



**Applicant's Responses to the
Examining Authority's Further
Written Questions**

Abergelli Power Project

EN010069

Deadline 4 – 1 February 2019

1 INTRODUCTION

1.1 Background

On 17 October 2018 the Examining Authority (ExA) issued a timetable for the examination in accordance with Planning Act 2008 – Section 88 and the Infrastructure Planning (Examination Procedure) Rules 2010 – Rules 8 and 13.

This Rule 8 procedural decision requested the following document submissions to be made available by Deadline 4 on 1 February 2019:

- Responses to further information requested by the ExA for this deadline;
- Any revised/updated Statements of Common Ground
- The Applicant's revised dDCO
- Comments on any additional information/submissions received by Deadline 3
- Responses to the ExA's Further Written Questions

1.2 Content

This document provides responses to the ExA's Further Written Questions which have been directed to the Applicant, Abergelli Power Limited (APL). In addition, where input from the Applicant would assist the ExA, the Applicant has provided answers to questions directed to other parties.

Answers to questions are provided in numerical order as per the sections and headings outlined in the ExA Further Written Questions. Questions have been repeated for ease of reference, and where a substantial response is required or where additional information or documents are provided, these have been provided as Appendices. These are clearly outlined in the relevant response, and the Appendices are attached to this submission document. Relevant cross referencing to other DCO documentation (either revised and submitted at the same time as this document or as submitted with the DCO application) has also been provided where appropriate.

Question number	Question to	Question	Response
2.0 General and Cross-topic Questions			
2.0.1	The Applicant and Loxley Solicitors	<p>Access Road as Integral Development:</p> <p>i. Can the Applicant point to any made DCOs in Wales where an access road was deemed to be integral to the development?</p> <p>ii. Loxley Solicitors have taken Advice from Senior Counsel on the approach taken by the Applicant in relation to the Project and that advice concludes that the Electrical Connection and Gas Connection are integral to the Project and should have been included in the DCO [EV-011]. Can Loxley Solicitors make a written version of this advice available to the Examination?</p>	<p>i) Access roads (or alterations to access roads) have been determined to be integral to generating station NSIP development in the following made DCOs in Wales:</p> <p>The Clocaenog Forest Wind Farm Order 2014</p> <p>Brechfa Forest West Wind Farm Order 2013</p> <p>Hirwaun Power Station Order 2015</p> <p>Wrexham Gas Fired Generating Station Order 2017</p> <p>Swansea Bay Tidal Generating Station Order 2015</p> <p>The Port Talbot Steelworks Generating Station Order 2015</p>
2.0.2	CCS and the Applicant	<p>Bond for Decommissioning of Plant: CCS [RR-022][EV-011] believe that a bond should be provided to cover the full cost of decommissioning, repayable upon completion of this element, to ensure that there is funding available to dismantle/ decommission the project in the future.</p> <p>i. Can CCS point to any made DCOs where a bond for decommissioning of plant was included?</p> <p>Planning Policy Wales (Edition 10) (PPW) was introduced on 4th December 2018 and states that the <i>'polluter pays' principle is a key planning principle. In addition, Paragraph 5.2.24 states that energy related developments should be decommissioned and sites restored...LPAs should use planning conditions or obligations to secure decommissioning and remediation of the site''</i>.</p> <p>ii. What is the Applicants view of the latest edition of PPW commentary on decommissioning?</p>	<p>Please see the Planning Statement Addendum submitted to the Examination at Deadline 4, which sets out the Applicant's views on compliance with the relevant policies within PPW10. See in particular paragraphs 4.3.28 -4.3.30 of the Planning Statement Addendum, and the Applicant's response to CCS' Deadline 3 representations at paragraph 21.12 (both of which have been submitted at Deadline 4).</p>
2.0.3.	CCS	<p>Discharge, monitoring and enforcement costs:</p> <p>CCS [RR-022] the Local Planning Authority (LPA) will be responsible for discharging, monitoring and enforcing any requirements imposed on the development as well as any planning obligations. Currently there is no provision for charging in the draft DCO [APP-014].</p>	<p>The Applicant and CCS have held constructive discussions on the implementation of a Planning Performance Agreement (PPA). The Applicant believes that both CCS and APL can successfully conclude a PPA, work continues on this.</p>

Question number	Question to	Question	Response
		Does CCS agree that these costs should form part of a Planning Performance Agreement (PPA) directly with the Applicant?	
2.0.4.	CCS	Emerging LDP: The Inspector's Binding Report is expected on 10 January 2019. Can CCS make a copy of the report available to the Examination?	
2.0.5.	The Applicant and NRW	Environmental Permit (EP): A copy of the draft permit for the development is available on the NRW website [EV-012] at: https://naturalresources.wales/permits-and-permissions/permit-applications-consultations-and-decisions/current-consultations-environmental-permit-draft-decisions/drax-power-limited/?lang=en The permitting process is on-going as discussed in the ISH [EV-012]. The draft permit and decision document are currently being advertised on the NRW website (with an end date for comments by 17 January 2019), and any responses to the consultation process will need to be considered as part of the permitting process. Can the Applicant and NRW provide further updates to this as and when the permit progresses?	Environmental Permit (EP): Following advertising the draft permit, NRW have determined and completed the application process. NRW issued the Environmental Permit EPR/BB3098FK on the 18 January 2019. Confirmation of this decision can be found on NRW website: https://naturalresources.wales/permits-and-permissions/permit-applications-consultations-and-decisions/final-environmental-permitting-decisions/?lang=en
2.1.	Alternatives The Examining Authority has no further questions at this stage.		
2.2	EIA Methodology The Examining Authority has no further questions at this stage.		
2.3	Compulsory Acquisition, Temporary Possession and Other Land or Rights Considerations		
2.3.1.	The Applicant	Statutory Undertakers (SU): The BoR [AS-002] includes a number of SUs with interests in land. Can the Applicant: Provide a progress report on negotiations with each of the SUs listed in the BoR, with an estimate of the timescale for securing agreement from them? Table 3 of the Statement of Reasons (SoR) [APP-010] should be updated at each Examination deadline.	Please see the updated version of Table 3 at Appendix 1, which includes estimates of time to secure agreement on outstanding negotiations.

Question number	Question to	Question	Response
2.3.2.	The Applicant	Affected Parties: Can the Applicant provide an update of Table 2 in the Statement of Reasons [APP-010] contained in Annex 1 of [REP1-010]?	Please see the updated version of Table 2 at Appendix 2.
2.3.3.	The Applicant	Agricultural Land Classification: The proposed access road crosses land consisting of East Keswick 1 soil series which is noted for deep, well drained and fine loamy soils with slowly permeable subsoils [EV-010]. Land of this type is therefore suitable for both cereals and grassland (the latter for stock rearing). Does the Applicant agree that this land, if assessed locally, can be shown to be of equivalent Class 3a?	The Applicant notes that the reference to "East Keswick 1 soil series" was submitted in the Covering Email of the Deadline 3 submission from Loxley Solicitors on behalf of Mr Michael Edwards, Redisplay Limited, and Mr Wynne Watkins [REP3-015]. As the Applicant confirmed in the Written Summary of the Oral Case put at the Compulsory Acquisition Hearing [REP3-004] submitted at Examination Deadline 3, the agricultural land classification (ALC) of the land along the new section of Access Road is shown as part Grade 3b and part Grade 5 (see REP3-004 Appendix 1) as classified by Welsh Government cartography team. There is no evidence nor are there records that the land is classed as Agricultural Land Classification (ALC) Grade 3a. The Applicant therefore remains of the view that the land is appropriately classed as Grade 3b.
2.4.	Air Quality and Emissions		
2.4.1.	The Applicant	Temperature Inversions: Has the Applicant considered the potential effects of temperature inversion on the dispersion of pollutants?	The Applicant has considered the potential effects of temperature inversion. As this point has also been raised by local residents the Rasbridges in their Deadline 3 submission [REP3-018], the Applicant refers to comments submitted for Examination Deadline 4 in the Applicant's comments on Other Parties' Deadline 3 Submissions. As noted there, the Applicant's assessment did specifically consider the potential for temperature inversion to affect the dispersion of emissions, and the Applicant does not consider that the local meteorological conditions will prevent appropriate dispersion here.
2.5.	Noise and Vibration The Examining Authority has no further questions at this stage.		
2.6.	Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA))		
2.6.1.	NRW	Status of "Ancient Woodland":	

