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08/08/23

Dear Sir / Madam,

PROPOSED HYNET CARBON DIOXIDE PIPELINE

PLANNING INSPECTORATE REFERENCE: EN007007

OUR REFERENCE: 20033913

RE: NATURAL RESOURCES WALES' DEADLINE 6A SUBMISSION

This letter comprises Natural Resources Wales (NRW)'s response to the following document:

- i. Water Framework Directive Derogation Case for the Alltami Brook Crossing [REP5-016] – see Annex A;

In addition, NRW's consolidated written representation for Change Requests 1 to 3 is provided in Annex B.

NRW acknowledges that the project seeks to contribute to the Government's key objectives in energy policy to ensure energy security for the UK and to decarbonise energy capacity in order to meet the UK's 2050 climate change targets. However, NRW advises that there may be deterioration of the Wepre Brook waterbody as a result of the Applicant's preferred trenched (open-cut) crossing option of Alltami Brook. Accordingly, consent for the project should not be granted unless the criteria set out respectively under Article 4(7) of the Water Framework Directive and Regulation 19 of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, have been satisfied.

The geology of the Alltami Brook crossing point location is complex and this proposal for excavation of the bedrock beneath Alltami Brook would result in a permanent, physical change to the watercourse. Without any ground investigation information or robust evidence to support the Applicant's position, NRW maintains that there is a risk that excavating

bedrock for the proposed Alltami Brook trenched (open-cut) crossing could create a pathway for surface water to be lost underground. Such flow losses may cause long-term deterioration of hydromorphology, water quality and ecological elements downstream.

The Applicant has submitted an alternative crossing option (embedded pipe bridge). NRW has provided advice to the ExA about this [CR2RR-002]. In summary, on the information provided, NRW considers that such an option would not result in deterioration in the status of the affected waterbodies and on that basis, would likely be compliant with the Water Framework Directive and Regulations. On that basis, NRW considers that a derogation under the respective provisions would not be required.

The Applicant has made clear that, despite NRW's concerns, it would prefer to proceed with the trenched (open-cut) crossing option and has prepared a 'without prejudice' WFD derogation report in support of this. Whereas this report is welcomed, NRW nevertheless remains concerned at the lateness of this submission. Furthermore, despite being labelled as a derogation report the document mixes the Applicant's position about WFD compliance with the WFD derogation information. NRW advises that a WFD derogation report should comprise an objective assessment of the WFD Article 4(7) / Regulation 19 tests.

Nevertheless, NRW has reviewed the report and in summary advises that the evidence provided by the Applicant in support is insufficient/inadequate to enable the ExA to conclude that a robust WFD derogation case can be made. On that basis, the ExA should not consent to the DCO based on the Applicant's preferred option. NRW's detailed advice regarding this is provided in Annex A of this letter.

NRW's advice is provided in response to the information and evidence submitted by the applicant in its WFD Compliance assessment and subsequent case for derogation. Its role is to advise and assist the ExA in its determination of whether the information presented by the Applicant is compliant with the requirements of the WFD and Regulations. As a result, NRW has not undertaken a forensic assessment of matters raised in the Applicant's WFD submissions (for example, references to the consideration by the Courts of the evidential burden, and historic discussion with NRW) and has rather sought to limit its advice to those issues directly material to the issue of WFD compliance. Nevertheless, NRW would reserve the right to comment as necessary on such issues. NRW's advice is given without prejudice to any further comments we may wish to make in relation to this application and examination whether in relation to the ES, provisions of the draft DCO and its Requirements, SoCG or other evidence and documents provided by Liverpool Bay CCS Ltd. and their consultants ('the Applicant'), the Examining Authority or other interested parties.

In addition to being an interested party under the Planning Act 2008, NRW exercises functions under legislation as detailed in the cover letter of NRW's Deadline 1 Written Representations [REP1-071].

Please do not hesitate to contact Chris Jones should you require further advice or information regarding these representations.

Yours sincerely,

Chris Jones
Uwch Gyngorydd – Cynllunio Datblygu / Senior Advisor – Development Planning
Cyfoeth Naturiol Cymru / Natural Resources Wales

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ANNEX A: NRW's advice in relation to the Applicant's Water Framework Directive Derogation Case for Alltami Brook Crossing [REP5-016]

1. Background

1.1.1. Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (Water Framework Directive), Articles 4(7), 4(8) and 4(9) states:

Article 4(7) (and Regulation 19 of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017)

Member States will not be in breach of this Directive when:

- failure to achieve good groundwater status, good ecological status or, where relevant, good ecological potential or to prevent deterioration in the status of a body of surface water or groundwater is the result of new modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater, or

- failure to prevent deterioration from high status to good status of a body of surface water is the result of new sustainable human development activities and all the following conditions are met:

(a) all practicable steps are taken to mitigate the adverse impact on the status of the body of water;

(b) the reasons for those modifications or alterations are specifically set out and explained in the river basin management plan required under Article 13 and the objectives are reviewed every six years;

(c) the reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development, and

(d) the beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

Article 4(8) (and Regulation 14)

When applying paragraphs 3, 4, 5, 6 and 7, (Regs 15-19) a Member State shall ensure that the application does not permanently exclude or compromise the achievement of the objectives of this Directive in other bodies of water within the same river basin district and is consistent with the implementation of other Community environmental legislation.

Article 4(9) (and Regulation 14)

Steps must be taken to ensure that the application of the new provisions, including the application of paragraphs 3, 4, 5, 6 and 7, (Regs 15-19) guarantees at least the same level of protection as the existing Community legislation.

