

National Development Framework Team
Planning Policy Branch
Welsh Government
Cathays Park
Cardiff
CF10 3NQ

Date: 15 November 2019

Contact: Eleri Davies

Phone: [REDACTED]

E-mail: [REDACTED]

15 November 2019

Welsh Government Consultation: Draft National Development Framework

Dear Sirs

- 1.1 This response is made on behalf of Innogy Renewables UK Ltd (innogy) which develops, owns and operates a portfolio of onshore wind, offshore wind and hydro-power generating stations across Wales. Innogy welcomes the opportunity to respond to the National Development Framework (NDF) which will have a significant bearing on our development activities in Wales over the next 20 years.
- 1.2 The UK Committee on Climate Change (UKCCC) estimates that delivering 'net zero' will require a fourfold increase in renewable energy deployment¹. In this context, there needs to be a recognition that 'business as usual' is not enough and accelerated action and progress is required. A renewed, positive planning approach which does not unnecessarily constrain opportunities is crucial if the Welsh Government is serious about unlocking the opportunities inherent in Wales' resource potential. The NDF is a once in a lifetime opportunity to put in place a new planning framework that can facilitate the delivery of the Welsh Government's targets and address the Climate Emergency.

innogy in Wales

- 1.3 Innogy is a leading energy company which employs over 130 permanent employees across its four Welsh offices located at Mostyn, Dolgarrog, Llanidloes and Baglan. innogy is the largest renewable energy operator in Wales, generating one third of all of Wales' renewable electricity. innogy's onshore, offshore and hydro projects combined produce enough electricity to meet the equivalent needs of more than 550,000 homes – almost half of the households in Wales.
- 1.4 innogy's portfolio in Wales includes involvement in an installed capacity of 957MW. We operate three offshore wind farms off the coast of North Wales: Gwynt y Môr (576MW), Rhyl Flats

¹ <https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf>

(90MW) and North Hoyle (60MW). Onshore, we also operate Brechfa Forest West Wind Farm in Carmarthenshire (57.4MW), Mynydd y Gwair Wind Farm north of Swansea (32.8MW) and the under construction Clocaenog Forest Wind Farm (96MW) in Denbighshire and Conwy. We also operate six hydro-electric sites in North Wales totalling over 40MW.

- 1.5 In August 2019, The Crown Estate agreed to an extension of Gwynt y Môr offshore wind farm and innogy will now work with project partners to progress this. innogy was also successful in a tender exercise in 2017 run by Natural Resources Wales (NRW) and Dŵr Cymru Welsh Water (DCWW) for an option to develop a project in the Alwen Forest in North Wales. innogy is working with Community Energy Wales to develop this onshore wind farm which would offer the community up to 15% of the project under a shared ownership offering.

National Development Framework

- 1.6 innogy welcomes the Welsh Government's positive approach towards renewable energy developments and the efforts made to reflect this in the narrative and policies of the NDF. innogy supports the Welsh Government's recognition that renewable energy is a key part of the commitment to decarbonisation and tackling the causes of climate change.
- 1.7 innogy also welcomes the inclusion of the Welsh Government's renewable energy target (i.e. 70% of electricity consumption to be generated from renewable energy by 2030) as a key driver of the NDF but questions whether this is sufficiently ambitious. Since the target was announced in 2017, the Welsh Government has declared a Climate Emergency, and set an ambitious emissions reduction target of 95% with an aspiration to become 'net zero' by 2050 (for context, the Welsh Government's previous emissions reduction target was 80% by 2050).
- 1.8 As a starting point, the Welsh Government needs to establish realistic and evidence-based demand assumptions for 2030, 2040 and 2050 – without these, it is difficult to plan for the future and impossible to measure progress against 'net zero' aspirations.
- 1.9 It is critical that Wales continues to have secure and reliable supplies of electricity throughout the transition to a low carbon economy, whilst also replacing existing power plants due for closure. To manage the risks to achieving security of supply, sufficient electricity capacity (including a greater proportion of low carbon generation) is required to meet demand, and this requires a diverse mix of technologies and fuels. However, encouraging renewable and low carbon energy is only a small part of the wider decarbonisation agenda. Strategic decisions, for example on the decarbonisation of heat (i.e. electrification vs repurposing the gas network using renewable gases and hydrogen), have yet to be made and will inevitably have an impact on spatial planning in the future.
- 1.10 The planning system in Wales plays a key role in facilitating clean growth and decarbonisation, and the role of the NDF should be to provide the decision-making framework to facilitate nationally significant renewable energy development and its associated infrastructure. In a

rapidly changing context such as this, the NDF also needs to be flexible and responsive enough to adapt to future decisions.

- 1.11 For onshore wind projects, the Technical Advice Note 8 'Planning for Renewable Energy' (July 2005) (TAN8) restricts opportunity for >25MW projects to Strategic Search Areas (SSAs) and makes limited provision for 5-25MW projects outside the SSAs. In this context, the NDF is a positive step forward as it enables consideration of any project >10MW outside National Parks (NPs) and Areas of Outstanding Natural Beauty (AONBs).
- 1.12 In the context of increasing recognition (including by the UKCCC) that onshore wind and solar photovoltaic can generate the cheapest electricity, innogy appreciates the Welsh Government's efforts to expand opportunities in Wales. However this will only deliver if the planning policy framework is sufficiently positive and ambitious. In this regard, innogy has significant concerns with the output of the ARUP assessments which underpin NDF Policy 10 'Wind and Solar Energy in Priority Areas' and have resulted in the allocation of Priority Areas that are largely unsuitable for onshore wind. The reason for this is that ARUP have (in the context of onshore wind) applied inappropriate constraints (including a subjective high-level landscape and visual assessment) and onerous buffers around designations, whilst failing to include any separation distance from residential properties which developers use as standard to mitigate against noise, visual amenity and shadow flicker impacts.
- 1.13 The ARUP assessments do not (and simply cannot) provide the level of detail that a developer would be required to undertake at the environmental impact assessment (EIA) stage, which means that some of the least constrained and most appropriate and deliverable areas have been excluded from Priority Areas whilst some of the most constrained and least deliverable areas have been included.
- 1.14 innogy's comments on the Draft NDF are set out in Annex 1 and, specifically in relation to renewable energy, are summarised as follows:
 - NDF Policy 10 seeks to make the consenting process for wind and solar generation over 10MW in capacity easier by giving a "presumption in favour of development for these schemes" and "an associated acceptance of landscape change". The Priority Areas identified alongside Policy 10 (NDF p.42) have been significantly shaped by ARUP's Stage 2 refinement exercise however this type of exercise is unworkably complicated and cannot be reliable in the absence of specific development proposals (see Annex 2 analysis of ARUP assessments).
 - There is a lack of clarity regarding the levels of intended permissiveness in Policy 10 (i.e. a "presumption in favour of development" and "an associated acceptance of landscape change"), particularly around how the requirement to "maximise" benefits and "minimise" adverse impacts is intended to operate in practice. 'Minimising adverse effects' and 'maximising benefits' could theoretically be interpreted as an absolute requirement to implement all available measures. This is very different to the way the planning system

operates in practice, whereby the decision-maker is afforded the flexibility to carry out a balancing exercise between the benefits of a scheme and its adverse impacts. The Policy 10 approach is therefore unclear in the weight given to different impacts and does not make explicit provision for a balancing exercise to be undertaken by the decision-maker.

- The issues associated with the drafting of Policy 10 could either result in many sites within Priority Areas being too heavily constrained for developments or, given the policy presumption in favour of development, sites being developed that result in significant adverse impacts on other features (e.g. ecology, biodiversity or cultural heritage).
- The reference in the NDF to building the case for new or reinforced grid infrastructure (p.36) is welcomed. There are however concerns with how grid has been considered in the ARUP Assessments; this is addressed in Annex 2. The over-riding point is that there is no benefit in being close to a network that has no capacity to connect into, but it may be worth bringing the grid network to an area with a large unconstrained wind resource. The NDF also needs to include a policy on overhead grid connections up to 132kV so that there is a clear decision-making framework for these DNS projects.

ARUP Assessments

1.15 Concerns with the ARUP assessments that underpin Draft NDF Policy 10 are set out in Annex 2 and in reports prepared by East Point Geo (peat, geology and geomorphology), LUC (landscape and visual), Headland Archaeology (cultural heritage) and SLR (ecology and biodiversity) (Appendices A-D). In summary, Annex 2 sets out the following concerns:

- the use of inappropriate variable constraints to define EPAs (i.e. woodland, Peat deeper than 45cm and Regionally Important Geological and Geomorphological Sites (RIGS) Agricultural Land Classification 1 and 2, LANDMAP Visual and Sensory: High, Outstanding, Open Access, Historic Landscapes and UNESCO Biospheres);
- the application of inappropriate and onerous buffers around designations: a buffer of any fixed distance is somewhat arbitrary and should be treated with caution;
- the high level strategic landscape study carried out by ARUP risks excluding suitable areas, as well as including unsuitable areas. LUC argue that it is too detailed an approach for a high level strategic assessment and the way that it is presented within the ARUP reports suggests a level of accuracy beyond what is achievable at this scale. ARUP have done extensive and detailed work, but this is a very crude tool which, unfortunately, seems to have had a significant influence on the extent of Priority Areas;
- the questionable approach to assessing grid capacity and the failure to factor in future demand scenarios; the failure to consider separation distances from residential

properties; and the specific approaches to ecology and biodiversity, and the historic environment; and

- the inconsistencies between the TAN 8 SSAs and the NDF Priority Areas (both undertaken by ARUP).
- 1.16 Whilst the constraints identified are important considerations in developing a renewable energy project, the time to assess actual impacts on features and consider buffers is at the detailed design stage informed by a site-specific EIA, not at the high-level plan making stage.
- 1.17 To put this into context, analysis conducted by RenewableUK Cymru (RUKC) on behalf of the industry concludes that only ~5% of the 'Solar and Wind Energy' Priority Areas is suitable for onshore wind and theoretically deliverable once suitable constraints are applied and operational wind farms have been excluded – the actual potential is far less than this. Furthermore, in some cases, the small pockets of land are only likely to be suitable for <10MW non-DNS projects which won't be assessed against the NDF.
- 1.18 Figure 1 identifies the ARUP 'fixed constraints'; an 800m separation distance from existing residential properties² (a critical omission from the ARUP assessments); the 'Solar and Wind Energy' Priority Areas and the TAN8 SSAs. This demonstrates that the least constrained areas for onshore wind in Wales (i.e. the 'white' areas) are largely outside the NDF Priority Areas, and that the NDF Priority Areas themselves are heavily constrained by fixed constraints and the 800m separation distance from housing.
- 1.19 If the NDF is adopted as it currently stands, most large scale (>10MW) onshore wind projects will come forward outside the Priority Areas, i.e. in the amber areas under Policy 11. This will be a sub-optimal outcome which undermines the value of the Priority Areas allocation and means that planning for projects in amber areas will be less certain.
- 1.20 Spatial limits are inappropriate constraints on the ability of industry to bring forward projects, especially in the context of the established need for renewable energy projects and the need to accelerate decarbonisation in the context of the recently declared Climate Emergency.

Conclusion and Recommendation

- 1.21 For the reasons set out above (and in more detail in supporting Annexes 1-2 and Appendices A-D), the NDF as currently drafted has the potential to increase the consenting risk for onshore wind leading to reduced deployment, increased risk of missing renewable energy targets, reduced economic and social benefits to Wales and increased costs to consumers.

² Residential property buffers are based on publicly available address point data which may not be 100% up-to-date

1.22 The 'traffic light' approach in the NDF is misleading and fails to provide a clear position on where development will come forward. innogy recommends that the Priority Areas map (NDF p.42) be removed in its entirety, and NDF Policies 10, 11 and 13 (as currently drafted) be merged into a single criteria-based policy which will apply to ***all renewable energy developments***. This policy should:

- afford significant weight to the proposal's contribution to reducing greenhouse gas emissions, meeting decarbonisation and renewable energy targets;
- afford significant weight to the proposal's contribution towards satisfying a need for renewable energy infrastructure, on the basis that the Welsh Government has demonstrated that there is a need;
- apply a presumption in favour of renewable energy developments and an associated acceptance of landscape change in areas outside those protected by Policy 12; and
- apply a "*no unacceptable adverse effects*" test which allows a balancing exercise between the benefits of a proposal and its adverse impacts on identified features.

1.23 This approach allows industry to identify suitable locations for new large scale onshore wind projects prior to carrying out a detailed assessment of potential significant effects through the EIA process.

Please do not hesitate to contact me should you require any clarification on the points raised in this consultation response.