Question number	Question to	Question	Response
		Can NRW confirm the current statutory status of the woodland south east of the Substation and north of the Applicants proposed Access Road?	
2.7.	Draft Development Consent Order (DCO)		
	Annexe G to the Rule 6 Letter [PD-005 issued 12 September 2018] provided notice of an Issue Specific Hearing (ISH) on the draft DCO [REP1-014] which was held on Wednesday 10 October 2018 (ISH1). Annexe H to that letter set out a schedule of issues and questions for Examination at ISH1. A further ISH2 on the dDCO [REP2-005] was held on Thursday 13 December 2018. The Examination timetable provides that matters raised orally in response to ISH2 are to be submitted in writing by Deadline 3, Friday 21 December 2018. Comments on any matters set out in those submissions are to be provided by Deadline 4, Friday 1 February 2019, which is the same as the deadline for responses to these questions. IPs who participated in ISH2 and consider that their issues have already been drawn to the ExA's attention do not need to reiterate their issues in responses to the question below. Matters set out in Deadline 3 written submissions arising from ISH2 are best responded to in Deadline 4 comments rather than in responses to the following questions, which aim to capture matters that were not raised at ISH2.		
2.7.1	CCS	<p>Operational Time Limit:</p> <p>CCS agrees that the Project has a design life of 25 years and that this is the basis of the assessments within the Environmental Statement [APP-042].</p> <p>CCS considers that the Project has been designed for the above design life and is therefore of the opinion that there should be a requirement limiting the lifetime of the Order. CCS argue that without a time limit, the consent is essentially permanent (CCS has also raised concerns about the wide-ranging definition of maintain within the DCO [REP2-005]) and the ES has been prepared on the basis that the effects are reversible in the medium term.</p> <p>In addition, the LEMP [APP-036] has a lifetime of 25 years. The drainage attenuation has also been designed for a period of 25 years.</p> <p>CCS argues that ensuring the effects considered are accurate can only be secured with an operational time limit.</p> <p>Can CCS point to any made DCO where such an operational time limit has been imposed?</p>	<p>As outlined in the Applicant's Deadline 2 response to the LIR [REP2-003], the conclusions of the ES remain valid for an operational lifetime of the Project of 35 years or longer.</p> <p>In addition, the Applicant notes that the LEMS [REP3-007] was updated at Deadline 1 to clarify that the maintenance and management plan would cover the operational lifetime of the Project, and therefore the LEMP and LEMS are not restricted to 25 years.</p> <p>Furthermore, the Applicant clarified at Deadline 2 in Appendix 7 of the Applicant's Written Summary of Oral Representations for Issue Specific Hearing 1 [REP1-012] that the drainage attenuation design is valid for an operational lifetime of up to 51 years.</p> <p>In relation to the drainage attenuation design, for clarification and following consultation with the Flood Risk and Drainage Officer at CCS, the Applicant has provided the attached Technical Note (Appendix 3) on the consideration for increase in rainfall intensity allowance for Climate Change Effects from 20% to 40%. The Flood Risk and Drainage Officer at CCS has confirmed that this is a reasonable approach.</p> <p>The Applicant therefore does not consider that an operational time limit is necessary or appropriate and is not aware of such a time limit being imposed on other DCO projects of a similar nature.</p>
2.7.2	The Applicant	<p>Commencement:</p> <p>CCS raised concerns regarding the provision of temporary fencing that is excluded from the definition of the commencement of development and the relationship with Requirement 5 which requires approval of both temporary and permanent fencing.</p>	<p>Nature of the fencing required</p> <p>In line with industry practice, the Applicant will prepare a detailed risk assessment and method statement for the specific task or works which need to be fenced. This would identify appropriate and suitable means of fencing to</p>

Question number	Question to	Question	Response
		<p>Can the Applicant provide clarification with regards to what types of fencing this will comprise, why it will be required, the duration it will be required for and the mechanism for removal to ensure that it does not circumvent Requirement 5?</p>	<p>manage and control the identified risks, and would indicate the length of time that the fencing needs to remain in situ.</p> <p>The proposed works and the current land uses are both relevant to the selection of fencing.</p> <p>For both temporary and permanent fencing, the type of fencing to be deployed depends upon the stock or agricultural purpose that the land and adjacent land is used for. Stock fencing may be deployed or, if crops are planted, a lighter fencing type used.</p> <p>In terms of the works to be carried out, half height barriers may be sufficient to provide a physical barrier between workers and/or the general public and the hazard i.e. an open trench or man-hole cover etc. For larger areas of earthworks or pipeline trenching netton type barriers may be used (depending on the batter and depth of the trench). For more substantial trenches (such as a gas pipeline), foundation work or building erection 'Herras' type fencing or full panels may be used. For reptile exclusion, specific fencing will be employed for the duration of the construction works or until an ecologist agrees it can be removed.</p> <p>In relation to temporary agricultural fencing, typically this is required for a period of 12 months for construction and up to 3 years during aftercare, and this is a matter which the Applicant would seek to discuss and agree with the relevant land owners.</p> <p>Permanent fencing is generally erected once major construction activities are concluded to secure the perimeter and to support main commissioning. It remains in situ for the operational life of the plant.</p> <p>Provisions in the DCO</p> <p>The Applicant cannot start any of the authorised development comprising numbered works 1 to 5 without approval from CCS under Requirement 5 to the design of both temporary and permanent fencing. The exclusions from the definition of "commence" are intended to facilitate the carrying out of preliminary works necessary to discharge pre-commencement requirements, and the temporary fencing associated with those works. The definition of "commence" has been updated at Deadline 4 following further discussions with CCS, and now makes expressly clear that temporary fencing erected as preliminary works (i.e. without triggering "commencement") can only relate to</p>