- 1.1.2 In July 2015, the Court of Justice (ECJ) ruled on authorisation of projects affecting water quality under the *WFD 2000*, in *Bund fur Umwelt und Naturschutz Deutschland (Judgment) [2015] EUECJ C-461/13*.
- 1.1.3 The Court held that the Water Framework Directive precludes authorisation of a project where the project may cause a deterioration of the status of the body of water concerned or where it jeopardises the attainment of good surface water status or of good ecological potential and good surface water chemical status by the date laid down by the Directive, unless a derogation under Article 4(7) applies.
- 1.1.4 The judgment makes it clear that Article 4(1)(a)(i) does not merely set out a statement of high level objectives for a member state preparing a RBMP, but means that where deterioration cannot be ruled out, and absent of a derogation (i.e., the criteria in Article 4(7) (as transposed by Regulation 19) being satisfied) then consent must be refused.
- 1.1.5. In this application for a Development Consent Order under the Planning Act 2008, the decision as to the application of Reg 19 / Article 4(7) of the Water Framework Directive (WFD) rests with the Secretary of State (SoS). The advice below is provided by NRW to advise the ExA in making its recommendation to the SoS. It considers those matters under Reg 19 / Article 4(7) that fall within NRW's remit. It will be for the ExA, and ultimately the Secretary of State, to decide how much weight to give to this advice in reaching their final judgment.
- 1.1.6. In order to assist the ExA, NRW has sought to provide advice on the implications of the HyNet Carbon Dioxide Pipeline Project on WFD Regulations / Water Framework Directive compliance. Our advice should be considered solely in relation to the specific provisions of the WFD.
- 1.1.7. All references to documents stated in this Annex are given in section 9.

2. Scope

- 2.1.1. NRW's advice on the application of Reg 19 / Article 4(7) is given in the following interpretative context:
- a) Article 4(7)(a) (Reg 19.3): NRW will assess the adequacy of the mitigation measures proposed in the specific context of the objectives sought to be achieved under the WFD;
 - b) Article 4(7) (c) (Reg 19.4a & 4b): NRW will assess both limbs of this test as the Applicant has provided both.
 - c) Article 4(7)(d) (Reg 19.5): It should be noted that there is a divergence in the wording between the respective tests under Reg. 19 / Art. 4(7) (regarding omission of reference to 'environmental' options). NRW's advice is predicated on environmental options. However, it is a matter for the ExA to determine the appropriate approach to take in respect of this test.

Pre-application advice

2.1.2. NRW has provided advice and guidance to the Applicant during the pre-application stage as to the requirements under WFD, in particular raising concerns about the trenched (open-cut) crossing option at Alltami Brook and stating that detailed evidence should be made available prior to the DCO application to ensure compliance with the Water Framework Directive / Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (“the WFD Regulations 2017”). The pre-application advice provided by NRW was therefore based on the information available at the time. Section 6 of the Water Framework Directive Derogation Case for Alltami Brook Crossing report [REP5-016] explains that details of consultation with NRW are provided within the Statement of Common Ground (SoCG) [currently REP6-028].

Advice provided during the DCO Examination

2.1.3. Following submission of the DCO application on 3rd October 2022, additional information has been provided by the Applicant during the DCO Examination. Further advice has been submitted by NRW on the WFD Compliance Assessment and the risk of surface water flow loss from Alltami Brook. This can be summarised as follows:

- a) 02/02/23: NRW advised that there was insufficient baseline evidence to support the proposed engineering works at Alltami Brook to satisfy WFD compliance.
- b) 06/03/23: NRW advised that the Applicant’s proposed geomorphological assessment would be unlikely to address their key concerns about surface water flow loss via the trenched (open-cut) option.
- c) 27/03/23: An alternative encased pipe bridge option was presented to NRW during a site visit. The Applicant proposed to undertake flow monitoring within the Alltami Brook. NRW welcomed this but advised that it would be very difficult to draw any meaningful conclusions from the data.
- d) 06/06/23: During Issue Specific Hearing 1 the Applicant introduced their intention to belatedly submit a WFD derogation report into the Examination as a result of NRW’s outstanding concerns, and notwithstanding NRW’s advice at the pre-application stage.
- e) 18/07/23: NRW submitted its Deadline 6 representation [REP6-049] including its advice on the Applicant’s hydrogeological impact appraisal. NRW acknowledged the Applicant’s conceptual model for the site of the Alltami Brook crossing. The Applicant affords significant weight to this within their Reg 19 / Article 4(7) WFD derogation case. However, NRW considers that the actual geological site conditions are far more complex than indicated by the conceptual model. NRW does not have confidence in the Applicant’s conclusions and maintains its position that there may be deterioration of the Wepre Brook waterbody as a result of the proposed trenched (open-cut) crossing of Alltami Brook.

Water body and elements considered for Regulation 19 / Article 4(7)

2.1.4. NRW advises that there may be deterioration of the Wepre Brook water body as a result of the Applicant’s preferred trenched (open-cut) crossing option of Alltami Brook. Insufficient evidence has been provided to date by the Applicant to support the conclusions of its WFD compliance report.