Yours faithfully,



Eleri Davies
Head of Consents UK
Innogy Renewables UK Limited

Encs

Annex 1: Consultation Response Form

Annex 2: Analysis of ARUP's Assessment of onshore wind and solar energy potential in Wales

Appendix A: East Point Geo Review of ARUP Assessments (Peat, Geology and Geomorphology)

Appendix B: Land Use Consultants Review of ARUP Assessments (Landscape and Visual)

Appendix C: Headland Archaeology Review of ARUP Assessments (Historic Environment)

Appendix D: SLR Consulting Review of ARUP Assessments (Ecology and Biodiversity)

Figure 1: NDF Energy Priority Areas

Innogy Renewables UK Ltd: Response to Draft National Development Framework

Annex 1: Consultation Response Form

1. NDF Outcomes (Chapter 3)

Page | 1

innogy welcomes the inclusion of Outcome 11 in the NDF which acknowledges the contribution that renewable energy can make to promoting and delivering a competitive, sustainable and decarbonised society. innogy also considers that renewable energy developments can contribute to the achievement Outcomes 3, 6, 7, 9 and 10.

2. Spatial Strategy (Policies 1-4)

No comments.

3. Affordable Housing (Policy 5)

No comments.

4. Mobile Action Zones (Policy 6)

No comments.

5. Low Emission Vehicles (Policy 7)

Whilst Policy 7 sets out a strategic direction for electric vehicle (EV) charging infrastructure, it does not consider the new and/or upgraded grid infrastructure required to enable the roll out of EVs, despite overhead electric line projects up to 132kV potentially being of DNS scale. A further important consideration is data connectivity infrastructure, which is already insufficient to deal with charging infrastructure in parts of Wales.

The Welsh Government should consider the grid infrastructure required to decarbonise transport in conjunction with the infrastructure required to facilitate further deployment of renewable energy – the two cannot be considered separately as what benefits one may well benefit the other. Policy 7 or its supporting text should be amended to be supportive in principle of the new and/or reinforced grid infrastructure required in parts of Wales to enable the effective roll out of EV charging points.

6. Green Infrastructure (Policies 8 and 9)

The NDF does not spatially define areas to complement Policy 8 Strategic framework for biodiversity enhancement and ecosystem resilience and Policy 9 National forest (which clearly have a spatial dimension) so it is impossible to comment on these in any detail.

The narrative under Policy 8 states that “Safeguarding does not necessarily prohibit development but sets out a requirement to consider both the long-term future land needs of the habitats and species it is intended to protect and improve” and innogy welcomes this recognition. The NDF does, however, need to consider in more detail how Policies 8 and 9 will interact, in practice, with development proposals which are supported by other policies in the NDF.

Policy 13 (p.41) which applies to ‘Other Renewable Energy Developments’ states that “renewable energy projects can also provide environmental benefits, such as contributing to resilient ecological networks, restoring degraded peatlands and restoring semi-natural grasslands on post-agricultural land” – this should apply to all renewable energy policies (including onshore wind which already delivers these benefits on operational schemes, including innogy’s wind farms at Brechfa Forest West and Clocaenog Forest, as well as very significant potential future benefits associated with its proposed Carnedd Wen Wind Farm and Habitat Restoration project).

7. Renewable Energy and District Heat Networks (Policies 10-15)

innogy welcomes the Welsh Government’s positive approach to renewables and the efforts made to reflect this in the narrative and policies of the NDF, including setting out the Welsh Government’s 2017 renewable energy targets (p.36). However, since these were announced, the Welsh Government has declared a climate emergency, and set an emissions reduction target of 95% with an aspiration to be ‘net zero’ by 2050 (the previous emissions reduction target was 80% by 2050). Realistic demand assumptions for 2030, 2040 and 2050 (based on the decarbonisation of heat and transport) are required and these should also consider the impact of decommissioning older onshore wind sites.

The reference in the NDF to building the case for new or reinforced grid infrastructure (p.36) is welcomed. There are however concerns with how grid has been considered in the ARUP Assessments; this is addressed in Annex 2. The over-riding point is that there is no benefit to being close to a network that has no capacity to connect into, but it may be worth bringing the grid network to an area with a large unconstrained wind resource. The NDF also needs to include a policy on overhead grid connections so that there is a clear decision-making framework for DNS projects up to 132kV.

Policy 10 – Wind and Solar Energy in Priority Areas and Policy 11 – Wind and Solar Energy Outside of Priority Areas

For onshore wind projects, the existing TAN8 restricts opportunity for >25MW projects to the Strategic Search Areas (SSAs) and makes limited provision for 5-25MW projects outside the SSAs. In this context, the NDF is a positive step forward as it enables consideration of any project >10MW outside National Parks (NPs) and Areas of Outstanding Natural Beauty (AONBs). Innogy appreciates the Welsh Government’s efforts to expand opportunities in Wales.

However, the output of the ARUP assessments which underpin Policy 10 are fundamentally flawed and have resulted in the allocation of Priority Areas (p.42) that are largely unsuitable for onshore wind. The reason for this is that ARUP have (in the context of onshore wind) applied inappropriate constraints (such as a subjective high-level landscape and visual assessment) and onerous buffers around designations, whilst failing to include any separation from residential properties which developers use as standard to mitigate against noise, visual amenity and shadow flicker impacts. The ARUP assessments do not, and cannot, provide the level of detail that a developer would be required to undertake at the environmental impact assessment (EIA) stage, which means that some of the least constrained and most appropriate and deliverable areas have been excluded from Priority Areas whilst some of the most constrained and least deliverable areas have been included (see Figure 1). A detailed and evidence-based critique of the ARUP assessments is set out at Annex 2 and Appendices A-D.

To put this into context, RenewableUK Cymru (RUKC) has carried out an analysis of the 'Solar and Wind Energy' Priority Areas and concludes that only ~5% of the total area is suitable for onshore wind and theoretically deliverable once suitable constraints are applied and operational wind farms have been excluded – for the reasons set out in RUKC's response, the actual potential is far less than this. Furthermore, in some cases, the areas are only likely to be suitable for <10MW non-DNS projects and won't be assessed against the NDF. Spatial limits are inappropriate constraints on the ability of industry to bring forward projects, especially in the context of the established need for renewable energy projects and the need to accelerate decarbonisation in the context of the recently declared Climate Emergency.

If the NDF is adopted as it currently stands, most large scale (>10MW) onshore wind projects will come forward outside the Priority Areas, i.e. in the amber areas under Policy 11. This will be a sub-optimal outcome which undermines the value of the Priority Areas allocation and means that planning for projects in amber areas will be less certain.

Renewable energy generation previously of 'nationally significant infrastructure project' (NSIP) scale under the Planning Act 2008 but now devolved to Wales benefitted from the unequivocal policy support of the UK National Policy Statements¹ (NPS EN-1, EN-3 and EN-5). The NPS' recognise the "need and urgency for new energy infrastructure to be consented and built with the objective of contributing to a secure, diverse and affordable energy supply and supporting the Government's policies on sustainable development, in particular by mitigating and adapting to climate change" and set a starting point of a "presumption in favour of granting consent". This policy support has been instrumental to reducing the consenting stage risk associated with developing renewable energy projects. Likewise, the NDF should be unequivocal in its support of new renewable energy infrastructure.

The NDF should also make explicit reference to extension and repowering schemes >10MW that will be DNS applications. As acknowledged in paragraph 5.9.23 of Planning Policy Wales (PPW) Edition 10 (December 2018) "The extension and re-powering of existing renewable energy infrastructure is important in meeting renewable energy and decarbonisation targets".

¹ <https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure>

The facilitation of investment in grid solutions is necessary to realise the potential for onshore wind deployment in mid Wales, and 'in principle' support for new and reinforced grid infrastructure should be explicitly stated in the NDF. Large scale wind farms are necessary to facilitate improvements to the electricity network, thereby enabling smaller community owned projects to connect to the network.

Policy 12 – Wind and Solar Energy in National Parks and Areas of Outstanding Natural Beauty

No comments.

Policy 13 – Other Renewable Energy Developments

innogy welcomes the reference in the supporting text at Policy 13 (page 41) that “renewable energy projects can also provide environmental benefits, such as contributing to resilient ecological networks, restoring degraded peatlands and restoring semi-natural grasslands on post-agricultural land” however this should also be recognised in Policies 10 and 11 for onshore wind and solar projects which do not fall under Policy 13.

Policies 10 – 13: Conclusion and Recommendations

The Priority Areas map (NDF p.42) should be removed in its entirety, and NDF Policies 10, 11 and 13 (as currently drafted) should be merged into a single criteria-based policy which will apply to all renewable energy developments. This policy should:

- afford significant weight to the proposal's contribution to reducing greenhouse gas emissions, meeting decarbonisation and renewable energy targets;
- afford significant weight to the proposal's contribution towards satisfying a need for renewable energy infrastructure, on the basis that the Welsh Government has demonstrated that there is a need;
- apply a presumption in favour of renewable energy developments and an associated acceptance of landscape change in areas outside those protected by Policy 12; and
- apply a “no unacceptable adverse effects” test which allows a balancing exercise between the benefits of a proposal and its adverse impacts on identified feature.

By taking this approach, industry can identify suitable locations for new large scale onshore wind projects prior to carrying out a detailed assessment of potential significant effects through the EIA process.

8. The Regions (Policy 16)

innogy supports consistency across all regions of Wales and consider there to be almost equal opportunities for renewable energy infrastructure in all of the regions. Policy 16 refers to the spatial areas for renewable energy as being a matter for Strategic Development Plans, i.e.

regional planning. The NDF, as the primary development plan for DNS applications, should set policy for renewable energy schemes >10MW. LPAs should not be allowed to set their own (potentially conflicting) policies and allocations in SDPs and LDPs.

9. North Wales (Policies 17-22)

No comments.

10. Mid and South West Wales (Policies 23-26)

No comments.

11. South East Wales (Policies 27-33)

No comments.

12. Integrated Sustainability Appraisal

No comments.

13. Habitats Regulations Assessment

No comments.

14. Welsh Language

No comments.

15. Further comments

Although referred to as a “spatial plan”, the NDF is only spatial in respect of certain policies. The NDF also fails to consider (either spatially or in a criteria-based policy) any type of Development of National Significance (DNS) other than renewable generating stations over 10MW (Policies 10, 11, 12 and 13). The NDF as currently drafted does not provide a solid decision-making framework for any other type of DNS, i.e. other non-renewable generating stations between 10MW and 350MW; above ground electric lines up to 132kV; airport-related development; railways; highways etc. (all subject to thresholds etc)². From an energy perspective, the absence of policies or narrative relating to conventional generating stations and overhead grid connections is a significant omission.

It is critical that Wales continues to have secure and reliable supplies of electricity throughout the transition to a low carbon economy, whilst also replacing existing power plants due for closure. To manage the risks to achieving security of supply, sufficient electricity capacity

² The Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) Regulations 2016 (as amended)

(including a greater proportion of low carbon generation) is required to meet demand, and this requires a diverse mix of technologies and fuels. However, encouraging renewable and low carbon energy is only a small part of the wider decarbonisation agenda. Strategic decisions, for example on the decarbonisation of heat (i.e. electrification vs repurposing the gas network using renewable gases and hydrogen), have yet to be made and will inevitably have an impact on spatial planning in the future. In a rapidly changing context such as this, the NDF needs to be flexible and responsive enough to adapt to future decisions.

A consistent approach to the Welsh Government's position on non-devolved projects³ would also be welcomed – the NDF only mentions nuclear. Although the Welsh National Marine Plan (WNMP) will be the primary development plan for devolved offshore projects (<350MW), the NDF should include 'in principle' support for non-devolved projects (>350MW) including offshore wind (as is currently the case at paragraph 3.1 of Technical Advice Note 8 'Planning for Renewable Energy' (July 2005) (TAN8)). Local planning authorities and the Welsh Ministers are statutory consultees for non-devolved projects determined under the Planning Act 2008 and having a stated policy position on these developments would assist the Welsh Government in this regard. Additionally, planning permission is likely to be required for devolved onshore installations associated with offshore projects and the NDF should include narrative in support of such installations.

The introductory section (page 6) notes that the NDF is the "highest tier of development plan" and that it is the framework which will be built on by Strategic Development Plans (SDPs) and Local Development Plans (LDPs) at local planning authority (LPA) level. The status of the NDF in respect of influencing lower tier plans prepared by LPAs is therefore explicit, however its status in decision-making is not. innogy's concerns in this regard also stem from the Welsh Government's invitation to tenderers to prepare the 'National Development Framework Solar and Wind Energy Guidance' (C085/2019/2020) which states that the "NDF will form part of the statutory plan for determining planning applications and will assist the determination of Development of National Significance (DNS)". Proposals for a new infrastructure planning regime in Wales⁴ state that decisions on nationally significant scale development, i.e. DNS, "will be taken in accordance with the NDF". There should be an explicit and unequivocal statement in the NDF that it is the primary policy document against which Welsh Ministers will determine DNS applications.

The NDF should also clarify that local planning authorities (LPAs) cannot adopt supplementary guidance that contradicts the NDF, for example through landscape capacity / sensitivity studies that unfairly constrain development. Without this, there is a risk that the NDF could be diluted sequentially through the hierarchy of plans and restrict large scale renewable energy development.