Question number	Question to	Question	Response
			<p>the other preliminary works provided for in the definition. This change has been agreed with CCS.</p> <p>Requirement 5(3) deals with the removal of any temporary fencing, which must be undertaken within three months of the end of construction of the relevant work. This applies to temporary fencing erected pursuant to the exclusions in the definition of commence and any temporary fencing which has been approved by CCS under requirement 5.</p>
2.7.3.	The Applicant	<p>Maintain:</p> <p>CCS have concerns with regards to the extent of the current definition of maintain [EV-011]. Firstly, the definition includes the terms "remove", "reconstruct" and "replace and improve", which when read together with the whole of the definition, and the DCO, causes some concern. The definition goes on to state that this includes any part of, but not the whole of the authorised development. The authorised development is fully laid out in Schedule 1 and comprises all of the works required, listed into separate work items. The current definition allows for a whole range of works providing that the whole of the authorised development isn't removed, reconstructed, replaced etc. The current wording suggests that they could reconstruct the majority of the generating equipment site like for like providing that they don't change the whole of Work No. 1. This amendment (introduced at Deadline 2 [REP2-005]) aimed to overcome the Council's concerns but it still fails in this regard. Work No. 1 still includes various works and would still enable 95% to be removed/ replaced without breaching this definition.</p> <p>Can the Applicant point to made DCOs where their definition of maintain is used?</p>	<p>As explained in the Second DCO ISH, the Applicant is unable to point to another DCO where the exact wording proposed has been used, as the Applicant has made amendments to the wording to seek to accommodate concerns raised by CCS.</p> <p>However, the wording shown in bold text is based upon that used in other made DCOs.</p> <p>"maintain" includes inspect, repair, adjust, alter, remove, refurbish, reconstruct, replace and improve any part, but not the whole of, the authorised development;</p> <p>The following made DCOs include the form of wording shown in bold text, which includes each of the terms objected to by CCS:</p> <p>Hirwaun Power Station Order 2015</p> <p>Wrexham Gas Fired Generating Station Order 2017</p> <p>Progress Power Station Order 2015</p> <p>Eggborough Gas Fired Generating Station Order 2018</p> <p>The following additional wording shown in <u>underlined text</u> in the proposed definition has been added by the Applicant in response to CCS' comments and serves to make the definition more restrictive and to limit further the scope of the maintenance activities which may be undertaken by the Applicant.</p> <p><u>"and for the avoidance of doubt "maintain" shall not entitle the undertaker to remove or reconstruct the whole of work no. 1 "</u></p>
2.7.4.	The Applicant	Crossings:	

Question number	Question to	Question	Response
		<p>The LEMS [REP1-016] does not include information on crossings. [REP1-017] gives information about one permanent water crossing but does not relate to design with respect to wildlife or cover construction crossings.</p> <p>The DCO [REP2-005] has not been updated to include parameters.</p> <ol style="list-style-type: none"> i. Where will design of temporary crossings be provided and how will it be agreed and secured? ii. Can the Applicant point to where these works are defined in Schedule 1 of the draft DCO [REP2-005]? 	<p>Wildlife Crossings</p> <p>ES Appendix 8.10 [APP-038], Figure 1 illustrates the suitability of watercourses with regards to otter and water vole with details of suitability provided below:</p> <ul style="list-style-type: none"> • Stream B: Unsuitable for water vole. Suitable for otter– although no evidence of otter recorded here. Within ES Chapter 8 Ecology [APP-42] effects of wildlife road collisions were mitigated through the inclusion of a speed limit along the road. Due to the low levels of traffic likely along the road, the low speeds they will be travelling at, and the lack of evidence of otters along this watercourse (although it still remains suitable for supporting the species), the installation of an otter ledge to encourage any otters through the culvert rather than across the road was unnecessary. • Stream C: Not suitable for water vole or otter. • Stream D: Not suitable for water vole or otter. <p>No wildlife crossings are therefore likely to be required.</p> <p>Temporary crossings of water courses</p> <p>The design of temporary crossings will be provided and secured through DCO Requirement 6 (surface and foul water drainage).</p> <p>Permanent crossing of water main</p> <p>The draft DCO submitted for Deadline 4 has been updated to include parameters for the design of the road structure crossing the Welsh Water water main, see Schedule 2 Table 3 of the updated draft DCO, submitted at Deadline 4.</p> <p>Requirement 2(6) addresses approval of the design for any structure to be constructed as part of the access road for the crossing of the Welsh Water water main. This requirement operates in conjunction with the agreed protective provisions for the benefit of Welsh Water to ensure that the crossing design is approved by both CCS (as relevant planning authority) and that Welsh Water is consulted and approves the design. Welsh Water has confirmed it is content with the form of Requirement 2(6), as well as the protective provisions.</p>
2.7.5.	The Applicant	Requirement 9:	Requirement 3 (provision and maintenance of landscaping) has been updated to ensure that the requirement for regular reviews of the landscape planting

Question number	Question to	Question	Response
		<p>Whilst the final LEMS is to be approved, this does not mean that subsequent reviews (obviously undertaken at a later date) would be approved so the Council would not have any future control over the reviews or their outcome. As noted in Dunnett (Appendix I to the Council’s Deadline 2 Submission [REP2-013]) which is referenced in CCS’ Response to the Written Summary of Applicant’s Oral Submission including Appendices (submitted at Deadline 2 [REP2-012]), a permission should be clear on the face of it. CCS maintain that the Requirement should be amended to include a review mechanism and subsequent implementation of any required works and shouldn’t be left to the LEMS which isn’t suitable for this purpose.</p> <p>What is the Applicants view?</p>	<p>and an obligation to implement any measures arising from the reviews are secured in the draft DCO. See in particular Requirement 3(5).</p> <p>The implementation of ecological measures assessed in the ES is secured via Requirement 9 and the LEMS. The Applicant's view is that these requirements are adequate as drafted, and no further review mechanism as part of Requirement 9 is necessary.</p> <p>New habitats are being created to compensate for the loss of habitats during the construction phase of the Project. The newly created habitats will be monitored to feed into the management of the habitats to help ensure the successful establishment and ongoing functioning. While the newly created habitats will support a number of species, they are not being created solely for the purpose of species mitigation. The monitoring and management of newly created habitats is secured by the LEMS, and compliance with the approved ecological management plan and any timetable included is set out in Requirement 9(2).</p> <p>Pre-construction checks will be undertaken to ascertain if any protected species licences are required, for example, any newly created badger setts or tree bat roosts are identified and will be required to be removed during construction. As part of the licence there will be a requirement to provide mitigation in the form of a compensatory feature (for example, a sett or roost) and to monitor these for a duration to be agreed with NRW (typically 5 years). Any updates to the ecological management plan as a result of pre-construction surveys are already accounted for in the wording of Requirement 9(1) which requires the ecological management plan to be substantially in accordance with the outline LEMS, <i>“save to the extent that modifications are necessary to reflect the findings of any pre-construction ecological constraints surveys”</i></p> <p>As such, there is no need to include species or habitats monitoring within Requirement 9 Ecological Management Plan.</p>
2.7.6.	The Applicant and CCS	<p>Requirement 25:</p> <p>The Applicant stated at the DCO hearing on the 13 December 2018 that operational noise levels had been set at 5dB above background e. g. 39dB nighttime at Cefn Betingau. This would be characterised as being indicative of having an adverse impact (BS4142) [EV-011].</p> <p>The Applicant went on to state that there is the potential to lower plant noise if acoustic characteristics require. CCS maintain that if this is</p>	<p>The operational noise limits (ONL) for the plant are set at a BS 4142: 2014 rating level of 5 dB above background. The standard states that 5 dB above background is the level at which the onset of adverse effects occurs. Therefore by meeting the operational noise limit criteria the sound from the plant will be below the level at which adverse impacts occur according to the standard.</p>

