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Morlais Project

Rebuttal to Orthios Proofs of Evidence

Andrew D. Billcliff – Project and Compulsory Acquisition

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Orthios Rebuttal

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November 2020

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The following tables provide an overview of the paragraphs of Mr Levasseur and Mr Jesson's PoEs (CD POE005 and CD POE006, respectively) on behalf of Orthios which are addressed in this document, providing the paragraph numbers of this Rebuttal document where Mr Levasseur and Mr Jesson's comments are addressed.

Mr Levasseur PoE Paragraph No.	Paragraph No. of this Rebuttal document
Paragraph 1.8	3.1
3.11	6.19
3.10 and Section 6	6.14 and 6.15
4.1 to 4.3	3.3 to 3.8 and Appendix 1
4.5	3.9 and 3.10
4.8.to 4.13	3.16 to 3.19 and Appendix 8 illustrative list of email communications
4.9	3.11 to 3.13
4.14.3	3.24 and 3.25
4.14.4	3.14
4.14.5	4.10 to 4.12 and 5.21
4.15.1 to 4.15.3	3.20 to 3.23, 4.13
4.15.5	3.15
5.2	4.9
5.4	4.22
5.8.1	4.6 to 4.8
5.9.2	6.11 and 6.12
5.9.7	4.4 and 4.5
6.2.6	6.15
6.2.8	6.16
6.2.10	6.17
6.2.13	6.18
6.3.2 and 6.3.8	6.13
6.3.21, 6.3.23, 6.3.27 and Appendix P1.2.5	6.3 and 6.4
6.3.28	6.5 to 6.7
6.3.4	6.8

Mr Jesson PoE Paragraph No.	Paragraph No. of this Rebuttal document
3.2	5.7 to 5.8
4.1.2	4.14 and 4.15
4.1.4	4.16
4.5	4.17 to 4.19
Section 5	4.20
5.1	5.12
5.6	4.21
5.7.2	5.1 to 5.5
6.1 and 6.2 and Appendix P2.2.1 and P2.2.2	5.9 to 5.15 and Figures 1 and 2
6.3.4 to 6.3.8	5.16 to 5.19
Section 7, 7.1.3 and 7.3.1 to 7.3.3	5.20 to 5.24
8.1	6.9
8.4	6.10 to 6.12
9.3.2	5.6

1. **Introduction and Qualifications.**

- 1.1 I am Andrew D Billcliff I Eng. MIET. Director of Menter Môn and CPO witness.
- 1.2 This is a combined response to the Proof of Evidence submitted by Mr Levasseur and Mr Jesson on behalf of Orthios.
- 1.3 As explained in more detail in my main proof. I have over 40 years of power generation experience, from building and commissioning MoD surface vessels and submarines (conventional and nuclear) and operating merchant vessels. In 1981 I joined the Central Electricity Generating Board ('CEGB') where I gained experience in civil nuclear power plant construction and operation, gas turbine and coal fired power station development construction and operation, and more recently through its successor companies, wind and hydropower development construction and operation. Penultimately as director of RWE npower Renewables and Innogy UK. Within that time I was involved in many commercial deals including buying the rights for Kielder Hydro Electric Power station from National Grid ('NG'), commercial and technical due diligence on the Gerasul public power company in Brazil, bidding for Scottish aluminium plants and various land deals to allow installation of hydropower assets and windfarms.
- 1.4 I have been engaged in discussions with Orthios since an initial meeting with them at their Christleton office in April 2016, where Menter Môn representatives met Bryan Owen and Ed Everson the Finance Director of Orthios to introduce the project.
- 1.5 Where I make a statement in this rebuttal that is not based on my own actual knowledge or involvement in this matter, I note the source of that information. For example, Menter Môn recognised that for meaningful progress to be made as intended in the private treaty negotiations with Orthios, there was going to be needed three strands of involvement: namely at a senior management level on strategy and planning, at a technical level on planning and implementation, and on a commercial level utilising the services of a commercial agent.
- 1.6 There are many aspects of the evidence provided by Orthios with which there is disagreement. Not every such matter is set out within this rebuttal but that should not be taken as the acceptance of Orthios evidence in relation to these matters and more widely.

2. Overview

- 2.1 As is explained in my main Proof, somewhat unusually there is within Orthios owned land a 132KV double circuit 300MW electrical spur, connected to the NG and fed from Wylfa 400KV substation. The 132KV cable sealing ends within the Orthios site are owned by NG but the land surrounding the cables is owned by Orthios. This has created problems for the Morlais project as the NG substation is entirely surrounded by Orthios land. There is no right of access to the NG network at this point.
- 2.2 The Morlais project is clearly one that is supported by both planning and energy policy and is in the public interest, see in this regard the proof of David Bell. Indeed, Orthios does not object to the principle of the Morlais project (see below).
- 2.3 The Morlais project requires a connection to NG, whether direct or through Orthios. This is not disputed, and requires a route through Orthios owned land because of the background set out in para 2.1. The requirement for a connection either through Orthios or direct to NG has not changed.
- 2.4 The Transport and Works Act Order (the 'TWAO') seeks compulsory purchase of the land that Menter Môn and its expert consultants say is necessary to achieve the connection via Orthios land. Land requirements for the substation and access have been based on information provided by Black & Veatch B&V Consultant Engineers and that is based on EU, UK and industry standards for construction, installation and operation of high voltage (HV) electrical infrastructure and apparatus using a 'reasonably envisaged worst case scenario'.
- 2.5 The area contained within the TWAO is that which is required for the substation and cable access taking into account the worst case land area needed to ensure the delivery of a complete project and bearing in mind unknowns at the time of submission, such as ground lidar surveys and information on as built services (detail only provided by Orthios sept 2020), position of any contaminated land known or unknown, discovery of unrecorded buried services, construction challenges due to ground conditions and changes to contract scope during the final detailed design. Most of these still remain unknown and will remain so until after consent is granted. These are real issues because this is a site formerly in industrial use and in respect of any land there is a real risk of issues around contamination.
- 2.6 On completion of the construction and commissioning of the substation any land not required by the project will be handed back to the landowner. Please see article 28 of the draft order. This gives Menter Môn the power to use

land temporary for construction, access, mitigation and temporary works purposes. Menter Môn would then need to give any land no longer required, back within 1 year of completing the relevant works or otherwise use the CPO powers to acquire the land permanently. Article 28(4) specifies the requirement to reinstate the land to the reasonable satisfaction of the owner before handing it back. Menter Môn is also seeking a restrictive covenant. Menter Môn can therefore state that it would seek to exercise the TWAO powers (or a combination of them) in a proportionate manner. Where practicable it will employ temporary possession powers for the land that is not required permanently after construction, which would then be reinstated and handed back in accordance with the controls in the TWAO. With regards to land that is only required for underground cables, Menter Môn would seek to limit permanent acquisition to new rights and a restrictive covenant, akin to an easement.

- 2.7 The land the subject of the TWAO within the Orthios site is brownfield land, currently disused, and adjacent to the NG connection. The choice of land to be acquired is clearly a justified one.
- 2.8 Menter Môn has over the period of four years engaged with Orthios at various levels to try and achieve agreement but this has not been possible.

3. **Morlais Engagement with Orthios.**

- 3.1 Mr Levasseur's proof (para 1.8) refers to appointing expertise in technical electrical consultancy as late as September 2020 (the evidence upon which he significantly relies) despite accepting that Menter Môn were attempting to negotiate a private treaty transaction as early as 2016 for a 132kV private line electrical connection. It is unfortunate that Orthios did not see fit to seek such expert help on these matters earlier on, rather than so close to the inquiry.
- 3.2 Menter Môn recognised that the technical electrical discussions for a 132kV private line electrical connection was of central importance in attempting a private treaty negotiation which is why I (given my expertise in the field) led these discussions at commencement of our negotiations in 2016 and was able to call on the additional support of Mr Cook of ICCL and Mr Bowley of SES Supply, both experienced power industry electrical engineering specialists. Menter Môn instructed a commercial agent (Edmund Bailey of Baileys and Partners) as early as September 2018.
- 3.3 Mr Levasseur's proof (Para 4.1) states that while Menter Môn were engaged with Orthios at a technical and a senior commercial level they were not cross communicating internally. This is incorrect. The four key individuals: Gerallt Lewellyn Jones, myself, Ian Cook and Edmund Bailey, have been in regular

communication through Menter Môn's engagement with Orthios. Between the four of us we were empowered to deliver a solution both technically and commercially.

- 3.4 In stark contrast to the statement made in Mr Levasseur's proof (Para 4.1), it is my clear view that the reason that agreement has not been reached on a private treaty basis to date is because Orthios intention from commencement of our negotiations in 2016 had always been about trying to agree key financial terms and financial benefits to Orthios before consideration of both the remaining commercial terms that make up an agreement, and the technical solution that Mr Levasseur's proof (para 4.2) suggests was important at "a first meeting".
- 3.5 Mr Levasseur's proof, (para 4.3) refers to the open discussions that have been held between Orthios and Menter Môn. This is a very recent and public change of stance by Orthios and refers to the recently commenced technical discussions held weekly for around an hour commencing 2nd September 2020. Mr Levasseur implies that the pending inquiry has brought the flurry of activity. Whilst this may be the case in relation to both parties, that should not be understood as carrying an implication that Menter Môn were not pursuing these matters earlier. The recent change of position by Orthios I believe may owe less to any increase in activity leading up to the inquiry and rather more to the publication of the fact that Menter Môn now has a NG connection offer, or possibly the fact that Orthios in July 2020 had signed up new funders and this may have led to a review of projects and other commitments on site.
- 3.6 In support of my belief set out in 3.5 above, please see at Appendix 1 a document titled "Proposed terms to connect to Orthios Group's grid connection on the Orthios Eco Park, Holyhead" which was sent to Menter Môn in open correspondence by Orthios in August 2018. I would highlight in it the heavy emphasis on key financial terms coming before technical implementation, and more specifically the reference to the need for agreement first on the key commercial terms prior to the input from the regulatory experts. In my opinion this better encapsulates the priority being placed by Orthios throughout most of the process on the key financial terms rather than the emphasis now being placed in Mr Levasseur's proof on technical implementation upon which, of course, he heavily relies on the input of a technical expert only instructed to act in this matter for the first time in September 2020.
- 3.7 Menter Môn wanted to price an option to connect to NG through Orthios. This was to be one of several options that could be priced, reviewed by Menter Môn and the best option chosen. This is common practice on power

projects. Any costs provided by regulated companies such as Scottish Power Energy Networks (SPEN) and NG are formulaic and they are heavily regulated on their charging methodology. That is not the case with Orthios and this is a real concern for Menter Môn.

- 3.8 It must be made clear that virtually all communication between Orthios and Menter Môn from September 2018 (Annex A 4.19 & 4.20)¹ and September 2020 is marked 'without prejudice' and therefore I do not disclose the detail of that very extensive engagement. I have over 3000 emails regarding Orthios.
- 3.9 Mr Levasseur's proof (Para 4.5) states that in his view Morlais could and should have initiated more focussed iterative and meaningful discussions much earlier in the project. Menter Môn does not accept Mr Levasseur's account of the communications between the two organisations. Menter Môn began engagement with Orthios in 2016 (MDZ/P8 Annex A para 4.2) This was the start of a long and regular series of communication on technical and commercial aspects of the Morlais project and an Electricity Networks Association (ENA) connection application form was submitted in March 2018 - see appendix 2, along with a list of general technical and commercial requirements to be addressed in any agreement. MDZ/P8 Annex A Section 4 lists a chronology of significant events up until 20th September 2019 around the time Menter Môn was directed by Mr Levasseur to deal through the company solicitor Ian Hodgkinson.
- 3.10 Mr Levasseur himself directed Menter Môn to make all communications through the company lawyer on 20th September 2019 following postponement of a technical meeting brought about by receipt of TWAO communications with which all affected landowners were served. The TWAO should have come as no surprise as all the affected landowners including Orthios were told about the Menter Môn order submission and most understood and continued private treaty negotiations without detriment. Instead Orthios reacted badly to the TWAO and this hindered discussions for a lengthy period.
- 3.11 Mr Levasseur's evidence (para 4.9) argues that in May 2019 Morlais did not engage with Orthios on what services Orthios could provide instead of utilising a plot of land within parcel 49. At the time no alternative solutions were offered by Orthios and land to suit our needs was made available in parcel 49, subject to agreement. Commercial discussions continued around that. Menter Môn began thus working up a solution within parcel 49. The choice of this piece of land was an obvious one. It lies immediately beside

¹ There is an error in the in MDZ/P8 Annex 1 4.20: reads 2020 should read 2018

the necessary NG connection and is a disused piece of brownfield land located at the very edges of the much wider Orthios land holdings. It was thus adjudged to be unlikely to interfere with any of Orthios' many different and unfulfilled plans for the site given its location and lack of use for some time.

- 3.12 On 10/10/18 (MDZ/P8 Annex A 4.21) Menter Môn requested access to the Orthios site to undertake ecological surveys as this was the last area of the whole route to be surveyed. This work had to be done to complete the Environmental study work otherwise the project would be delayed. Orthios responded by email that no access to site would be granted until the deal was signed off. The following is the text from the email response on the same day: *'As per previous emails at the moment we have no agreement in place with Morlais to progress the project and until this is agreed and signed off no access to the site will be granted. We are waiting on Morlais to come back with an offer currently but if it means delays until next year so be it. Regards Sean.'*
- 3.13 This in my view illustrated the way that Orthios had been dealing with Menter Môn all along, pushing for a commercial settlement, not interested in the technical side and at times being positively unhelpful and obstructive in order to try and lever some advantage in the discussions. Menter Môn considers that it responded to any requests from Orthios for technical information in a timely manner, any detailed information was provided by Ian Cook of ICCL or Phil Bowley of SES supply and had to be specified as a package of work. Orthios is put to proof of any specific requests that were made and not answered in a proper and timely manner.
- 3.14 The invasive site investigation work requirement mentioned in Mr Levasseur's proof (Para 4.14.4) was to be managed by Alan Jones of Caulmert on behalf of Menter Môn. Alan Jones commenced dialogue with Orthios regarding the site access requirements by email on 13th November 2019, no access had been forthcoming by February 2020 and in March 2020 this was further exacerbated by the Covid-19 pandemic as Caulmert were furloughed from March to August 2020. Permission to access the Orthios site was finally granted by Orthios in September 2020. Access is required to undertake core sampling and is now in the final stages of planning with Risk Assessments & Method Statements being produced and shared with Orthios.
- 3.15 Mr Levasseur (4.15.5) implies slow progression of private treaty discussions with Orthios and that Menter Môn were not including a technical solution. Implementation of a technical solution was clearly not going to happen until the commercial principles had been agreed. This was taken by Menter Môn to mean the agreement of Heads of Terms. Within the timeframe of the

Orthios discussions which began in 2016, Menter Môn has secured grid connection offers at 33kV (distribution) and 132kV (transmission) levels, responses received within the regulatory 90 day timescales. Clearly the technical information supplied to both SPEN and NG must have been sufficient for them to provide a connection offer otherwise they would have requested more information. This is basically the same information as has been supplied to Orthios and would have been resubmitted had Orthios requested.

3.16 Mr Levasseur's evidence (4.8-4.13) somewhat artificially divides engagement with Menter Môn into 6 stages:

3.16.1 Stage 1 2016, small parcel of land required in existing substation.

3.16.2 Stage 2, May 2019, 1 acre of land required. (not available in substation)

3.16.3 Stage 3 August 2019 'significantly greater amount of land' required under TWA0. (around 2 acres on site of 213 acres)

3.16.4 Stage 4 September 2019 limited engagement with Orthios at Msparc (business centre) 33kV connection mentioned.

3.16.5 Stage 5 December 2019 Menter Môn requested extra 0.25 acres of land (to be added to drawing referred to in proposed Heads of Terms).

3.16.6 Stage 6 Orthios produces drawing Jan 2020 for Menter Môn comment.

3.17 The actual engagement between 2016 and 2020 was far in excess of these 6 events or stages, but it is clear that there has been continued engagement on land requirements, grid connection requirements and commercial terms over a very significant period. Some of this has been open but a large amount of it has been without prejudice and subject to contract. See Appendix 8 Illustrative list of email communications.

3.18 I have been involved with several 'first of a kind' projects such as this, North Hoyle offshore windfarm, a large tidal lagoon, and the first round of combined cycle gas turbine plants in the UK. To me the stages represent the natural evolution of a power plant project. The land requirement has increased from the first concept and the revised iterations on size and the timely communication of these revisions is evidence of a competent organisation sharing information as soon as it is able, as greater detail becomes available and at all times trying to minimise the need for greater disruption and extra cost. Orthios should understand the concept of project evolution as their own plans for their site change entirely on a very regular basis.

