbon Capture, Utilisation and Storage (CCUS)

CCUS refers to methods of reducing atmospheric carbon dioxide (CO₂) emissions by capturing CO₂ generated in industrial plant and power generation prior to emission to atmosphere, and then either using the CO₂ in another industrial process, or permanently storing the CO₂ in secure geological formations.

When CO₂ is captured for permanent storage, it must be stored in geological formations deep underground. A [study](#) conducted for the UK Government by relevant experts from industry and academia concluded that when CO₂ is injected into geological formations, more than 99.9% is expected to remain securely contained after 100 years.

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The principal potential benefit of CCUS is that the UK has significant geological storage assets, with the UK Continental Shelf (UKCS) potentially having enough capacity to store up to 78 billion tonnes of carbon, one of the largest potential CO₂ storage capacities in Europe. The UKCS has adequate storage potential, if it can be safely and effectively accessed, to store UK emissions for the foreseeable future.

CCUS has the potential to enable the decarbonisation of many parts of the economy including industry, power generation, heating and transport. It can substantially reduce emissions from the combustion of fossil fuels or enable the production of low-carbon hydrogen from methane reformation.

Additional potential benefits of CCUS are that it can be deployed at a relatively large scale, often over a shorter timescale than required for other methods of decarbonisation as:

- Where technically and economically feasible, capture equipment can be retro-fitted to existing industrial processes, without the requirement to fundamentally change the existing facility.
- Whilst CCUS requires substantial new infrastructure such as pipelines, it is in general not limited by the same infrastructure constraints as other methods of decarbonisation, so it offers alternative options where decarbonisation is limited by one type of infrastructure.
- Spent petroleum reservoirs in the UKCS provide both secure geological storage capacity, plus decades of transferable knowledge, expertise and supply-chains that can be used in developing CCUS infrastructure.

In any decision on the potential application of CCUS, any benefits must be considered alongside the concerns that CCUS is not yet proven at large scale in practice in the UK, that geological storage is untested at industrial scale over the long term, and that adoption of CCUS, if not properly managed, could increase, or unnecessarily prolong the use of fossil fuels, rather than transitioning away from fossil fuels. For example, CCUS, if not properly managed, could detract

from or delay investment in renewable energy infrastructure and energy storage.

We have recently completed [research](#) reviewing the viability of a CCUS network in Wales and how it might contribute to achieving net zero in Wales. The report concluded that CCUS is a feasible technical option to support Wales in its ambition to reach its statutory emissions reduction targets. The research highlighted that CCUS is technically challenging and expensive, and therefore must be used alongside other technologies including energy demand reduction, energy efficiency, recycling and alternative energy sources including electrification or hydrogen. Where other solutions cannot be deployed, CCUS may have a role. CCUS may also have a part to play in achieving net zero through removal of CO₂ from the atmosphere.

How is CCUS regulated in Wales?

CCUS developments are subject to a broad legislative framework and regulated by a range of public bodies. The two regulatory regimes where decarbonisation and energy policy are likely to be material factors in decision making are licensing and planning permissions.

The licensing of certain CCUS activities is largely governed by the Energy Act 2008 (section 17(2) contains the specific list of CCUS activities).

For *onshore* locations within Wales, as well as Welsh internal waters (primarily bays and estuaries), the licensing of any potential CO₂ storage sites is the responsibility of the Welsh Ministers (Energy Act 2008 section 18(1), (2)(cb), (2)(d) and (4A)).

For *offshore* locations (except certain bays and estuaries) the licensing of potential CO₂ storage sites is the responsibility of the North Sea Transition

Authority (NSTA)(Formerly known as the Oil and Gas Authority), an agency of the UK Government. The NSTA is the licensing authority for the Welsh inshore region, as well as the Welsh offshore region (12-200nm) (section 18(1), (2)(a) and (2)(d)). Where a CCUS licence is in an area that is partly in a Welsh controlled area and an English or UK controlled area, the licensing authority is either the Welsh Ministers or the NSTA (section 18(2)(cd)).

The Energy Act 2008 refers to the OGA (the Oil and Gas Authority), but this has since been renamed the North Sea Transition Authority.

The NSTA has already issued a number of CO₂ storage licences for offshore locations around the UK, in the North Sea and the East Irish Sea, and is expected to carry out further licensing rounds in the future. There have to date been no onshore CO₂ storage licenses issued in any of the UK nations.

The Welsh Government currently has no plans to issue licences for permanent storage of CO₂ at onshore locations in Wales. The proposed policy position is that any industrial CO₂ emissions captured in Wales should go to suitable offshore storage locations on the UKCS, where historic experience of petroleum extraction provides for an improved understanding of the geology. If adopted, this position will be reviewed as required in light of emerging evidence.