³ Nationally Significant Infrastructure Projects (NSIPs) determined under the Planning Act 2008

⁴ <https://beta.gov.wales/sites/default/files/consultations/2018-04/180430-changes-to-the-approval-of-infrastructure-development.pdf>

Given the 20-year plan period, the NDF needs to be flexible enough to address any future 'policy gaps' that may arise if further projects are devolved to Wales – the 5-year review period is therefore welcomed.

In terms of the structure of the NDF, the distinction between the two main functions (i.e. policy direction to influence SDPs/LDPs, and a decision-making framework for DNS) is often blurred. To make the document easier to navigate, the Welsh Government should consider re-structuring NDF Chapters 4 and 5 in the following way:

Page | 7

- a section setting out the strategic direction that local planning authorities are required to take into consideration when drafting their SDPs and LDPs;
- a section setting out the planning policies against which all types of DNS applications will be determined;
- a section setting out policies (e.g. Policies 8 and 9) which do not fall within the definition of 'development'⁵ but will be a material consideration for SDPs, LDPs and DNS applications; and
- a section setting out the Welsh Government's position in relation to non-devolved projects to inform Welsh Government and LPA responses; and
- for ease of reference, the NDF should also include paragraph numbers.

⁵ "...the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land" (Section 55 of the Town and Country Planning Act 1990 (as amended))

Innogy Renewables UK Ltd: Response to Draft National Development Framework

Annex 2: Analysis of ARUP's Assessment of onshore wind and solar energy potential in Wales

1. INTRODUCTION

Page | 1

- 1.1 The ARUP assessment has been completed in two stages: Stage 1 – Development of Priority Areas for Wind and Solar Energy (7 March 2019) and Stage 2 – Refinement of Priority Areas for Wind and Solar (20 June 2019). These assessments have contributed to Draft National Development Framework (NDF) Policy 10 'Wind and Solar Energy in Priority Areas' (p.38) and the associated identification of Priority Areas (p.42).
- 1.2 One of the key issues inherent within both the Stage 1 and Stage 2 assessments is the decision to conflate onshore wind and solar – these two technologies are so inherently different that it is impossible for a combined assessment to provide any meaningful outputs. Some areas may well be suitable for both onshore wind and solar, but the approach to constraints mapping is so different that separate assessments would have been more appropriate.
- 1.3 In this Annex, innogy provides comments on the ARUP assessments.

2. ARUP FIXED AND VARIABLE CONSTRAINTS

- 2.1 innogy has the following comments to make on the fixed and variable constraints which have been used to inform the ARUP assessments.
- 2.2 FIXED CONSTRAINTS
- 2.2.1 In the context of large scale onshore wind, the use of National Parks (NPs), Areas of Outstanding Natural Beauty (AONBs), Ramsar sites, World Heritage Sites (WHS), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and candidate SACs (cSACs), Ancient Woodland, Conservation Areas, NATS specified Communication System, Airports and Runways and Urban Regions as fixed constraints is considered broadly appropriate and innogy has no objection to their inclusion.
- 2.2.2 The key issue with a number of these fixed constraints is the inappropriate and onerous buffers that ARUP have applied to the designations themselves – this is discussed further below.
- 2.3 VARIABLE CONSTRAINTS
- 2.3.1 Generally, it is not clear which variable constraints have been used to develop and then refine the Priority Areas. Notwithstanding this, innogy has the following comments to make on some of the variable constraints.

2.4 Woodland

- 2.4.1 Table 2 within Appendix A of the ARUP Stage 1 assessment lists out the forms of woodland that have been included within the classification of 'Woodland' as a variable constraint. This is a very broad definition that covers all forms of forestry, including 'coniferous forestry'.
- 2.4.2 Notwithstanding the fact that 'Woodland' does not appear to have featured as a constraint in the development of the Priority Areas, the fact that the ARUP assessments suggests that 'coniferous forestry' could or should be a constraint is of concern. It is acknowledged that there are areas of important woodland habitats that may be unsuitable for development however any impacts upon woodland would be assessed as part of the site-specific environmental impact assessment (EIA) process.
- 2.4.3 Woodland and large scale onshore wind farms can and do sit comfortably alongside each other – in fact, offering benefits to the other in the form of, for example, landscape mitigation, infrastructure improvements and habitat enhancement.
- 2.4.4 Three very large onshore wind farms have been developed within the Strategic Search Areas (SSAs) identified in Technical Advice Note 8 (TAN8), namely Pen y Cymoedd, Brechfa Forest West and Clocaenog Forest, all located on the Welsh Minister's woodland estate. These have all been successful in providing renewable energy and wider benefits to the local area through employment and community benefit funds, and to the people of Wales through the income they generate for the Welsh Ministers. Incidentally, all three are also on Open Access land which has been used as a constraint for several Priority Areas (see Section 9.2 of the ARUP Stage 2 Assessment where Priority Areas have been cross-checked against Technical Advice Note 8 (TAN8) Strategic Search Areas (SSAs)).
- 2.5 Peat deeper than 45cm and Regionally Important Geological and Geomorphological Sites (RIGS)
 - 2.5.1 The approach to Priority Areas described in the Stage 1 and Stage 2 ARUP assessments has been reviewed with respect to peat, geology and geomorphology by East Point Geo (EPG). Their comments are summarised below, and the full report is included as Appendix A to innogy's response.
 - 2.5.2 The review finds that the datasets used to support the chosen GIS-based constraints analysis, although not clearly stated, are likely to be satisfactory based on the involvement of Natural Resources Wales as a key stakeholder (NRW) and workshop participant. While there is some variability in the amount of peat shown on 'the national peat map for Wales' (FCW, 2012) and the 'unified peat map for Wales' (Evans et al, 2015), this is unlikely to have had any impact on the definition of Priority Areas in Stage 1.
 - 2.5.3 A number of scenarios are presented in the Stage 1 report, some of which include peat >45cm and Regionally Important Geological and Geomorphological Sites (RIGS) as selected

'variable' constraints. It is not clear to what extent peat >45cm or RIGS are 'switched on' in Drawing No. 7 (ARUP Stage 1 report) and therefore whether they contributed to 'Areas of varying opportunity', 'Areas of least opportunity', or both.

2.5.4 The Draft NDF (p.41) states that "renewable energy projects can also provide environmental benefits, such as contributing to resilient ecological networks, restoring degraded peatlands and restoring semi-natural grasslands on post-agricultural land". However, areas of peat >45cm are largely excluded from the refined Priority Areas in the ARUP Stage 2 report, limiting the likelihood that this tangible co-benefit of wind farm development can be realised.

2.5.5 Degraded peats >45cm (i.e. those that are heavily drained or afforested) should be removed from the 'peat >45cm' category. Where present, this 'degraded peat' category should be considered as an 'opportunity' within which wind farm development, where paired with a suitably robust peat and habitat restoration plan, should be supported by the planning process. This would enable the Welsh Government to promote peat restoration and renewable energy together.

2.5.6 innogy has committed significant funds to developing the 150MW Carnedd Wen Wind Farm and Habitat Restoration Project, which includes extensive restoration works to degraded peatlands – a project recommended for approval by the appointed Inspector. This is exactly the type of project that will deliver the tangible co-benefits envisaged by the Draft NDF (p.41), however the majority of this site is excluded from Priority Area 5.

2.6 Agricultural Land Classification

2.6.1 The avoidance of Agricultural Land Classification (ALC) Grade 1 and 2 land appears to have flowed directly from existing planning policy which applies to solar energy, not wind. Solar energy schemes are expected to avoid ALC Grade 1 land as the existence of infrastructure prevents meaningful agricultural use of this type of higher productivity land. The NDF appears to seek to expand this to ALC Grade 2 land. The impact on agricultural operations as a result of the construction and operation of a wind farm is significantly less than solar, and applying this constraint to onshore wind is wholly inappropriate.

2.6.2 There are numerous examples of wind farms on agricultural land and this proves that the two uses are perfectly compatible. The physical footprint of the turbine and any above-ground electrical infrastructure is not available for grazing, however the total area involved is minimal. Furthermore, an onshore wind farm site is typically not fenced so agricultural activities continue largely unhindered.

2.7 LANDMAP Visual and Sensory: High, Outstanding

2.7.1 innogy has commissioned LUC to provide advice on the landscape and visual aspects of the Draft NDF as well as the methodology and outputs of the ARUP assessments. Their

comments on LANDMAP are summarised below and the full report is included as Appendix B to innogy's response. Further commentary on the landscape and visual aspects of the ARUP assessment beyond LANDMAP is provided in the Landscape & Visual section below and in the LUC Report at Appendix B.

- 2.7.2 LUC highlight that within any area there is considerable variation across the whole. They also point out that any overall evaluation in LANDMAP is subjective and, due to developments that have taken place subsequent to the evaluation, often out of date. A better approach might be to consider Landscape Character Type (LCT) which is more relevant to the selection of wind farm sites e.g. 'forested upland plateau' or 'plains' – these also have the advantage of being more objective. Page | 4
- 2.8 Open Access
- 2.8.1 Although it is not clear whether open access land (which includes common land, forestry and other designations) was switched on for the refinement of Priority Areas, a cross-reference of open access land against the Priority Areas indicates that this has been largely achieved. As with Woodland and ALC Grade 1 & 2 land, there is absolutely no justification for open access land to be considered a constraint to wind farm development.
- 2.8.2 There are numerous examples of wind farms on open access land and this proves that the two uses are perfectly compatible. The physical footprint of the turbine and any above-ground electrical infrastructure is not available, however the total area involved is minimal. Furthermore, the wind farm site is typically not fenced so open access activities continue largely unhindered. There are numerous examples of successfully developing, constructing and operating sites on open access land, including innogy's onshore wind sites at Brechfa Forest West, Clocaenog Forest and Mynydd y Gwair.
- 2.9 Historic Landscapes
- 2.9.1 innogy has commissioned Headland Archaeology (Headland) to review the sections of the ARUP reports relating to the Historic Environment; the full report is included as Appendix C to Innogy's response. With regards Registered Historic Landscapes, Headland comment that "The exclusion of Registered Historic Landscapes from the Refined Priority Areas appears reasonable, given that development proposals within a Registered Landscape could still, in principle, be accepted if the criteria in draft NDF Policy 11 were met."
- 2.10 UNESCO Biosphere
- 2.10.1 innogy has commissioned SLR Consulting (SLR) to review the ecology aspects of the Draft NDF as well as the methodology and outputs of the ARUP assessments. Their comments as a whole are summarised below and the full report is included as Appendix D to innogy's response.

- 2.10.2 SLR note that UNESCO's Biospheres have three aims: "Conservation protecting, wildlife, habitats and the environment; Development – encouraging a sustainable economy and community; and Education – supporting research, monitoring, and building global networks to share and learn.to inspire communities to work together"¹.
- 2.10.3 In SLR's view, large-scale wind power is not necessarily incompatible with a UNESCO Biosphere and are aware of several wind projects operating within other Biospheres, e.g. the Galloway and Southern Ayrshire Biosphere Reserve. The exclusion of the TAN8 SSA D (Nant y Moch) area, in part due to the presence of the River Dyfi UNESCO Biosphere, is therefore highly questionable.

3. TOPIC-SPECIFIC COMMENTARY

- 3.1 Comments on ARUP's Stage 2 assessment, specifically the sections addressing landscape and visual assessment, centres of population, grid connection, ecosystem services and resilience, the historic environment and refining the Priority Areas are provided below.
- 3.2 Landscape and Visual Assessment (ARUP Stage 2: Section 3)
- 3.2.1 As the NDF is a policy document, its application in practice by the Welsh Ministers in determining DNS applications will be subject to legal duties relating to NPs, AONBs and other designated assets. A buffer on these designations is therefore not appropriate at the plan making stage – the EIA process will consider the detailed site-specific basis and the decision-maker will determine the acceptability or otherwise of any individual scheme on that basis. The high level strategic landscape study carried out by ARUP risks excluding suitable areas, as well as including unsuitable areas.
- 3.2.2 LUC's advice on the landscape and visual aspects of the Draft NDF are summarised below, and the full report included as Appendix B to Innogy's response.
- 3.2.3 LUC are critical of the lack of transparency in ARUP's methodology as well as the confusing way in which the methodology and outputs are presented. Table 5 of the Stage 2 report is highlighted for particular criticism as it sets out the process used for refinement but is not consistent with the stated methodology elsewhere. For example, LUC observe that value judgements have been made in refining Priority Areas about which views from particular designations are more important than others. This does not form a part of the methodology described and it is questionable whether ARUP have followed a consistent process.
- 3.2.4 In relation to the Stage 2 report, it is noted that a buffer of any fixed distance is somewhat arbitrary and should be treated with caution. Specifically, LUC observe that "Indications of visibility do not equate to visual impacts, still less to significance". They suggest that it would

¹ <https://www.dyfibiosphere.wales/what-is-a-biosphere>

be better to provide guidance or refer to the need for consideration of buffers at the detailed design stage based on a site-specific Landscape and Visual Impact Assessment.

