

Decarbonisation Readiness (DR) Guidance

Energy UK is the trade association for the energy industry, representing companies investing billions of pounds to secure our country's current and future energy needs.

From growing start-ups to major electricity generators, grid and infrastructure developers and energy suppliers, our members are driving change across power, heat, transport and flexibility.

We provide a collective voice for the sector working with governments, regulators, charities and other organisations to provide crucial insight that shapes policy, offers solutions and promotes best practice.

Our broad view across the whole system supports evidence-based positions which are not tied to particular technologies, and are focused on delivering strategic benefits for people, businesses and the economy.

We champion initiatives such as our Vulnerability Commitment, which pushes suppliers to go beyond regulation to support customers with additional needs, and TIDE, the industry's drive for greater inclusion and diversity. Through our Young Energy Professionals Forum, we support the development of future leaders.

We are equally committed to our team and are proud to be recognised as a 'Gold' Investors in People employer.

If you would like to discuss this response in further detail with Energy UK and its members, we would welcome further engagement.

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Question 1: If you are an operator, does the document make it clear if the new requirements apply to you?

No.

Generally, it is reasonably clear. However, it is hard to understand why the new requirements apply to:

“plants which are already burning 100% hydrogen, capturing carbon dioxide, operating on blends of hydrogen, ammonia, or other low carbon fuels with methane or natural gas. No distinction is made between fossil and biogenic carbon dioxide”

as these plants are either already decarbonised (e.g. if using 100% hydrogen) or decarbonisation ready (e.g. if operating on blends of fuels but with a capability to be fully decarbonised). This statement in the guidance needs to be clarified.

It is unclear within the guidance how Decarbonisation Readiness requirements will apply to small combustion plants. These are not currently required to hold an environmental permit, but required to apply for a permit by 2029/30 under the medium combustion plant directive. It needs to be clearly stated within the guidance that Decarbonisation Readiness would apply.

The guidance also needs to be clear for the situation of additional capacity being added to an existing permitted site. Our assumption is that the intent of the regulations is to capture the new capacity, ensuring this is decarbonisation ready, rather than any existing capacity which pre-dates these requirements. It would be helpful to explicitly explain that the addition of extra capacity does not trigger decarbonisation readiness requirements for the plant already permitted.

Clarity required as to how comparable 'combustion plant' is defined. Without clarity it may prove difficult for operators to identify which refurbishment projects may be subject to Decarbonisation Readiness.

Question 2: A decarbonisation readiness report should set out how the decarbonisation readiness requirements have been met. Does the document clearly set out what is required by the new regulations?

No. It is unclear what the expectations are from the Environment Agency, including on whether an operator should identify a barrier to implementation of their route to decarbonisation. It is unclear what should occur in the event of no feasible alternative. There is less clarity on what demonstrating the guidance means in practical terms, particularly for different sizes of projects and where there is a lack of information available (e.g. hydrogen combustion). The guidance is also silent on how an Operator should address the strong dependence of economic feasibility on Government support mechanisms.

Tests within the guidance should be robust to ensure new combustion power plant will have realistic route to decarbonise. The guidance should recognise that the CCS and hydrogen sectors are in early stages, and ahead of wide scale deployment that would be expected developers are to show they have thoroughly considered their route to decarbonisation pathway, so they are best placed to decarbonise when infrastructure allows.

Question 3: Refer to section 4 carbon capture decarbonisation readiness route. Does this section clearly describe all the topics a decarbonisation readiness report following the carbon capture route should cover?

Yes, the topics are listed out. However, as noted above it is hard to discern the level of detail required for different plant types. Furthermore, while the guidance notes that the information should not be at the level of a Pre-FEED study the referenced report does seem to require some detailed engineering assessments; we would question whether all the requirements listed are necessary to simply meet the aim of ensuring there are no barriers to future decarbonisation (e.g. the impact of carbon capture on the performance of the plant, emissions abatement etc – these aspects would be considered in FEED studies).

Further clarity is needed on the requirement to be ready to operate as a “complete CCS system” achieving 90% capture. The interaction with BAT/GET needs to be clarified and the focus should be on aspects within Operators control – the carbon capture process itself rather than the wider system.

For the transport and storage demonstration, we do not think the updated requirements should go beyond current requirements; for example, consideration of methods used to minimise coastline impacts goes beyond current requirements and is not commensurate with a “no barriers” demonstration.

On Section 4.4 *How to demonstrate a suitable plan for carbon dioxide transport and storage* it states “Your self-assessment must also confirm the feasibility of transporting your captured carbon dioxide to the geological storage site. You cannot assume that you will be able to outsource your transport arrangements at the time of future carbon capture and storage deployment”. This exclusion may be problematic in terms of some operators ability to meet the economic feasibility test.

Question 4: Refer to section 5 hydrogen decarbonisation readiness route. Does this section clearly describe all the topics a decarbonisation readiness report following the hydrogen route should cover?

No.

The topics are clearly listed; however, it is difficult to determine the detail required. We also note that hydrogen combustion is a developing area and there is a lack of information available. There simply may not be available information for some of the aspects listed - such as materials issues and NOx emissions. Furthermore, some aspects may only be considered at a more detailed design stage, e.g. impact on performance and any requirements for emissions abatement.