CCUS is comprised of both onshore (including capture facilities and pipelines) and offshore infrastructure and facilities (including loading/unloading, pipelines and storage). The Town and Country Planning Act 1990, as applied to these pipelines and storage facilities in Wales, is a complex mixture of devolved and reserved functions.

Where discrete elements of, or an entire, CCUS network are located in Wales, it is likely that a developer will require a planning permission under the 1990 Act. Planning Policy Wales (PPW) sets out the Welsh Government's land use planning policies.

Wellbeing of Future Generations

The **Well-being of Future Generations (Wales) Act 2015** (the Act) (the Act) requires specified public bodies (including the Welsh Ministers) to carry out sustainable development, which is the process of improving the economic, social, environmental and cultural well-being of Wales by taking action in accordance with the sustainable development principle, aimed at achieving the well-being goals. This means the Welsh Ministers must, among other things, act in a way that seeks to ensure the needs of the present generation are met without compromising the ability of future generations to meet their own needs.

The Act sets **seven well-being goals** that the Welsh Ministers must seek to achieve. The proposed CCUS policy will contribute directly to achieving the following well-being goals: “a prosperous Wales” (which includes taking action on climate change), “a resilient Wales”, and “a globally responsible Wales”.

The Programme for Government 2021 to 2026: Well-being statement sets out the well-being objectives that the government will use to maximise its contribution to these well-being goals. The proposed CCUS policy will make a direct contribution to the objectives:

- Embed our response to the climate and nature emergency in everything we do.
- Build a stronger, greener economy as we make maximum progress towards decarbonisation.

Decarbonisation and the role of CCUS

To help achieve these well-being goals, the **policy position statement** on energy policy set out in the Senedd by the then Minister for Climate Change in

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November 2022 stated that emissions reduction would be achieved by following an energy and carbon hierarchy, to help select the most sustainable decarbonisation methods.

The statement emphasised that we must transition away from fossil fuels; that we should avoid creating emissions in preference to storing them; that CCUS would be supported where other methods of decarbonisation have been considered and justifiably ruled out; and that any decisions on CCUS would be guided by energy and decarbonisation hierarchies, similar to the model adopted in Planning Policy Wales (PPW) Edition 10 onwards.

The energy hierarchy is an established component of **Planning Policy Wales** (Wales's national planning policy guidance, p93). The Welsh Government expects all new development to mitigate the causes of climate change in accordance with the energy hierarchy for planning, with reducing demand, increasing efficiency, and increasing prioritisation of renewables.

This energy hierarchy for planning has informed the development of our preferred policy position for CCUS. In general, following a hierarchy will guide both developers and decision makers towards avoiding the generation of emissions in preference to capturing and storing emissions. For example, through fuel-switching, or adopting new technology and processes in preference to geological storage. However, given the urgency of the climate emergency and the need to make rapid reductions in emissions to the atmosphere, capture and permanent storage of emissions could be appropriate where other methods of decarbonisation are not practicable.

Our vision for the future

Our vision for the future of industry and energy generation in Wales is one in which:

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- Sustainable industries are retained in Wales and continue to generate high-quality jobs and other benefits for the communities in which they operate;
- Industry has substantially reduced its reliance on fossil fuels and its generation of greenhouse gases;
- Where fossil fuels are still used and emissions are still generated, those emissions are captured to the fullest extent possible and safely and permanently stored;
- There is a credible and sustainable plan for industry to work towards eliminating all greenhouse gas emissions, all need for capture and storage, and all dependence on fossil fuels.

Key policy principles

To achieve this vision, it is the Welsh Government's preferred policy position that:

1. In general, CCUS will be supported by the Welsh Ministers where it makes a clear, measurable and sustained contribution to decarbonisation or the transition away from fossil fuel consumption, AND there is no reasonable alternative to avoid or substantially reduce the emission of CO₂ to atmosphere (either at the present time, or the immediate future).
2. For both energy supply and non-energy emissions, emission reduction methods that avoid the creation of emissions is preferable to CCUS, where such methods are technically and economically feasible.
3. Where CCUS is proposed, it must be clear that there is a global net climate benefit and that it is not un-necessarily increasing or extending the overall use of fossil fuels or our dependency on fossil fuels. (Global net climate benefit here means a clear overall reduction in emissions to atmosphere as a result of applying CCUS, allowing for any increases or reductions in emissions elsewhere directly related to the change. Or retaining industry in Wales, as opposed to offshoring industry to countries with lower

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environmental standards).

4. The responsibility for demonstrating that CCUS is the right choice, that it contributes to long-term decarbonisation, that it delivers a net climate benefit, and builds a stronger, greener economy, rests with the developer.

When CCUS is implemented, fossil fuel consumption could increase due to the energy requirements of the CCUS process, but emissions to atmosphere should still be significantly reduced. If the principles set out above are successfully followed, then we anticipate that the appropriately targeted implementation of CCUS will accelerate emissions reduction during the transition away from fossil fuels, without delaying the transition away from fossil fuels. This is the key goal for successful use of CCUS.