3.2.5 The use of 'line of sight' modelling is criticised. LUC argue that it is too detailed an approach for a high level strategic assessment and the way that it is presented within the ARUP reports suggests a level of accuracy beyond what is achievable at this scale. Additionally, it is not consistent with NRW's Draft guidance for Landscape Sensitivity and Capacity: An Assessment approach for Wales (August 2018)². The significance of visual effects and effects on setting are influenced by much more than the potential for intervisibility. ARUP have done extensive and detailed work, but this is a very crude tool which, unfortunately, seems to have had a significant influence on the extent of Priority Areas.

3.2.6 The ARUP Stage 1 analysis, which leads to the areas of greatest, varying and least opportunity, is based on a well-established approach. Assuming that the appropriate constraints can be clearly identified at each level, then the resulting areas form a useful guide to the likely constraint on any given area. As an output, this type of mapping would have the benefit of being relatively simple to interpret and apply, assuming that a clear methodology is presented. It avoids the need for subjective judgements that have been applied in the definition and refinement of Priority Areas, and which are therefore open to challenge.

3.3 Centres of Population (ARUP Stage 2: Section 4)

3.3.1 Section 4 of the ARUP Stage 2 refinement exercise only provides an assessment of centres of population in the context of opportunities for Power Purchase Agreements (PPAs) or direct feed arrangements, opportunities for community engagement and ownership, the impact on energy losses from overhead line distances, and the proximity of renewable energy to demand centres.

3.3.2 A fundamental omission from the ARUP assessments is its failure to factor in separation distances from existing residential properties. This is vitally important in the context of neighbouring amenity, i.e. to ensure compliance with noise limits under ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms' as well as to avoid unacceptable effects from shadow flicker and residential visual amenity.

3.3.3 Prior to investigating a potential site, developers will apply a reasonable separation distance (e.g. 800m) from existing residential properties. Separation distance is not a definitive issue, and the factors involved in noise, shadow flicker and residential visual amenity are more complex than setting a specific distance, however, separation of turbines from residential properties is likely to be greater than 800m following detailed design work.

² <https://naturalresources.wales/guidance-and-advice/environmental-topics/consultations/our-own-consultations-closed/landscape-sensitivity-and-capacity-assessment/?lang=en>

3.4 Grid Connection (ARUP Stage 2: Section 5)

- 3.4.1 The ARUP assessment of grid has focussed on the proximity to the existing grid network. Capacity, not physical proximity to grid infrastructure, is the key variable for a grid connection. There is no benefit in being close to a network that has no capacity, but it may be worth bringing the network into an area of unconstrained wind resource.
- 3.4.2 Additionally, no consideration has been given to economies of scale. Viability depends upon the capacity that is looking to connect. A 10MW wind farm will need to be relatively close to a suitable connection, whereas a >100MW wind farm can still be viable with a connection much further away.
- 3.4.3 Particularly of concern is Section 5 of the ARUP Stage 2 assessment which rules out sites that are >20km from a substation. This could rule out some large sites (or groups of smaller sites) that could potentially be viable with a longer grid connection. For example, innogy's 57.4MW Brechfa Forest West Wind Farm has a grid connection in excess of 28km, plus additional works. The significant costs associated with this connection, which was itself a Nationally Significant Infrastructure Project (NSIP) consented under the Planning Act 2008, were carried by this single project. Therefore, it is fundamentally incorrect for ARUP, as they state in Appendix A of their Stage 2 report, to assume such distances are too expensive.
- 3.4.4 ARUP acknowledge that grid is constrained, and therefore a more practical approach may be to consider areas where new connection hubs could be built – both to connect renewable energy projects and to strengthen the network for consumers, including to accommodate the roll-out of electric vehicles (EV).
- 3.4.5 The consideration of losses in Section 4, whilst important, need to be compared to the alternatives. For example, the losses on a 132kV generation circuit feeding into a Grid Supply Point (GSP) need to be compared to the alternative losses that the network would have seen if this energy had to be transported into Wales. Losses are lower when generation is consumed by nearby demand. The report gives an example of losses on a 132kV line but does not consider that using hubs to collect generation and higher voltages (e.g. 400kV) could reduce losses.
- 3.4.6 At the end of Section 5, it is recommended that the Priority Areas are not refined on the basis of grid as this is not static. It is questionable, therefore, whether grid should have been considered at all in the selection of the Priority Areas, as proximity to grid and acceptable upgrade costs will depend upon economies of scale and how much generation is being developed.

3.5 Ecosystem Services and Resilience (ARUP Stage 2: Section 7)

- 3.5.1 SLR believe that the ARUP approach is seriously flawed in terms of its consideration of ecology and biodiversity and advise abandoning the Priority Areas. Their full report is included as Appendix D to innogy's response.
- 3.5.2 In SLR's view, the fixed constraints relating to ecology and biodiversity, i.e. European sites and ancient woodland, are appropriate. SLR highlights that other features which could prove to be constraints to development at a site level, e.g. non-statutory sites, are not identified as variable constraints and have therefore not been considered.
- 3.5.3 Table 10 in Appendix A to the ARUP Stage 1 report suggests that buffer zones were not applied, stating that only "AONB, National Park and existing building constraints will have buffer zones applied". However, this appears to be contradicted in Section 7.2 of the Stage 2 report, which states that the Habitats Regulations Assessment (HRA) for the Draft NDF³ is based on the premise that "all the Priority Areas for Refinement contain buffer zones for the various [European] sites". Whilst buffer zones around some nature conservation sites and features will be appropriate, SLR question the validity of applying fixed buffer zones to ecology and biodiversity-related constraints at the plan-making stage as they believe the need for buffer zones, and their extent, can only be determined on a site and feature-specific basis.
- 3.5.4 Other than European sites and ancient woodland, which are effectively no-go areas for wind development under current planning policy, the identification of Priority Areas does not appear to have considered ecological constraints (although there is a lack of clarity within the Stage 1 and Stage 2 reports in terms of how exactly the boundaries of the Priority Areas have been defined). It is therefore likely that most, if not all, Priority Areas contain a number of potentially significant ecological constraints to development and it is possible that many sites within the Priority Areas could even be more constrained, in terms of ecology and biodiversity, than sites outside the Priority Areas. This could either result in many sites within Priority Areas being too heavily constrained for wind development or, given the policy presumption in favour of development within the Priority Areas, sites being developed that result in adverse outcomes for ecology and biodiversity.
- 3.5.5 In respect of ecology and biodiversity SLR therefore believe that the Priority Areas approach, as set out in the ARUP Stage 1 and 2 reports, is both unclear in its approach and unbalanced in the weight given to ecology and biodiversity constraints other than European sites and ancient woodland. SLR therefore conclude that this approach is seriously flawed.

³ Arcadis for Welsh Government, Wales NDF – Implications for the Natura 2000 network of Priority Areas for Renewables Development across Wales, March 2019 [note that review of the Arcadis report was beyond the scope of this review]

3.6 Historic Environment (ARUP Stage 2: Section 8)

- 3.6.1 Headland comments on the Draft NDF as well as the methodology and outputs of the ARUP assessments are summarised below; their full report is included as Appendix C to innogy's response.
- 3.6.2 Common to both policies 10 and 11, it is not clear what is meant by "identified protected ... archaeological, architectural or historic assets". Does "protected" mean a "designated asset" as defined in TAN24; does it also include assets on statutory lists (i.e. the Register of Historic Parks and Gardens); does it include assets on non-statutory advisory registers (i.e. the Register of Historic Landscapes in Wales); or does it include all historic assets?
- 3.6.3 An overarching concern is that the Historic Environment has been used to reduce Priority Areas but the lack of clarity in the policy wording means that significant weight could still be accorded to 'residual' heritage impacts. In the opinion of Headland, developments within the Priority Areas are unlikely to see any consenting benefits in relation to the Historic Environment. This needs to be made explicit to consultees and decision makers.
- 3.6.4 The selection and use of Historic Environment criteria for the initial ARUP Stage 1 assessment appears reasonable and in accordance with the importance and sensitivity to change of the three categories of asset used (World Heritage Sites, Conservation Areas and Historic Landscapes). However, for the ARUP Stage 2 refinement exercise there is no clear intellectual case for the selection and application of Historic Environment constraints.
- 3.6.5 Headland raise particular concerns with the use of the UK list of historic assets drawn up in accordance with the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict. This was originally adopted in order to safeguard cultural property from physical damage during wartime and may not be appropriate for defining historic assets that are particularly sensitive to the (primarily visual) changes that arise from wind and solar developments.
- 3.6.6 Commentary on the specific reasons for refinement is given in Appendix 1 of Headland's report and there appear to be some errors or inconsistencies in the reasons.
- 3.6.7 Headland is concerned that the lack of clarity over the intended level of permissiveness in draft NDF Policy 10 has infected the refinement exercise. There does not seem to have been a clear intellectual case for the selection and application of historic environment constraints which has caused disproportionate reduction of the Priority Areas on heritage grounds.
- 3.6.8 Wind and solar developments are very different in terms of their impact on the historic environment – the nature of visual changes and ground impacts differs greatly between the two types of development. Headland question whether the historic environment constraints applied are appropriate for both wind and solar development and therefore whether their inclusion in the refinement exercise has been of any benefit at all.

- 3.6.9 There is little justification for the blanket use of buffer zones around heritage assets to assist in refining the Priority Areas. It isn't clear whether the refinement exercise has made use of any location-specific information (e.g. topographic) in deciding whether the presence of a buffer should influence the extent of a Priority Area. There is no reason why wind or solar developments within any set distance of one of these assets should necessarily cause harm to their significance, meaning that the blanket buffers could in many cases be irrelevant.
- 3.6.10 In Headland's view, there may be a role for buffer zones in detecting whether a potential constraint requires closer examination, but they should not be relied on to deconflict development policies with historic assets.
- 3.7 Refining the priority areas (ARUP Stage 2: Section 9)
- 3.7.1 As part of the Stage 2 refinement exercise, ARUP has undertaken an exercise of cross-checking the Priority Areas against the TAN8 SSAs. This highlights inconsistencies between the prescription of the TAN8 SSAs and the NDF Priority Areas. Of particular note are the blatant contradictions and inconsistencies between work that ARUP completed on the TAN8 SSAs (including the subsequent refinement exercise for each); and ARUP's current work in developing and refining the NDF Priority Areas. From innogy's perspective, the following contradictions are notable:
- 3.7.2 SSA A Clocaenog Forest: the first bullet-point under paragraph 9.3 states that "the eastern edge of SSA A sits outside Priority Area for Refinement 3" thereby "avoiding the historic landscape". As stated above (Section 2.9), development proposals within a historic landscape could still, in principle, be acceptable. The Alwen Forest project, under option to innogy from NRW and DCWW, is wholly within SSA A and the refined ARUP boundary (both prepared by ARUP), however six out of the nine proposed wind turbines are outside the Priority Area 15. innogy has invested significantly in developing the Alwen Forest project on the basis of its inclusion within an area deemed suitable for large scale onshore wind farms in TAN8; its exclusion in part from the Priority Area 15 is therefore a significant concern. Notably, Priority Area 15 boundary also excludes two of the constructed 145m tip height turbines at Clocaenog Forest – a location judged to be acceptable through the planning process.
- 3.7.3 SSA B Carno North: the second bullet-point under paragraph 9.3 notes the presence of "variable constraints including LANDMAP visual sensory high and outstanding areas, open access areas and UNESCO biosphere areas" and that "the full SSA is not covered [by a Priority Area] due to the proximity to Snowdonia National Park". As noted above (Sections 2.7, 2.8 and 2.10), these three variable constraints are not incompatible with wind farm developments and should not be used as a reason for excluding suitable areas. As stated above (Section 3.2 and Appendix B), a buffer of any fixed distance is somewhat arbitrary. The Welsh Ministers in determining DNS applications will be subject to legal duties relating

to National Parks and it is therefore not appropriate at the plan making stage to apply a buffer. innogy's 50 turbines at 137m tip height (150MW) Carnedd Wen Wind Farm and Habitat Restoration (CW) project is located wholly within TAN 8 SSA B and the refined SSA B boundary (both prepared by ARUP). Following a conjoined public inquiry into six Mid Wales projects⁴, the CW project was recommended for approval by the Planning Inspector. In the Draft NDF, 23 of the CW turbines are within Priority Area 5 whilst 27 are outside, largely due to the inclusion of a buffer from the National Park. The CW project already achieves a 3km separation from the SNP and the arbitrary buffer applied by ARUP in refining the Priority Area is excessive and not evidence-based. innogy has invested significant funds at risk in the development of the CW project on the basis that it is a suitable location for a wind farm. CW is also located on degraded peat and offers the tangible co-benefit envisaged in the Draft NDF (see Section 2.5 above) which will not be realised if the inappropriate constraints and buffers suggested by ARUP are taken forward.

3.7.4 SSA E Pontardawe: Priority Area 14 boundary excludes three of the 16 constructed 127m tip height turbines at Mynydd y Gwair – a location judged to be acceptable through the planning and common land consent processes.