Question number	Question to	Question	Response
		<p>possible, limits should be lowered to ensure there is no adverse impact in the first instance.</p> <p>What progress have the Applicant and CCS made on this issue?</p>	<p>Using the example in the question the ONL for Cefn Betingau is indeed 39 dB. The predicted rating level for the plant at that location is 38 dB, based on a specific sound level of 35 dB LAeq plus a sound character correction of +3 dB.</p> <p>The ONLs are BS 4142: 2014 rating levels. The character of the noise is assessed within the rating level determination methodology in the standard. If the sound produced by the plant were to include distinct tonal and/or impulsive component then a character correction of greater than the assumed 3 dB will be required. If, in such a situation, the specific sound level were to remain 35 dB then the resulting rating level will exceed the ONL and the plant will not be in compliance with its DCO. The responsibility is therefore on the designers of the plant to ensure that either, the plant achieves a specific sound level of 35 dB with no tonal or impulsive characteristics (as per the predictions in the ES) or it achieves a sufficiently low specific sound level to allow for the ONL to be met with additional character corrections that might result from unavoidable tonal or impulsive components.</p> <p>A Statement of Common Ground has been agreed with CCS on this matter. Please refer to the updated Statement of Common Ground as submitted for Deadline 3 on 21 December, 2018.</p>
2.7.7.	The Applicant	<p>Requirement 27:</p> <p>Requirement 27 (as currently drafted in [REP2-005]) does not provide for the decommissioning strategy requiring the written approval of the Local Planning Authority.</p> <p>The current wording states that a strategy has to be submitted, but there is no mechanism to achieve written approval.</p> <p>CCS reiterated their concern [EV-011] with regards to the wording of 27(3) which would not be enforceable if the Applicant didn't seek to obtain the necessary consents and a suggested additional subsection to require the Applicant to submit applications for the necessary consents does still not ensure that they would be actively sought.</p> <p>What is the Applicants view?</p>	<p>The Applicant notes that the numbering of the Requirement has been amended in the version of the draft DCO submitted at Deadline 4 and the decommissioning strategy requirement is now contained at Requirement 28.</p> <p>The draft requirement has been amended for Deadline 4 and makes clear that CCS' written approval of the decommissioning strategy is required. Requirement 28(3) provides for implementation in accordance with the approved strategy including the implementation timetable.</p> <p>Requirement 28(4) includes a positive obligation on the undertaker to submit applications for any other consents required for decommissioning in accordance with the programme for submission approved by the relevant planning authority.</p> <p>The applicant considers that these amendments ensure that the planning authority will be properly informed of the scope of additional consents required, and will have a binding timetable for submission of those consents which the undertaker will be obliged to meet.</p>
2.7.8.	The Applicant	<p>Deadline 7 Applicant's Preferred DCO:</p> <p>Can the Applicant ensure that the version of the draft DCO to be submitted by Deadline 7 is in the Statutory Instrument (SI) Template with the SI Template Validation Report attached.</p>	<p>The applicant confirms that the draft DCO has been prepared using the SI Template and a validation report will be submitted at Deadline 7.</p>

Question number	Question to	Question	Response
2.8.	Historic Environment The Examining Authority has no further questions at this stage.		
2.9.	Landscape and Visual The Examining Authority has no further questions at this stage.		
2.10.	Socio-economic Effects The Examining Authority has no further questions at this stage.		
2.11.	Transportation and Traffic The Examining Authority has no further questions at this stage.		
2.12.	Water Environment		
2.12.1	The Applicant	Monitoring Measures: Table A.1 Mitigation Register contains all mitigation measures outlined in the ES [APP-042], however no information is included about proposed periodic maintenance of the attenuation pond, or sampling. Can the Applicant provide clarification as to what monitoring regime is proposed and how these measures will be secured either via the DCO or other means?	The proposed attenuation pond is part of the design solution and there is therefore an incentive to carry out regular maintenance to ensure continuing operation to design performance standards. Maintenance responsibility for the attenuation pond and the development of a Maintenance Plan and Schedule for the asset will be set out at detailed design stage. Maintenance activities will be in accordance with current best practice set out in the CIRIA SuDS Manual (C753) and as a minimum will include the monthly inspection of all hydraulic structures and the removal of litter and debris from the pond. Water quality sampling would not normally be required unless in response to a given incident. If such an incident should occur, it may be necessary to sample both water and sediments in the attenuation pond to ensure that dissolving into solution and adsorption onto sediments is fully understood. For the operational phase, the onus will be on site operators to report (externally where appropriate) if an incident should occur. The standard communication route for this will be the NRW website https://naturalresources.wales/about-us/contact-us/report-an-incident/?lang=en
2.13.	Ground Conditions The Examining Authority has no further questions at this stage.		

List of Appendices

Appendix	Title
Appendix 1	Updated Statement of Reasons Table 3: Process of negotiations with statutory undertakers
Appendix 2	Updated Statement of Reasons Table 2
Appendix 3	Technical Note: Consideration for increase in rainfall intensity allowance for Climate Change Effect from 20% to 40%

Appendix 1

Updated Statement of Reasons Table 3

Progress of negotiations with Statutory Undertakers

	Statutory Undertaker	Relevant Representation	Details of apparatus requiring protection/works required and land impacts	Status of negotiations
1	National Grid (National Grid Electricity Transmission Limited and National Grid Gas Limited)	RR-024	Underground gas transmission pipeline (Feeder 32), and associated rights. Overhead electricity transmission lines and pylon.	The first draft protective provisions and side agreements were issued to National Grid on 23 May 2018. Statements of Common Ground (one for each statutory undertaker) were sent to National Grid on 12 September 2018 and were updated and submitted at Deadline 1. Only minor updates are anticipated. Discussions on the protective provisions and side agreements are currently being progressed. APL considers these are likely to be agreed by Deadline 5.
2	Western Power Distribution Limited	RR-006	An overhead line which crosses above the temporary construction laydown area, new means of access and landscaping and ecological area. An overhead line which crosses the identified route for the new underground gas connection pipeline for the Project. Underground cables which run along and across the access road which is to be used for the Project (which is already in existence as it is an existing access road to National Grid's substation).	The first draft protective provisions and side agreements were issued to Western Power Distribution Limited on 21 May 2018. The protective provisions and side agreement have now been agreed and were submitted to the examination in the revised draft DCO at Deadline 3. The side agreement has been signed and dated on 22 January 2019.
3	DWR Cymru Cyfyngedig (Welsh Water)	RR-023	High pressure water main serving Swansea - there will be a 400kV cable which crosses the water main. Crossings required for permanent site access and temporary crossings for temporary laydown area. Protections required in relation to the exercise of streetworks powers. Protections required in relation to the exercise of powers of compulsory acquisition/extinguishment of rights.	The first draft protective provisions and side agreements were issued to Welsh Water on 22 May 2018. The protective provisions and side agreement have now been agreed and were submitted to the examination in the revised draft DCO at Deadline 3. The side agreement has been signed and dated on 14 January 2019. The draft Statement of Common Ground was sent on 30 November 2018. Minor updates to reflect agreement of the protective provisions are submitted at Deadline 4 – a signed copy is anticipated to be submitted at Deadline 5.
4	Abergelli Solar Farm Limited	RR-018	Underground cables connecting the eastern solar field to the DNO station and the private road which provides access to the solar farm. If NG switches off to connect to APL, that may not be compensated by APL.	The first draft protective provisions and side agreements were issued to Abergelli Solar Farm Limited on 22 May 2018. These are currently in the process of being negotiated and are considered by APL to be close to agreement. APL considers these are likely to be agreed by Deadline 5.
5	Wales and West Utilities Limited	RR-013	High-pressure underground gas main which runs between the existing Swansea North Substation and the adjacent National Grid Gas Compressor Station.	The first draft protective provisions and side agreements were issued to Wales and West Utilities Limited on 21 May 2018.