Implementing the policy

Based on the outcomes of this consultation, and subject to any necessary statutory or other assessments, it is proposed that:

- The preferred policy position will be issued as a Ministerial written statement to the Senedd that outlines our policy objective for CCUS.
- The policy objective will be incorporated into future editions of Planning Policy Wales and Net Zero Wales Carbon Budgets.
- Detailed guidance on the implementation of the policy will be developed for planning offices and other decision makers. It is recognised that the preferred policy position provides strategic objectives rather than detailed advice to decision makers and developers. Therefore, guidance will be prepared outlining how the policy might work in practice and what type of evidence will be required.

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Consultation questions

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Question 1: Do you agree that avoiding the generation of emissions is preferable to capturing and storing emissions? If no, please provide your reasons.

Question 2: Do you agree that, where CCUS is proposed, developers must evidence that its use will not unnecessarily increase or extend the overall use of fossil fuels or our dependency on fossil fuels? If no, please provide your reasons.

Question 3: Do you agree that storage within the UK Continental Shelf (UKCS) should remain the preferred focus rather than onshore locations in Wales? (Our current preference is that captured emissions should be stored at UK-controlled offshore locations). If no, please provide your reasons.

Question 4: Do you agree overall with the proposed policy position set out in this document? If not, please indicate where you disagree and your reasons for disagreeing

Question 5: What type of additional information or guidance would help give effect to this policy, for developers, investor and decision makers?

Question 6: We would like to know your views on the effects that 'Carbon Capture, Utilisation and Storage' would have on the Welsh language, specifically on opportunities for people to use Welsh and on treating the Welsh language no less favourably than English. What effects do you think there would be? How could positive effects be increased, or negative effects be mitigated?

Question 7: Please also explain how you believe the proposed policy could be formulated or changed so as to have positive effects or increased positive effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language, and no adverse effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language.

Question 8: We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them:

Question 9: Do you live in Wales?

Question 10: Do you have a business interest in Wales?

Question 11: Please provide the first part of your home postcode e.g. CF10

How to respond

The closing date for responses is 24 February 2025, and you can respond in any of the following ways:

- by email: please complete the consultation response form and send it to: YmatebionYnni-EnergyResponses@llyw.cymru. Please include “Draft policy on CCUS” in the subject line of your email.
- by post: please complete the consultation response form and send it to:

Energy Division
Welsh Government
Cathays Park
Cardiff
CF10 3NQ

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The Welsh Government will be data controller for Welsh Government consultations and for any personal data you provide as part of your response to the consultation.

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Welsh Ministers have statutory powers they will rely on to process this personal data which will enable them to make informed decisions about how they exercise their public functions. The lawful basis for processing information in this data collection exercise is our public task; that is, exercising our official authority to undertake the core role and functions of the Welsh Government. (Art 6(1)(e))

Any response you send us will be seen in full by Welsh Government staff dealing with the issues which this consultation is about or planning future consultations. In the case of joint consultations this may also include other public authorities. Where the Welsh Government undertakes further analysis of consultation responses then this work may be commissioned to be carried out by an accredited third party (e.g. a research organisation or a consultancy company). Any such work will only be undertaken under contract. Welsh Government's standard terms and conditions for such contracts set out strict requirements for the processing and safekeeping of personal data.

In order to show that the consultation was carried out properly, the Welsh Government intends to publish a summary of the responses to this document. We may also publish responses in full. Normally, the name and address (or part of the address) of the person or organisation who sent the response are published with the response. If you do not want your name or address published, please tell us this in writing when you send your response. We will then redact them before publishing.

You should also be aware of our responsibilities under Freedom of Information legislation and that the Welsh Government may be under a legal obligation to disclose some information.

If your details are published as part of the consultation response then these published reports will be retained indefinitely. Any of your data held otherwise by Welsh Government will be kept for no more than three years.

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- to (in certain circumstances) object to or restrict processing
- for (in certain circumstances) your data to be 'erased'
- to (in certain circumstances) data portability
- to lodge a complaint with the Information Commissioner's Office (ICO) who is our independent regulator for data protection

For further details about the information the Welsh Government holds and its use, or if you want to exercise your rights under the UK GDPR, please see contact details below:

Data Protection Officer:

Welsh Government

Cathays Park

Cardiff

CF10 3NQ

e-mail: dataprotectionofficer@gov.wales

The contact details for the Information Commissioner's Office are:

Wycliffe House

Water Lane

Wilmslow

Cheshire

SK9 5AF

Tel: 0303 123 1113

Website: <https://ico.org.uk/>

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Large print, Braille and alternative language versions of this document are available on request.

Contact details

For further information:

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