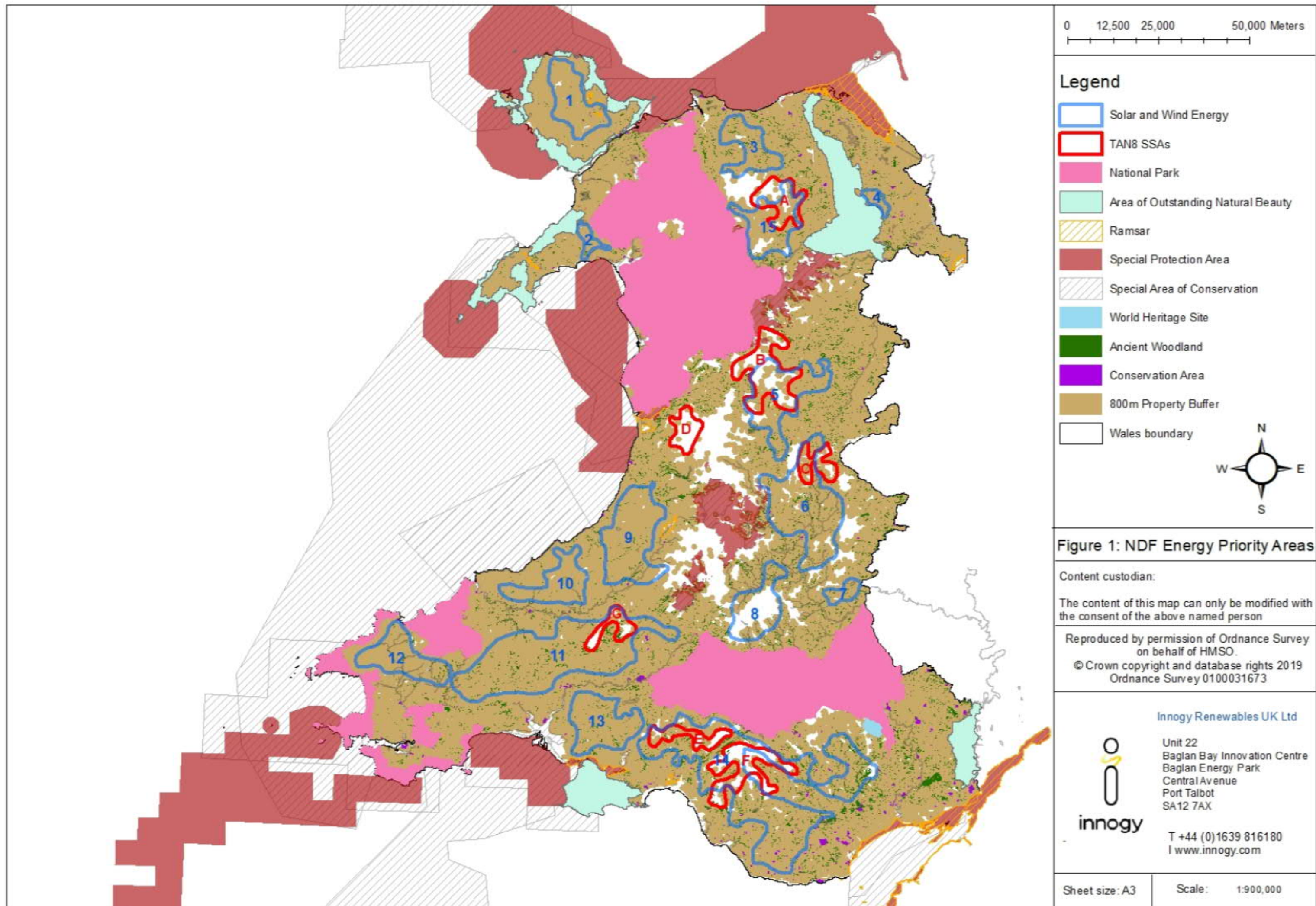
3.7.5 Discrepancies relating to non-innogy sites include:

- SSA A Clocaenog Forest: Pant y Maen (consented) and Brenig (operational) are within SSA A but excluded from Priority Area 15;
- SSA B Dyfnant Forest: Dyfnant Forest and Cemmaes 3 are within SSA B but excluded from Priority Area 5;
- SSA C Newtown South: Llandinam (operational with consent to repower) is within refined SSA C boundary but excluded from Priority Area 6;
- SSA D Nant y Moch: Nant y Moch in SSA D boundary but no Priority Area identified in this location due to “variable constraints including high and outstanding visual sensory LANDMAP classification, open access land and UNESCO biosphere area” and, furthermore, because “no schemes have come forward in this area”. As noted above (Sections 2.7, 2.8 and 2.10), the application of these variable constraints is inappropriate and has resulted in the exclusion of a potentially suitable site. It is difficult to accept the reasoning around ‘no schemes coming forward’ – the Nant y Moch wind farm project progressed through EIA and was stalled due to issues surrounding grid and access, not because this is not a suitable location for a large-scale onshore wind farm.

⁴ Section 36 of the Electricity Act 1989

- SSA E Pontardawe: refined SSA E consists of the western and eastern parts of SSA E, whilst Priority Area 14 shows the eastern refined SSA E boundary to be solar only;
- SSA F Coed Morgannwg: Pen y Cymoedd wind farm (228MW), one of the largest operational schemes in the UK, is located largely within a solar only area in Priority Area 14. This is evidence of the erroneous and contradictory mapping exercise conducted in delineating the Priority Areas; Y Bryn (located on the Welsh Government's estate and recently subject to a tender) is within the refined SSA F yet the Southern block is excluded from Priority Area 14 due to the presence of a historic landscape; and areas within Priority Area 14 are identified as solar only which are in areas of commercial plantation. Clear-felling of commercial plantation for solar farms is unlikely to be acceptable because of the significant landscape changes, the loss of extensive commercial forestry, difficulty of the resulting land cover, and excessive costs – it also potentially contradicts the aims of NDF Policy 9 National Forest;
- SSA G Brechfa Forest: Priority Area 11 is a significant area and does include all of SSA G, however the application of a 800m housing buffer highlights very limited potential outside of the already developed areas of the SSA.

3.7.6 The raft of inconsistencies between the output of ARUP's work on the TAN8 SSAs and the output of its recent exercise in identifying NDF Priority Areas as set out above is further evidence that the Welsh Government should attach limited weight to ARUP's assessment. It is simply inconceivable that this many operational and consented wind farms are in locations that were previously deemed suitable under TAN8 but are now unsuitable under the NDF.



Welsh Government National Development Framework

Peat, Geology and Geomorphology Review of Planning Policy

September 2019

© East Point Geo Ltd 2019

Client	Innogy Renewables UK Limited
Document Number	19-INN-001-01
Author(s)	Andy Mills, Director
Approved by	Andy Mills, Director
Version	01
Date	30/09/2019

Contents

1. Background 1

2. Approach..... 2

3. Suitability of the WG approach to constraints 3

4. Alternative approaches..... 9

5. Summary..... 11

6. References..... 12

1. Background

- 1.1 The Welsh Government (WG) has recently commenced a consultation on their Draft National Development Framework (NDF). This document is intended to set the direction of and priorities for development in Wales from 2020 through to 2040. It includes significant information regarding the future development of large scale renewables, specifically onshore wind and solar power. Pages 36 through to 42 and Policies 10 through to 13 of the Draft NDF address this topic.
- 1.2 The Draft NDF identifies 15 Priority Areas, within which there is a presumption in favour of large scale onshore wind and solar energy development. Any developments outside the Priority Areas will not carry explicit Welsh Government support but may be deemed acceptable, with proposals being determined on their individual merits (development is not acceptable within National Parks or AONBs).
- 1.3 In addition to the relevant sections of the Draft NDF, there are 3 additional documents which provide further information on how the 15 Priority Areas have been identified and refined, and set out the fixed and variable constraints that have been applied:
- Priority Areas for Solar and Wind Energy - Executive summary stage 1 and 2 (12 July 2019).
 - Assessment of onshore wind and solar energy potential in Wales - Stage 1 - Development of Priority Areas for Wind and Solar Energy (7 March 2019).
 - Assessment of onshore wind and solar energy potential in Wales - Stage 2 - Refinement of Priority Areas for Wind and Solar Energy (20 June 2019).
- 1.4 Innogy Renewables UK Limited (Innogy) is concerned that the allocations and approach taken in the Draft NDF are fundamentally flawed and largely undeliverable. Innogy believes that many of the constraints applied are inappropriate - in most cases being more suitable for consideration on a site-by-site basis as part of a detailed environmental impact assessment. Furthermore, other key constraints relevant to the development of wind energy have been ignored, thus rendering the vast majority of the Priority Areas as unsuitable for large scale wind development. Accordingly, Innogy are seeking to put forward a case for an alternative approach to that presented in the Draft NDF.
- 1.5 Innogy commissioned East Point Geo Ltd (EPG) to review the treatment of peat, geology and geomorphology within the Draft NDF and supporting documents, the constraints applied and how these topics could or should be more appropriately considered in relation to onshore wind power. The scope of work comprises:
- i) Preparation of a short, written report setting out whether the approach taken to peat, geology and geomorphology in the Draft NDF is appropriate and, if not, why not.
 - ii) If appropriate, provision of one or more alternative approaches to the consideration of peat, geology and geomorphology issues when setting high level planning policy guidance for large scale (>10MW) onshore wind farms.
- 1.6 This document provides an assessment of the Draft NDF in relation to peat, geology and geomorphology and commentary on whether and what alternative approaches might be appropriate. Section 5 of this document provides a short synthesis of the report findings suitable for inclusion in Innogy's consultation response.

2. Approach

- 2.1 In order to support Innogy's requirements, a sequential review of documents has been undertaken considering the supporting documents to the NDF, and ultimately the Draft NDF itself. The following documents have been reviewed:
- Assessment of onshore wind and solar energy potential in Wales - Stage 1 - Development of Priority Areas for Wind and Solar Energy (7 March 2019) (WG, 2019a).
 - Assessment of onshore wind and solar energy potential in Wales - Stage 2 - Refinement of Priority Areas for Wind and Solar Energy (20 June 2019) (WG, 2019b).
 - Priority Areas for Solar and Wind Energy - Executive summary stage 1 and 2 (12 July 2019) (WG, 2019c).
 - National Development Framework 2020-2040 - Consultation Draft: 7 August – 1 November 2019 (WG, 2019d).
- 2.2 In addition to these documents, the following documents have been reviewed (with respect to peat, geology and geomorphology) as context:
- Welsh Government NDF - Habitats Regulations Assessment: Rules of Thumb: August 2017 (WG, 2017).
 - Wales NDF - Implications for the Natura 2000 network of Priority Areas of Solar and Wind Energy development across Wales - HRA Report: June 2019 (WG, 2019e)
 - Wales National Development Framework - Habitats Regulations Assessment: July 2019 (WG, 2019f).
 - A strategic assessment of the afforested peat resource in Wales – Forestry Commission Wales report: October 2012 (FCW, 2012).
 - Glastir monitoring and evaluation programme – Centre for Ecology & Hydrology: May 2015 (Evans et al, 2015).
- 2.3 Review of these documents has been undertaken with the following objectives in mind:
1. Assessing the suitability of the approach to opportunities and constraints (with respect to peat, geology and geomorphology).
 2. Assessing the suitability of the data used in the approach.
 3. Assessing whether alternative approaches to peat, geology and geomorphology might be preferable.
- 2.4 A key part of the review has been comparison of the outputs of the Development of Priority Areas for Wind and Solar Energy (DPAWSE) approach with peat data for Wales. Additional context is available from the treatment of peat as a constraint in Scotland, where peat and carbon-rich soils are a key consideration in planning policy on both a National and Regional level.

3. Suitability of the WG approach to constraints

3.1 The Executive Summary for the DPAWSE states that the Draft NDF is “*not about local matters which are normally dealt with at local authority level – but rather [takes] a broader look at what Wales, as a whole, needs in order to achieve prosperity and well-being now and in the future*” (p5; WG, 2019a). This means that site scale consideration of constraints is not addressed by the approach.

3.2 In relation to wind and solar energy specifically, the DPAWSE comprised a two-stage process to develop an interactive tool to indicate the potential output of onshore wind and solar projects across Wales against specific technical, environmental and landscape constraints. In planning, peat is traditionally considered as an environmental constraint, however, there may also be *opportunities* associated with wind farms, such as implementation of peatland restoration in association with wind farm projects (where otherwise such restoration would have no funding mechanism). This latter point is acknowledged in the NDF:

“Renewable energy projects can also provide environmental benefits, such as contributing to resilient ecological networks, restoring degraded peatlands and restoring semi-natural grasslands on post-agricultural land”

(p41; WG, 2019d)

3.3 The approach to identifying opportunities and constraints in the DPAWSE is typical of Geographical Information System (GIS) based spatial planning tools in that it comprises a set of inputs with spatial attributes that are layered, weighted and compared. Constraints are layered and areas of least constraint typically have the greatest opportunity. It is rarely the case that inputs are considered as ‘opportunity’ layers, so the GIS approach is essentially one of reducing complexity by screening out areas of greatest constraint.

3.4 The suitability of GIS-based approaches is a function of:

- i) The coverage and reliability of the input datasets.
- ii) The approach to weighting and layering of input datasets.
- iii) The accuracy of the processing undertaken in GIS to layer and compare the datasets.