- 3.19 The requirement for a connection either through Orthios or direct to NG has not changed throughout the project life.
- 3.20 Mr Levasseur (4.15.1) states that Menter Môn is taking the whole of the Orthios switchyard for the purposes of exporting electricity to the grid. This is not the case. The Menter Môn plans submitted in the TWAO avoid the switchyard and provide a fully self-contained substation (switchyard) on currently undeveloped land in parcel 49. Allowing Orthios to fully utilise the existing 'switchyard' for their own plans.
- 3.21 Mr Levasseur (4.15.2) suggests that Menter Môn has not sought to progress its discussions with Orthios in a manner that justifies compulsory purchase rights. This is not the case, Menter Môn has been trying to reach agreement on Heads of terms since they were originally developed in 2018.
- 3.22 The communications remain on a 'without prejudice and subject to contract' basis as is the very extensive correspondence trail between Baileys and Partners and Orthios between September 2018 and October 2020. (MDZ/P8 Annex A 5.2). There is thus regrettably a limit on what can be said. What I can state is that the overall account given of the communications and contacts between Orthios and Menter Môn by Mr Levasseur is not accepted as being fair, accurate or complete.
- 3.23 Ultimately after many months Orthios' lawyers suggested we open technical discussions on the feasibility of a connection at Orthios in late August 2020. Menter Môn readily agreed to this as there had been no significant technical engagement in the recent past despite repeated requests to Orthios to engage at this level. It has always been Menter Môn's intention to try and negotiate land acquisitions where possible both in relation to Orthios and more generally. It will be recalled that following service of documentation related to the TWAO Orthios from that point on until late August 2020 insisted all communication be through lawyers (see above) and so technical discussions did not happen.
- 3.24 Mr Levasseur's proof (para 4.14.3) somewhat misleadingly suggests that Orthios advisers have driven the process to develop solutions for electrical connectivity but the position is in fact that Orthios only very belatedly tabled two potential alternatives for electrical connections that were not offered to Menter Môn at any time prior to September 2020. This has followed from Orthios belatedly appointing a specialist. In the limited time available before the inquiry no deal has been possible. These options require a deal to be done. I am unable to explain why this is so given that the communications are without prejudice. Menter Môn will continue to discuss matters with

Orthios but the simple fact is that absent a deal the land sought to be obtained in the TWAO is necessary to enable the project to process.

- 3.25 This new openness demonstrated by Orthios was not evident to Menter Môn throughout the previous 18 months, as all communications were directed, as I have said, to Orthios' lawyers only at their request.

4. **Orthios Understanding of Morlais Project.**

- 4.1 Menter Môn have always wanted to explore both an option for a connection to grid directly with NG and an option to connect to grid via Orthios and to take the most secure option, not necessarily the cheapest. The viability and integrity of the counterparty has to be taken into account. Orthios does not at any stage appear to take account of how it as an organisation may be viewed by others – such as funders of the Morlais project. I have enclosed a snapshot of Orthios company details Appendix 6 and 7. I discuss this further below.
- 4.2 Orthios has at least in recent months, demonstrated a basic understanding of the Morlais requirement for a connection. I do not believe however that Orthios understands Menter Môn's key aims and motivation. Menter Môn's directors are bound and motivated by cultural and socio-economic aspirations, providing a sustainable future for local inhabitants, opportunities for young people, and a stable basis for the Welsh language and culture. Its primary objective is to provide long term secure jobs for the people of North West Wales. It also aims to secure European Union funding for the benefit of the local economy providing a platform for the growth of predictable renewable energy and to deliver on the objectives of the Welsh Government's Future Generations Act, its Carbon reduction targets and its intent to see formal local participation in renewable energy.
- 4.3 The Morlais project has never been done before, it pulls together developers from across the globe with different devices and connection details and because of that it is very difficult to fix all the technical parameters at this stage.
- 4.4 Mr Levasseur (5.9.7) correctly understands that the Morlais project is funded predominantly by the public sector. Because of that every financial decision is under additional scrutiny. This is very different to a privately owned and privately funded company. Orthios not being a regulated body under the electricity regulator OFGEM and not subject to any regulation at all introduces a whole series of questions to be answered. This requirement upon Menter Môn to provide comfort to the project's funders is not new to Orthios.

- 4.5 The project is part funded by European Union Structural Funds and administered by the Welsh European Funding Office. The project is not adversely affected by the UK decision to leave the EU, project completion by the end of 2023 has always been the end date for this funding round. Menter Môn currently has a clear and deliverable funding strategy, but a delay to the project that risked the ability to meet the 2023 date would introduce significant uncertainty about whether the EU funding would still be available.
- 4.6 An issue arises because of the unusual position on the Orthios site (that is to say it controls all the land around the connection point, which is NG owned). Orthios is not a regulated body and therefore does not come with a number of the statutory and legal safeguards that Menter Môn requires to reassure its funders, such as a price control framework and a formal complaints procedure. Menter Môn is looking at ways of de-risking this element. Mr Levasseur's proof (para 5.8.1) lays out the basis of a commercial arrangement that could be of interest to Menter Môn, but of course a deal would need to be done. Having land packages allocated on which to build key infrastructure if required may be a possible solution, however those packages identified require land which is outside the existing planning envelope and TWAO boundary. As for the reason for this it must be remembered that in 2018 Menter Môn were told by Orthios that the existing substation was to be used for 'other things' and Menter Môn's needs could not be accommodated within it. That is why Menter Môn acting entirely reasonably, concentrated on the disused parcel 49 and were not able to include the new proposals made by Orthios in September 2020 in the TWAO submitted in September 2019, a year earlier. Negotiations are ongoing but no agreement has so far been reached and so Menter Môn must retain the solution based around parcel 49.
- 4.7 The Orthios organisation itself appears to be a group of around 18 companies. We note Orthios (Orthios Eco Parks (Anglesey) Limited and Orthios (Anglesey) Technology Limited) appear to have signed an investment agreement with outside investors on 8 July 2020 as shown by filings of revised Articles of Association and new Directors at Companies House which refer to various shareholders agreements. We are not aware of the purpose of these agreements, the identity of the investors or the details of any associated planned projects on the site. Menter Môn is concerned as to whom the contract counterparty will be if agreement is reached and how Menter Môn's interests will be protected throughout the life of that agreement, the lack of any regulation and the risk on matters such as insolvency of any of the companies, given the very complex company structure. See appendix 6 & 7.

- 4.8 Any agreement would be based on planned future works by Orthios, these works may or may not be completed and may not be to an acceptable standard. Certainly Orthios' track record on delivery of its plans to date is non-existent. The proposed Lateral Eco-park in Hull, another similar project went nowhere and the company was dissolved in 2015. Sean McCormick held the position of MD of Lateral power until dissolution. In relation to the present site Orthios' plans have changed regularly with all kinds of proposals floated but little or nothing, beyond demolition, actually delivered on site.
- 4.9 Mr Levasseur (5.2) talks about Menter Môn carrying forward a large degree of optionality beyond the TWAO stage. The final detail design work on the cable and the substations will be undertaken by the principal contractor for the cable and substations contract once appointed and this is planned for the end Q1 2021. The EPC (Engineer Procure Construct) contractor would not normally be engaged before consent has been granted. This is why final detailed technical designs are not available at this stage. This is normal in large scale power projects. Outline plans are submitted for planning purposes.
- 4.10 Mr Levasseur (4.14.5) refers to the amount of survey work Menter Môn has requested to undertake on the Orthios site. It is normal in a power project of this size to minimise 'at risk' capital spend. This is money necessarily spent before the project final investment decision (FID) has been made. In this case detailed invasive ground survey work (core sampling) would not be undertaken before consent, although some test bores are planned. A significant test bore programme could be time and money wasted as any contractor taking on ground risk would need to be satisfied on the validity and suitability of those survey results and would in my experience, want to undertake their own detailed surveys before taking on that risk.
- 4.11 I must emphasise that the land requirements as contained in the TWAO for the substation and access have been based on information provided by B&V Consultant Engineers and that is based on EU, UK and industry standards for construction, installation and operation of HV electrical infrastructure and apparatus using a 'reasonably envisaged worst case scenario'. The final size of the substation had to be based on a 'without Orthios co-operation' assumption as there was, and is, no guarantee of this. It was reduced following internal challenge and discussion with B&V to 1.5 acres as it needed to be self-contained and fenced to Electrical Safety Quality and Continuity (ESQC) standards, and contain access roads for maintenance and heavy lifting. Had there been co-operation with Orthios from the outset, and some certainty that this would be secured this may have enabled a smaller footprint to be the subject of the TWAO but there was no co-operation at that time and no guarantee of it now absent a deal being done. Orthios more

positive engagement began as I have said in September 2020. Moreover, there remains at present no guarantees around what Orthios is suggesting and there are many unknowns within the physical area concerned that must be identified and managed before construction can commence. Unknowns such as existing buried services, unmapped contamination, rock, voids and soft ground, springs even unexploded ordinance. So, the land and rights sought in the TWAO remain entirely necessary to ensure there is sufficient flexibility to ensure the delivery of the Morlais project.

- 4.12 Appendix 5 refers to some of the key design milestones in the development of the substation layout. Siting of the works appendix 4, within parcel 49 is not finalised and will not be so until detailed post consent invasive land survey work is undertaken as specified by the main contractor. This helps to minimise the 'at risk' pre-consent costs to the project and is the strategy employed by B&V across the whole cable route. Menter Môn takes on a reasonable worst case scenario to ensure the success of the project, then once the project construction is completed Menter Môn will give back land where it can.
- 4.13 Mr Levasseur mentions the magnitude (4.15.2) of the land requirements in the order. Menter Môn would argue that 2-3 acres of a 213 acre site is not on any view '*extensive parts of Orthios site*'. Especially when some of that 2-3 acres is covered by a NG cable easement that is not developable land and some of the land the subject of the TWAO will be returned on completion of construction as discussed in para 2.6 of this document. Somewhat less than 1% of the Orthios site is expected to be retained by Menter Môn. Mr Levasseur then goes on to mention (4.15.3) that Menter Môn was aware of Orthios' earlier development plans for parcel 49. That is true, in May 2019 Menter Môn was in discussion with Orthios around re-siting a proposed gas peaking plant planned for parcel 49 to allow Menter Môn to build its substation within parcel 49 and commercial terms were being agreed. One reason for the size of parcel 49 was to enable Menter Môn to have the flexibility to construct a substation and leave sufficient land to accommodate Orthios' plans. Menter Môn was only made aware of Orthios change of position on parcel 49 and their requirement to install a large battery in that location in September 2020 during the technical meetings. Again, there is a pattern in the history of engagement of Orthios plans changing.
- 4.14 Mr Jesson's reference (para 4.1.2) to Menter Môn's perceived constraint concerning the route of the incoming cable is incorrect. Menter Môn's agreements with Network Rail ("NR") refer to drill bores crossing beneath the railway at a depth of greater than 9m. As the substation was to be located in parcel 49 there was no need to enter protracted discussions with NR to reduce that depth as 9m depth provided a suitable drill gradient to

break the surface within parcel 49. The final break out point would be determined by the practicalities of the drilling and this to some extent determines the final location of the proposed substation in parcel 49.

- 4.15 Menter MÔN have had initial discussions with NR, crossing at a shallower depth may be possible (but if it happened it would be outside the TWA0) and the determination of depth in that case will only come following trial bore drills to determine ground conditions.
- 4.16 Mr Jesson then further suggests (para 4.1.4) that Menter MÔN had no choice but to plan for a grid connection in parcel 49 because of the drilling technique chosen. This is incorrect. Menter MÔN were told by Orthios that any more land than a tennis court size could not be accommodated in the existing substation(MDZ/P8 Annex A 4.29, 4.32. & 4.33). Orthios suggested a plot in parcel 49 where a 'planned' gas peaking plant could be re-sited and a small 150mm gas main could be moved to suit. This all happened in 2019, before Mr Jesson was retained by Orthios. So the substation was sited and then the drill routes were designed to meet the substation not the other way round.
- 4.17 In Mr Jesson's conclusion (para 4.5) he states that the underlying premise is wrong regarding the choice of position for a Morlais substation. The substation was sited within parcel 49 as agreed with Orthios and was nothing to do with drilling. Menter MÔN did however chose the least risk path to drill to the substation once the approximate location of the substation had been set.
- 4.18 Menter MÔN did look at siting the substation in the wooded area at the eastern end of the Orthios site but this was dropped as it was considered that permission to fell 200-300 trees would not be granted when a fit for purpose brownfield site existed immediately to the west – parcel 49.
- 4.19 It also became apparent in the recent technical discussions that the Orthios HDD specialist was not aware of NR's tolerance on drill bores beneath rail tracks being within +-15 degrees of perpendicular to the rail, thereby eliminating the proposal of diagonal drill routes.
- 4.20 Mr Jesson's proof in section 5 generally discusses detail that is the responsibility of NG and as such is outside the scope of the inquiry. It must also be remembered that Mr Jesson is no longer an employee of NG. I do not seek to comment on detailed matters between Orthios and NG. NG have their own ability to negotiate and acquire land for connections and it is clear that NG have started those discussions with Orthios. It is their 'bread and butter' and there is no reason to believe a grid connection cannot be achieved. The agreement Menter MÔN has is between Menter MÔN and NG

and is formally regulated by OFGEM. It is clear that NG take the view that a connection to NG can be effected from parcel 49. Menter Môn were told by NG at the beginning of the application process that third parties would not be contacted in regard to connections until the offer had been accepted and returned. So there is no mechanism for the transfer of the technical information that Orthios require, before an accepted connection offer is received by NG, that does not breach customer confidentiality.

- 4.21 Mr Jesson mentions in para 5.6, that a private arrangement should be entered into between Orthios, NG and Menter Môn. Menter Môn is seeking to facilitate such a tripartite arrangement, but absent this Menter Môn sees the acquisition of Parcel 49 via the TWAO and has a connection offer in respect of this from NG.
- 4.22 Menter Môn agrees generally with Mr Levasseur's understanding (para 5.4) of the Morlais project requirements. Although the 33kV element is missing. This allows the project to run initially at 33kV feeding power back to the SPEN point of connection at Parc Cybi. In the early months of the project this may be all that is required until the number of devices is increased. This ability to deploy more devices may happen very quickly and the magnitude of the increase is unknown so batteries allow 'time shifting' of this cyclic generation to make best use of limited capacity until such time as the 132kV connectivity is available. The planned date for 132kV Grid export is 2028. With the physical infrastructure needs to be in place during 2023 to ensure the ability to move this 2028 date forward if required.

5. **Orthios proposals for accommodating Menter Môn**

- 5.1 In relation to Mr Jesson's proof (para 5.7.2), the 'behind the meter' technical solution proposed by Orthios may introduce commercial market opportunities but it takes no account of the Menter Môn view on the risk that this creates for the project.
- 5.2 Risk arises from dealing with an organisation that is not regulated by OFGEM. These risks include for example, risk that the project build out by Orthios may not meet the Morlais project programme, risk that unnecessary outages may be required by Orthios, risk that a funder may not wish to deal with Orthios. This is discussed in PDZ/P8 Annex A para 4.39 & 4.40 where Orthios has been aware for some years that at least part of any Menter Môn connected capacity would have to be through an OFGEM regulated body e.g. NG or SPEN.

- 5.3 Potential funders understand the protection offered by the regulator and see this connection solution as a much lower risk than dealing with a private company, even though a 'behind the meter' solution connecting via Orthios appears at first glance to be more profitable to Menter Môn. The dealings Menter Môn have had with Orthios to date add to the risk profile as it has been so difficult to get proper engagement, there must be the risk that this would repeat itself in the future. The complex company structure is also a concern. This is not just a concern for the funders *per se* it goes to the heart of securing the delivery of the Morlais project and the delivery of all the benefits that flow from it.
- 5.4 Moreover, any option agreed with Orthios would be exactly that, 'an option', until exercised. Creating that option and paying a fee for that option cannot eliminate the ability for Menter Môn to be able to pursue alternative options without the risk of the failure of the Morlais project should this option fail. Menter Môn has to protect its developers and the project against any agreement failing. Indeed Menter Môn would not be treating Orthios any differently to any other land owner along the route. Making an option payment to Orthios cannot crystallise the deal as it then ceases to be an option and becomes the 'way'.
- 5.5 The only option that gives certainty to deliver the project is the option already described within the TWAO - a direct connection to NG.
- 5.6 Mr Jesson's proof (9.3.2) states that the TWAO if granted would not guarantee a successful grid connection for Morlais at the site because further agreements between NG and Orthios would be required. This is completely wrong. Menter Môn has a valid NG connection offer and that offer is regulated by OFGEM. NG has many tools to ensure that a connection can be made within parcel 49. NG and Menter Môn have full confidence that a connection can be made within parcel 49 and that point was reiterated by NG in the most recent project delivery meeting held between NG and Menter Môn on the 16th November 2020. NG have previously indicated to Menter Môn that they would be willing to 'roll back' (remove) the existing oil filled buried cables back along the NG easement and create a 'stop joint' where the old oil filled cable is joined to modern XLPE cable. This stop joint could be installed at the location of the first cable joint around 276m to the west of the Penrhos substation. NG could then create a new 132kV substation at a suitable point between that point and the existing cable sealing ends, that would feed the Morlais substation and continue on to connect the Orthios substation. The exact configuration of such a solution would be the responsibility of NG. See appendix 9. NG discussion around substation provision.