			A 400kV cable crossing and the new section of Access Road which will cross the Wales and West pipeline.	These are currently in the process of being negotiated and are considered by APL to be close to agreement. APL considers these are likely to be agreed by Deadline 5.
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Appendix 2

Updated Statement of Reasons Table 2

Updated Statement of Reasons - Table 2

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
1	-	Freehold acquisition of land for the AGI	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn	<p>An option agreement was concluded on 26 June 2014 with the owner (the “Option Agreement”) for the acquisition of the AGI area by way of long term lease agreement. A meeting was held with the owners and their representatives on 11th May 2018 to update the owners on the project design and to commence discussion for freehold acquisition of Plot 1 by way of variation to the Option Agreement.</p> <p>A fully termed written offer was made to the landowners on or around 28 June 2018. Agents and solicitors were appointed prior to June and undertakings for their costs are provided. A further meeting between the Applicant, landowners and their professional advisers was held in Neath on 9th October to assist the landowners with understanding of the planning process through examination and to review progress of negotiation.</p> <p>Carter Jonas met with the owner’s agent on 24th October 2018 to discuss the offers made on 28th June 2018. A counter offer was discussed between the parties’ respective land agents in early November and the Applicant submitted a revised offer to the landowners in writing on 15th November which was accepted on 16th November by the landowners. Detailed drafting of the variation agreement terms is now underway.</p>
2	-	Freehold acquisition of land for the AGI	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	<p>An option agreement was concluded on 26 June 2014 with the owners (the “Option Agreement”) for the acquisition of the AGI area by way of long term lease agreement. A meeting was held with the owners and their representatives on 11th May 2018 to update the owners on the project design and to commence discussion for freehold acquisition of Plot 2 by way of variation to the Option Agreement.</p> <p>A fully termed written offer was made to the landowners on or around 28 June 2018. Agents and solicitors were appointed prior to June and undertakings for their costs are provided. A further meeting between the Applicant, landowners and their professional advisers was held in Neath on 9th October to assist the landowners with understanding of the planning process through examination and to review progress of negotiation.</p> <p>Carter Jonas met with the owner’s agent on 24th October 2018 to discuss the offers made on 28th June 2018. A counter offer proposal was discussed between the parties’ respective land agents in early November and the Applicant submitted a revised offer to the landowners in writing on 15th November which was accepted on 16th November by the landowners. Detailed drafting of the variation agreement terms is now underway.</p>
3	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis	<p>The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”). The Option Agreement provides permanent and temporary rights over the owners’ land in respect of the Pipeline.</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
				Paul Marsh Meidwen May Thomas Teifion Henry Thomas	
3A	-	Acquisition of new rights (and imposition of restrictions) for drainage and landscaping in relation to the Gas Connection	(a), (e) and (g)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
3B	-	Acquisition of new rights (and imposition of restrictions) for drainage and landscaping in relation to the Gas Connection	(a) and (e)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides full rights to permanent and temporary rights over the owners' land in respect of the Gas Connection.
4	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
4A	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
5	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
				Paul Marsh Meidwen May Thomas Teifion Henry Thomas	
5A	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
5B	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
6	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
6A	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owner's land in respect of the Gas Connection.
6B	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
				Meidwen May Thomas Teifion Henry Thomas	
7	3	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
7A	3	Temporary use to facilitate construction of the Power Generation Plant and the Pipeline	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides to permanent and temporary rights over the owners' land in respect of the Pipeline and a temporary construction lease over Plot 7A.
7B	2, 3	Temporary use to facilitate construction of the Power Generation Plant and the Pipeline	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides to permanent and temporary rights over the owners' land in respect of the Pipeline and a temporary construction lease over Plot 7B.
7C	3	Temporary use to facilitate construction of the Power Generation Plant and the Pipeline	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides to permanent and temporary rights over the owners' land in respect of the Pipeline and a temporary construction lease over Plot 7C.
8	1A, 1B, 1C, 1D, 1E, 1F 2,	Freehold acquisition of land for the Power Generation Plant	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis	The option for the Applicant to acquire a 50 year lease over Plot 8 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement").

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
	3 and 5A			Paul Marsh Meidwen May Thomas Teifion Henry Thomas	
9	1A, 1B, 1C, 1D, 1E, 1F, 2, 3 and 5A	Freehold acquisition of land for the Power Generation Plant	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 9 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”).
10	1B, 1E, 4 and 5A	Freehold acquisition of land for the Ecological Mitigation Area	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	Discussion for acquisition of Plot 10 was commenced formally by meeting held on 11 th May 2018 with the owners and their representatives. The initial views and opinions of the owners were sought and a discussion over valuation will continue immediately between the appointed land agents. Agents and solicitors were appointed prior to June and undertakings for their costs are provided. A further meeting between the Applicant, landowners and their professional advisers was held in Neath on 9 th October to assist the landowners with understanding of the planning process through examination and to review progress of negotiation. Carter Jonas met with the owner’s agent on 24 th October 2018 to discuss the offers made on 28 th June 2018. A counter offer was discussed between the parties respective land agents in early November and the Applicant submitted a revised offer to the landowners in writing on 15 th November which was accepted on 16 th November by the landowners. Detailed drafting of the variation agreement terms is now underway.
11	2, 3 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical Connection	(b), (c) and (f)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 11 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”).
11A	2, 3 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical	(b) and (e)	Sarah Ann Marina Llewellyn Eric Davies	The option for the Applicant to acquire a 50 year lease over Plot 11A has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”).

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
		Connection and for access to the Ecological Mitigation Area.		Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	
11B	2, 3 and 5B	Temporary use to facilitate construction of the Power Generation Plant and the Electrical Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 11B has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement").
12	1F, 2, 3 and 5B	Acquisition of freehold land (and imposition of restrictions) for Laydown Area, Maintenance Compound, Access Road and Electrical Connection	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 12 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement").
13	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Electrical Connection and the Access Road	(b), (c) and (f)	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27 th April 2018 to commence discussion for acquisition of rights over Plot 13. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18 th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24 th September and 10 th October to progress discussions. A record of correspondence between the land agents follows: Carter Jonas discussed the offer to be made with the owner's agent on 2 nd May 2018 which preceded the offer being issued. On 6 th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Following the meeting held on 24 th September the agent has submitted comparable evidence by email on 2 nd November 2018 inviting APL to revise the offers made. Some correspondence for clarification of details submitted on 2 nd November was exchanged between the agents on 20 th November. Carter Jonas sent a full response