These issues are considered further below:

Coverage and reliability of the input datasets

3.5 In relation to peat, although not stated in the Stage 1 report (WG, 2019a), the primary input dataset for Wales is assumed to be the ‘national peat map for Wales’ (p20; FCW, 2012). This map is derived from multiple sources: National Soils Research Inventory (NSRI), British Geological Survey (BGS) and Countryside Commission for Wales (CCW, now Natural Resources Wales, NRW) peatland habitat mapping. This map categorises peat soils into ‘deep peaty soils (including modified peat)’, ‘shallow peaty soils’ and ‘soils with peaty pockets’. The FCW report states that ‘deep peaty soils’ are defined as “*organic matter depth >45cm*” (p15; FCW, 2012). This corresponds to the category of peat used as an input layer to the DPAWSE (see excerpt below, Figure 1):

Table 2: User-variable constraints applied to create user defined high risk areas, which are added to the high risk base layer

Category	Fixed constraint	Wind/Solar	Criteria	Copyright	Reference
	Peat deeper than 45cm	Both	Exclude all	© Crown copyright: Welsh Government	Developer input on variability. Depth defined by dataset

Figure 1 Excerpt from Table 2 (Appendix A) of Stage 1 report

- 3.6 A unified peat map for Wales was subsequently prepared as part of the Glastir Monitoring and Evaluation Programme (Evans et al, 2015). Figure 1 in the associated report shows good correspondence with the FCW map 'deep peaty soils' layer, though the resource appears slightly more fragmented than in the FCW map. This is likely to reflect the report's observation that peat appeared to be slightly over-represented in upland areas and under-represented in lowland areas.
- 3.7 As a key stakeholder, workshop attendee and contributor to the Stage 1 and Stage 2 DPAWSE (p11; WG, 2019a; p3; WG, 2019b), it is assumed that the most up-to-date peat depth data would have been incorporated in the approach by NRW, though it is not clear whether the Glastir or FCW outputs were used. **Although the source and reliability of peat depth data is not clearly stated it is likely that up-to-date data were provided by NRW and therefore that the data used is suitable at the scale of assessment.**
- 3.8 In relation to geology and geomorphology, these constraints typically have related engineering implications (e.g. suitability of ground conditions for foundations) or local impacts (e.g. fluvial geomorphological implications of channel engineering works) which are considered during EIA or during engineering design. As planning constraints at a national level, they are considered within RIGS as 'Regionally Important Geological and Geomorphological Sites'. These sites are regarded as the most important sites for geology and geomorphology outside statutorily protected land such as Sites of Special Scientific Interest (SSSI).
- 3.9 Table 2 of the Stage 1 report indicates the RIGS data to have been provided from an NRW database. **It is likely therefore that this data is suitable.**

The approach to weighting and layering of input datasets

- 3.10 The GIS-based constraints analysis documented in the Stage 1 and 2 reports can be summarised as an initial filtering of input layers at Stage 1 to define 'Priority Areas for Refinement' (Drawing No. 7; WG, 2019a) and subsequent refinement by consultation to define 'Priority Areas' that inform the policies in the Draft NDF. The treatment of peat, geology and geomorphology within each stage is a key factor in determining the suitability of the adopted approach.

Stage 1: Derivation of Priority Areas for Refinement

- 3.11 In Stage 1, constraint layers are considered as either 'fixed' or 'variable' constraints. 'Fixed' constraint layers (also termed 'high risk') cannot be removed and their presence in any particular area implies 'least opportunity' (p12; WG, 2019a). 'Variable' constraint layers can be removed or retained (switched on) dependent on varying scenarios (e.g. a low constraint scenario vs a high constraint scenario). In locations where there are very few constraining layers visible, there should be greater opportunity. A third category of constraints was also used – 'overlay' – in which input data "*are for information purposes and do not have an effect on the size of the areas of opportunity*". Both peat and geology/geomorphology (henceforth considered together in this document) were considered to be 'variable' constraints (Table 3; WG, 2019a), implying a lower level of importance than the 'fixed' constraints.
- 3.12 The spatial framework for layering constraints was a 250m x 250m grid cell. If >50% of a cell was covered by a 'fixed' or 'switched on (variable)' constraint layer, then the cell was excluded as a location of opportunity. **At the national and regional level of application of the tool, this spatial framework is satisfactory and the % criteria is reasonable.**
- 3.13 In order to progress Stage 1 to develop 'Priority Areas for Refinement' (PAR), four scenarios were tested using the GIS tool:

- **Scenario 1:** comprising only 'fixed' constraints in order to minimise constraint and maximise opportunity – in this case, neither peat nor RIGS would have been considered as a constraint.
- **Scenario 4:** comprising all 'fixed' and 'variable' constraints, maximising constraint and minimising opportunity – in this case, peat and RIGS would have been considered as a constraint and no areas with peat soils >0.45cm in depth would fall within PAR.
- **Scenarios 2 and 4:** comprising all 'fixed' constraints and varying levels of the 'variable' constraints; the perception of which 'variable' constraints should be switched on or off would depend upon the stakeholders involved in the decision-making process.

3.14 In order to produce mapped output of the scenarios, 'fixed' and 'variable' constraints were plotted as follows:

- 'fixed' were plotted as grey (i.e. no-go areas or 'areas of least opportunity').
- 'variable' constraints, if selected as a constraint under a particular scenario, were also plotted as grey (i.e. no-go areas).
- 'variable' constraints, if present but not selected were plotted as light green ('areas of varying opportunity').
- If no constraints were present in an area, the area was plotted as dark green ('areas of greatest opportunity').

The boundaries for PAR were generally plotted around areas of dark green polygons though locally extended into areas of light green (see Figure 2). Therefore, areas of peat >0.45 may well have been incorporated within the PAR boundaries (and not considered as a constraint).

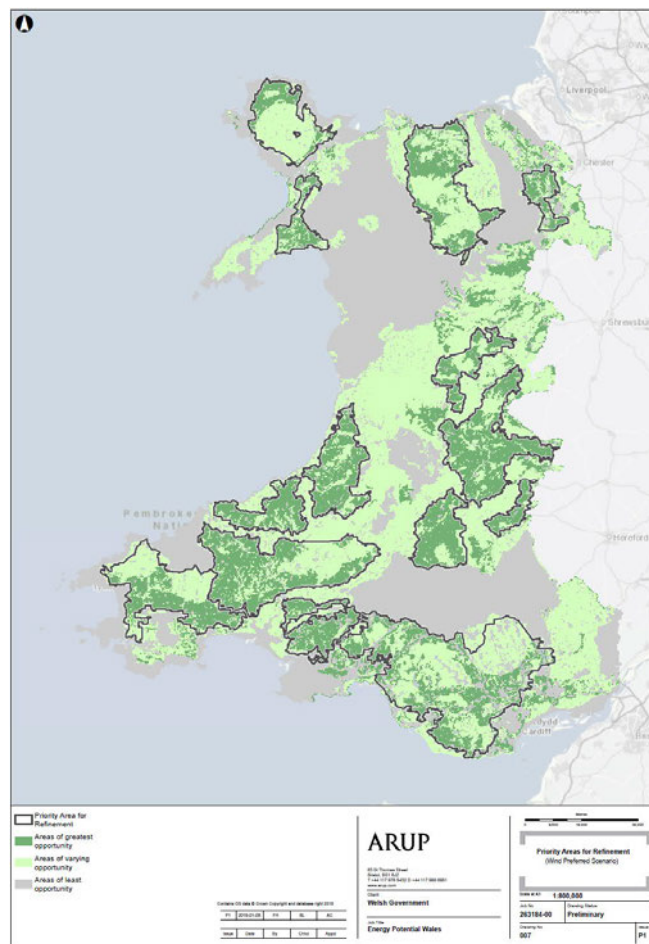


Figure 2 Drawing No 7 showing Stage 1 Priority Areas for Refinement

- 3.15 For Scenario 2 (termed 'Low constraint, high output; Appendix B2; WG, 2019a), neither peat nor RIGS were 'switched on' and therefore neither was considered in definition of the PAR.
- 3.16 For Scenario 3 (termed 'High constraint, low output'), both peat and RIGS were switched on and therefore both would have directly contributed to definition of the PAR. It is noted in Appendix B2 that "*the list [of variable constraints] was further refined to create a preferred scenario and a final list of constraints*". This refined list is shown as Table 3 in the main Stage 1 report **and shows both peat and RIGS to be variable constraints**. This indicates that subsequent users of the tool would have the ability to exclude both peat and RIGS from consideration in assessing wind farm potential.

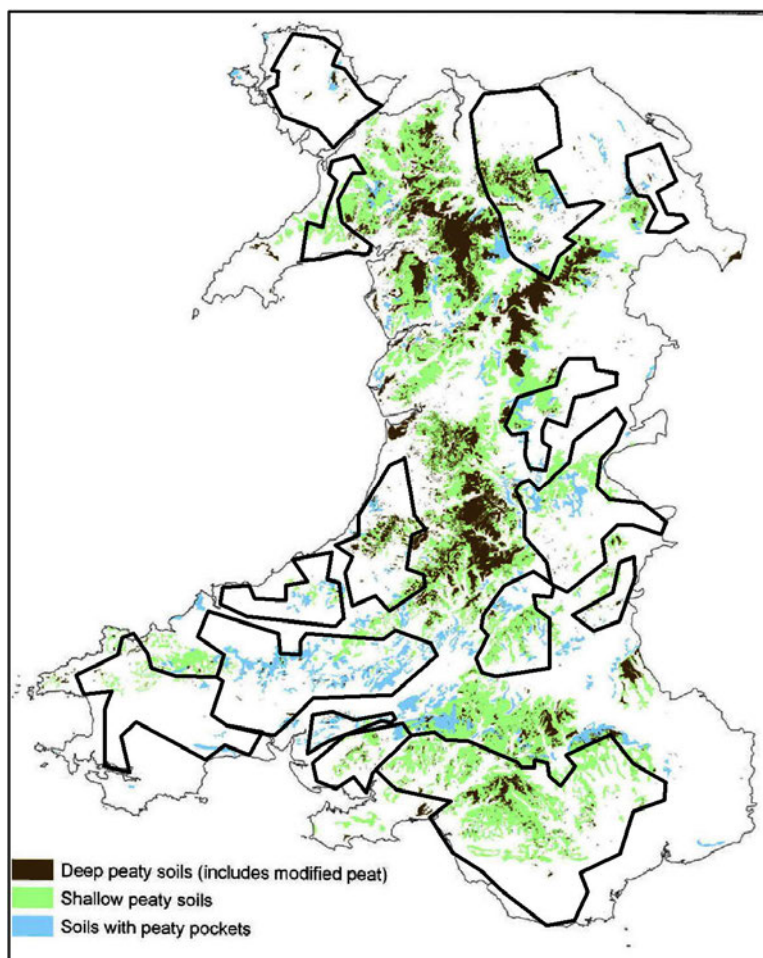


Figure 3 Approximate boundaries for Priority Areas for Refinement following Stage 1 (peat map from FCW, 2012; PARs digitised from Drawing No. 7, WG, 2019a)

- 3.17 The Stage 1 outputs were summarised as 15 PAR. These have been digitised at a coarse scale and are shown superimposed on the 'national peat map for Wales' on Figure 3. The figure confirms that peat was not used as a 'fixed' constraint for defining all of the PAR, as it is clearly visible within some of the PAR boundaries. However, as a user defined 'variable' constraint in the "preferred scenario" it is possible that peat was 'switched on' in some areas, contributing to PAR definition. No further information is provided in the Stage 1 report.

Stage 2: Refinement to final Priority Areas for the NDF

- 3.18 The purpose of Stage 2 was to refine the large geographical extents of the PAR into more manageable Priority Areas (PA). Seven topics / criteria (agreed with Welsh Government)

were assessed in further detail. Peat, geology and geomorphology are not specifically mentioned, however, the value of peat could be considered under 'Ecosystem services and resilience', which is one of the seven topics.

- 3.19 Review of Chapter 7 of the Stage 2 report indicates that this topic primarily considers woodland, heath and wetland creation and biodiversity hotspots. While peatlands contain heath and are wetlands, in Wales, only lowland raised bogs are classified as wetlands. Comparison of the ecosystem services and biodiversity layer maps presented in Appendix G of the Stage 2 report indicate little correlation with 'deep peat' layers shown on Figure 3. **Therefore, it appears that neither peat nor RIGS are further considered in the refinement of PAR to PA between Stage 1 and Stage 2.**
- 3.20 Even if areas of peat were captured within biodiversity hotspots, as they might expect to be locally, summary implications for refinement of the PAR were as follows: *"Based on the advice of NRW, ecosystem services and biodiversity hotspots maps should not be used to influence refinement. This information is better suited to later stages of the decision-making process using area statement mapping at a local scale"* (p41; WG, 2019b). Therefore, peat would not have been a basis for refining the PAR polygons any further.
- 3.21 The Stage 2 outputs were summarised as 15 PA, refined from the Stage 1 PAR. Again, these have been digitised at a coarse scale and are shown superimposed on the 'national peat map for Wales' (FCW, 2012) and in relation to the Stage 1 PAR polygons (Figure 4).