- 2.1.5. NRW agrees that this activity qualifies for Reg 19 / Article 4(7) by being “*a new modification to the physical character of the water body or alteration to the level of groundwater which may jeopardise the attainment of good ecological status, good ecological potential, good groundwater status*”.
- 2.1.6. The element and water body that may deteriorate as a result of the HyNet Carbon Dioxide Pipeline Project are:
- The Wepre Brook water body (reference number GB111067056880):
 - Hydromorphology supporting element.
- 2.1.7. NRW notes that the Applicant does not “anticipate” any downstream impacts to this water body but has not provided robust information to demonstrate that this can be ruled out. To date, insufficient evidence has been presented to determine whether deterioration of the hydromorphological element could result in a deterioration of additional water body elements, e.g., flow, phosphates (reduced dilution) and biology. This could have a consequential impact on the ability to achieve the objective set out for this Water Body in the River Basin Management Plan of good status by 2027.
- 2.1.8. This advice provided by NRW relates to this water body and elements. The ExA/SoS may conclude that further water bodies and/or elements should be included in the scope of Regulation 19 / Article 4(7). Therefore, the Reg 19 / Article 4(7) information may need to be updated by the Applicant following the completion of the ExA / SoS’s WFD Compliance Assessment and therefore NRW may provide further advice as considered necessary.

3. Article 4(7) (a): ‘all practicable steps are taken to mitigate the adverse impact on the status of the body of water’ (“Test A”)

3.1 Methodology

- 3.1.1. NRW has considered the WFD elements which may deteriorate.
- 3.1.2. This advice is informed by the information made available to NRW by the Applicant in their WFD Compliance Assessment report and Article 4(7) report.
- 3.1.3. This advice is based upon the potential impacts of the HyNet Carbon Dioxide Pipeline Project and the mitigation proposed with the objective of minimizing or cancelling the adverse impact on the status of Wepre Brook water body.
- 3.1.4. For the purpose of this test, all practicable steps taken to mitigate are those which are technically feasible, not disproportionately costly, and compatible with the new modification, in line with Common Implementation Strategy (CIS) (2017).
- 3.1.5. Mitigation is considered through the design, construction, maintenance and operational phases of the project.

3.1.6. Mitigation must be secured and legally enforceable.

3.2. Mitigation measures for the Wepre Brook water body

3.2.1. The Applicant has largely provided the mitigation measures information following the template table provided to them by NRW (OGN77, NRW, 2018), with the exception of documenting the potential negative impacts of each mitigation measure. The mitigation measures for Test A are provided in Table 7-2 of the Applicant's Article 4(7) report [REP5-016].

3.2.2 Although not clearly referred to in the report, NRW is not aware of any mitigation options that have been omitted by the Applicant and therefore none are recorded here as such.

Mitigation measures presented/included by the applicant

3.2.3. Mitigation measures included by the Applicant in relation to the Wepre Brook water body include:

- a) Micro-siting of the pipeline during detailed design.
- b) Reducing the working width for the open cut crossing to 16m.
- c) A pre-works crossing point survey.
- d) High pressure grouting of any uncovered fractures within the excavated bedrock.
- e) A Groundwater Management and Monitoring plan.
- f) A bespoke geomorphology assessment to inform the micro-siting of the crossing location and the detailed design of the permanent works.
- g) Post-construction geomorphological and ecological monitoring of the permanent works.

3.2.4 NRW considers that some of the information provided on route corridor options relates to the wider environmental impact of the proposed pipeline beyond Wepre Brook and is more relevant to Test D, as are the first three rows in Table 7-2 of the derogation report. Because they are therefore not relevant to Test A, they have not been considered by NRW.

Additional mitigation measures not included but could be considered

3.2.5. NRW guidance on 'Derogation determination for Water Framework Directive Article 4(7) (OGN77) (current version dated October 2018) advises that, if adverse residual impacts are unavoidable or cannot be reduced further, enhancement measures should be considered to inform Test A. The Applicant has proposed the environmental actions and commitments listed in Table 7.1 to eliminate, reduce and manage both construction and operation impacts of the trenched (open-cut) crossing of Alltami Brook, including positive enhancement measures to offset impacts (D-BD-048 and D-WR-066). However, it is unclear why some of these measures have been omitted from Table 7-2 and Test A. These measures would serve to strengthen the argument for this test, where adverse impacts are unavoidable and cannot be reduced further.

NRW's conclusions on Test A

- 3.2.6. On the basis of the evidence available NRW considers that a reasonable range of mitigation measures have been considered.
- 3.2.7. NRW is satisfied that all mitigation and enhancement measures could be secured by the DCO requirements. However, the nature of the proposed 'monitoring throughout operation' and 'adaptive management' needs to be clearly defined. It is not clear who would be responsible for maintaining the pipeline post-decommissioning, replacing any grout needed to prevent the loss of surface water from Alltami Brook and completing this monitoring in the long-term once the pipeline is no longer operational but the permanent irreversible alterations to bedrock are still in place.
- 3.2.8. Although not clearly evidenced in the Applicant's WFD derogation report, NRW understands that no mitigation measures are identified as technically infeasible or disproportionately costly.

3.3. Summary

- 3.3.1. On the basis of the evidence available, and subject to the concerns outlined at para. 3.2.7 above, NRW considers that a reasonable case has been made that all practicable steps will be taken to mitigate the adverse impact on the status of the Wepre Brook water body.

4. Article 4(7) (b): 'the reasons for those modifications or alterations are specifically set out and explained in the river basin management plan required under Article 13 and the objectives are reviewed every six years;' ("Test B")

- 4.1.1. The reasons for the modifications would need to be reported in the updated Dee River Basin Management Plan due to be published in 2027.

5. Article 4(7) (c): 'the reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development'. ("Test C")

- 5.1.1 The applicant has provided information for the application of both "limbs" of Test C. Therefore, NRW has considered both limbs in the provision of this advice. However, it should be noted that only one limb of Test C needs to be satisfied.