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					<p>on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
13A	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Michael Edwards	<p>A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 13A. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions.</p> <p>Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018 which preceded the offer being issued. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Following the meeting held on 24th September the agent has submitted comparable evidence by email on 2nd November 2018 inviting APL to revise the offers made. Some correspondence for clarification of details submitted on 2nd November was exchanged between the agents on 20th November. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
13B	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Michael Edwards	<p>A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 13B. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions.</p> <p>Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018 which preceded the offer being issued. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Following the meeting held on 24th September the agent has submitted comparable evidence by email on 2nd November 2018 inviting APL to revise the offers made. Some correspondence for clarification of details submitted on 2nd November was</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					<p>exchanged between the agents on 20th November. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
14	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical Connection	(b), (c) and (f)	Michael Edwards	<p>A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 14. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions.</p> <p>Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018 which preceded the offer being issued. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Following the meeting held on 24th September the agent has submitted comparable evidence by email on 2nd November 2018 inviting APL to revise the offers made. Some correspondence for clarification of details submitted on 2nd November was exchanged between the agents on 20th November. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
15	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b) and (c)	Michael Edwards	<p>A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 15. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions.</p> <p>Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018 which preceded the offer being issued. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Following the meeting held on 24th September the agent has submitted comparable evidence by email on 2nd November 2018 inviting APL to revise the offers made.</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					<p>Some correspondence for clarification of details submitted on 2nd November was exchanged between the agents on 20th November. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
16	-	Acquisition of new rights (and imposition of restrictions) for the Electrical Connection	(b), (d) and (f)	National Grid Electricity Transmission plc	<p>Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 16 was made on or around 18th May 2018.</p> <p>Carter Jonas has been in contact with NGET surveyor, who has confirmed receipt of the offers made in May 2018, and in a phone conversation on 8th October the surveyor signalled that the offer was acceptable in principle</p> <p>National Grid's surveyor has confirmed on 8th January 2019 that the terms for the option agreement for the easements proposed by the applicant are acceptable and that NGET would be in a position to instruct solicitors shortly</p>
16A	-	Temporary use to facilitate construction the Electrical Connection and the Access Road	Not applicable - temporary possession powers sought	National Grid Electricity Transmission plc	<p>Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 16A was made on or around 18th May 2018.</p> <p>Carter Jonas has been in contact with NGET surveyor, who has confirmed receipt of the offers made in May 2018, and in a phone conversation on 8th October the surveyor signalled that the offer was acceptable in principle</p> <p>National Grid's surveyor has confirmed on 8th January 2019 that the terms for the option agreement for the easements proposed by the applicant are acceptable and that NGET would be in a position to instruct solicitors shortly</p>
17	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b) and (c)	Michael Edwards	<p>A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 17. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions.</p> <p>Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018 which preceded the offer being issued. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Following the meeting held on 24th September the agent has submitted comparable</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					<p>evidence by email on 2nd November 2018 inviting APL to revise the offers made. Some correspondence for clarification of details submitted on 2nd November was exchanged between the agents on 20th November. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
17A	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Michael Edwards	<p>A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 17A. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions.</p> <p>Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018 which preceded the offer being issued. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Following the meeting held on 24th September the agent has submitted comparable evidence by email on 2nd November 2018 inviting APL to revise the offers made. Some correspondence for clarification of details submitted on 2nd November was exchanged between the agents on 20th November. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
17B	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Michael Edwards	<p>A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 17B. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions.</p> <p>Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018 which preceded the offer being issued. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal.</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					<p>Following the meeting held on 24th September the agent has submitted comparable evidence by email on 2nd November 2018 inviting APL to revise the offers made. Some correspondence for clarification of details submitted on 2nd November was exchanged between the agents on 20th November. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer for an option agreement was made to Mr Edward's agent on 16th January 2019 and with clarification on the areas of land affected by the easement rights that the applicant would wish to document. This improved offer was subsequently rejected by the agent on 22nd January. Carter Jonas has submitted a request on 22nd January for a counter offer to be made to better inform ongoing negotiations.</p>
18	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (d)	Wynne Watkins	<p>A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 18. A fully termed written offer was made to Mr Watkins on or around 18th May 2018. A further meeting was held between land agents with the Applicant in attendance on 24th September.</p> <p>Carter Jonas received correspondence from the owner's agent on 7th August 2018 confirming that the heads of terms proposed in the offer made on 18th May were not acceptable to the owner and a counter offer was submitted.</p> <p>Carter Jonas wrote to the agent on 3rd September 2018 to confirm the rights being sought and requested evidence of comparable transactions to support the counter offer made. The owner's agent responded on 6th November with details of comparable land transactions. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer was submitted to Mr Watkins' agent on 16th January 2019 which also clarified the extent of land areas affected by the applicant's proposed easement requirement.</p>
18A	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Wynne Watkins	<p>A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 18A. A fully termed written offer was made to Mr Watkins on or around 18th May 2018. A further meeting was held between land agents with the Applicant in attendance on 24th September. Carter Jonas received correspondence from the owner's agent on 7th August 2018 confirming that the heads of terms proposed in the offer made on 18th May were not acceptable to the owner and a counter offer was submitted.</p> <p>Carter Jonas wrote to the agent on 3rd September 2018 to confirm the rights being sought and requested evidence of comparable transactions to support the counter offer made. The owner's agent responded on 6th November with details of comparable land transactions. Carter Jonas sent a full response on the valuation matters raised on</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					<p>14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer was submitted to Mr Watkins' agent on 16th January 2019 which also clarified the extent of land areas affected by the applicant's proposed easement requirement.</p>
18B	2 and 5B	Temporary use to facilitate construction of the Access Road	Not applicable - temporary possession powers sought	Wynne Watkins	<p>A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 18B. A fully termed written offer was made to Mr Watkins on or around 18th May 2018. A further meeting was held between land agents with the Applicant in attendance on 24th September. Carter Jonas received correspondence from the owner's agent on 7th August 2018 confirming that the heads of terms proposed in the offer made on 18th May were not acceptable to the owner and a counter offer was submitted.</p> <p>Carter Jonas wrote to the agent on 3rd September 2018 to confirm the rights being sought under the DCO and requested evidence of comparable transactions to support the counter offer made. The owner's agent responded on 6th November with details of comparable land transactions. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer was submitted to Mr Watkins' agent on 16th January 2019 which also clarified the extent of land areas affected by the applicant's proposed easement requirement.</p>
19	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c), (d) and (j)	National Grid Electricity Transmission plc	<p>Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 19 was made on or around 18th May 2018. NG ET confirmed in September which individual contacts will progress the review of the offer and conclude discussions with the Applicant. The Applicant awaits confirmation of legal advisers in order that appropriate undertakings for costs can be given.</p> <p>Carter Jonas has been in contact with NGET surveyor, who has confirmed receipt of the offers made in May 2018, and in a phone conversation on 8th October the surveyor signalled that the offer was acceptable in principle</p> <p>National Grid's surveyor has confirmed on 8th January 2019 that the terms for the option agreement for the easements proposed by the applicant are acceptable and that NGET would be in a position to instruct solicitors shortly.</p>
19A	2 and 5B	Temporary use to facilitate construction of the Access Road	Not applicable - temporary possession powers sought	National Grid Electricity Transmission plc	<p>Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 19A was made on or around 18th May 2018. . NG ET confirmed in September which individual contacts will progress the review of the offer and conclude discussions with the Applicant. The</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					<p>Applicant awaits confirmation of legal advisers in order that appropriate undertakings for costs can be given.</p> <p>Carter Jonas has been in contact with NGET surveyor, who has confirmed receipt of the offers made in May 2018, and in a phone conversation on 8th October the surveyor signalled that the offer was acceptable in principle</p> <p>National Grid's surveyor has confirmed on 8th January 2019 that the terms for the option agreement for the easements proposed by the applicant are acceptable and that NGET would be in a position to instruct solicitors shortly.</p>
20	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	Claire Louise Smith Ferylith Joan Smith Malcolm Richard Christie Smith Robert Malcolm Christie Smith Kirsty Ann Dando-Thomas Jeffrey Charles Jones Garry William Thomas	<p>Confirmation of the appointed agent for the owners was received during the week of 7th May 2018 and a telephone meeting held with the land agent on 10th May 2018 to review and discuss the rights to be acquired over Plot 20. A fully termed offer for acquisition of the rights over Plot 20 was issued to the land agent on or around 18th May 2018.</p> <p>Carter Jonas met with the owner's agent on 24th October 2018 to discuss the offers made on 18th May 2018. A counter offer proposal is expected from the owner's agent with respect to the acquisition of the rights required having given clarification on the rights required. A revised term sheet was issued to the owner's agent on 5 December with a supporting counter offer in writing on 6th December. The offer is under review by the owners.</p>
21	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	Wynne Watkins Good Energy Brynwhilach	<p>A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 21. A fully termed written offer was made to Mr Watkins on or around 18th May 2018. A further meeting was held between land agents with the Applicant in attendance on 24th September.</p> <p>Carter Jonas received correspondence from the owner's agent on 7th August 2018 confirming that the heads of terms proposed in the offer made on 18th May were not acceptable to the owner and a counter offer was submitted.</p> <p>Carter Jonas wrote to the agent on 3rd September 2018 to confirm the rights being sought under the DCO and requested evidence of comparable transactions to support the counter offer made. The owner's agent responded on 6th November setting out details of comparable land transactions. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer was submitted to Mr Watkins' agent on 16th January 2019 which also clarified the extent of land areas affected by the applicant's proposed easement requirement.</p>
22	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	Redisplay Limited Teamforce UK Limited	<p>A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 22. A fully termed written offer was made to Mr Watkins on or around 18th May 2018. A further meeting was held between land agents with the Applicant in attendance on 24th September.</p>