- 5.7 Mr Jesson (para 3.2) lists a number of connected users on the Orthios site those being: 210MW of generation, 100MW of demand and 100MW of battery with import and export requirements. Orthios currently has two NG Transmission Entry Capacity ("TEC") register entries 150MW effective from 31st October 2021 and 60MW effective from 1st April 2023. This is the publicly available list maintained by National Grid showing all customers connected at the transmission level. Both entries are currently associated with a biomass plant. The total capacity they have secured is 210MW. The circuit itself is capable of transmitting 300MW x2. None of the above mentioned 'connected users' are actually 'connected' or 'users' at this time and both 132kV NG circuits are currently isolated. To my knowledge there is no electricity generation capability installed at site.
- 5.8 Orthios had not raised concerns previously about the ability for Menter Môn to co-exist with their many and various planned developments. Indeed, MDZ/P8 Annex A para 4.17 notes that Orthios has previously told Menter Môn on 31st July 2018 that a non-firm 240MW Morlais connection would have no impact on Orthios' various proposed activities. Menter Môn also reiterated in that meeting the need for an option of a direct connection to NG as well as an option to connect via Orthios. In attendance was both Sean McCormick and Ian Hodkinson.
- 5.9 Mr Jesson's proof (para 6.2) details two options showing possible connections to the 132kV circuits within the Penrhos substation. Mr Jesson's (appendix P2.2.1 and P2.2.2) show the circuits pictorially. The circuits are labelled circuit options X2 and X3. Where X2 is a connection 'behind the meter' into the Orthios circuit and X3 is a direct connection to NG. The latter would be the Menter Môn preferred option as it depicts Menter Môn cables connecting directly to the NG busbar without utilising any Orthios infrastructure. In both options A (X2) and B (X3) as proposed by Orthios, everything proposed apart from the basic direct NG connection itself sits outside the existing TWAO land and deemed planning permission boundaries of the TWAO therefore both options would require a further planning permission and introduce at this stage significant planning risk and the potential for more delays.

- 5.10 The connection at X3 is still a proposal made by Mr Jesson and has not been and may never be agreed by NG. I have enclosed screenshots of the Mr Jesson proposals for clarity. Fig1 and fig 2.

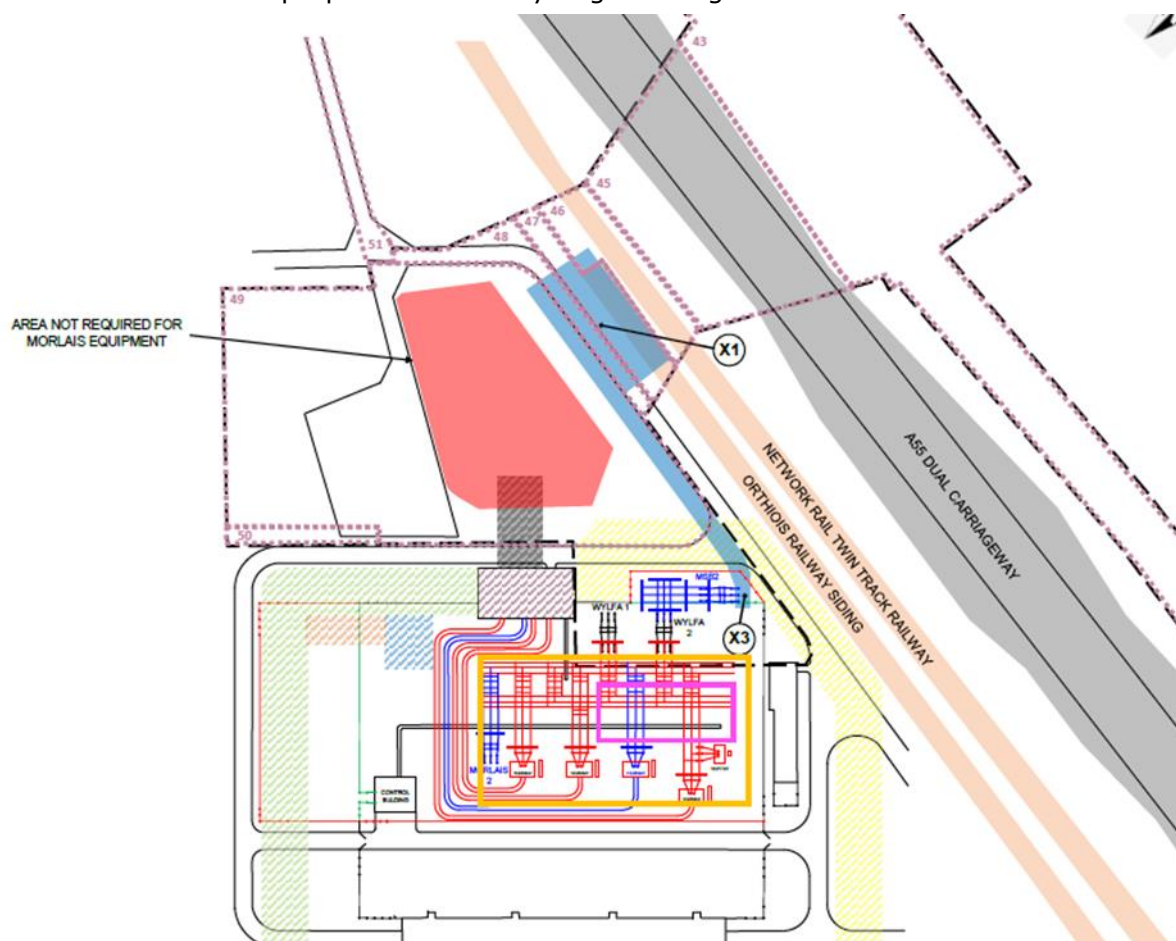


Figure 1 Direct NG connection

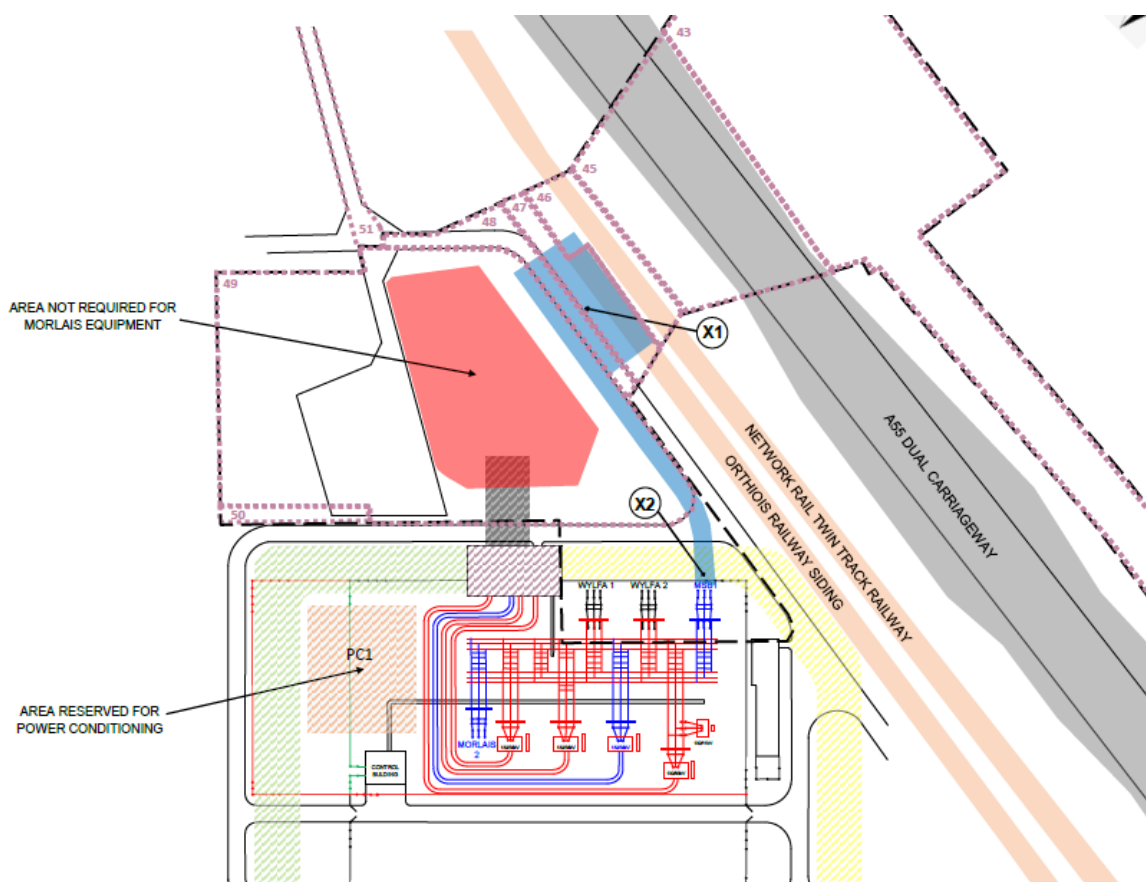


Figure 2 behind meter Indirect connection

- 5.11 Menter Môn questions why the proposals were not tabled in May 2019 when it became clear that Menter Môn needed more land or indeed at any time prior to September 2020. Of course, Mr Jesson was only appointed in September 2020. The plans shown in Mr Jesson's proof (his appendix P2.2.1 and P2.2.2) would be more informative if they included outlines of the various possible Orthios projects that is said the Morlais project may impact upon. That is difficult it is acknowledged because Orthios plans have changed, and continue to change, so regularly. Menter Môn is investigating these options and getting closer to an agreed position with Orthios but there are many unresolved variables such that any agreement would be conditional in any case. Without agreement these alternative options are not options at all.
- 5.12 MDZ/P8 Annex A para 5.4 refers to a significant action from an early technical meeting to set up a meeting with NG, originally with Orthios but was given to Ian Cook (Menter Môn advisor) as there had been no progress by Orthios despite it being seen as a key precursor to any agreement. The need for this tri-partite discussion between Orthios, Menter Môn and NG is

also mentioned in Mr Jesson's proof (para 5.1) and mentioned by Menter Môn repeatedly in the notes provided to Orthios following each of the technical meetings. There have been 11 to date. Appendix 3 Technical meeting notes (8)

- 5.13 Mr Jesson in para 6.1 says that in his opinion alternative and no more expensive methods exist for creating a grid connection for Morlais. It is correct for example, that an overhead line between parcel 43 and 49 would have been a much cheaper solution. But it was discounted following discussion with NR and their concerns over long term maintenance and failure of overhead lines (MDZ/P8 para 4.6.4), and Menter Môn's aim to follow Welsh Governments preferred position on new power lines, which is that they should be shared and buried. See MDZ/D1 *Planning Policy Wales* 2018 para. 5.7.11.
- 5.14 MDZ/P8 Section 4.5 contains details about other potential points of connection and cable routes that were considered and why they were rejected.
- 5.15 The cable corridors Mr Jesson (6.2) mentions may not be sufficiently wide given the final detail of either of the requirements for the power conditioning equipment and switchgear, as they are not yet known given that it is too early in the project's gestation period. This will all be determined as the optioneering and other work is developed with NG. It may be possible to agree a derogation with NG to install reactive power control over time as the project grows, but the footprint to enable that installation will be required at the outset to accommodate the maximum the project may ever need. Failure to provide this apparatus when required will prevent the use of the connection and could cause the project to fail.
- 5.16 Mr Jesson's (6.3.4) comment on choice of switchgear can only be justified by a full discounted cash flow cost benefit analysis. So, cannot be taken as true without the results of this exercise. As the previous substation has been demolished it does allow greater choice of switchgear although the latest NG requirement for coastal substations is based around Gas Insulated Switchgear (GIS).
- 5.17 Mr Jesson (6.3.5) suggests that commercial energy trading with other users could lead to substantial additional revenue for the Morlais project but this could only be substantiated by a financial study based on a contractual offer, until this has been done it cannot be taken as being true.
- 5.18 Mr Jesson (6.3.6 & 6.3.7) refers to his commercial design assumptions that imply that Menter Môn has shared sufficient information to enable him to produce a basic design based on his previous knowledge and experience.

Menter Môn could own the auxiliary equipment such as large scale batteries or power conditioning equipment or indeed could buy the requirement as a service for the right commercial terms. Menter Môn want an asset efficient design that is ultimately determined by a Discounted Cash Flow (DCF) Cost Benefit Analysis (CBA) which would include the 'cost of risk' to the project. In short Menter Môn needs to retain flexibility and just because it is shown as an option it doesn't mean that it is the only option or the best option.

- 5.19 Mr Jesson's (6.3.8) suggestion of connection to 33 kV leading to cost savings needs to be quantified, it may not be even possible technically. It is too early to determine, a full technical and commercial appraisal including CBA would need to be completed before Menter Môn could make a decision whether or not to use Orthios' proposed 33kV infrastructure. It would also depend on timing. Menter Môn will need access to 33kV apparatus in 2022.
- 5.20 Mr Jesson's plans in section 7 are purely a desk-based feasibility study showing a best case to suit Orthios' point. Moreover, a somewhat simplistic approach has been taken and I have seen no evidence of a project risk matrix that should take into account all project risks associated with the tabled proposals. Indeed a thorough risk assessment of the options can only be undertaken by Menter Môn as Menter Môn is the only organisation that can fully understand all of its project's dependencies. The proposals to date are just sketches. Detailed ground investigation still need to be undertaken to fix the final locations. A key point in Mr Jesson's feasibility study is that the land plots mentioned - (paras 7.3.1, 7.3.2 & 7.3.3) are all outside the parcel 49 and the scope of the TWAO planning process and increase risk to delivery of the whole project and the socio economic benefits it brings to Wales. However, that does not mean that Menter Môn is not prepared to look at these very recently tabled alternatives and see if there is an acceptable deal to be done.
- 5.21 The buried services drawing mentioned in Mr Levasseur's proof (4.14.5) was only submitted to Menter Môn in September 2020. This document would have been far more useful to inform proposed substation siting discussions back in May 2019.
- 5.22 The launching area for the HDD bores was placed on the Land & Lakes side of the A55 trunk road because Menter Môn was able to have regular and unrestricted access to the land and to have technical discussions with the Land & Lakes senior management team and reach agreement. Mr Jesson (7.1.3) talks about launching the HDD from within the Orthios site. Launching from the opposite side was not ideal in terms of siting the launch area but Menter Môn could not get Orthios engagement at the time in order to agree a more suitable launch site.

- 5.23 MDZ/P8 Annex A para 5.8, lists the main reasons as to why the options suggested by Orthios are not straight forward. The SoC provided by Orthios lists 2 options that could be facilitated by them, however there are still significant technical issues to overcome before either could become a viable option. Both options require the agreement of other parties. NR would need to agree to cable depth beneath the rail line reducing from 9m to 5 or 6m, that in turn would require satisfactory ground investigation results. Menter Môn cables must be turned 90 degrees in limited space that would require confirmation from the cable supplier of a suitable bend radius for the cable, currently assumed to be around 2m radius. NG would need to agree to providing a shared substation, agree the substation location and agree to use GIS. SPEN may need to agree to lift 11KV cables in the area by the rail line, and WWU would need to agree to relocate their gas main. Any private treaty agreement between Orthios and Menter Môn relating to the grid and ancillary services would need to be conditional on Menter Môn achieving planning consent on any works planned outside the TWAO.
- 5.24 Until the issues above have been resolved and a final deal done – assuming that it is possible to reach a deal -Menter Môn cannot revise its land requirements within the TWAO.