5.2 Overriding public interest (Test C, Limb 1)

- 5.2.1 Overriding public interest in the context of the WFD is interpreted as overriding the objectives of the WFD (CIS, 2017). The overarching aim of the WFD is

long-term sustainable water management based on a high level of protection of the aquatic environment. Specific objectives are defined in Article 4(1) which are to achieve good status in all surface and groundwater bodies and to prevent any further deterioration of status.

- 5.2.2 In providing its advice under Reg 19 / Article 4(7)(c) NRW has referred to the European Common Implementation Strategy Guidance (CIS 2009; CIS 2017).
- 5.2.3 CIS (2017) states that it is reasonable to consider the reasons of overriding public interest in a Water Framework Directive context and refers to situations where plans or projects envisaged prove to be indispensable within the framework of:
- i. Actions or policies aiming to protect fundamental value for citizens' lives (health, safety, environment);
 - ii. Fundamental policies for the state and the society;
 - iii. Carrying out activities of an economic or social nature, fulfilling specific obligations of public services.
- 5.2.4 The Applicant has provided evidence in their Article 4(7) report [REP5-016] to inform the case for OPI describing the public need for low carbon, secure energy and the suitability of the HyNet Carbon Dioxide Pipeline Project.
- 5.2.5 NRW has considered the Applicant's case which includes:
- National policies and carbon budgets at both UK and Wales level which make the case for and importance of low carbon, secure energy, e.g.:
 - o UK Government policy for energy - Overarching National Policy Statement for Energy EN-1 (Department of Energy and Climate Change (DECC), 2011a). This highlights the need for new energy generation capacity, to provide energy security and to move towards lower carbon electricity generation (while not referencing CCS technology).
 - o The Draft NPS EN-1 (2021) reiterates the Government's commitment to design new business models for hydrogen supporting transport and storage infrastructure by 2025.
 - o Welsh Government ambition for net zero energy.
 - Two national pieces of evidence link the need for new technology and the HyNet project:
 - o HyNet is identified as a project recognised by UK government for progression as Track-1 of its Cluster Sequencing Process (WFD derogation report, para 7.7.48).
 - o Welsh Government carbon budget (WFD derogation report, para. 7.7.45). Although the Applicant has not referred to it, NRW has considered Net Zero Wales Carbon Budget 2 (2021-25) (Welsh Government, 2021), which notes that Carbon Capture, Usage and Storage is a feasible option and can be used alongside hydrogen, HyNet presents significant opportunities to businesses across north Wales to decarbonise existing industrial processes.

5.3 Public Participation (Test C, Limb 1)

- 5.3.1 CIS (2017) states that 'public participation will contribute considerably in determining overriding public interest'.
- 5.3.2 NRW notes that this aspect does not appear to have been considered in the Test C section of the Applicant's derogation report. The Applicant could further strengthen the case for Test C with consideration of the public participation aspects. For example:
- The Planning Act 2008 sets out statutory requirements for pre-application consultation, including public consultation, for Development Consent Orders. The Applicant has submitted a Consultation Report [APP-031] that details the consultation activities undertaken in respect of the DCO application, but this or any specific examples of public support have not been referred to in the section on Test C in their derogation report.
- 5.3.3 It is a matter for the ExA/SoS to determine whether or not public participation in respect of the DCO examination or otherwise has been adequate to satisfy this limb for Test C.

5.4 Benefits comparison (Test C, Limb 2)

- 5.4.1 The benefits aspect of this test requires evaluation of the benefits to the environment and society of achieving the objectives of WFD against the benefits of the new modification and whether those benefits would outweigh the benefits to the environment (CIS 2017).
- 5.4.2 NRW guidance (OGN 77) advises applying three stages:
- Stage 1: Summarise benefits foregone from failing to achieve environmental objectives of WFD;
 - Stage 2: Summarise benefits of the project in terms of human health, human safety and/or sustainable development;
 - Stage 3: Use weight of evidence approach to evaluate benefits versus benefits foregone using information from Stages 1 and 2.
- 5.4.3 This test should be applied where there may be a deterioration. This is because the test needs to demonstrate that the benefits foregone as a result of deterioration to the water environment/achievement of the WFD objectives, can be outweighed by the benefits of the project in terms of human health/safety and sustainable development.
- 5.4.4 Stage 1 should identify the benefits foregone in the event of loss of water from the brook and the hydromorphology impact, and that water quality and ecology of the Wepre Brook water body is impacted. NRW advises that this should identify and assess the social, environmental and economic benefits that would no longer be provided by the impacted water environment. However, the Applicant's consideration of Stage 1 is limited to reiterating the Applicant's position on compliance and fails to consider benefits foregone.
- 5.4.5 For Stage 2 a qualitative summary is provided by the applicant of the benefits and significance assessment in Table 7.3. No evidence for this assessment is referenced.

5.4.6 For Stage 3, benefits comparison, NRW advises that there is insufficient information from Stages 1 and 2 to complete the benefits comparison.

5.5 Summary of Test C, Limb 1

5.5.1 NRW considers that a reasonable case for Over-riding Public Interest (OPI) has been presented.

5.5.2 The evidence provided for OPI could, for further clarification, be linked to the three categories in the CIS framework, namely:

- Actions or policies aiming to protect fundamental value for citizens' lives (health, safety, environment);
- Fundamental policies for the state and the society;
- Carrying out activities of an economic or social nature, fulfilling specific obligations of public services.