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
					The owner's agent wrote to Carter Jonas on 7 th August 2018 in response to the offer made on 18 th May 2018, confirming that the heads of terms submitted with the offer were not accepted. A counter offer was made and Carter Jonas requested in an email dated 3 rd September 2018 comparable evidence to support the proposal made. The owner's agent responded on 6 th November with details of comparable land transactions. A revised term sheet and offer was issued to the owner's agent on 6 December which was acknowledged by the owner's agent. The offer is under review.
23	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	National Grid Gas plc	<p>A fully termed written offer was made to NG Gas plc on or around 18th May 2018. . NG Gas plc confirmed in September which individual contacts will progress the review of the offer and conclude discussions with the Applicant. The Applicant awaits confirmation of legal advisers in order that appropriate undertakings for costs can be given.</p> <p>Carter Jonas has been in contact with NG surveyor, who has confirmed receipt of the offers made in May 2018, and in a phone conversation on 8th October the surveyor signalled that the offer was acceptable in principle</p> <p>National Grid's surveyor has confirmed on 8th January 2019 that the terms for the option agreement for the easements proposed by the applicant are acceptable and that NG would be in a position to instruct solicitors shortly.</p>
24	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	Wynne Watkins	<p>A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 24. A fully termed written offer was made to Mr Watkins on or around 18th May 2018. A further meeting was held between land agents with the Applicant in attendance on 24th September.</p> <p>Carter Jonas received correspondence from the owner's agent on 7th August 2018 confirming that the heads of terms proposed in the offer made on 18th May were not acceptable to the owner and a counter offer was submitted.</p> <p>Carter Jonas wrote to the agent on 3rd September 2018 to confirm the rights being sought under the DCO and requested evidence of comparable transactions to support the counter offer made. The owner's agent responded on 6th November setting out details of comparable land transactions. Carter Jonas sent a full response on the valuation matters raised on 14th December with an indication of further points of detail and information to be discussed by the parties.</p> <p>A revised offer was submitted to Mr Watkins' agent on 16th January 2019 which also clarified the extent of land areas affected by the applicant's proposed easement requirement.</p>
Plots 9, 10, 11, 11A, 11B, 12, 13, 13A, 13B, 14,	1A, 1B, 1C, 1D, 1E, 1F, 2,	Freehold acquisition of land for the Power Generation Plant, Ecological mitigation area, Laydown Area, Maintenance Compound,	(b), (c), (d), (e), (f) and (j)	Lord Richard Anthony Hussey	Assessment of potential for interference with minerals rights is in progress, and negotiations with the owner of the minerals rights are expected to begin shortly.

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	Work No.	Reason for acquisition or possession	Category of rights sought	Owner / occupier	Status of negotiations
15, 16, 16A, 19, 19A, 20, in respect of minerals rights only	3, 4, 5A and 5B	<p>Access Road and Electrical Connection.</p> <p>Temporary use to facilitate construction of the Power Generation Plant, the Electrical Connection and the Access Road.</p> <p>Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical Connection.</p>			

Appendix 3

Technical Note:

Consideration for increase in rainfall intensity
allowance for Climate Change Effect from 20% to 40%



Calculation Note

TO	AECOM, Natalie Williams	FROM	WSP, David Watson
DATE	31 January 2019	CONFIDENTIALITY	Restricted
SUBJECT	Abergelli Power Ltd. – Consideration for increase in rainfall intensity allowance for Climate Change Effects from 20% to 40% - Rev 01		

The Outline Drainage Strategy Report was originally carried out in May 2018, assessing the operation of the proposed development for the Total Potential Change by the 2050's as specified by the Welsh Climate Change Allowance guidance (CL-03-16)). Under these conditions the upper estimate climate change allowance specified for rainfall intensity was 20%, which covers the years 2040-2069. The purpose of this document is to prove robustness of the proposed development beyond a design life of 51 years (regarding the period of assessment that the climate change allowance banding falls within) and assess the required attenuation volume for the Total Potential Change by the 2080s. An assessment has therefore been carried out for the proposed development using a climate change allowance of 40%. The methodology for calculating the attenuation volume are the same as those specified in Chapter 4 of the Outline Drainage Strategy and has been repeated here with an increase in climate change allowance. The attenuation volumes have been calculated using the greenfield runoff rates which are specified in table 4.3-1 of the Outline Drainage Strategy (Table provided in Appendix). Table 1 shows the anticipated effect on the rainfall storm event as follows:

Storm Duration (hrs)	FEH2013 Basic Values		Climate Change Factor	Modified Design Values		Climate Change Factor	Modified Design Values	
	Total Rainfall (mm)	Rainfall Intensity (mm/hr)		Total Rainfall (mm)	Rainfall Intensity (mm/hr)		Total Rainfall (mm)	Rainfall Intensity (mm/hr)
1	38.6	38.6	1.2	46.32	46.32	1.4	54.04	54.04
2	46.9	23.5	1.2	56.28	28.2	1.4	65.66	32.9
6	65	10.8	1.2	78	12.96	1.4	91	15.12
10	75.4	7.5	1.2	90.48	9	1.4	105.56	10.5
24	96.6	4	1.2	115.92	4.8	1.4	135.24	5.6
48	118.3	2.5	1.2	141.96	3	1.4	165.62	3.5