6. **Orthios Plans and impact of the Morlais project.**

- 6.1 I note the confirmation from the Orthios COO Lewis Mr Levasseur in para 2.3 of his proof, that the Orthios senior management team does not object to the principle of the Morlais project, indeed *'Orthios supports the project in general so long as the development requirements are not inconsistent or incompatible with Orthios' own plans and proposals for the site.'*
- 6.2 I have already noted though that Orthios' own plans for their site appear to change on a regular basis. On 2nd May 2019 Menter Môn were told by Sean McCormick that a 50/50 JV had 'just been' signed for a gas peaking plant to be built in the area to be known as parcel 49 although there is no evidence of a planning submission for this particular project. it was within the redline boundary for the 299MW biomass plant, but now, it seems, that same space is required for a 100MW commercial battery, despite Orthios working up agreement to site the Menter Môn's proposed substation in the same area for an annual rent of £75000/year per acre. Figure 3 below shows the area concerned, bottom left.



Figure 3 Orthios plans. Thanks to Wales on Line 2015

- 6.3 The Proposed biomass plant that features so heavily in Mr Levasseur's proof (appendix P1.2.5) does have consent under S36 of the Electricity Act 1989. However, as stated in my proof MDZ/P8 (Annex A para 3.6, 3.7 & 3.8), a Biomass plant at this scale is unlikely ever to be built within the UK. Mr Levasseur (6.3.21 and 6.3.23) talks about up to 100MW of smaller biomass related modules and the reprocessing of non-PET plastics commencing in 2021. Levasseur (6.3.27) states Orthios anticipates being fully in contract with FD in Q1 2021. Menter Môn puts Orthios to the strictest proof of this.
- 6.4 I have to say I find it strange that the Welsh Government (WG) does not appear to be engaging with Orthios and rushing to support them financially in the creation of a non-recyclable plastics recycling plant, as non-PET plastic waste is a massive global problem needing global resolution. The Welsh Government has partly funded the Morlais project and is hugely in favour of renewable energy projects in Wales. I attend the North Wales Confederation of British Industry (CBI) meetings and would expect WG representatives if they believed this was feasible to be excited to have such a 'game changing'

plastic waste to energy project on their doorstep. Even if the project was not introduced by name or location.

- 6.5 Mr Levasseur (6.3.28) states that the innovative biomass project intended for the site will produce energy without the need for a government subsidy. I know of no new commercial scale power generation technology that needs no financial support at the outset either in the form of capital grants or revenue support.
- 6.6 Another proposed solution for some of the Orthios land use was the building of a Waste to Energy plant, unfortunately the contract for this opportunity was won by Wheelabrator, their site was commissioned in Flintshire earlier in 2020 servicing the North Wales Waste Treatment Partnership of which Anglesey County Council, the incumbent local authority, is a member.
- 6.7 The onshore wind and solar generation also mentioned in the local press are not evident on site and do not have Planning consent. Other ideas noted were prawn farming,² hydroponics, fertiliser production, bio-oil production and accommodation of 'modern slaves' (according to North Wales Live news website 9th June 2016)³. Cruise ships have utilised the Orthios berth on occasions, that is true. But this is very far indeed from Plot 49 and wholly unaffected by the Morlais Project. See figure 4. Orthios jetty location edged in yellow to the top right of the figure.

² <https://www.bbc.co.uk/news/uk-wales-north-west-wales-35432478>

³ https://www.dailypost.co.uk/news/north-wales-news/old-anglesey-aluminium-base-human-11279783?utm_source=linkCopy&utm_medium=social&utm_campaign=sharebar

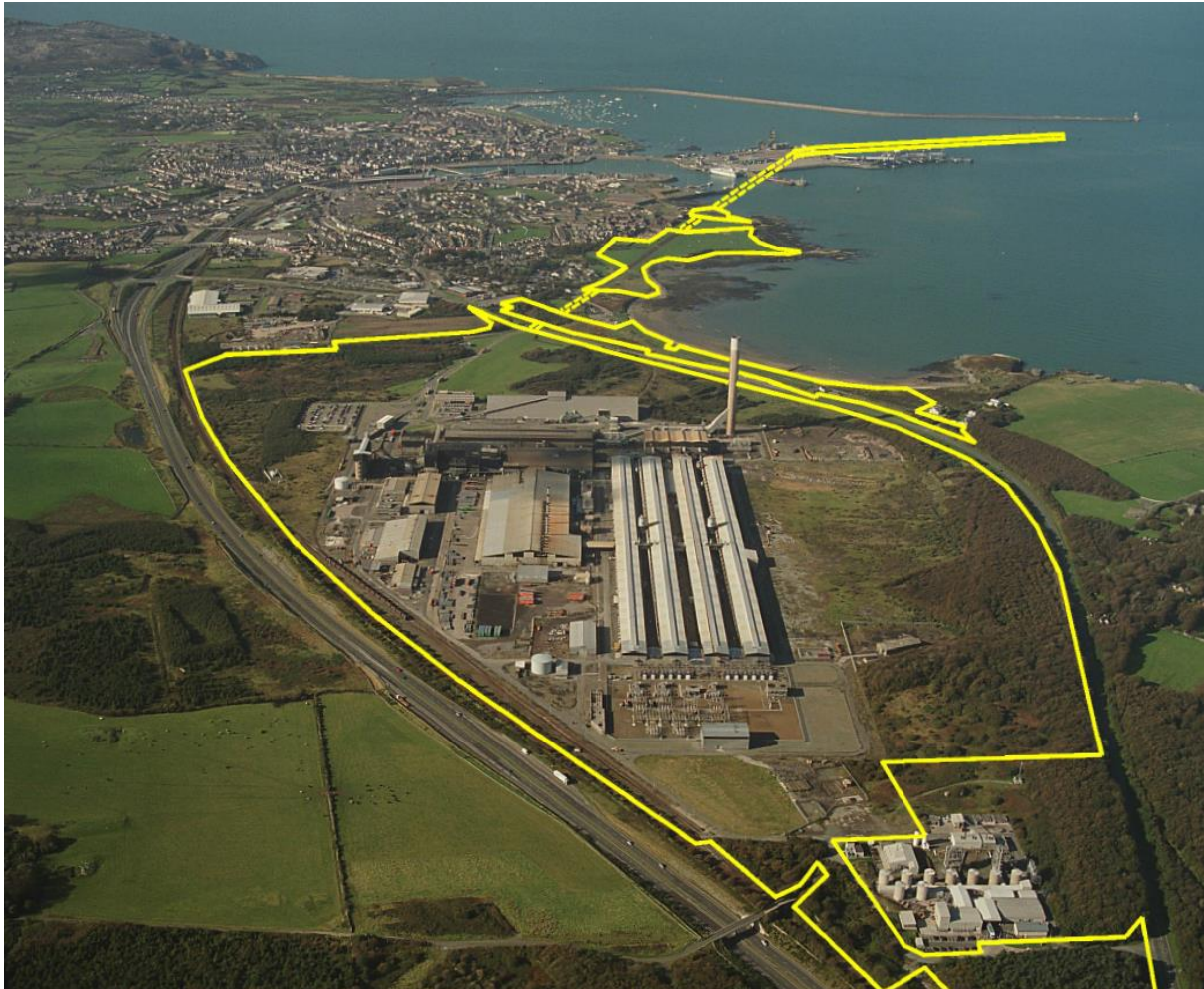


Figure 4 Orthios jetty location. Taken from Mr Levasseur's proof of Evidence.

- 6.8 Mr Levasseur (Para 6.3.4) refers to £26m committed investment in the site and to date there is no evidence of any substantial activity around this. Menter Môn puts Orthios to the strictest proof of this committed investment.
- 6.9 Mr Jesson's proof (para 8.1) states that the land in parcel 49 is currently consented for use as part of the Orthios Renewable Energy Plant Project. Menter Môn suggests that this is misleading as the consent is currently for an 'up to 299MW biomass plant', not a 'renewable energy plant'. This is discussed further within Mr Levasseur's Proof (6.3.29) where he mentions that construction has started on the 299MW biomass plant, and refers to the S36 Electricity Act 1989 consent (Appendix P1.2.5). In order to be used for

anything other than the consented development, variations and additional licences and permissions will be required. Menter Môn puts Orthios to strict proof for any detailed evidence on the current state of those submissions.

- 6.10 Mr Jesson's conclusion (para 8.4) states that giving up the land in parcel 49 for the Morlais grid connection will lead to a significant loss of earnings for Orthios when compared with the use of Parcel 49 for a planned Battery Energy Storage System (BESS) project. This conclusion is incorrect. There would only be a loss of earnings if the battery were unable to be built at all, but it can be built in an alternative location on site – there is no loss of earnings caused by re-siting the facility in this manner.
- 6.11 The Orthios BESS like any battery storage system could be located anywhere on the entire 213 acre site. Mr Levasseur (5.9.2) reminds us of this ability to relocate batteries.
- 6.12 I draw attention to MDZ/P8 section 5 'the need for the project' where the successful delivery of the Morlais project is in the public interest and brings significant benefits to Wales and the UK, helps meet government aspirations on Renewable energy and provides local ownership and a platform for worldwide participation. This I suggest is far more important than the alleged requirement to relocate a 'proposed' 100MW battery to any other part of the vast 213 acre site.
- 6.13 Mr Levasseur's evidence regarding his concerns over the control of the substation (Switchyard) (paras 6.3.2 & 6.3.8) are totally unfounded having regard to NG Safety Rules 'policy, philosophy and principles', a version of which is used throughout the Electricity Industry. Orthios should be applying the same policy, philosophy and principles therefore the same safeguards apply. There is no requirement for Menter Môn to 'control' the Orthios substation. Control of HV apparatus is very clearly defined in the safe systems of work that each operator must have under the Electricity at Work Regulations 1989/635 and NG Safety Rules and Guidance (Fifth Edition) and National Safety Instructions (NSI's) or approved equivalent safe system of work. Detail of system ownership and operational control boundaries are formally recorded down to component detail. Connection documentation lists for example who owns the bolts on the bolted connection on a busbar dropper on a connection. Indeed, without an operating agreement it would be in breach of the any HV safety rules where ownership boundaries have to be clearly identified and suitable cross boundary procedures put in place. If a shared substation is constructed using GIS the footprint would be small and physical segregation of individual owners apparatus would be straight forward to provide if required. All apparatus would be uniquely identified to NG standard. Access would only be allowed by duly authorised persons

under NG safety rules or approved equivalent. The substation or switchyard owned and operated by Orthios would be theirs to control. The capacity available to them would be based on their current contract with NG. Likewise with Menter Môn's contracted capacity. Any requirement to inter-trip would be managed by NG. The two substations would run independently even though they may be installed in a suite of panels within the same room. NG would control any reductions or disconnections in line with contracts. Electrical protection must be installed and maintained as part of any HV installation to protect the host apparatus and other connected parties apparatus from maloperation or fault conditions on connected circuits. Maintenance responsibilities for lighting, HVAC and other shared equipment would be the subject of operator agreements. Fig 5. Typical GIS installation.



Figure 5 Typical GIS installation

- 6.14 Mr Levasseur's proof (3.10 & 6) mentions ongoing operations. The Orthios 11kV distribution system is connected into the SPEN distribution network. Menter Môn has agreement with them regarding their infrastructure and any isolation or 'lift and shift' operations that the project may require on its network. As it enters site the 11kV network at some point transfers ownership to Orthios. Under the Construction (Design and Management) Regulations (CDM) 2015/51 and Health & Safety at Work Act 1974 (HSAWA), Orthios and Menter Môn would need to share information on existing activities and suitable arrangements would need to be made to

'avoid danger' in the vicinity of these cables and minor substations. The 132kV circuits are currently operational but not live, there is no feed from the 132kV circuits to the 11kV network. The 132kV control room monitoring facility is outside of Menter Mòn's scope. There is no impact on the jetty or Orthios' other operations, the jetty being some distance away although fed power from the local 11kV Orthios distribution network. I also understand that this 132kV substation is the only long spur connected directly to NG at 132kV however it is not the only 132kV circuit owned by NG, power stations connected to NG at 275 or 400kV normally have 132kV NG owned circuits within the substation. Pembroke Combined Cycle Gas Turbine power station has such an arrangement for example. NG substations are normally associated with operational or disused power stations, owned by power companies also subject to OFGEM regulatory control.

- 6.15 It is not the intention of Menter Mòn to endanger persons or disturb supplies to existing activities. Menter Mòn will be regulated by the HSAWA, CDM, Electricity at Work (EAW) and Electrical Safety Quality & Continuity (ESQC) regulations 2002/2665 throughout its activities. These regulations place duties on organisations to share information with others such as site occupiers and come up with safe systems of work. It is Menter Mòn's intention to minimise disruption to ongoing work. New 11kV cables are relatively small and low cost and can easily be rerouted if required, only requiring short power outages, or reconfiguration of supplies with minimum loss of power. Mr Levasseur (6.2.6) mentions installing 11kV cables across parcel 49 from a possible new SPEN substation. These cables could easily be routed around parcel 49.
- 6.16 Mr Levasseur (6.2.8) has concerns over the use of the road by Menter Mòn. The road defined in parcel 51 is solely for access including emergency access between the A5 and the proposed works. There is no requirement to stop up the road for any works and access will be maintained at all times.
- 6.17 Mr Levasseur (6.2.10) also has concerns about the Alpoco limited site access. Menter Mòn and Alpoco have a side agreement to cover this aspect. This covers the road in parcel 51 between the A5 and their undertaking.
- 6.18 Mr Levasseur (6.2.13) is concerned about working arrangements. Menter Mòn must comply with the , HSAWA, CDM and ESQC regulations along with all other relevant regulations. Duties placed on operators under these regulations include the sharing of information on each other's undertakings and the creation and implementation of safe systems of work.
- 6.19 Mr Levasseur (3.11) talks about the 132kV substation being fundamental to delivering Orthios' plans. As most of the existing substation has been

demolished Menter Môn can see no reason why a redeveloped 132kV substation cannot suit both parties, and why it cannot be relocated to better suit both Orthios and Menter Môn. It would be possible to share a new NG 132kV busbar in parcel 49, the orientation could be changed to better suit Orthios' connection requirements. Sharing an asset with NG could have financial benefits for both Orthios and Menter Môn as significant costs could be socialised, new equipment would be indoor GIS, due to proximity to the coast and would give greater reliability and a much smaller footprint and it would be easier to control access.

7. **Summary**

7.1 **Background.**

- 7.1.1 This document provides a combined rebuttal to the Proof of Evidence supplied by Lewis Mr Levasseur Chief Operating Officer of Orthios, and the Proof of Evidence supplied by Tim Mr Jesson of EPNC an electrical contractor engaged by Orthios.
- 7.1.2 In order to deliver the Morlais tidal energy project and bring a new industry and prospects to North Wales, Menter Môn, the project owner needs a 132kV grid connection physically connected in 2023 and ready for export by 2028 but with flexibility to bring the export date closer to 2023.
- 7.1.3 The Orthios group of companies purchased a 213 acre site from Anglesey Aluminium Corporation in 2016. The site contains a NG substation capable of fulfilling the electrical export capacity needs of both Orthios and Menter Môn as confirmed by Orthios on 31st July 2018. The site has consent under s36 of the Electricity Act 1989 for an 'up to' 299MW biomass plant. Orthios themselves recognise that this is unlikely to be built. Orthios had not raised concerns before 2nd September 2020 about the ability to co-exist with the Morlais project. Indeed Orthios stated 240MW of additional connectivity would not affect them.

7.2 **Morlais engagement with Orthios.**

- 7.2.1 Menter Môn wanted to price an option to connect to NG through Orthios. This was to be one of several options that could be priced, reviewed and the best option chosen. This is common practice on power projects. Any costs provided by regulated companies such as SPEN and NG are formulaic and they are heavily regulated on charging methodology. That is not the case with Orthios.