5.6 Summary of Test C, Limb 2

5.6.1 NRW does not agree with the Applicant's statement that benefits of the trenched (open-cut) crossing outweigh the potential benefits foregone, as explained at para. 5.4.4 above. As a result, NRW considers the case made for Test C, Limb 2 to be inadequate.

5.7 Overall Summary of Test C, Limbs 1 and 2

5.7.1 NRW considers that a reasonable case for Test C, Limb 1 has been made. However, the case could be further strengthened with evidence around public consultation and support.

5.7.2 NRW considers the case made for Test C, Limb 2 to be inadequate due to insufficient evidence being provided.

6. Article 4(7) (d): 'the beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option'. ("Test D")

6.1. Significantly better environmental option

6.1.1 In order to fulfil this test, there must be no significantly better environmental option for achieving the benefits expected from the project/activity, or, if there are other options they should be ruled out as either technically infeasible or disproportionately costly.

6.1.2 Benefits should relate to the primary intention of the project/activity, and be considered on a Wales-wide basis:

- at different scales and designs,
- at alternative locations and operating schemes

- at a strategic and project level.

6.2. Strategic level alternatives

- 6.2.1. NRW advises that this test should also utilise information gathered for Test C (OGN77, NRW, 2018). No assessment of “other means” for the beneficial objectives to be served by these modifications is undertaken in Test D. NRW advises that no clear case has been made in the Applicant’s Article 4(7) report for there being no significantly better environmental strategic alternative.
- 6.2.2. However, NRW notes that some of the national sectoral policies and statements outlined in Test C may provide some support for the development in principle, at a strategic level, and if so, a full assessment of other means may not be required. It is ultimately a matter for the ExA and SoS to determine whether such policies would assist the Applicant in satisfying this requirement.

6.3. Project level alternatives – the Wepre Brook water body

- 6.3.1. The Applicant’s Article 4(7) derogation report [REP5-016] outlines alternative options for pipeline route corridors and route alignments (note that this detail is provided for Test A but is not referenced for Test D). This includes an explanation of how the need for the newbuild pipeline corridor to connect to the existing Point of Ayr natural gas pipeline became an integral part of the project infrastructure. The rationale for the pipeline route alignment was based on a range of factors (as outlined in para. 7.7.22 of the report).
- 6.3.2. Four strategic corridors were identified. The Southern Corridor was identified as the preferred option (para. 7.7.1) although both Southern and Core corridors were taken forward to more detailed appraisal, with nine options assessed (paragraphs 7.7.20 - 7.7.21).
- 6.3.3. Two route options were considered to cross the steep gorge section of Alltami Brook. The South Alternative route was chosen due to reduced ecological impacts to residential and ecological receptors.
- 6.3.4. A more detailed comparison was made for different crossing options within the steep gorge section of Alltami Brook, presented in tabular format (Table 7.4). However, there are few references to evidence the options appraisal conclusions, which appear to be based on a qualitative assessment.

Consideration of significantly better environmental options

- 6.3.5. Technical feasibility and environmental considerations have been applied in appraising project level alternative options. However, NRW considers the assessment of environmental considerations between the options has been applied at a high level and is qualitative, hence it lacks adequate detail and evidence to support the analysis. The statements in Table 7.4 are not clearly evidenced. The method for determining disproportionate costs is not transparent e.g., there are generic comparisons (“comparatively low-cost” “considerably higher cost”) but no assessment of disproportionality.

- 6.3.6. The appraisal of options appears to have been applied inconsistently e.g., the long-term, permanent environmental impact of bedrock removal for the trenched (open-cut) crossing is not identified. The benefit provided by the embedded pipe bridge option in removing the risk of surface water flow loss is not acknowledged. Furthermore, the potential long-term loss of water through degradation of the concrete grout within fractured bedrock has not been considered for the trenched (open-cut) crossing, nor has the long-term risk of grout washout from a continuous upward gradient of groundwater pressure (if confirmed to be present).
- 6.3.7. Overall, NRW considers that parts of the project-level options appraisal appear inconsistent and hence provide erratic results. The Applicant states that *“an embedded pipe bridge is not a significantly better environmental option and could not meet the test of being ‘significantly’ better under (d).”* However, NRW is unclear as to what evidence this conclusion is based on other than the qualitative high-level options appraisal presented in Table 7.4. In NRW’s view the trenched (open-cut) option would result in a permanent change to the bedrock at this location, and hence a long-term environmental impact in perpetuity, in contrast to the embedded pipe bridge option which would avoid this long-term risk.

6.4. Summary

- 6.4.1. NRW considers there is inadequate evidence to agree that a case has been made that the beneficial objectives served by these modifications to the Wepre Brook water body cannot, for reasons of technical feasibility or disproportionate cost, be achieved by other means, which are a significantly better environmental option. The Applicant has presented an alternative crossing option which would not appear to need a derogation and has failed to provide evidence to satisfy NRW that this would not be a significantly better environmental option.

7. Consideration of Article 4(8) and Article 4(9)

- 7.1 NRW considers, based on its knowledge of the scheme, that the application of Regulation 19 / Article 4(7), subject to appropriate regulatory control, is unlikely to permanently exclude or compromise the achievement of the objectives of this Directive in other bodies of water within the Dee river basin district. The derogation report does not currently signpost the evidence for reaching this decision or name the hydrologically connected water bodies or relevant protected areas.
- 7.2 Having considered NRW’s advice the decision maker must be satisfied that the application of a derogation under Regulation 19 / Article 4(7) is consistent with the implementation of other Community environmental legislation and guarantees the same level of protection as under existing EU legislation as per Regulation 14 / Articles 4(8) and 4(9).