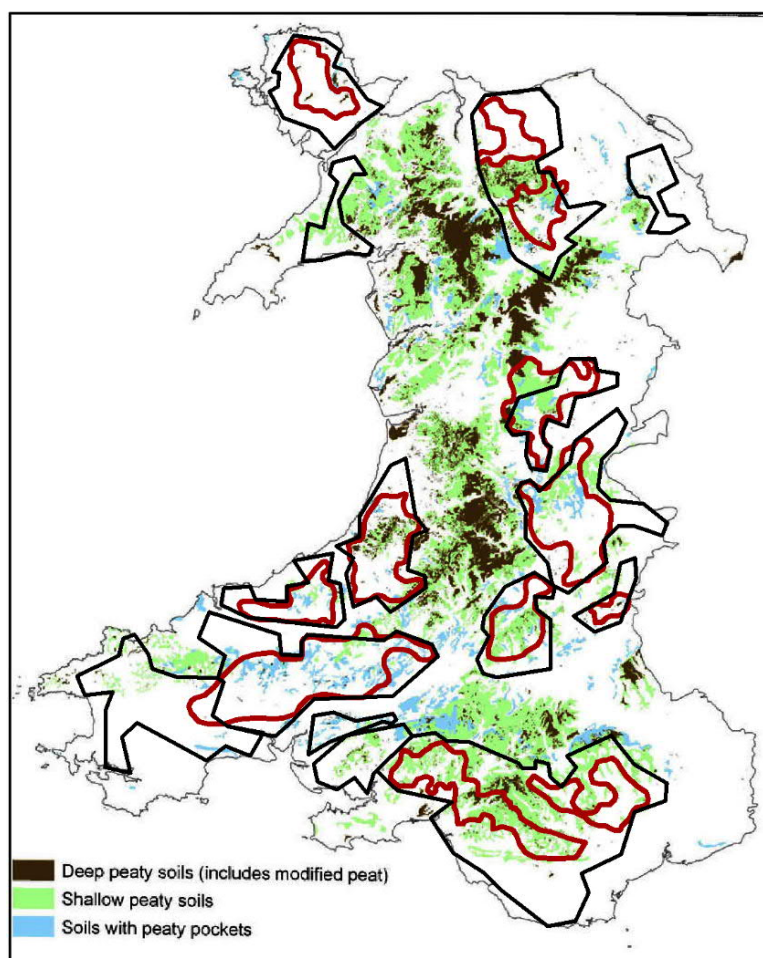


Figure 4 Stage 1 Preliminary Areas for Refinement (black lines), Stage 2 Priority Areas (burgundy lines) and peat soils

- 3.22 The figure indicates that some PA still contain some small areas of deep peat, and therefore that PA boundaries were not likely to have been refined using peat as a constraint layer. Further some of the PA boundaries have been extended *outside* the PAR boundaries, including in central Wales (e.g. east of Mallwyd).
- 3.23 Table 5 of the Stage 2 report (p46) lists the rationales for revision of the PAR into PA, broken down for each of the 15 PA. None of the individual rationales cite peat, geology or geomorphology as criteria for refinement. However, commentary provided in Section 9.6 of the Stage 2 report ('Excluded areas') states the following:
- "Cambrian Mountains*** *The Cambrian Mountains contain a number of open access area, LANDMAP high and outstanding visual sensory areas as well as historic landscape areas and deep peat."*
- 3.24 The implication is that within the Cambrian Mountain region, deep peat (i.e. peat >0.45cm) may have been applied as a 'switched on' constraint. This is not implied by the Stage 1 report.

Accuracy of layer processing in GIS

- 3.25 Had peat or geology and geomorphology been considered as either 'fixed' inputs or switched-on 'variable' inputs, the accuracy of processing would be a relevant quality assurance step in the derivation of PAR. However, this is not the case and no further consideration is necessary here.

Review of the Draft NDF

- 3.26 Review of the Draft NDF consultation document (WG, 2019d) states "*a presumption in favour of development for these schemes and an associated acceptance of landscape change*" in the Priority Areas, including in those where deep peat is present. Equally, outside National Parks and Areas of Outstanding Natural Beauty, "*planning applications for large scale wind and solar development must demonstrate the proposal is acceptable...and that there are no unacceptable adverse effects on, or due to...natural resources or reserves*". This indicates that in areas of deep peat, planning applications may still be progressed, provided that there are no *unacceptable* adverse effects. It is assumed that the acceptability of adverse effects is a matter for the decision-maker, taking into account mitigating and compensatory measures.

4. Alternative approaches

Comparison with Scotland

- 4.1 The obvious analogue for spatial planning considering peat in relation to onshore wind energy is the approach applied in Scotland. Peat and all carbon-rich soils, including those too shallow to be classified as peat, are considered in the 'Carbon-rich soils, deep peat and priority peatland habitat mapping – Consultation analysis report: June 2016' (SNH, 2016). This report accompanies a publicly available GIS mapping layer which provides information on peat across Scotland, including definition of the expected spatial extent of 'nationally important resource'.
- 4.2 In the SNH approach, the 'nationally important resource' is categorised as follows:
- **Class 1:** nationally important carbon-rich soils, deep peat and priority peatland habitat; areas likely to be of high conservation value.
 - **Class 2:** nationally important carbon-rich soils, deep peat and priority peatland habitat; areas of potentially high conservation value and restoration potential.
- 'Priority peatland habitat' is considered to be land covered by peat-forming vegetation or vegetation associated with peat formation. The threshold for definition of 'deep peat' is 0.5m (greater than that in Wales). In practice, these categories are broad enough that any peat soil with typical blanket bog vegetation is considered to be either Class 1 or 2.
- 4.3 At present, based on EPG's experience of planning applications for onshore wind in Scotland, the presence of either Class 1 or Class 2 peat soils can be sufficient to raise an objection from SNH in their role as consultee for large energy infrastructure projects. Essentially, this makes Class 1 or 2 soils equivalent to a switched on 'variable' constraint in the Welsh Government approach, i.e. a grey layer or 'area of least opportunity'.
- 4.4 In contrast, in Wales, it appears that deep peat is largely 'switched off'. Exclusion of much of the deep peat resource in Wales may be a function of other related (e.g. SAC / SSSI, AONB, National Park) or unrelated constraints. However, as noted previously, it is not clear whether there was intervention from NRW (as consultees) in making peat a switched-on variable constraint in some areas (e.g. the Cambrian Mountains).
- 4.5 Regardless of the presence of Class 1 or Class 2 carbon-rich soils in Scotland, the primary intention of the Carbon-Rich Soils map was stated by SNH to be in support of planning authorities for preparation of spatial frameworks for onshore wind. Importantly, *"the map itself cannot provide information on the significance of any possible effects of development. This can only be done at the development management stage using information provided in the Environmental Statement."* (SNH, 2016). **Therefore, the presence of peat soils and the quality of their habitats should only be considered as a constraint to development during the EIA process, and not before site specific data is acquired. It is suggested that the same should apply for Wales.**

Alternative approaches

- 4.6 It was noted in paragraph 3.2 that the Draft NDF explicitly highlighted restoration of degrading peatlands as a potential environmental benefit of renewable energy projects (p41; WG, 2019d). However, because 'degraded peatlands' do not appear to have been identified as a positive 'opportunity' layer (due to the focus on 'constraint'), these potential benefits are largely precluded by the Priority Area extents, i.e. the overlap between peat >45cm and Priority Areas is so small as to effectively close out any opportunities for

renewable energy with coupled projects. Such opportunities might be better served by an alternative approach that identifies peat restoration as one of a number of criteria on which individual sites might be considered for wind energy.

5. Summary

Summary of review

- 5.1 East Point Geo has reviewed the approach taken to Development of Priority Areas for Wind and Solar Energy. The review was undertaken by Dr Andy Mills, an experienced peat geomorphologist with a background in development and application of best practice guidance in relation to peat and renewable energy. The review considered the Stage 1 and Stage 2 reports, the associated Executive Summary and the objectives of the Draft NDF.
- 5.2 In relation to peat, geology and geomorphology, the review noted that the Stage 1 Priority Areas for Refinement were developed using a standard GIS-based spatial constraints mapping approach. This approach used fixed constraints (equivalent to 'no go' areas, e.g. National Parks) and variable constraints (user variable by region) to determine areas of 'most opportunity' (i.e. least constraint) that form the basis for definition of Priority Areas for Refinement. The source and reliability of peat data used in Stage 1 is not clearly stated in the Stage 1 report, but is assumed to be NRW held GIS data equivalent to the 'national peat map of Wales' contained in the FCW publication 'A strategic assessment of the afforested peat resource in Wales' (FCW, 2012). This data was subsequently slightly refined by Evans et al (2015) although the two datasets correspond closely. **Although it is not clear which dataset was used, the datasets are sufficiently similar that at the national and regional scale of the tool, both peat depth data and geology / geomorphology data inputs are considered to be acceptable.**
- 5.3 Review of the methodology applied to develop the Priority Areas for Refinement indicates that the approach is considered appropriate for a national and regional scale planning tool. However, there is a lack of clarity as to the status of 'peat >45cm' as a 'variable' constraint in the generation of Drawing No. 7 (Appendix A of the Stage 1). It is unclear whether 'peat >45cm' was used as a constraints layer (producing 'grey' on Drawing No. 7) or disregarded (producing 'light green' on Drawing No. 7, where present). **Clarification is requested as to how 'peat >45cm' was treated and whether its treatment was consistent across Wales or applied locally by NRW.**
- 5.4 Review of the Stage 2 Priority Areas and accompanying report indicates that peat, geology and geomorphology were not explicitly considered in refining of Priority Areas. **Confirmation is sought that this is the case.**
- 5.5 It is noted that the presence of 'deep peat' is one of the factors excluding the Cambrian Mountains for consideration. This implies that 'peat >45cm' was locally used as a switched on variable constraint. If this is not the case, then it is not clear why 'deep peat' is one of the criteria for exclusion in this area. **Clarification is requested as to whether the 'peat >45cm' constraint was applied in the Cambrian Mountain area or elsewhere.**
- 5.6 It is noted that the Draft NDF explicitly states that restoration of degrading peatlands is a potential environmental benefit of renewable energy projects, however, it is also clear from the Priority Area extents that this benefit is not encouraged by the Priority Area boundaries, which largely exclude areas of deep peat. **Therefore, it is recommended that areas of 'degrading peatlands' are considered as areas of positive opportunity to enable this considerable benefit to be a tangible outcome.**

6. References

Evans C, Rawlins B, Grebby S, Scholefield P and Jones P (2015) Glastir Monitoring & Evaluation Programme. Mapping the extent and condition of Welsh peat. Welsh Government (Contract reference: C147/2010/11). NERC/Centre for Ecology & Hydrology (CEH Project: NEC04780).

Forestry Commission Wales (2012) A strategic assessment of the afforested peat resource in Wales – Forestry Commission Wales report.

Scottish Natural Heritage (2016) Carbon-rich soils, deep peat and priority peatland habitat mapping – Consultation analysis report.

Welsh Government (2019a), Assessment of onshore wind and solar energy potential in Wales - Stage 1 - Development of Priority Areas for Wind and Solar Energy.

Welsh Government (2019b), Assessment of onshore wind and solar energy potential in Wales - Stage 2 - Refinement of Priority Areas for Wind and Solar Energy.

Welsh Government (2019c) Priority Areas for Solar and Wind Energy - Executive Summary Stage 1 and 2.

Welsh Government (2019d) National Development Framework 2020-2040 - Consultation Draft.

Welsh Government (2019e) Wales NDF - Implications for the Natura 2000 network of Priority Areas of Solar and Wind Energy development across Wales.

Welsh Government (2017) Welsh Government NDF – Habitats Regulations Assessment: Rules of Thumb.

Review of Landscape Approach to Determining Priority Areas for Wind and Solar Development in the Draft National Development Framework for Wales

Introduction

LUC was commissioned by Innogy Renewables UK Ltd to review the landscape and visual aspects of the work undertaken to define Priority Areas for wind and solar energy development, as presented in the Draft National Development Framework for Wales.

The Priority Areas were developed by Arup for the Welsh Government, and their work is presented in two reports:

- Stage 1 Development of Priority Areas for Wind and Solar Energy (March 2019); and
- Stage 2 Refinement of Priority Areas for Wind and Solar Energy (June 2019).

Both reports are relatively lengthy and are supported by large appendices, making for a complex read. The short executive summary is helpful as an overview.

Stage 1: Development of Priority Areas for Wind and Solar Energy

Overall the approach taken in Stage 1 appears to be reasonable, in that a series of fixed constraints (including designated landscapes – see Table 3, Stage 1 report) were applied, and then variable constraints (see Table 4, Stage 1 report) considered. However, there are a number of uncertainties over the application of the approach that render the outputs questionable.