Clarification is still required on what the expectation is when referring to hydrogen as a primary source of fuel. The CCS option presented has a decarbonisation target of 90%, but without a target or threshold for hydrogen there is a potential risk that an unlevel playing field is created. This is because some operators may choose to blend fuel with higher or lower percentage of hydrogen, while others strive for 100%. A minimum threshold should recognise the technology status, aiming to amend as the market develops. This is in line with the existing GET/BAT review process.

Question 5: The document provides the right level of detail to guide an operator (or their agent) when applying for an environmental permit with decarbonisation readiness.

Disagree.

The document does list all the aspects that need to be considered and we note there are supporting technical reports available. However, it does not give a sense of the level of detail required not how this should vary with the complexity of the project. Examples for different types of project are needed to help Operators.

It should be noted that scale and complexity can be separate variables, including small scale plants that can be complex and large-scale plants can be relatively simple in comparison. It is also important that Environment Agency staff assessing submissions have the required training to ensure knowledge of current and future technology developments.

Question 6: We expect the level of detail in decarbonisation readiness reports to be proportionate to the scale and complexity of the asset. Does the document provide sufficient information on what is expected for different sizes and types of plant?

No.

While the principle that the DR report should be proportionate to the scale and complexity is clearly stated there is very little information in the guidance as to what this means in practice. For example, the guidance lists requirements, including some detailed information requiring engineering assessment, with no steer on whether all elements are required for all projects nor an acceptable level of simplification. Examples for different types of project would help Operators, reduce the regulatory

burden associated with making additional information requests and minimise permitting delays.

Question 7: Operators may explore both the carbon capture and hydrogen routes to decarbonisation but we expect decarbonisation readiness reports to present a primary choice that we will assess as part of the permit application. Operators may change this preference in response to changing technology or conditions and update their report accordingly, provided a valid decarbonisation readiness report is maintained according to permit conditions. Does the guidance make this clear?

Yes.

We welcome the clarity that Operators may change their preferred decarbonisation route – the guidance is clear. However, the guidance needs to set out how an Operator goes about managing this change. Current understanding is that a change of route does not require a permit variation; an Operator simply needs to inform their Regulatory Officer or local team and update their DR report. The guidance needs to be very clear on the requirements for Operators.

Clarity is required on the process for operators providing evidence and justification in the guidance. Further details on the expectation from the EA on types of air quality modelling being required is needed when developers are opting to change route.

Question 8: We recognise that new and emerging technologies will develop that apply to decarbonisation by carbon capture or hydrogen conversion. We will regularly review this document so that it reflects significant changes in technology. However, we intend it to have sufficient flexibility that operators can include the use of such technologies within the decarbonisation readiness report if appropriate. Does the document adequately reflect this intention?

Yes.

The Environment Agency should review guidance to address any lessons learned once guidance is published and being used as part of the application process.

Question 9: There will be a supplementary charge made for the assessment of a decarbonisation readiness report as part of the permit determination process. The specific costs will be consulted upon as part of a wider permit charging consultation.

For bespoke permits, the proposed charges will be based on the number of extra hours needed to assess the decarbonisation readiness report. A scaled approach is suggested according to the size and type of the power plant and the expected complexity of the decarbonisation technology being presented for assessment.

These would be:

- combustion electricity generating power plant equal to or greater than 0MWth or less than 20MWth
- combustion electricity generating power plant equal to or greater than 20MWth or less than 50MWth
- combustion electricity generating power plant equal to 50MWth or greater, or an energy from waste plant of any size

Do you agree with this approach?

No.

Agree with proposed method of basing charges on no extra hours, as well as scale and complexity of site. But all applicants should be held to the same requirements. The Environment Agency should assess the space and technology feasibility tests. As such, charges should reflect this, and it also needs to consider different charges for new applicants and sub variations.

Question 10: Is the language used in the document easy to understand, bearing in mind the technical nature of the subject matter and the intended audience?

Yes, though it is noted the guidance is at headline level and the supporting technical reports are required.

Question 11: Is there any information missing from the document?

Additional guidance for plant that may wish to update their CCR requirements in current planning regime to DR requirements in permitting regime would be welcomed. The guidance notes that Operators can apply for a DR permit voluntarily, but clarity on the process for removing the requirements from consents would be welcome.

It would be helpful if the guidance explicitly recognised that economic feasibility assessments can refer to an assumption that Government support mechanisms are required, noting that these are required for either route to be feasible.

The guidance should explicitly state that the land reserved for decarbonisation readiness and any connection corridors does not have to be within the permit boundary. It would also be helpful if there was guidance to clarify whether temporary uses can be made of the land – the current CCR requirements cover this aspect.

Question 12: After reading the document and answering these questions, are there any other questions you have or suggestions you would like to make?

Given that there are different determination approaches for standard rules and bespoke permits there is the potential for a lack of consistency and transparency; projects meeting the standard rules criteria could be broadly similar to those requiring bespoke permits. The creation of examples would help with addressing this. Standard templates or wording on permit submission forms to clearly set out what an applicant is self-certifying is also important.

We would also stress that there needs to be proactive measures to ensure consistency across Regulatory Officers – for example to ensure that there is consistency in assessing changes to decarbonisation route and any feedback on the self-certification aspects.

DESNZ should not wait 5 years to review, the guidance should be reviewed in line with policy development.

Regarding Section 6, more information is needed on what the Environment Agency considered as evidence that a Decarbonisation Readiness proposal is economically feasible. If a Cost Benefit Analysis is required, this should be stated in the guidance.