8. Summary

- 8.1 In respect of Test A - On the basis of the evidence available, NRW considers that a reasonable case has been made that all practicable steps will be taken to mitigate the adverse impacts on the status of the Wepre Brook water body. However, the Applicant is required to provide further evidence in support to demonstrate and satisfy NRW as to how these will be secured in the long-term, post-decommissioning.
- 8.2 In respect of Test B - NRW is satisfied that the reasons for the modifications would need to be reported in the updated Dee River Basin Management Plan due to be published in 2027.
- 8.3 In respect of Test C:
- a) First Limb - NRW considers that, on the basis of the information available, a reasonable case has been made that the reasons for the project are of overriding public interest (Test C, Limb 1),
 - b) Second Limb – NRW considers that the case made for benefits comparison (Test C, Limb 2) is inadequate.
- 8.4 In respect of Test D - NRW considers there is inadequate evidence to agree that a case has been made that the beneficial objectives served by the proposed modifications to the Wepre Brook water body cannot, for reasons of technical feasibility or disproportionate cost, be achieved by other means, which are a significantly better environmental option.
- 8.5 NRW considers that on the basis of the evidence available, the application of Regulation 19 / Article 4(7), subject to appropriate regulatory control, would not permanently exclude or compromise the achievement of the objectives of this Directive in other bodies of water within the same river basin district. Having considered NRW's advice the decision maker must be satisfied that the application of a derogation under Regulation 19 / Article 4(7) is consistent with the implementation of other Community environmental legislation and guarantees the same level of protection as under existing EU legislation as per Regulation 14 / Articles 4(8) and 4(9).

9 References

Common Implementation Strategy (CIS) (2009). Guidance Document on Exemptions to the Environmental Objectives. Common Implementation Strategy for the Water Framework Directive (2000/60/EC). Guidance Document No. 20.

Common Implementation Strategy (CIS) (2017). Guidance Document on Exemptions to the Environmental Objectives according to Article 4(7). Common Implementation Strategy for the Water Framework Directive (2000/60/EC). Guidance Document No. 36.

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ANNEX B

NATURAL RESOURCES WALES' CONSOLIDATED WRITTEN REPRESENTATIONS FOR CHANGE REQUESTS 1 TO 3

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1. Crynodeb / Summary

NRW's written representations for Change Requests 1 to 3 are summarised as follows:

Change Request 1

NRW has no objection to any of the proposed amendments associated with Change Request 1.

Change Request 2

Water Framework Directive (WFD)

NRW considers that there may be deterioration of Wepre Brook water body as a result of the Applicant's preferred open-cut crossing option within the bedrock below Alltami Brook. This is because there is a risk that excavating bedrock for the proposed Alltami Brook open-cut crossing could create a pathway for surface water to be lost to the ground/contaminated mine workings; this could cause water courses to dry up downstream.

However, based on the information submitted in support of Change Request 2 NRW concur with the Applicant's conclusion that the alternative embedded pipe bridge option is WFD compliant.

NRW therefore consider that the alternative embedded pipe bridge crossing option would address its concerns regarding the risk of surface water flow loss from the Alltami Brook currently presented by the Applicant's preferred open-cut crossing option, as raised in NRW's Written Representation [REP1-071]. Consequently, NRW does not consider that the derogation provisions under the Water Environment (Water Framework Directive) Regulations 2017 would need to be engaged in the event that the Applicant elects to proceed with this option.

However, should the open-cut crossing option continue to be the Applicant's preferred option NRW's current position would remain the same regarding deterioration of the Wepre Brook water body.

Access to Flood Risk Management Assets

With regards to the alternative embedded pipe bridge crossing option at Alltami Brook, NRW advises that the FCA has reached reasonable conclusions based on readily available information.

However, NRW concur with the FCA's recommendation to undertake detailed hydraulic modelling at the detailed design stage to quantify flood levels and confirm the design criteria for the embedded pipe bridge option.

NRW notes that sub-paragraph (8) of draft DCO Requirement 4 [REP4-008] aims to secure the submission of the relevant detailed design information for approval prior to construction. However, NRW advises that some minor amendments are made to the wording of this requirement.

NRW also advises that the construction of the embedded pipe bridge would not require a Flood Risk Activity Permit (FRAP), as the Alltami Brook watercourse is not a designated main river. The works (including any temporary works required to facilitate construction) may require an Ordinary Watercourse Consent (OWC), which would be administered by the Lead Local Flood Authority (LLFA). Furthermore, the final design of the structure should be approved by the LLFA since it would cross an Ordinary Watercourse. NRW therefore advises consultation with the LLFA in this regard.

NRW advises that a FRAP would be required for any additional crossings on the Pentre Drain North designated main river.

Change Request 3

NRW has no comments to make.

2. NRW's Written Representation for the proposed HyNet Carbon Dioxide pipeline Change Request 1 [AS-074]

Dear Sirs,

Thank you for consulting Natural Resources Wales regarding Change Request 1 of the HyNet CO2 pipeline NSIP application. Here are NRW's comments in respect of the same:

We note that Proposed Change 13 would remove the Public Right of Way and associated land plots adjacent to the Hawarden Embankment (adjacent to the River Dee main river) and have no objection to this. However, Proposed Change 13 would not remove NRW's concerns about avoiding any physical impediment during the construction phase in light of its statutory Flood Risk Management powers, as the temporary construction compounds adjacent to the River Dee at this location (Work No. 30D - Temporary Logistics and Construction Compound, Work No. 31A - Temporary Logistics and Construction Compound and Work No. 31C – Temporary Working Area) are still proposed. NRW's current concerns relate to these compound locations and associated access routes. In particular, Work No. 30D could affect NRW's access to the Northern Embankment as it uses the road going through the compound to access the embankment. Work No. 31A could affect NRW's access to the Hawarden Embankment, as the compound itself is located very close to the embankment and the access route serving the compound is the only means of accessing this section of the defence.