- 7.2.2 Four key individuals: Gerallt Lewellyn Jones, myself, Ian Cook and Edmund Bailey, have been in regular communication throughout Menter Môn's engagement with Orthios. Between the four of us were empowered to deliver a solution both technically and commercially.
- 7.2.3 Mr Levasseur refers to the amount of technical information supplied to Orthios as being insufficient to make a connection offer. Menter Môn has been in negotiation to access this 132kV substation either via Orthios infrastructure or direct to NG since 2016. Within that time Menter Môn has received connection offers from Scottish Power and NG. These offers took around 120 days each to secure including the 90 day maximum turn around period regulated by Ofgem. These offers were secured using the technical data available to Menter Môn at the time. Both offers were received during Q3 2020.
- 7.2.4 Orthios suggests that Menter Môn did not engage sufficiently with them. I have records of over 3000 emails to and from Orthios. Menter Môn does not accept Mr Levasseur's account of the communications between the two organisations. It must be made clear that all communication between Orthios and Menter Môn from 20/09/19 is marked 'without prejudice' and therefore I do not disclose the detail of that engagement. Mr Levasseur himself directed Menter Môn to make all communications through the company lawyer on 20th September 2019 following his postponement of a planned technical meeting brought about by receipt of TWAO communications. All affected landowners were told about the Menter Môn order submission and most understood and continued private treaty negotiations without detriment.
- 7.2.5 The reason I believe agreement has not been reached on a private treaty basis to date is because Orthios' intention from commencement of our negotiations in 2016 had always been about trying to agree key financial terms and financial benefits to Orthios before consideration of both the remaining commercial terms that make up an agreement, and the technical solution.. Implementation of a technical solution was clearly not going to happen until the principles had been agreed. This was taken by Menter Môn to mean the agreement of Heads of Terms. Menter Môn has been trying to reach agreement on Heads of Terms since they were originally developed and has been chasing Orthios for a substantive reply to a without prejudice and subject to contract offer made on 22nd April 2020 without success.
- 7.2.6 In September 2020 Orthios reopened technical discussions and these meetings appear to be productive and show a very recent and public change of stance by Orthios. Orthios and Menter Môn signed a new

Memorandum of Understanding and Non-Disclosure Agreement in order to facilitate a tri-partite meeting with NG. This meeting is key to getting agreement with NG to share substation assets and could be beneficial to both parties if NG agree to provide a shared substation at some mutually convenient location within parcel 49. The action to set up this meeting was originally with Orthios but transferred to Menter Môn as the action was not progressing. Menter Môn had signed a Memorandum of Understanding (MoU) previously in March 2017.

- 7.2.7 Mr Levasseur implies that the pending inquiry has brought the flurry of activity, whilst this may be the case, it may also be due to the publication of the fact that Menter Môn now has a NG connection offer, or that Orthios in July 2020 had signed up new funders and this itself may have led to a review of projects and commitments on site.
- 7.2.8 Menter Môn requested access to Orthios site to undertake Ecological surveys on the Orthios site as this was the last area of the whole route to be surveyed. This work had to be done to complete the Environmental study work otherwise the project would be delayed. Orthios responded by email that no access to site would be granted until the deal was signed off. The following is the text from the email response on the same day: *'As per previous emails at the moment we have no agreement in place with Morlais to progress the project and until this is agreed and signed off no access to the site will be granted. We are waiting on Morlais to come back with an offer currently but if it means delays until next year so be it. Regards Sean.'* This in my view illustrated the way that Orthios had been dealing with Menter Môn all along, pushing for a commercial settlement, not interested in the technical side.

7.3 **Orthios understanding of Morlais project.**

- 7.3.1 Orthios demonstrates a basic understanding of the Morlais requirement for a connection. I do not believe however that Orthios understands Menter Môn's altruistic drivers, delivering infrastructure for developers of a new industry to use and share the benefits of.
- 7.3.2 The Morlais project has never been done before and because of that it is very difficult to fix all the technical parameters at this stage.
- 7.3.3 Although Orthios recognises that the Morlais project is significantly publicly funded, Orthios does not appear to appreciate the level of diligence Menter Môn must place on any financial transactions when not dealing with a regulated body, and the additional safeguards that it requires. This is very different to a privately owned and privately funded

company. Orthios not being a regulated body and not subject to any regulation at all introduces a whole series of questions to be answered. This requirement upon Menter Môn to provide comfort to the project's funders is not new to Orthios.

7.4 Orthios proposals for accommodating Menter Môn.

- 7.4.1 Orthios has very recently, in September 2020, tabled two potential connection options and a buried services drawing that were not available to Menter Môn in May 2019. Because of this recent action Mr Levasseur asserts that his team are driving the process. This is obviously not the case. Menter Môn were surprised by the sudden tabling of these options and that one option included a direct path to NG, this had never been recognised by Orthios as an option previously.
- 7.4.2 Orthios suggest that crossing the railway at 9m depth is not necessary, it could be shallower, this may be the case but a shallower crossing is outside the TWAO and would need additional permissions from NR and that permission would be contingent on test borehole results.

7.5 Orthios plans and impact of the Morlais project.

- 7.5.1 The reason why Menter Môn has sited a substation in parcel 49 is because in May 2019 Orthios told Menter Môn that it could not accommodate an increase in size of the originally proposed connection area, an area the size of a 'tennis-court', within the existing substation. Orthios were prepared to accommodate around an acre of plant in parcel 49 for an annual rent of £75,000/acre/year. Discussions were proceeding with Orthios on that basis. This area increased over time as part of the normal project design iterations and those increases in area were communicated to Orthios in a timely manner and incorporated in discussions.
- 7.5.2 Menter Môn did look at siting the substation in the wooded area at the eastern end of the site but this was dropped as permission to fell 200-300 trees would be unlikely to be granted when a fit for purpose brownfield site exists immediately to the west – parcel 49.
- 7.5.3 The cable route to the substation in parcel 49 was planned once the substation location had been ascertained. Giving a low risk drilling solution perpendicular to the railway as it passed beneath.
- 7.5.4 The size of the substation was determined by B&V consulting engineers based on a 'reasonably envisaged worst case scenario'. The final size of the substation based on a "without Orthios co-operation" assumption

was reduced following challenge and discussion internally with B&V to 1.5 acres. This was considered the minimum size as it needed to be self-contained and fenced to ESQC standards, and contain access roads for maintenance and heavy lifting and allow sufficient space for project expansion to the full 240MW over time. With co-operation from Orthios a smaller footprint for the TWAO may have been possible, but there was no co-operation at that time. Orthios' co-operation began in September 2020 and, as yet no deal has been possible.

7.5.5 Orthios have grand plans for the 213 acre site. A 299MW biomass plant, small scale biomass, wind, solar, a gas peaking plant, 100MW battery, aquaculture, fertiliser production, housing for victims of 'modern slavery', tyre burning, Non-PET plastics reprocessing, bio-oil production, prawn farming and a logistics centre. None of these projects have yet materialised. The Morlais project will affect around 3 acres and once built would hope to return around half of that land to the original owner, retaining around 1% of the site. Part of parcel 49 contains the NG 132kV cable easement and as such cannot be developed in any case.

7.5.6 Menter Môn would always want to minimise any effect on the continued development of the Orthios site.

8. Conclusion

8.1 I believe that the success of Menter Môn's Morlais project is in the public interest. Securing a grid connection at 132kV future proofs the project by allowing for expansion to the full rated capacity of the tidal energy zone over time and enables developers from across the world to install their devices in North Wales in the Morlais Demonstration Zone with the ability to raise project finance as there is a known and clear pathway to significant grid export capacity. The project needs the grid capacity and security that NG can provide. That level of regulatory comfort is understood worldwide.

8.2 I also believe that although I have spent a lot of time and effort in this document addressing the adequacy or otherwise of the communication between Orthios and Menter Môn around the technical issues surrounding a grid connection, the real issue is of course the land requirement to make that grid connection and site the apparatus required for the project. That land requirement is addressed in the TWAO.

8.3 NG have made a grid connection offer to Menter Môn which has been accepted. There is no doubt that the offer can be fulfilled by NG. The NG

offer can be delivered wholly within parcel 49. That is why parcel 49 was defined as it was covering the existing NG easement and cable tails

- 8.4 Parcel 49 became the location for the Menter Môn substation following discussion with Orthios in May 2019. Menter Môn had looked elsewhere on the Orthios site but the brownfield location bounded by the existing substation and the NG 132kV cable easement and with existing road access seemed to be the most sensible place to use.
- 8.5 It may be possible for Orthios and Menter Môn to benefit from a shared substation where the incoming cables are owned by NG. Discussions are ongoing on that basis, but are by no means concluded.
- 8.6 I believe that the level of technical detail Orthios are requesting from Menter Môn is not necessary at this stage and certainly not necessary to reach a commercial agreement. This level of technical detail will however, be required at the next stage of the project, should Menter Môn wish to apply for and take up an offer of a 132kV electrical connection through Orthios' own infrastructure.
- 8.7 It must be remembered that Orthios so far have not delivered on any project they have publicised, except perhaps the berthing of cruise ships from time to time. Whilst it is not impossible to reach a deal with Orthios, Menter Môn needs to contract with something physical or be suitably protected in case of non-delivery by Orthios. It is clear that Orthios do not understand how they may be viewed by a public sector funding body such as Welsh European Funding Office (WEFO) the principal funder for Menter Môn. Had Orthios been regulated by OFGEM the level of contractual protection required would have been much less.
- 8.8 The land requirements at this stage can be based on the 'reasonably envisaged worst case scenario' substation design provided by B&V. The land parcels 46-51 have to allow the substation to be micro-sited within the allowable area based on ground risk and engineering and technical factors. The parcels must allow cable connectivity to the final substation location.
- 8.9 This stand-alone substation has to include roads for access and maintenance, fencing to the appropriate standards, messing and toilet facilities, storage areas, drainage, earthing, car parking, connections to services and all the electrical apparatus that may be required throughout the life of the project. Being an entirely self-contained unit.
- 8.10 Menter Môn has received grid offers from SPEN and from NG. These offers were both made in Q3 2020. Clearly, they were provided with sufficient information from Menter Môn to make those offers. That information was

very little more that was provided to Orthios via the ENA application form in 2018. The SPEN offer cannot be increased above 18MW. The project must have the additional and further expandable capacity offered by a connection to the NG transmission system.

- 8.11 The parties are advancing discussions and are getting closer to an agreed position but there are a number of variables, conditions, constraints, and third party consents which must be resolved. However, any agreement would therefore need to be a conditional agreement which by its very nature gives rise to a delivery risk accordingly, the Order powers are still needed and it would fundamentally prejudice the deliverability of project were the CPO powers not to be granted.
- 8.12 The powers and land in the order guarantee a deliverable solution and the proposed land take is appropriate and proportionate with that in mind. On completion of the construction and commissioning of the substation any land not required by the project will be handed back to the landowner. Please see article 28 of the draft order. This gives Menter Môn the power to use land temporary for construction, access, mitigation and temporary works purposes. Menter Môn would then need to give any land no longer required, back within 1 year of completing the relevant works or otherwise use the CPO powers to acquire the land permanently. Article 28(4) specifies the requirement to reinstate the land to the reasonable satisfaction of the owner before handing it back. Menter Môn is also seeking a restrictive covenant. Menter Môn can therefore state that it would seek to exercise the TWAO powers (or a combination of them) in a proportionate manner. Where practicable it will employ temporary possession powers for the land that is not required permanently after construction, which would then be reinstated and handed back in accordance with the controls in the TWAO. With regards to land that is only required for underground cables, Menter Môn would seek to limit permanent acquisition to new rights and a restrictive covenant, akin to an easement.

Appendix 1 Proposed terms

Proposed terms to connect to Orthios Groups grid connection

From: Ian Hodgkinson <ian.hodgkinson@hodgkinsonlegal.com>
Date: 7 August 2018 at 22:49
Subject: Morlais - proposed terms to connect to Orthios Groups grid connection Ref Hodgkinson Legal:MA:10110/017
To: Gerallt Llewelyn Jones <gerallt@mentermon.com>, Andy Billcliff <andy@billcliff.com>
Cc: Mike Masters <mike.masters@orthios.com>, Sean McCormick <sean@orthios.com>, "Steven.Haswell@orthios.com" <steven.haswell@orthios.com>, "Lewis.Levasseur@orthios.com" <lewis.levasseur@orthios.com>, Philip McCormick <philip.mccormick@orthios.com>

Dear Gerallt and Andy

Sean has asked me to send you the below draft proposal. The thinking behind it is to allow the project to proceed with a payment of less than £6m if the initial connection is for a relatively small amount of MWe but to achieve a fair balance (by reference to the previously discussed possible terms of an option fee of only £250k but a payment on exercise of the option of £6m) by increasing the option fee to £500k.

The below proposal is subject to any comments that the regulatory experts may have, but we wanted to get the basic shape of the proposed commercial deal to you, which we can then shape to fit any applicable regulatory constraints once the key commercial terms are agreed

As always, we remain open to further discussions and look forward to hearing from you

Kind regards

Ian

Morlais - proposed terms to connect to Orthios Group's grid connection on the Orthios Eco Park, Holyhead.

1. Orthios and Morlais will enter into a connection agreement to enable a phased development programme of Morlais tidal power generation connecting at the Orthios Eco Parks power station.

2. Morlais intend to generate electricity via an offshore tidal array in 10MWe phasing via an easement on the Orthios Eco Park to a busbar at the Orthios substation.

3. Orthios will agree to an option for an easement from the agreed access point on the site to the busbar in the Orthios Substation. Shown A-B on an agreed plan.

Option high

4. The option fee will be £500,000 (plus vat if applicable) payable to Orthios Parks (Anglesey) Limited (OEPAL) for a 5 year option agreement for an easement to enable the laying of a cable across OEPAL's land for up to 240MWe of non-firm electrical connection in an agreed 10MWe multiple phasing.

5. The phasing of the 10MWe increments will be agreed between the parties in advance.

6. Morlais will cover all associated costs including the costs of laying the cable through the Orthios property and into the substation and connecting into the busbar.

Thought to be more?

7. Initially Morlais are targeting 60MWe of non-firm connection (irrespective of government subsidy) and Morlais will pay a one off easement fee on exercise of the option of £2m (plus vat if applicable) per 10MWe for the first 30MWe.

*£2m x 10m = £20m
£6m for 30m
£14m for 60m*

8. At the commencement of the fourth 10MWe and for every 10MWe thereafter, Morlais will pay a one off easement payment to OEPAL of £1 million (plus vat if applicable) for each 10MWe across the easement.

180

9. Morlais and Orthios will work together in support of the tidal generation project and intend to use some of the power at the Orthios Eco Park.

10. Orthios will work to develop a series of c.10MWe battery storage units on the site to accumulate energy storage from the tidal array to be used on site or for sale to the market.

*U Compare to Kington = 60,000 per annum to 8MW
day £600,000 for 8MW
600,000 x 4 = 2.4m
= 12.4m
or 4.8m
for 64m*

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Appendix 2 ENA 7/3/18

ENA Orthios Penrhos Grid Application

Connection of generation plant to distribution networks

It is possible to connect almost any generation plant to the distribution network and in order for the connection to meet the requirements of a new customer and the existing customers it is important to ensure the new connection is properly designed. In order to do this there is a need for information to be exchanged between you as the generator and the local Distribution Network Operator (DNO). The Data Registration Code of the Distribution Code sets out the obligations on the generator and DNO to exchange data as part of the design process and lists the data items that may need to be exchanged. The purpose of this application form is to simplify and clarify this data exchange process.

If the generation plant that you are applying to connect is less than 16A per phase, you will probably be able to connect it using the far simpler connection process for generation plant complying with Engineering Recommendation G83/1. This Application Form is for all other generators and is in two parts.

Part 1

This part collates the initial data that the DNO requires to assess the connection application and in some cases this information may be sufficient for the DNO to complete the connection design and make a connection offer. In this case there will be no need for you to provide additional information. However, for some generating plant connection applications, depending on the size of the generating plant and the proposed point of connection, this initial information may not be sufficient for the DNO to complete the connection design and make a connection offer. The DNO will advise you if you need to provide further information so that the connection design can be completed when Part 1 of the Application Form has been assessed by the DNO.

Part 2

If the DNO requires information in addition to that provided on Part 1 of the application form, the DNO will request that Part 2 of the application form is completed. Generally you will need to complete all of Part 2 of the application form appropriate to the type of generator although the DNO may indicate if not all of this information is required.

In some cases the DNO will require further information which is not included in either part of the application form to complete the connection design. The DNO will advise you if such information is required.

There is the option for you to complete Part 1 and 2 of the application form and return both of these as part of the initial data exchange. This will speed up the DNO design process as there is unlikely to be a need for additional information to be provided. However this may result in you providing information that is not required in order for the DNO to design the connection.

The application forms can be downloaded from the ENA website and when completed they should be sent to your local DNO. Their contact details can be found by following the link below:

<http://2010.energynetworks.org/ena-members/>

If you are unsure of who your local DNO is, please follow the link below to do a postcode search.

<http://2010.energynetworks.org/whos-my-supplier/>

Guidance on completing the application form

The following section provides an overview of the information required to complete each part of the application form.

Part 1

This part of the application form is in two sections. Part 1a enables you to provide:

- Contact details for you and your consultant (if you have one)
- The location of your generation plant, or power station. The term power station is used in the application form so that it is consistent with the terms used in the Distribution Code
- Details of the import and export requirements for your site. It is important to make sure that you consider the import requirements for any load that you have on your site in addition to the export from the generation plant
- Information about the fault level contribution from the generation plant at the site boundary, although you do not need to provide this information here if more detailed fault level information is provided in Part 1b of the application form.