Table 1 Site-specific rainfall calculations

Time from Storm Commencement (mins)	Storm Event					
	M100- 1 hour	M100- 2 hour	M100- 6 hour	M100- 10 hour	M100- 24 hour	M100- 48 hour
0	0.00	0.00	0.00	0.00	0.00	0.00
5	98.93	59.27	26.13	17.50	8.40	4.32
10	197.87	118.53	52.38	35.12	16.68	8.52
15	296.92	177.80	78.52	52.62	25.08	12.83
30	593.72	355.48	157.03	105.23	50.17	25.55
60	1187.43	711.08	314.18	210.58	100.22	51.22
120	1161.18	1422.05	628.37	421.05	200.43	102.32
240	1108.68	1369.55	1256.62	842.22	400.98	204.63
360	1056.18	1317.05	1884.98	1263.27	601.42	307.07
600	951.18	1212.05	1779.98	2105.48	1002.40	511.70
1440	583.68	844.55	1412.48	1737.98	2405.90	1228.15
2880	0.00	214.55	782.48	1107.98	1775.90	2456.18
<i>Maximum</i>	1187.43	1422.05	1884.98	2105.48	2405.90	2456.18

Table 2 Generating Equipment Site Attenuation Requirements

Time from Storm Commencement (mins)	Storm Event					
	M100- 1 hour	M100- 2 hour	M100- 6 hour	M100- 10 hour	M100- 24 hour	M100- 48 hour
0	0.00	0.00	0.00	0.00	0.00	0.00
5	18.67	10.73	3.85	1.98	0.00	0.00
10	37.22	21.58	7.58	3.97	0.12	0.00
15	55.88	32.32	11.43	5.95	0.12	0.00
30	111.77	64.63	22.75	11.90	0.23	0.00
60	223.42	129.27	45.62	23.68	0.47	0.00
120	197.17	258.65	91.12	47.48	0.93	0.00
240	144.67	206.15	182.35	94.85	1.75	0.00
360	92.17	153.65	273.47	142.33	2.68	0.00
600	0.00	48.65	168.47	237.18	4.43	0.00
1440	0.00	0.00	0.00	0.00	10.62	0.00
2880	0.00	0.00	0.00	0.00	0.00	0.00
<i>Maximum</i>	223.42	258.65	273.47	237.18	10.62	0.00

Table 3 Access Road Extension Attenuation Requirements

Time from Storm Commencement (mins)	Storm Event					
	M100- 1 hour	M100- 2 hour	M100- 6 hour	M100- 10 hour	M100- 24 hour	M100- 48 hour
0	0.00	0.00	0.00	0.00	0.00	0.00
5	12.72	7.12	2.10	0.82	0.00	0.00
10	25.32	14.12	4.20	1.63	0.00	0.00
15	38.03	21.23	6.30	2.33	0.00	0.00
30	76.07	42.47	12.48	4.78	0.00	0.00
60	152.25	84.93	25.08	9.45	0.00	0.00
120	126.00	169.87	50.17	18.90	0.00	0.00
240	73.50	117.37	100.33	37.80	0.00	0.00
360	21.00	64.87	150.50	56.70	0.00	0.00
600	0.00	0.00	45.50	94.62	0.00	0.00
1440	0.00	0.00	0.00	0.00	0.00	0.00
2880	0.00	0.00	0.00	0.00	0.00	0.00
<i>Maximum</i>	152.25	169.87	150.50	94.62	0.00	0.00

Table 4 Maintenance Yard Attenuation Requirements

Time from Storm Commencement (mins)	Storm Event					
	M100- 1 hour	M100- 2 hour	M100- 6 hour	M100- 10 hour	M100- 24 hour	M100- 48 hour
0	0.00	0.00	0.00	0.00	0.00	0.00
5	9.80	5.13	1.17	0.12	0.00	0.00
10	19.60	10.15	2.33	0.35	0.00	0.00
15	29.40	15.28	3.50	0.47	0.00	0.00
30	58.80	30.57	7.00	0.93	0.00	0.00
60	117.60	61.13	14.12	1.87	0.00	0.00
120	91.35	122.27	28.12	3.62	0.00	0.00
240	38.85	69.77	56.35	7.23	0.00	0.00
360	0.00	17.27	84.47	10.85	0.00	0.00
600	0.00	0.00	0.00	18.08	0.00	0.00
1440	0.00	0.00	0.00	0.00	0.00	0.00
2880	0.00	0.00	0.00	0.00	0.00	0.00
<i>Maximum</i>	117.60	122.27	84.47	18.08	0.00	0.00

Table 5 AGI Attenuation Requirements



The increase in storage required is approximately 16% (See Table 6 below), the volume increase would be able to be accommodated in either the attenuation pond freeboard (the distance between the design water level and top of the structure – typically provided as a precautionary safety measure against early system failure. This can also be considered as is spare capacity in the existing design).

Location	Maximum Storage Requirement		
	20% Allowance for Climate Change	40% Allowance for Climate Change	Increase
Generating Equipment Site Attenuation Requirements	2105	2456.18	16.68%
Access Road Extension Attenuation Requirements	234.4	273.47	16.67%
Maintenance Yard Attenuation Requirements	145.6	169.87	16.67%
AGI Attenuation Requirements	104.8	122.27	16.67%

Table 6 Comparison between Maximum Storage Requirements

David Watson

Senior Engineer



Appendix

TABLE 4.3-1 OF THE OUTLINE DRAINAGE STRATEGY

'GREENFIELD RUNOFF

Greenfield equivalent runoff rates are calculated individually for the permanent site area using the procedure recommended in Institute of Hydrology report 124 'Flood Estimation for Small Catchments' and 'Rainfall Runoff Management for Developments' (EA / DEFRA, 2013). See Table 4.3-1 below. Site soil type is derived from HR Wallingford's Flood Studies Report. Annual average rainfall is the site-specific FEH2013 value. The maximum surface water drainage discharge rate which shall be used for the whole Abergelli Power Station development has been highlighted in bold in Table 4.3-1.

	Site Area				Totals
	Gen Equip Site	Access Rd Extn	Maintenance Yard	AGI	
Hydrological Region	9	9	9	9	
Soil Type	3	3	3	3	
SPR	0.37	0.37	0.37	0.37	
SOIL	0.40	0.40	0.40	0.40	
SAAR (mm/year)	1435	1435	1435	1435	
Total Site Area (Ha)	2.153	0.446	0.339	0.266	3.204
Impermeable Area (Ha)	1.796	0.379	0.271	0.213	2.659
IH 124 Reference Area (Ha)	50.0	50.0	50.0	50.0	
Reference Area Greenfield Runoff (L/s)	332.7	332.7	332.7	332.7	
Site Area Greenfield Runoff (L/s)	11.9	2.52	1.80	1.42	

Table 4.3-1 Greenfield Runoff Equivalent

The Greenfield Runoff Rates have been calculated using the anticipated Impermeable Area and not the Total Site Area. These areas shall require re-measuring and re-analysis of the drainage system during the detailed design phase. Runoff volumes are determined by multiplication of the rainfall depths by the equivalent impermeable areas (the 'Rational Method').