Please see NRW's Written Representation (REP1-071; see paragraphs 3.3 to 3.5), Deadline 2 submission (REP2-053) and Statement of Common Ground with the Applicant [REP3-026, see Items NRW 3.4.3 and 3.4.5] for details of NRW's concerns regarding to access to flood risk management assets. In addition, a request was made by NRW by email dated 5 June for these concerns around this issue to be the subject of discussion in the ISH on environmental matters on 6 June. However, this was not brought to the panels' attention. NRW will nevertheless provide further comments at Deadline 4 and continue to engage with the Applicant regarding this matter with a view to hopefully agree matters and record such agreement in the Statement of Common Ground.

Regarding Proposed Change 2 we have advised the Applicant to refer to NRW's website for standing advice on ancient woodland (Natural Resources Wales / Advice to planning authorities considering proposals affecting ancient woodland) and liaise with Flintshire County Council's ecologist regarding this topic and have no further comments.

Regarding the other proposed changes, where these could affect environmental interests within Wales, NRW has no new concerns or comments to raise.

I would be grateful if you could acknowledge receipt of these comments and confirm that they have been brought to the Examining Authority's attention

Yn gywir / yours faithfully

3. NRW's Written Representation for the proposed HyNet Carbon Dioxide pipeline Change Request 2 [CR2RR-002]

1) Water Framework Directive

- 1.1 NRW raised concerns in its Written Representation [REP1-071] that the Applicant's submitted WFD compliance assessment [APP-165] does not contain sufficient evidence to demonstrate that "*potential construction and operation impacts are unlikely to cause a deterioration in the status of quality elements or overall status at the Wepre Brook water body scale with the mitigation within the CEMP, REAC and monitoring measures implemented*". Further, in respect of para 5.5.20 there is insufficient evidence to demonstrate that "*The DCO Proposed Development therefore would not compromise the ability of the water bodies potentially impacted to achieve Good Ecological Potential/Status.*"
- 1.2 NRW considers that there may be deterioration of Wepre Brook water body, as a result of the proposed open-cut crossing of Alltami Brook. This is because there is a risk that excavating bedrock for the proposed Alltami Brook open-cut crossing could create a pathway for surface water to be lost to the ground/contaminated mine workings; this could cause water courses to dry up downstream. This continues to be NRW's position with the Applicant's preferred open-cut crossing option.
- 1.3 However, based on the information submitted in support of Change Request 2 NRW concur with the following statement within Appendix 18.3 Water Framework Directive Assessment Addendum [CR2-019] for the alternative embedded pipe bridge option:
- "Detailed assessment of the proposed design option PS25 concludes that the Alltami Brook embedded pipe bridge option is WFD compliant"* (para. 1.4.13).
- 1.4 NRW therefore considers that the alternative embedded pipe bridge crossing option, would address the concerns regarding the risk of surface water flow loss from the Alltami Brook currently presented by the Applicant's preferred open-cut crossing option, as raised in our Written Representation. Consequently, NRW does not consider that the derogation provisions under the Water Environment (Water Framework Directive) Regulations 2017 would need to be engaged in the event that the Applicant elects to proceed with this option. Our detailed comments regarding this are provided below.

1.1: Hydrogeology

- 1.1.1 Section 2.1.9 of the 2023 Environmental Statement Addendum Change Request 2 [CR2-017] states the following with regards to the alternative embedded pipe bridge crossing option design:

"It is expected that piled foundations will not be required due to the shallow bedrock within the gorge; however, piled foundations for the abutments, as an

alternative to standard shallow and direct foundations, could be required depending on the actual soil conditions and the associated mechanical properties. This will need to be further investigated during detailed design”.

- 1.1.2 The main difference between the open-cut option versus the embedded pipeline option is largely the nature and extent of construction excavation and whether the operational performance, in terms of the potential for integrity loss of a grouted open excavation over time under the open-cut option, could result in some flow loss from the Alltami Brook to the underlying bedrock. This is in direct contrast when considering if the same risk applies to the foundations for the embedded pipeline option, which are not within the Alltami Brook channel bedrock and therefore do not possess a potential for brook flow loss.
- 1.1.3 A review of the proposed foundations [CR2-021] shows that the nature of the proposed excavation appears to be significantly reduced and would not occur within the channel bedrock of Alltami Brook but rather within the adjacent banking; it therefore does not pose a potential risk for surface water flow loss from the brook, as a result of encountering a transmissive fracture(s) for example.
- 1.1.4 NRW acknowledges that the embedded pipe bridge option includes the potential for piles to be required depending on the load-bearing properties of the local bedrock for supporting the bridge, and this would be further investigated during detailed design. However, such piling is considered to be far less intrusive in comparison to the bedrock excavations within the brook channel proposed for the open-cut option (which we note would affect a 4m length of channel).
- 1.1.5 In summary, based on the evidence available, NRW advises that the embedded pipe bridge option does not present a risk in terms of surface water flow loss from Alltami Brook to the underlying bedrock. In contrast, the open-cut option presents a risk for surface water flow loss because bedrock excavation would occur directly within a 4m extent of the brook channel itself as opposed to within the adjacent banking.