Part 1b of the application form enables you to provide more detailed information on each of the generators you are applying to connect. Slightly more information is required if the connection is likely to be at high voltage rather than at low voltage. If the generation plant you are looking to connect is larger than 150kW you should assume that your site may be connected at high voltage and provide this additional information.

If there are any items on the application form that you are unsure about, it would be worth contacting the company you are arranging to buy your generation plant from as they should be able to provide some of the more technical information. If you are unable to provide some of the technical details for example if you have not yet decided who to buy your generation plant from, you can provide estimated data provided that you clearly indicate on the application form which data is estimated. You will need to confirm this data as soon as possible and always before the generator is commissioned.

Part 2

This part of the application form enables you to provide detailed technical information about the generation plant you are applying to connect. It is split into five sections. The first four sections relate to particular types of generating plant designs. You only need to complete the section relating to the type of generating plant that you are applying to connect i.e. Part 2a, 2b, 2c or 2d. Use one form for each type of generating plant. The fifth section enables you to provide information about any transformers that you plan to use.

As when completing Part 1, if you are unable to provide some of the technical details, if for example you have not yet decided who to buy your generation plant from, you can provide estimated data provided that you clearly indicate on the application form which data is estimated. You will need to confirm this data as soon as possible and always before the generator is commissioned.

PART 1a

Applicant's Details

Company Name :	Menter Mon Cyf
Company registered No.	3160233
Postal Address :	Neuadd y Def / Town Hall
	Sgwar Bulkeley / Bulkeley Square
	Llangefni
	LL777LR
Contact Name :	Andy Billcliff
Email Address :	andy@billcliff.com
Telephone No.	07940 488997
Fax No.	NA

Consultant's Details (if applicable)

Consultants Name :	ICCL
Postal Address:	11, Ffordd Crwys
	Bangor
	LL57 2NT
Contact Name :	Ian Cook
Email Address :	iancook@iee.org
Telephone No.	07915 607165
Fax No.	

Power station location and operation

Power station name :	Morlais Tidal Project
Postal Address or site boundary plan (1:500) :	Offshore, (West Anglesey Demonstration Zone)
Details of any existing Connection Agreements :	None
Target date for provision of connection / commissioning of power station :	2019

PART 1a

Connection Point (OS grid ref or description) :	SH 2685 8070
It is intended that at Orthios double busbar substation the Morlais owned primary equipment is an incoming cable, a line earth switch and disconnector, a circuit breaker and two busbar selector disconnectors with VTs as required (CTs in the circuit breaker turrets).	
Preferred connection point voltage :	132, 000
Single line diagram of any on-site existing or proposed electrical plant or, where available, operation diagrams	132 kV double busbar substation where the two busbars are owned by Orthios.
What security is required for the connection? (see Note A1) :	Unfirm Single circuit connection
No. of generation sets in power station :	Up to 240
Are all generation sets of same design/rating?	Y
Will power station operate in island mode?	Y
Will generation plant supply electricity to on-site premises?	Yes, to the Morlais shore site substation

Power station standby import requirements (see Note A2)

Maximum active power import	49	MW
Maximum reactive power import (lagging)	16.1	MVAr
Maximum reactive power export (leading)	16.1	MVAr

Power station top-up import requirements (see Note A3)

Maximum active power import	49	MW
Maximum reactive power import (lagging)	16.1	MVAr
Maximum reactive power export (leading)	16.1	MVAr

-----PART 1a -----

Power station export requirements (see Note A4):

Total power station output at registered capacity (net of auxiliary loads)

Registered capacity (maximum active power export)	240	MW
Maximum reactive power export (lagging)	78.9	MVar
Maximum reactive power import (leading)	78.9	MVar

Power station maximum fault current contribution (see Note A5)

Peak asymmetrical short circuit current at 10ms (i_p) for a 3 ϕ short circuit fault at the connection point	Max nominally 9.45 kA
RMS value of the initial symmetrical short circuit current (I_k) for a 3 ϕ short circuit fault at the connection point	Max nominally 7.87 kA
RMS value of the symmetrical short circuit current at 100ms ($I_{k(100)}$) for a 3 ϕ short circuit fault at the connection point	Max nominally 7.87 kA

Power station interface arrangements (see Note A6)

Means of connection, disconnection and synchronising between the DNO and the Customer	<p>Energisation of Morlais circuit only to be from Orthios by Dead Line Circuit Breaker Closing to energise the Morlais circuit. This results in the Orthios line only being energised when it is dead. This means that only the correctly set 'Check Sync' feature is required to ensure this is complied with.</p> <p>Other than for automatic protection tripping, the circuit breaker on the Morlais circuit will only be opened when it is carrying nominally zero MW and zero MVar.</p> <p>Note, the technology is still under development, as a result the fault level data and clearance times may change.</p>
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Note A1 – The DNO will assume a single circuit connection to the power station is required unless otherwise stated. Options include:

- single circuit connection
- manually switched alternative connection
- automatic switched alternative connection
- firm connection (secure for first circuit outage)

Note A2 – This section relates to operating conditions when the power station is importing active power, typically when it is not generating. The maximum active power import requirement and the associated maximum reactive power import and/or export requirements should be stated

Note A3 - This section relates to operating conditions when the power station is importing active power, typically when it is generating, but is not generating sufficient power to cater for all the on-site demand

Note A4 – This section relates to operating conditions when the power station is exporting active power. The active power export and associated maximum reactive power export and/or import should be stated for operation at registered capacity.

Note A5 - See Engineering Recommendation G74, ETR 120 and IEC 60909 for guidance on fault current data. Additionally, fault current contribution data may be provided in the form of detailed graphs, waveforms and/or tables. This information need not be provided where detailed fault level contribution / impedance data is provided for each Generation Set in Part 1b or Part 2 of this application form

Note A6 - The interface arrangements need to be agreed and implemented between the User and DNO before energisation. DPC7.3.1 of the Distribution Code refers.

PART 1b

Generation set general data

Number of generation sets to which this data applies:	240
Type of generation set (please tick box)	
Synchronous generator	<input type="checkbox"/>
Fixed speed induction generator	<input type="checkbox"/>
Double fed induction generator	<input type="checkbox"/>
Series converter / inverter connected generator	<input checked="" type="checkbox"/>
Other (provide details)	<input type="checkbox"/>
Type of prime mover:	Tidal
Operating regime (see Note B1). Please tick box	
Intermittent	<input checked="" type="checkbox"/>
Non-intermittent	<input type="checkbox"/>

Generation set Active Power capability

Rated terminal voltage (generator)	Likely per generator one of 400/690/1500 V
Rated terminal current (generator)	Likely per generator up to 1,443 A
Generation set registered capacity (net)	Likely per generator for 240 off to be up to 1 MW
Generation set apparent power rating (to be used as base for generator parameters)	Likely per generator 1.053 MVA
Generation set rated active power (gross at generator terminals)	Likely per generator to be 1 MW

Generation set Reactive Power capability at rated Active Power (gross, at generator terminals)

Maximum reactive power export (lagging). For HV connected generators only	Likely per generator to be 0.33 MVar
Maximum reactive power import (leading). For HV connected generators only	Likely per generator to be 0.33 MVar

PART 1b

Generation set maximum fault current contribution (see Note B2)

Peak asymmetrical short circuit current at 10ms (i_p) for a 3 ϕ short circuit fault at the generation set terminals (HV connected generators only)	kA
RMS value of the initial symmetrical short circuit current (I_k) for a 3 ϕ short circuit fault at the generation set terminals (HV connected only)	kA
RMS value of the symmetrical short circuit current at 100ms ($I_{k(100)}$) for a 3 ϕ short circuit fault at the generation set terminals	kA

Note B1 – Intermittent and Non-intermittent Generation is defined in Engineering Recommendation P2/6 as follows:
Intermittent Generation: Generation plant where the energy source for the prime mover can not be made available on demand.
Non-intermittent Generation: Generation plant where the energy source for the prime mover can be made available on demand.

Note B2 - See Engineering Recommendation G74, ETR 120 and IEC 60909 for guidance on fault current data. Additionally, fault current contribution data may be provided in the form of detailed graphs, waveforms and/or tables.

----- PART 2a -----

Generation set model data: Synchronous generation sets (or equivalent synchronous generation sets)

Generation set identifier:	
Type of generation set (wound rotor, salient pole or asynchronous equivalent). See Note C1	
Positive sequence (armature) resistance (HV connected generators only)	per unit
Inertia constant (generation set and prime mover). (HV connected generators only)	MWsec/MVA
<u>Direct axis reactances:</u>	
Sub-transient (X''_d) – unsaturated / saturated	per unit
Transient (X'_d) – unsaturated / saturated (HV connected generators only)	per unit
Synchronous (X_d) – unsaturated / saturated (HV connected generators only)	per unit
<u>Time constants:</u>	
State whether time constants are open or short circuit (HV connected only)	
D-axis sub-transient – unsaturated / saturated (HV connected generators only)	s
D-axis transient – unsaturated / saturated (HV connected generators only)	s

Note C1 – Asynchronous generators may be represented by an equivalent synchronous generator data set
--

-----PART 2b-----

Generation set model data: Fixed speed induction generation sets (see Notes D1 and D2)

Magnetising reactance (HV connected generators only)	per unit
Stator resistance (HV connected generators only)	per unit
Stator reactance (HV connected generators only)	per unit
Inner cage or running rotor resistance (HV connected generators only)	per unit
Outer cage or standstill rotor reactance (HV connected generators only)	per unit
State whether data is inner-outer cage or running-standstill (HV generators connected only)	
Slip at rated output (HV connected generators only)	%
Total effective inertia constant (generator and prime mover). HV connected generators only	MWsec/MVA
Shunt capacitance connected in parallel at % of rated output:	
Starting	kVAr or graph
20%	kVAr or graph
40%	kVAr or graph
60%	kVAr or graph
80%	kVAr or graph
100%	kVAr or graph
Active power and reactive power import during start-up	MW-MVAr / time graphs
Active power and reactive power import during switching operations e.g. '6 to 4 pole' change-over (HV connected generators only)	MW-MVAr / time graphs
Under voltage protection setting & time delay	puV, s

Note D1 – Asynchronous generators may be represented by an equivalent synchronous data set

Note D2 – You will need to provide the above data for each asynchronous generation set based on the number of pole sets (i.e. two data sets for dual speed 4/6 pole machines)

----- PART 2c -----

**Generation set model data: Doubly fed induction
generation sets**

Generation set maximum fault current contribution data (see Note E1)	
Magnetising reactance (HV connected generators only)	per unit
Stator resistance (HV connected generators only)	per unit
Stator reactance (HV connected generators only)	per unit
Running rotor resistance (HV connected generators only)	per unit
Running rotor reactance (HV connected generators only)	per unit
Standstill rotor resistance (HV connected generators only)	per unit
Standstill rotor reactance (HV connected generators only)	per unit
State whether data is inner-outer cage or running-standstill (HV generators connected only)	
Generator rotor speed range – Minimum to rated speed (HV connected generators only)	rpm
Total effective inertia constant at rated speed (generator and prime mover). HV connected generators only	MWsec/MVA

Note E1 – Fault current contribution data should be provided in Part 1 of this application form



-----PART 2d-----

**Generation set model data: Series converter / inverter
connected generation sets**

Generation set maximum fault current contribution data (see Note E1)	
Generator rotor speed range (HV connected generators only)	
6 to 30 rpm	
Total effective inertia constant (generator and prime mover). HV connected generators only	N/A, but contracts for Ancillary Services including synthetic inertia are to be considered and likely. MWsec/MVA

Note E1 – Fault current contribution data should be provided in Part 1 of this application form

Transformer information

Method of earthing of high-voltage winding	Solid																				
Method of earthing of low-voltage winding	The delta winding of the step up transformers will not be earthed at the transformer. The 33 kV system will be earthed using a zig zag winding earthing transformer(s), the star point of the zigzag winding(s) will be earthed through a resistor to provide the correct earth fault level. The 33 kV terminals of the zig zag winding will be connected between the LV winding of the step up transformer and the transformer LV circuit breaker.																				
Generation Export growth Morlais to Orthios. Note, this programme may change once Morlais have further information from their developers.	<table border="1"> <thead> <tr> <th>Date</th><th>Export to Orthios Busbar, MW</th></tr> </thead> <tbody> <tr> <td>2021</td><td>5</td></tr> <tr> <td>2022</td><td>15</td></tr> <tr> <td>2023</td><td>25</td></tr> <tr> <td>2024</td><td>40</td></tr> <tr> <td>2025</td><td>80</td></tr> <tr> <td>2026</td><td>120</td></tr> <tr> <td>2027</td><td>150</td></tr> <tr> <td>2028</td><td>190</td></tr> <tr> <td>2029</td><td>240</td></tr> </tbody> </table>	Date	Export to Orthios Busbar, MW	2021	5	2022	15	2023	25	2024	40	2025	80	2026	120	2027	150	2028	190	2029	240
Date	Export to Orthios Busbar, MW																				
2021	5																				
2022	15																				
2023	25																				
2024	40																				
2025	80																				
2026	120																				
2027	150																				
2028	190																				
2029	240																				

Appendix 3 Tech Meeting Notes (8)
Morlais/Orthios Technical Meeting 8 Notes

Morlais/Orthios Technical Meeting 8

Teams Meeting – 23 October 2020. 13.00

Present:

Andy Billcliff (ADB)	Morlais
Ian Cook (IMC)	Morlais
Lewis Mr Levasseur (LL)	Orthios
Tim Mr Jesson (TJ)	Orthios

Apologies:

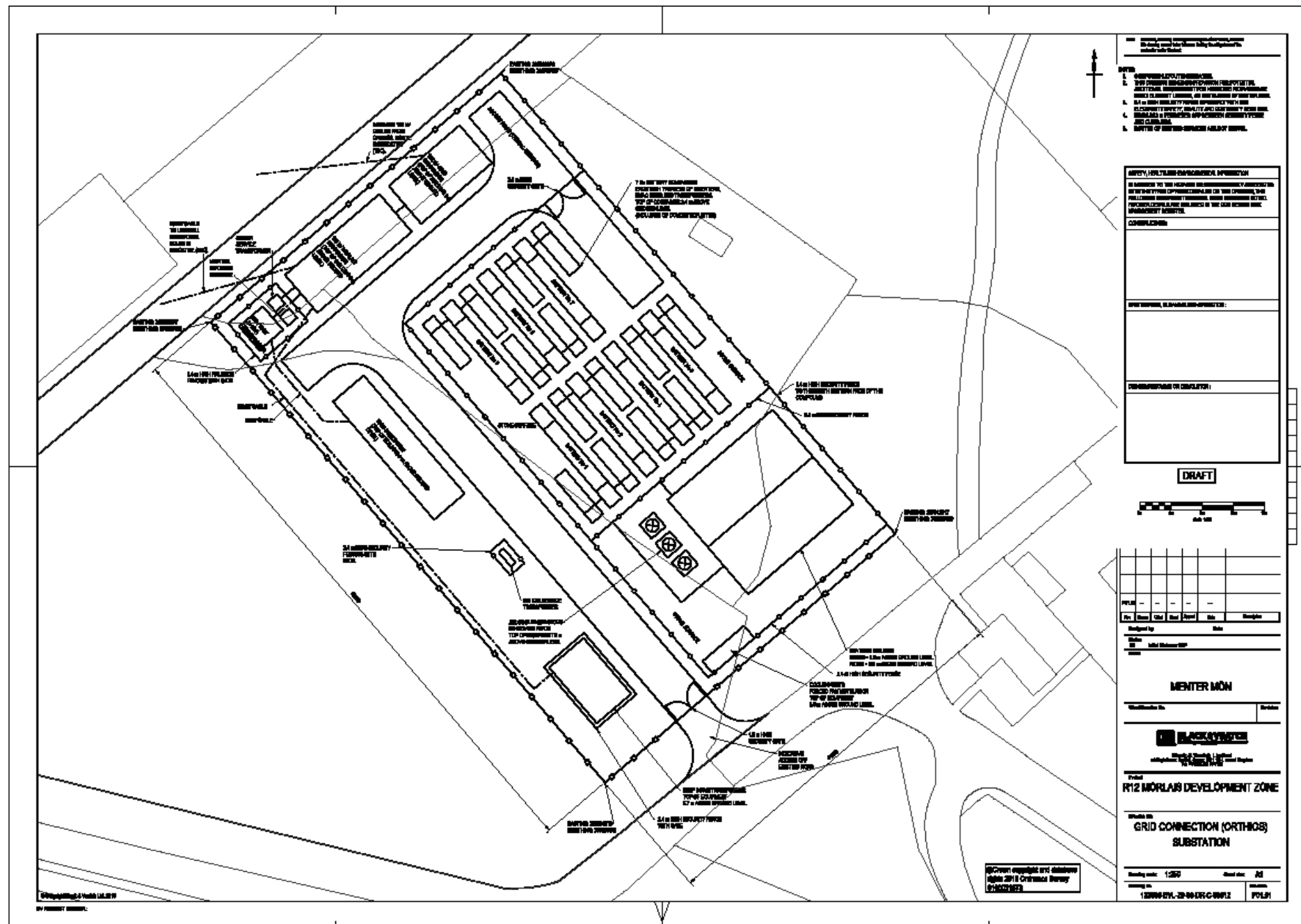
None

The draft file notes & actions from the meeting are below...

Note No.	Note	Action	Action Date
1	<p>1.1. IMC to send meeting 7 notes out.</p> <p>1.2. ADB had talked to Caulmert the meeting am to chase trial borehole drilling. Geraint from Caulmert is talking to Steve Mullin in Orthios. The trial boreholes have to be cleared with Network Rail before they can be drilled.</p> <p>1.3. LL sent Morlais NDA for comment 20/10/20 07.57, if content Morlais to sign and send back.</p> <p>1.4. The Morlais/Orthios MoU has been updated by Orthios and is now (sent 20/10/20 12.44) with Morlais for clearance and signing. Orthios Company details and Orthios people's names need adding.</p> <p>1.5. Drawings still to be sent, this to be done by the 30 October to Morlais of 132 kV cables in area 49 and potential site layouts for substation area. This to include GIS substation on two axes, 90 degrees from each other. Also to be included is where the cables go under the railway. Caulmert to be sent the drawings as soon as with Morlais.</p> <p>1.6. The 11kV Orthios owned cables are of the order 0.78/0.8 m deep.</p> <p>1.7. TJ noted that NG owning part or all of the 132 kV busbar may be acceptable. There may be a lowest cost solution that suits all involved. The equivalent of a COIN may be needed.</p> <p>1.8. TJ noted that whatever happens the 132 kV substation will be NG Standard compliant, with likely NG taking the construction risk</p> <p>1.9. Orthios still planning to set up NG three way (Orthios/NG/Morlais) meeting. Morlais welcomed this meeting and is very keen that it is held. The action to set the tripartite meeting up had transferred to Morlais on Wednesday the 21 October, Morlais had already contacted NG and set this moving. Suggested agreed Morlais/Orthios agenda had gone to NG. Orthios had just been told that Alex Curtis was now their NG contact, not Stephanie Wooton. Morlais surprised that the NG lands people had not been in touch with Orthios.</p> <p>1.10. Morlais want to own as little as possible of Plot 49.</p>	<p>IMC</p> <p>ADB</p> <p>ADB</p> <p>ADB LL</p> <p>TJ</p> <p>IMC</p>	<p>30/10/20</p>

2	<p>2.1 Costs need to be resolved between Orthios and Morlais in any commercial agreement developed. This is vital for Morlais, they need to know the monetary figures involved. The Commercial Agreement needs to move forward quickly, a weekly meeting is to be considered. Morlais view; a Commercial Agreement in place by the 1 December 2020 would be good. Any Agreement would have to be acceptable to Morlais solicitors Evershed. The Commercial Agreement latest update should have been sent to Morlais Wednesday the 21st October, but not sent. There is a view that the technical aspects can be made to work for both Orthios and Morlais, but clarity needed for any Commercial Agreement. In the last Commercial Agreement considered a number of months ago, Orthios had added four Clauses that made it totally unacceptable to Morlais, one of these was that Morlais paid Orthios wherever Morlais connected even if not to the Orthios 132 kV busbar, this was totally unacceptable to Morlais. Morlais have a view they will be able to reach a settlement in the Agreement with Orthios on engineering costs, but Easement costs may be a problem.</p> <p>2.2 Whatever happens, the option of Morlais connecting directly to NG at 132 kV must be maintained. Morlais have only Orthios and NG for potential connection at 132 kV. Morlais want to protect themselves against Orthios Distribution going into administration/liquidation. Orthios noted if this happened at present five companies would be affected.</p>	LL	
3	3.1. Orthios asked Morlais how important power price is? All Morlais do is convey power from their Clients to NG.		
4	4.1 Next on line meeting Friday 30 October 2020, 13.00 with the Commercial people involved. Send meeting request.	LL	

Appendix 4 132kV Substation Grid Connection (Orthios) Substation



Appendix 5 B&V Substation Key Points

Orthios Substation B&V Email

From: Jones, Andrew (AL) <jonesal@bv.com>

Sent: 10 November 2020 16:51

To: Andy Billcliff <andybillcliff@gmail.com>

Subject: Orthios Substation

Hi Andy,

See below for my recollections of the key milestones on the development of Orthios (or Penrhos, 132kV Grid Conneciton) Substation. Get in touch if you have queries.

1. **Email, Fri 10th May 2019, 16:58:** Draft layout of the substation was issued to the team (B&V email sent by Dan Matson at 16:58) which introduced the 6365m² (c. 1.5Ha) rectangular footprint. This is Drg No. 122938-BVL-Z0-00-DR-C-0008.P01-01-S0 which was also used in the Environment Statement. It is important to note that this layout was developed for consenting and considered the “reasonably envisaged worse case scenario” layout that allows for battery storage and STATCOM.
2. **Email, Sat 11th May 2019, 11:43:** In response, email from Andy Billcliff at 11:43 suggests that the footprint is c.0.5Ha larger than expected.
3. **Email: Tues 14th May 2019, 09:00:** Email from Tim Baker following discussions with James Orme. Email states that whilst the it may be possible to reduce/further optimise the footprint, this may limit Morlais’ future options for design/procurement – so could end up costing the project more money in the future if we choose to restrict the footprint now.
4. **Email: Tues 14th May 2019, 13:19:** Email from Tim Baker listing opportunities for reducing the area and the aspects that may conversely increase the area. Two summary points were identified by B&V:
 - a. Given the urgent timescale for the Environment Statement, and to pre-empt modelling work that had not yet been complete, it was proposed that an additional 450m² of area was added to the 6635m² to allow for possible Harmonic Filtration. This giving a total area of 6815m².
 - b. B&V happy to work with Morlais to investigate how the footprint area can be refined.
5. **Team Call:** With reference to the two points above, my understanding is that Menter Môn instructed B&V not to includes the extra 450m² of area for Harmonic Filtration and that no further work to refine the layout was agreed. I understand this is due to a change in layout being potentially troublesome to include in the Environment Statement that was well advanced.
6. **Environment Statement:** Drg No. 122938-BVL-Z0-00-DR-C-0008.P01-01-S0 as issued on 10th May 2019 (item 1 above) was communicated in the ES Chapter 4 (Issued October 2019).
7. **TWOA Updates 2019:** As part of a series of TWOA meetings at B&V’s Chester office during summer 2019, a number of minor amendments were made to the layout which included:
 - a. Entrance into the substation was moved from the western side to the eastern side of the substation. The internal access road layout was rearranged accordingly. The footprint area was slightly reduced from 6365m² to 6000m².

- b. A revised drawing (Drg No. 122938-BVL-Z0-00-DR-C-00012) was created and is attached. This was issued to the Project Team and WSP on 20th Aug 2019 and was used for the TWA application.

8. Technical Specifications Summer 2020:

- a. The solution provided in Drg No. 122938-BVL-Z0-00-DR-C-00012 was used as the basis for the Technical Specifications. On instruction of Menter Môn, the requirement for Battery Storage and STATCOM was removed – instead, sufficient room for future installation of this equipment in the future was provided.
- b. Logic used for deriving the Orthios Substation is tabulated below.

Parameter	Value
General	The footprint of the substation is to be 61.5m x 98m.
NG substation building	<p>The NG (NG) substation building is assumed to contain the following individual rooms:</p> <ul style="list-style-type: none"> • 132kV switchboard room, • Battery room, • Welfare facilities, • Control room/low voltage distribution, • Metering room. <p>It is assumed that the building will have an approx. footprint of 15m x 8m (or equivalent) area and will be maximum of c. 9m above ground level.</p> <p>All assumptions relating to the NG substation building are to be checked against NG guidelines.</p>
Morlais 132kV substation building	<p>The Morlais 132kV substation building is required to interface with the NG obtained supply.</p> <p>The building is assumed to contain the following individual rooms:</p> <ul style="list-style-type: none"> • 132kV switchboard room, • Battery room, • Welfare facilities, • Control room/low voltage distribution, • Metering room. <p>It is assumed that the building will have an approx. footprint of 20m x 8m (or equivalent) area and will be maximum of c. 9m above ground level.</p>
Morlais 33kV substation building	<p>The Morlais 33kV substation building will contain the following rooms:</p> <ul style="list-style-type: none"> • 33kV switchboard room including battery tripping unit, • Control room/low voltage distribution/metering room.

	<p>The main supply to the 33kV switchboard will come from the 33kV Substation at Parc Cybi. An alternative supply to the 33kV switchboard will come from the Morlais 132kV building (switchboard) via the 132/33kV transformer. The purpose of this connection is, in the event of loss of the 132kV grid connection, to allow small amounts of generation to be exported via this alternative connection.</p> <p>It is assumed that the building will have an approx. footprint of 25m x 6.5m (or equivalent) area and will be maximum of c. 9m above ground level.</p>
Battery Storage	<p>The battery storage will operate such that when the amount of generated power is greater than the capacity of the DNO connection at Parc Cybi (13.5MVA), the battery storage units will be trickle charged as required. When amount of generated power is less than the capacity of the DNO connection, the battery storage units will discharge power up to the capacity of the connection. It is assumed that up to 7no. energy storage units and associated plant (including inverters, HVAC units and transformers) will be required.</p> <p>It is assumed that a designated area with a footprint of 46m x 38m (or equivalent area) will be sufficient to install the battery storage.</p> <p>The maximum height of the equipment is 9m above ground level.</p>
STATCOM	<p>Provision has been made for a +- 60MVAR STATCOM for the purposes of reactive compensation should it be required.</p> <p>It is assumed that a designated area with a footprint of 29m x 38m (or equivalent area) will be sufficient to install the STATCOM.</p> <p>A separate external step-down transformer will be required to provide an appropriate voltage for the STATCOM. It is assumed that a footprint of 8.5m x 13m is sufficient for this transformer enclosure.</p> <p>The maximum height of the equipment and buildings is 9m above ground level.</p>
Transformer enclosure	<p>External enclosure to accommodate 132/33kV (20MVA) transformer, 132/0.4kV (500kVA) service transformer and neutral earthing resistor.</p> <p>It is assumed that a footprint of 8m x 10m is sufficient for this transformer enclosure.</p> <p>The maximum height of the equipment is 9m above ground level.</p>
Harmonic Filtration	<p>Currently the notional design does not provide an area for harmonic filtration.</p>

Access Roads	The substation will be served by a central access road (with tarmac surfacing) that provides vehicular access adequate for the safe operation, maintenance and replacement of the substation equipment and civil infrastructure.
--------------	--

Andrew Jones | Chief Engineer | Renewable Energy Services

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Appendix 6 Orthios Structure

Orthios Summary

Carried out a Companies House check on the Orthios group of companies, identifying persons with significant control over each company to make the link.

From what I can establish as a group of companies, Orthios do not have any assets on the balance sheets and an overall Total Net Liabilities of £33,629,562. They have however been able to raise capital in the form of Bonds. Details of which is included in this document.

There are five companies that have active balance sheets or is registered multiple times as having significant influence over other companies, these are:

- Orthios Group (Holdings) Limited
- Orthios International Ltd
- Orthios (Anglesey) Technologies Ltd
- Orthios Eco Parks (Anglesey) Ltd
- Orthios Power (Anglesey) Limited

Structure / Control

The highest level of the companies is Orthios Group (Holdings) Ltd and has the following registered officers:

- Steven Hedley Haswell
- Charles Ian Hodgkinson
- Lewis H Mr Levasseur
- Michael David Masters
- Phillip McCormick
- Sean Michael McCormick

With the following registered as persons with significant control:

- Lewis H Mr Levasseur
- Phillip McCormick
- Sean Michael McCormick

The Orthios Group (Holdings) Ltd is registered as having significant control over:

- Orthios International Ltd
- Orthios Eco Parks (Anglesey) Ltd
- Orthios (Anglesey) Technologies Ltd

And Orthios Eco Parks (Anglesey) Ltd is registered as having significant control over:

- Orthios Power (Anglesey) Limited

Orthios Eco Parks (Anglesey) Ltd and Orthios (Anglesey) Technologies Ltd also has, as listed as having a significant influence, Mpb Securities Limited.

Mpb Securities Limited was incorporated in January 2019 and changed its name in October 2020 to Mpb Eco Parks Limited.

Mpb Eco Parks Limited has 3 persons with significant influence listed:

- Cresta Estates Limited
- Matthew Welsh
- Paul Hilton

Cresta Estates Limited and Mpb Securities Limited hold charges over numerous of the companies including Orthios (Anglesey) Technologies Ltd

Matthew Welsh is a Director of both Orthios Eco Parks (Anglesey) Limited and Orthios (Anglesey) Technologies Ltd.

Cresta Estates Limited has a balance sheet showing net assets of £16,540,039 for the year to 31st March 2019.

Mpb Eco Parks Limited is yet to file accounts.

Financial Position

	Net Assets (Liabilities) - 2019
Orthios Group (Holdings) Limited	(£165,272)
Orthios International Ltd	(£170,030)
Orthios (Anglesey) Technologies Ltd	(Not yet Filed)
Orthios Eco Parks (Anglesey) Ltd	(£34,883,260)
Orthios Power (Anglesey) Ltd	£1,589,000
Total Net Asset / (Liability)	(£33,629,562)

The only company currently with a Net Asset base is Orthios Power (Anglesey) Ltd, This company was previously called Anglesey Aluminium Metal Renewables Limited when Orthios purchased the site in 2009 therefore I presume the land is registered to this company.

Bonds

The group has also set up eight companies to hold the various bonds secured. Details below

Lateral Eco Park Bond Limited

LATERAL ECO PARKS BONDS LIMITED

Registered Number 09075958

Micro-entity Balance Sheet as at 31 March 2019

	<i>Notes</i>	<i>2019</i>	<i>2018</i>
		£	£
Called up share capital not paid		-	-
Fixed Assets		3,019,643	3,013,513
Current Assets		655,820	446,952
Creditors: amounts falling due within one year		(655,819)	(446,951)
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities		<u>3,019,644</u>	<u>3,013,514</u>
Creditors: amounts falling due after more than one year		(3,019,643)	(3,013,513)
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts.

Lateral Eco Park Bonds II Ltd

LATERAL ECO PARKS II BONDS LIMITED

Registered Number 09389902

Micro-entity Balance Sheet as at 31 March 2019

	<i>Notes</i>	<i>2019</i>	<i>2018</i>
		£	£
Called up share capital not paid		-	-
Fixed Assets		345,543	331,589
Current Assets		69,293	48,259
Creditors: amounts falling due within one year		(69,292)	(48,258)
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities		<u>345,544</u>	<u>331,590</u>
Creditors: amounts falling due after more than one year		(345,543)	(331,589)
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts.

Lateral Eco Park Bonds III Ltd

LATERAL ECO PARKS III BONDS LIMITED

Registered Number 09690858

Micro-entity Balance Sheet as at 31 March 2019

	<i>Notes</i>	<i>2019</i>	<i>2018</i>
		£	£
Called up share capital not paid		-	-
Fixed Assets	3,242,407	3,162,909	
Current Assets	740,929	537,805	
Creditors: amounts falling due within one year	(740,928)	(537,804)	
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities	3,242,408	<u>3,162,910</u>	
Creditors: amounts falling due after more than one year	(3,242,407)	(3,162,909)	
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts.

Eco Parks HNW Ltd

ECO PARKS HNW LIMITED

Registered Number 09877548

Micro-entity Balance Sheet as at 31 March 2019

	<i>Notes</i>	<i>2019</i>	<i>2018</i>
		£	£
Called up share capital not paid		-	-
Fixed Assets	20,000,000	20,000,000	
Current Assets	4,877,657	2,606,149	
Creditors: amounts falling due within one year	(4,877,656)	(2,606,148)	
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities		<u>20,000,001</u>	<u>20,000,001</u>
Creditors: amounts falling due after more than one year	(20,000,000)	(20,000,000)	
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts.