1.2: Geomorphology

- 1.2.1 From a geomorphological perspective, NRW has no objection to the proposed embedded pipe bridge crossing given the current risk of surface water flow loss associated with the Applicant’s preferred open-cut option within the channel bedrock.
- 1.2.2 During temporary works associated with any diversion of the Alltami Brook, NRW advises that sandbags should be replaced with bags of washed gravels (Visqueen wrapped if needed) such that should a bag split only habitat-beneficial gravels would enter the watercourse and not potentially habitat-smothering sands.

1.3: Hydrology

1.3.1 Based on the information submitted, NRW considers that the embedded pipe bridge option would remove the risk of surface water from Alltami Brook being lost to the ground as a result of the pipeline crossing, which could otherwise be caused by the required excavation into the bedrock under the Alltami Brook for the Applicant's preferred open-cut crossing option. In the absence of any ground investigation data from the site to verify the Applicant's assessment conclusions regarding this risk, we consider that the embedded pipe bridge option would enable surface water quantities in the Alltami Brook watercourse to remain protected.

2) Flood risk

2.1 NRW has reviewed the information submitted in support of Change Request 2 including the ES Addendum Change Request 2 - Appendix B – Technical Appendices Addenda [CR2-019], specifically *Appendix 18.5 Flood Consequences Assessment*.

2.2 NRW has previously provided advice on the flood risk design parameters for an alternative embedded pipe bridge crossing over Alltami Brook in our Written Representations (REP1-071, paragraph 3.8), advising that the soffit level of the bridge should be set 300mm above the flood level for the 1% Annual Exceedance Probability (AEP) (1 in 100) event with an allowance for climate change. Whilst this is acknowledged by the Applicant this approach has not yet been adopted due to the absence of any detailed flood modelling data for the Alltami Brook watercourse.

2.3 Instead, a qualitative approach has been undertaken and the proposal is for the soffit level of the bridge to be set 1500mm above the dry weather flow water level of the watercourse. Based on the justification provided in the FCA (local topography and the culvert upstream controlling flows) NRW considers this to be a reasonable approach.

2.4 The Applicant also states that it is not expected that the structure (including its abutments) would result in increased flood risk elsewhere due to the topography of the deep channel and the modelled extents shown on the Flood Map for Planning (FMfP). Again, NRW considers this is a reasonable conclusion based on readily available information.

2.5 NRW is also satisfied with the suggested maintenance requirements for the structure, from a flood risk perspective, as outlined in Section 2.1.16 of the ES Addendum [CR2-017].

2.6 The FCA recommends undertaking a hydraulic model for the section of Alltami Brook to confirm the design criteria for the embedded pipe bridge option as part of the detailed design stage (paragraph 1.5.36). Whilst NRW considers the approach taken to be reasonable given the lack of any detailed flood modelling data, we concur that detailed hydraulic modelling should be undertaken at the detailed design stage in order to quantify flood levels. This would ensure that the soffit of the bridge is raised above the design flood level and enable the potential impacts on flood risk elsewhere to be fully understood. However, we

advise that this could result in further design changes post any DCO consent and some of the parameters shown on the 'Indicative Arrangement' plan [CR2-021] may need to be amended to reflect the modelling outputs, including the minimum clearance above water levels and the location of the abutments.

- 2.7 NRW notes that sub-paragraph (8) of Requirement 4 [REP4-008] aims to provide a suitable mechanism within the DCO to secure the submission of the above detailed design information for approval prior to construction. However, we advise that the following minor amendments are made to the wording of this requirement, as underlined below:

“8) Where the crossing of Alltami Brook uses an embedded pipe bridge (Work No. 43E), the details submitted under sub-paragraph (5) must be accompanied by a flood consequences assessment showing the maximum water level reached in a 1 in 100 year event plus 20% climate change scenario. The soffit level of the embedded pipe bridge over the Alltami brook must be set no less than 300 millimetres above that maximum water level. The flood consequences assessment must also demonstrate that the impacts of the proposal on flood risk elsewhere can be managed to an acceptable level”.

- 2.8 NRW also notes that the Outline Construction Environmental Management Plan [REP4-237] and Register of Environmental Actions and Commitments [REP4-235] include reference to the need for hydraulic modelling (D-WR-076) and for the bridge design to provide a minimum freeboard of 300mm above the 1% AEP event with an allowance for climate change (D-WR-075).
- 2.9 However, contrary to paragraph 1.5.18 of the ES Addendum Change Request 2 - Appendix B - Technical Appendices Addenda [CR2-019] and the subsequent wording of D-WR-076, please note that the construction of the embedded pipe bridge would not require a Flood Risk Activity Permit (FRAP), as the Alltami Brook watercourse is not a designated main river. The works (including any temporary works required to facilitate construction) may require an Ordinary Watercourse Consent (OWC), which would be administered by the Lead Local Flood Authority (LLFA). Furthermore, the final design of the structure should be approved by the LLFA since it would cross an Ordinary Watercourse. We therefore advise consultation with the LLFA in this regard.
- 2.10 In relation to the proposed changes to land plots (Change 2, CR2-016), NRW advises that a FRAP would be required for any additional crossings on Pentre Drain North, as this is a designated main river.

3) Protected Species

- 3.1 NRW has no objection to either of the two proposed scheme amendments from a protected species conservation perspective.

4) Fisheries

- 4.1 NRW has no objection to either of the two proposed scheme amendments from a fisheries perspective.

4. NRW's Written Representation for the proposed HyNet Carbon Dioxide pipeline Change Request 3

- 1.1 NRW notes the proposed changes sought by Change Request 3 and has no further comment to make.