Eco Parks IV Bonds Ltd

ECO PARKS IV BONDS LIMITED

Registered Number 09834677

Micro-entity Balance Sheet as at 31 March 2019

	<i>Notes</i>	<i>2019</i>	<i>2018</i>
		£	£
Called up share capital not paid		-	-
Fixed Assets		3,636,808	3,574,463
Current Assets		695,665	546,072
Creditors: amounts falling due within one year		(695,664)	(546,071)
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities		<u>3,636,809</u>	<u>3,574,464</u>
Creditors: amounts falling due after more than one year		(3,636,808)	(3,574,463)
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts

Eco Parks V Bonds Ltd

ECO PARKS V BONDS LIMITED

Registered Number 09866378

Micro-entity Balance Sheet as at 31 March 2019

	<i>Notes</i>	<i>2019</i>	<i>2018</i>
		£	£
Called up share capital not paid		-	-
Fixed Assets		3,283,268	3,285,172
Current Assets		581,813	405,394
Creditors: amounts falling due within one year		(581,812)	(405,393)
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities		<u>3,283,269</u>	<u>3,285,173</u>
Creditors: amounts falling due after more than one year		(3,283,268)	(3,285,172)
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts.

Eco Parks VI Bonds Ltd

ECO PARKS VI BONDS LIMITED

Registered Number 09938379

Micro-entity Balance Sheet as at 31 March 2019

	<i>Notes</i>	<i>2019</i>	<i>2018</i>
		£	£
Called up share capital not paid		-	-
Fixed Assets	3,503,801	3,522,634	
Current Assets	620,369	427,750	
Creditors: amounts falling due within one year	(620,368)	(427,749)	
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities	3,503,802	<u>3,522,635</u>	
Creditors: amounts falling due after more than one year	(3,503,801)	(3,522,634)	
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts.

Eco Parks VII Bonds Ltd

ECO PARKS VII BONDS LIMITED		Registered Number 10195859	
Micro-entity Balance Sheet as at 31 March 2019			
	Notes	2019	2018
		£	£
Called up share capital not paid		-	-
Fixed Assets	2,819,082	2,253,570	
Current Assets	375,443	226,047	
Creditors: amounts falling due within one year	(375,442)	(226,046)	
Net current assets (liabilities)		<u>1</u>	<u>1</u>
Total assets less current liabilities	2,819,083	<u>2,253,571</u>	
Creditors: amounts falling due after more than one year	(2,819,082)	(2,253,570)	
Total net assets (liabilities)		<u>1</u>	<u>1</u>
Capital and reserves		<u>1</u>	<u>1</u>

- For the year ending 31 March 2019 the company was entitled to exemption under section 477 of the Companies Act 2006 relating to small companies.
- The members have not required the company to obtain an audit in accordance with section 476 of the Companies Act 2006.
- The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of accounts.
- The accounts have been prepared in accordance with the micro-entity provisions and delivered in accordance with the provisions applicable to companies subject to the small companies regime.

Approved by the Board on 2 July 2019

Appendix 7 Orthios Companies

Orthios Group of Companies



Company Name	Status	Previous Names	People with Significant Control	Charges	Balance Sheet Position	Activity
Orthios Aquaculture Ltd	Dormant Company		Orthios Group (Holdings) Limited			E1 03220 - Freshwater aquaculture
Orthios Eco Parks Ltd	Dissolved Oct 2020		Orthios Group (Holdings) Limited		(E159243) Final Accounts 2019	02190 - Growing of vegetables and melons, 03220 - Freshwater aquaculture
Orthios Eco Parks (PT) Ltd	Dormant Company / Dissolved July 2019		Orthios Eco Parks Limited			E1 03220 - Freshwater aquaculture
Orthios (Anglesey) Technologies Ltd	Active - Incorporation Nov 2018		Mpb Securities Limited / Orthios Group (Holdings) Limited	2 x Cresta Estates Limited & Not yet Filed		38210 - Treatment and disposal of non-hazardous waste
Orthios Feedstock (Anglesey) Ltd	Active - Incorporation July 2020		Orthios (Anglesey) Technologies Ltd	1 x Cresta Estates Limited & Not yet Filed		8210 - Treatment and disposal of non-hazardous waste
Orthios Group Holdings Ltd	Active - Inc. April 2015		Mr Sean Michael McCormick / Mr Philip McCormick / Mr Lewis Hugh Levasseur		Total Net Liabilities - £165,272 (2019)	70100 - Activities of head offices
Orthios Eco Parks (Anglesey) Ltd	Active	LATERAL ECO PARKS LIMITED	Mpb Estates Limited / Orthios Group (Holdings) Limited	9 x Robert Colin	Total Net Liabilities - £34,383,260 (2019)	68209 - Other letting and operating of own or leased real estate
Orthios Power (Anglesey) Ltd	Active	ANGLESEY ALUMINIUM META	Orthios Eco Parks (Anglesey) Ltd	2 x Robert Colin	Total Net Assets £1,589,000 (2019)	35110 - Production of electricity
Orthios Logistics Ltd	Dormant Company		Orthios Group (Holdings) Limited			E100 50200 - Sea and coastal freight water transport
Orthios International Ltd	Active		Orthios Group (Holdings) Limited		Total Net Liabilities - £170,030 (2019)	70100 - Activities of head offices
Orthios Power Ltd	Dormant Company		Orthios (Anglesey) Technologies Ltd	2 x Cresta Estates Limited &		E1 35110 - Production of electricity
Orthios Distribution (Anglesey) Ltd	Dormant Company		Orthios Distribution Limited	2 x Cresta Estates Limited &		E1 35130 - Distribution of electricity
Orthios Distribution Ltd	Dormant Company		Orthios (Anglesey) Technologies Limited (Trf from Orthios	2 x Cresta Estates Limited &		E83 35130 - Distribution of electricity
Orthios Hydroponics Ltd	Dormant Company		Orthios (Anglesey) Technologies Ltd	2 x Cresta Estates Limited &		E1 01130 - Growing of vegetables and melons, roots and tubers
Orthios Carbon Solutions Ltd	Dormant Company		Orthios Group (Holdings) Limited			E1 01610 - Support activities for crop production
Orthios otech 5 Ltd	Active - Inc Feb 2019		Orthios (Anglesey) Technologies Ltd	3 x Cresta Estates Limited & Not yet Filed		20590 - Manufacture of other chemical products not elsewhere classified
Orthios Technologies Limited	Active - Inc March 2020		Orthios (Anglesey) Technologies Ltd	1 x Cresta Estates Limited & Not yet Filed		77400 - Leasing of intellectual property and similar products, except copyright works
Orthios Fuels Limited	Inc July 2018 - Dissolved Oct 2019		Orthios Group (Holdings) Limited			0 32990 - Other manufacturing not elsewhere classified
Orthios Bioproducts Limited	Inc Oct 2017 - Dissolved Jul 2019		Orthios Eco Parks (Anglesey) Ltd			0 48760 - Wholesale of other intermediate products
Orthios Power A4 Limited	Inc Mar 2017 - Dissolved Jul 2019		Orthios Eco Parks (Anglesey) Ltd			0 35110 - Production of electricity
Orthios Power A1 Limited	Inc Mar 2017 - Dissolved Jul 2019		Orthios Eco Parks (Anglesey) Ltd			0 35110 - Production of electricity
Orthios Power A3 Limited	Inc Mar 2017 - Dissolved Jul 2019		Orthios Eco Parks (Anglesey) Ltd			0 35110 - Production of electricity
Orthios Power A2 Limited	Inc Mar 2017 - Dissolved Jul 2019		Orthios Eco Parks (Anglesey) Ltd			0 35110 - Production of electricity
Orthios Power (PT) Limited	Inc April 2018 - Dissolved Jul 2019	ORTHIOS POWER (ANGLESEY)	Orthios Power Limited			0 35110 - Production of electricity
Orthios P20 (Anglesey) Limited	Inc Oct 2017 - Dissolved Jul 2019		Orthios Eco Parks (Anglesey) Ltd			0 32990 - Other manufacturing not elsewhere classified
Orthios Water and Energy Supply Limited	Inc Mar 2016 - Dissolved Jul 2019		Orthios Group (Holdings) Limited			0 35140 - Trade of electricity
Ompeco Orthios Solutions Limited	Dormant Company		Orthios (Anglesey) Technologies Ltd & X-met Limited			4 32990 - Other manufacturing not elsewhere classified
Lateral Eco Parks Bonds Ltd	Inc June 2014		Orthios Eco Parks (Anglesey) Ltd	2 x Robert Colin	Total Net Assets £1	70100 - Activities of head offices
Lateral Eco Park Bonds II Ltd	Inc. Jan 2015		Orthios Eco Parks (Anglesey) Ltd	1 x Robert Colin	Total Net Assets £1	70100 - Activities of head offices
Lateral Eco Park Bonds III Ltd	Inc. July 2015		Orthios Eco Parks (Anglesey) Ltd	1 x Robert Colin	Total Net Assets £1	64999 - Financial intermediation not elsewhere classified
Lateral Eco Parks Anglesey Limited	Inc Apr 2013 Diss Sept 2015					68209 - Other letting and operating of own or leased real estate
Eco Parks HNW Ltd	Inc Nov 2015		Orthios Eco Parks (Anglesey) Ltd	5 x Robert Colin	Total Net Assets £1	70100 - Activities of head offices
Eco Parks IV Bonds Ltd	Inc Oct 2015		Orthios Eco Parks (Anglesey) Ltd	1 x Robert Colin	Total Net Assets £1	70100 - Activities of head offices
Eco Parks V Bonds Ltd	Inc Nov 2015		Orthios Eco Parks (Anglesey) Ltd	1 x Robert Colin	Total Net Assets £1	70100 - Activities of head offices
Eco Parks VI Bonds Ltd	Inc Jan 2016		Orthios Eco Parks (Anglesey) Ltd	1 x Robert Colin	Total Net Assets £1	70100 - Activities of head offices
Eco Parks VII Bonds Ltd	Inc May 2016		Orthios Eco Parks (Anglesey) Ltd	1 x Robert Colin	Total Net Assets £1	70100 - Activities of head offices
Pure Energi Developments Limited	Inc Jan 2017 - Diss July 2019		Orthios Group (Holdings) Limited			35110 - Production of electricity
Peel Bond I Ltd	Inc Jan 2017 - Diss July 2019		Pure Energi Developments Limited			70100 - Activities of head offices
Clean Thermal Conversion Limited	Inc Jan 2020		Orthios (Anglesey) Technologies Ltd	1 x Cresta Estates Limited & Not yet Filed		38210 - Treatment and disposal of non-hazardous waste
Opes Environmental Limited	Inc Dec 2017 - Dormant Company		Orthios Group (Holdings) Limited & Polymer Energy Systems Holdings Limited			20590 - Manufacture of other chemical products not elsewhere classified



Appendix 8 Illustrative list of email communications

↩ Ian Hodgkinson	[REDACTED]	Orthios/Morlais - Lease/option - subject to contract - Ref Hodgkinson Legal:MA:10135/037 - Dear Ed Thank you for sending th...	19/06/2019
Ed Bailey	[REDACTED]	RE: URGENT: Orthios/Morlais (Subject to Contract) - attachments - Ref Hodgkinson Legal:MA:10135/037 - Without Prejudice and Subject to Contra...	19/06/2019
Ian Hodgkinson	[REDACTED]	URGENT: Orthios/Morlais (Subject to Contract) - attachments - Ref Hodgkinson Legal:MA:10135/037 - Dear Ed Please may I hear from you as a f...	19/06/2019
Ian Hodgkinson	[REDACTED]	URGENT: Orthios/Morlais (Subject to Contract) - attachments - Ref Hodgkinson Legal:MA:10135/037 - Dear Ed Please may I hear from you as a first priority with copie...	19/06/2019
Ian Hodgkinson	[REDACTED]	Orthios/Morlais (Subject to Contract) - changes to Heads of Terms - Ref Hodgkinson Legal:MA:10135/037 - Ed, I am ploughin...	18/06/2019
Ed Bailey	[REDACTED]	RE: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Without Prejudice and Subject to Contract Dear Ian Thanks fo...	18/06/2019
Ed Bailey	[REDACTED]	RE: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Without Prejudice and Subject to Contract Dear Ian Thanks for ...	18/06/2019
Ian Hodgkinson	[REDACTED]	Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Ed, in preparation for fort...	18/06/2019
Ed Bailey	[REDACTED]	RE: Meeting today - Many thanks Sean. That's much appreciated. Regards Ed Edmund Bailey BSc (Hons) MRICS Director Office Telephone: 01341 241700 Mobile Tele...	17/06/2019
Sean McCormick	[REDACTED]	Re: Meeting today - Thanks Ed I'm in London today and catching up with Ian tomorrow on this. Regards Sean For and on Behalf of Orthios Group ...	17/06/2019
Andy Billcliff	[REDACTED]	Re: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - I think we should discuss Monday. With a view to getting back to them by CoB M...	14/06/2019
Ed Bailey	[REDACTED]	RE: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Dear GERALT, Graham and Andy I have just spoken to Andy an...	14/06/2019
Ed Bailey	[REDACTED]	Meeting today - Without Prejudice and Subject to Contract Dear All Further to you meeting earlier today, please find attached; 1. The latest heads of agreement that in...	13/06/2019
Andy Billcliff	[REDACTED]	Re: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Thanks Ed. On Thu, 13 Jun 2019 at 12:16, GERALT Llewelyn Jones <gerallt@mente...	13/06/2019
Ed Bailey	[REDACTED]	RE: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Annwyl GERALT and Andy The heads of agreement attached re...	12/06/2019
Ed Bailey	[REDACTED]	RE: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Annwyl GERALT and Andy I had promised a quick note to he...	12/06/2019
Andy Billcliff	[REDACTED]	Re: Reconnection - Hi Sean hope you enjoyed your holiday. I know what you mean Re time off. If you had time in your diary for 13th pm that would be good for me? Thanks Andy On Mon, ...	10/06/2019
↩ Sean McCormick	[REDACTED]	Re: Reconnection - Hi G Sorry I'm not ignoring you I had my first break away with Cal in 20 years and didn't take my phone. Let ...	10/06/2019
➡ Philip McCormick	[REDACTED]	RE: Reconnection - Hi GERALT, Sean is away all this week on a well earned break and he may not receive your email. He will not ...	05/06/2019
Ian Hodgkinson	[REDACTED]	Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Thanks, Ed. I am abroad ...	17/05/2019
Ed Bailey	[REDACTED]	RE: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Without Prejudice & Subject to Contract Dear Sean, Davi...	16/05/2019
↩ Ed Bailey	[REDACTED]	RE: Orthios/Morlais (Subject to Contract) - legals/due diligence - Ref Hodgkinson Legal:MA:10135/037 - Without Prejudice & Subject to Contract Dear Sean, David and ...	16/05/2019
➡ me	[REDACTED]	Morlais Orthios Land Agreement (proposal) - Good evening gentlemen, Following our recent meeting with Sean we would like to provide a little more detail on our proposed land requirem...	08/05/2019
➡ andy	[REDACTED]	FW: Orthios Morlais Meeting 2/5/19 draft for comment - Hi Sean, I think I've captured the key things we discussed. If you could take a look and get back with any changes I would appreci...	03/05/2019

Appendix 9 Extract from pre Application NG meeting

11.	[REDACTED], NG could still build the substation as considered in the Fig 1 patch of land with the extra cost being as a result of "customer choice" which would result in MAME paying the extra costs. A COIN may be needed, MAME will help NG with this as required.	
12.	MAME long term wants a 180 MW connection, the Application will be for a ramped phased build to 180 MW, but the first connections must be cable laid complete before the end of 2023.	
13.	MAME has submitted a planning application and is expecting consent by Q2 2021 for the MAME project that includes for the connection to the NG new substation up to the substation fence. It was notes that Securities would reduce to 10% on gaining planning permission.	
14.	NG noted that there are two 400/132 kV SGTs at Wylfa, a third will be needed at some time for MAME to be able to export the full 180 MW. Studies once the Application is Competent will determine when the third SGT is needed.	
15.	It was noted that the Horizon Wylfa references had been removed from the TEC Register, but that Orthios were still there with 150 MW in 2021 and 210 MW in 2023.	
16.	MAME is to use the "DRC Tool" for the DRC Application.	MAME
17.	NG is to advise MAME of the Application Fee, it will be of the order of [REDACTED]	NG
18.	[REDACTED]	DW MAME

Fig 1



IMC 27.02.20

Appendix 10 Buried services in parcel 49