Methodology

The methodology in Chapter 3, and in appendix A, introduces uncertainty as it focuses mainly on the ‘tool’ or ‘dashboard’ used to test scenarios, rather than the actual method used to determine the constraints and Priority Areas. It refers to constraints being ‘switched on and off’ and being ‘selected by the user’ when this does not form part of the way Priority Areas have been defined. The methodology appendix introduces complex terminology and multiple scenarios which make it difficult to understand what is being reported in the main Stage 1 document.

Application of variable constraints

The application of designated sites and other areas of known sensitivity as constraints is standard practice and is fair, but some of the variable constraints could have resulted in the removal of potentially suitable areas from consideration at an early stage. An example is ‘Woodland’ (Table 4), which appears to include coniferous forest plantation (see Table 2 of the methodology appendix, page 7), a land use which, in combination with the upland plateau landscape character type, has been found to be well suited to onshore wind farms. If all areas of commercial forestry have been removed, or classified by default as ‘medium’ rather than ‘high’ or ‘low’ risk, then the approach could be considered flawed.

Another questionable variable constraint concerns LANDMAP. Visual and Sensory aspect areas evaluated as ‘high’ or ‘outstanding’ have been used as a variable constraint for Stage 1.¹ However, the evaluations presented in LANDMAP are potentially subjective, and are likely to vary considerably across any given aspect area. The evaluations may now be dated in some cases, particularly the degree to which LANDMAP captures and recognises the effects of existing wind farm development.

It is also notable that the variable constraints include areas of genuinely varied sensitivity, such as those noted above, as well as designated sites which have statutory protection, such as SSSIs or National Nature Reserves, and that all of these appear to have been treated in the same way.

¹ In the draft guidance of NRW's Landscape Sensitivity and Capacity Assessment (2018), it is acknowledged that ‘It is common for LANDMAP's visual and sensory aspect to be used as the lead layer (or first layer to be considered).’

It is helpful that the approach seems to have accommodated an iterative process, and has been refined through stakeholder engagement and meetings with the Welsh Government, although little evidence of stakeholder input is presented. A preferred scenario was agreed between Arup and the Welsh Government.

Based on the methodology provided, the reader is not offered clarity as to how any of the 'variable constraints', have in fact been treated. There are many categories within the 'variable constraints' that could potentially accommodate development, but these are not explored. It would appear that, notwithstanding the multiple scenarios presented in the appendices, the preferred approach is to map the 'fixed constraints' as 'areas of least opportunity' and the 'variable constraints' as 'areas of varying opportunity'. All other areas are 'areas of greatest opportunity' (see Figure 3 and 4).

Omissions from the constraints analysis

Conversely, with the exception of the exclusion of urban areas, the practical constraint of proximity to residential properties does not seem to have been considered in relation to noise, shadow flicker or visual impact (see Tables 2 and 3 of potential assessment methodology, where no mention is made of properties). Given that a residential property dataset is readily available, and that wind turbines cannot be positioned next to properties for a range of reasons, it is surprising that this does not appear to have been used to any degree. Our own research has shown that applying even a 500m buffer around every property would render a very large percentage of Wales, and the majority of many of the Priority Areas, as unsuitable. In practice it is unusual for turbines to be placed closer than around 750m from a turbine, and so application of a conservative buffer, at either Stage 1 or Stage 2, would have removed large areas, and been more useful in directing the search towards less constrained sites.

Alternative approach to using LANDMAP

At Stage 1, it could have been more informative to use LANDMAP as a classification system in terms of landscape character type, rather than to apply the broad brush evaluations. The whole study neglects to consider landscape character type, which would have been a useful approach given its importance in siting wind energy development.

Landscape types can be readily mapped by using the classifications of each aspect area in LANDMAP. Identification of aspect areas of 'forested upland plateau' or 'plains' as having greater opportunity than types such as 'steep valley sides', 'escarpments', or 'dune systems', for example, could have been a useful consideration either at Stage 1 or Stage 2. Landscape character type is a function of the classification of basic geophysical features in combination with land use, cultural and perceptual characteristics, and is less likely to be subjective than the evaluations.

Identification of Priority Areas

The end result for Stage 1 is to identify 15 'Priority Areas for Refinement', shown on Figure 5. There is no explanation as to how these areas were drawn other than the four 'considerations' listed at 5.5.1. Some rationale is presented in Table 9, but this does not appear to cover all 15 areas, nor is it sufficiently detailed. The boundaries of the areas are drawn with a high level of apparent precision, including or excluding small features without explanation. Large areas of 'varying opportunity', and some smaller areas of 'greatest opportunity' are excluded, though there is no rationale to suggest that development in these areas would be inappropriate.

Stage 2: Refinement of Priority Areas for Wind and Solar Energy

In terms of landscape, Arup considered three aspects to help refine the boundaries of the Priority Areas for Refinement (which were determined by the Stage 1 work). These are set out at Section 3.1, page 12 of the Stage 2 report:

- Consideration of the visual setting of nationally designated landscapes;
- Using LANDMAP to consider the potential sensitivity of landscapes; and
- Review of sensitivity and capacity studies already undertaken.

Consideration of the visual setting of nationally designated landscapes

This aspect involved two further steps (see page 13 of Stage 2 report) to determine the likely intervisibility between observers in nationally designated landscapes and wind turbines up to 250m blade tip height in the Priority Areas for Refinement:

1. Determining the visual study areas, through the application of buffers beyond designated areas (see Drawing number 3.1 of Stage 2); and
2. GIS intervisibility modelling to indicate relative visibility of turbines within these buffers.

When considering the relationship between observer distance and turbine height, Arup has relied on Natural Resources Wales (NRW) *Seascape and visual sensitivity to offshore wind farms in Wales: Strategic assessment and guidance Stage 1 - Ready reckoner of visual effects related to turbine size* (2019). As a result they have determined that the visual study area for a turbine up to 150m requires a 15km buffer, and a turbine up to 250m requires a 24km buffer. NRW draft guidance for Landscape Sensitivity and Capacity Assessment (2018) states that the typical distance used in Wales for a study area relating to a turbine that is 141m+ is 20km, so there is some inconsistency between the two sets of guidance, evidence that such attempts at broad brush determination of effects should not be taken too literally.

In any event, the application of a buffer of any fixed distance is somewhat arbitrary and should be treated with considerable caution. A focused or framed view of a wind farm, or a view from a popular location, may often be a greater constraint than an open view of a wind farm on an ordinary skyline at much closer range. It would be impossible to take account of such variables in modelling, but the value of simplistic analysis is questionable. As with zone of theoretical visibility mapping, indications of visibility do not equate to visual impact, still less to significance. It may be better simply to provide guidance or to refer to the need for consideration at the detailed siting and design or LVIA stage, since this high level analysis cannot be a substitute for site specific appraisal.

Arup use line of sight modelling to consider the potential for intervisibility between two points (i.e. observer in nationally designated landscape and turbine position within the area for refinement) for both 150m and 250m turbines. This attempts to take visual analysis a step too far at this high-level strategic stage, especially as the approach seeks to classify areas into five different percentage ranges of visibility (see page 19), which is very detailed. NRW draft guidance for Landscape Sensitivity and Capacity Assessment indicates that views and visibility are more effectively assessed as part of an LVIA, as they are very specific to the siting and design of an individual proposal. This line is also commonly taken by Planning Inspectors when seeking to use strategic sensitivity and capacity studies to inform the determination of particular proposals. Attempting to spatially accommodate potential inter-visibility and visual buffer zones into a sensitivity assessment is likely to be subject to a need for assumptions beyond those which can reasonably be used at a strategic scale – the potential for visibility is influenced by land use, vegetation, detailed topography, the exact position and details of turbines, the position of a viewer, and so on.

In addition, the potential for visual effects, or effects upon the setting of designated areas, to be significant is influenced by much more than the potential for intervisibility. This includes the nature of the receptor, the context of the view, the relationship with the skyline, the design of the development, the geographical relationship between the viewer and the development, issues such as perceived separation, and lighting. All of these issues are better considered in a site-specific LVIA rather than a strategic assessment.

The GIS intervisibility analysis for designated areas is very detailed and the work extensive, although ultimately the likely visibility from National Parks and AONBs is only a very crude proxy for potential impacts. The analysis appears to have had a significant influence on the extent of Priority Areas for wind, which have been refined to exclude areas of greatest visibility (page 24).

Use of LANDMAP

During the Stage 1 process only the Visual and Sensory aspect areas evaluated as 'high' or 'outstanding' were used as 'variable constraints' and subsequently appeared on the Stage 1 maps as areas of 'varying opportunity'. As the Priority Areas for Refinement identified in the Stage 1 work were based on the spatial distribution of the areas of 'greatest opportunity', most of the areas of varying opportunity appear to have been excluded at Stage 1 (Figure 5 in the Stage 1 Report). In the Stage 2 Report, Arup notes that *'the Priority Areas for Refinement identified in the Stage 1 work generally excluded land identified as Outstanding or High in the overall evaluation of the Visual and Sensory LANDMAP aspect layer'* (emphasis added).

LANDMAP was revisited during the Stage 2 process, including a further high-level review of the 'outstanding' and 'high' overall evaluations of other aspect layers (Geological, Habitats and Historic Landscape) and their associated characteristics, to indicate where elevated sensitivities to development may exist. Consideration was also given to the 'outstanding' and 'high' scenic quality and character evaluations in the Visual and Sensory layer where the overall evaluation is 'moderate'. The Cultural Landscape aspect layer was not considered within the refinement work as the majority of land within Wales falls into the 'high' or 'outstanding' overall evaluation categories.

Arup recognises that LANDMAP evaluations do not represent landscape sensitivity to a particular type of development, and also recognises the importance of not being overly reliant on the evaluations, as other factors should also be considered. Although they do state that these aspect layers may help to *'indicate an elevated sensitivity to development'*, Arup conclude that *'LANDMAP layers should be used as a secondary reference in refinement; not driving initial changes but used as an additional evidence layer where there are difficult decisions to be made'* (page 24 of Stage 2 report). While we agree with this conclusion, it is not entirely clear how this LANDMAP analysis has actually influenced the refinement process.

Review of sensitivity and capacity studies already undertaken

Arup has considered the existing landscape sensitivity and capacity assessments available in Wales to help avoid inclusion of the most sensitive landscapes into the Priority Areas, as well as relevant Renewable Energy Assessments (REAs) where landscape sensitivity has been considered. However, of the 22 Local Planning Authorities (LPA) within Wales (excluding the National Park Authorities), only 12 LPAs have currently published landscape sensitivity studies available on their websites. Eight of the published studies consider wind only, three consider a combination of wind and solar PV, one considers solar PV only and one considered sensitivity generally.

Arup conclude that *'While the importance of such studies is recognised, the limited coverage across Wales and the slightly varying approaches of these studies has meant that these studies have not been used any further in the consideration of the refinement of the priority areas'* (page 29 of Stage 2 report). The decision not to use these studies is reasonable and one which we would support, but it does mean that there is no consideration of landscape sensitivity in the identification of Priority Areas.

Refinement process

The three landscape aspects set out above were considered together with a range of other factors to arrive at the refined set of Priority Areas that are presented in the Draft NDF. The actual process of refinement is contained in Table 5 of the Stage 2 Report, which details in just a few concise bullet points the reasoning that led to each finalised Priority Area. In relation to landscape and visual 'rationale', we offer the following observations on this table:

- There are value judgements about which views from particular designations are more important than others, and the resulting weight given to visibility, which do not form part of the methodology;
- There are references to specific views which have influenced Priority Areas, such as views to Snowdonia from the A487, which again do not appear to form part of the methodology;
- Coastal views are discussed as if they were a defined constraint, though they do not appear in the methodology;
- There are references to buffer areas to 'minimise visual impact', without any reasoning as to the distance chosen; and
- There is no mention of LANDMAP

Table 5 therefore appears to introduce reasoning that does not accord with the stated methodology, or where the weight being applied to different aspects is opaque. There is simply not enough detail in Table 5 to gain an understanding of how the refinement has followed a consistent process. We again highlight that the principal difficulty is that the refinement is based on the Priority Areas identified at Stage 1, which are not justified in terms of their number or extent, or their relationship to the mapped constraints.

Summary Points for Landscape and Visual

- Stage 1 appears to have excluded large areas of variable constraints, leading to the early exclusion of some potentially suitable areas including commercial forestry, open access land, and areas given a 'high' or 'outstanding' overall Visual and Sensory evaluation in LANDMAP. This is confirmed by the summary of 'excluded areas' in section 9.6 of the Stage 2 Report. If areas of coniferous plantation have indeed been excluded at Stage 1 then this is surprising given the fact that

forested upland plateau was the preferred landscape type for TAN 8 areas, and that development has been accommodated within them.

- Landscape character type does not seem to have been considered at all, which is surprising as the basic units of LANDMAP are effectively type classes, consistently applied across Wales, so the information is available to interrogate using GIS. Use of landscape types would have helped to spatially break up the landscape for assessment purposes, and as an evidence base against which to assess landscape sensitivity. There is no consideration of 'susceptibility' or 'value', as components of landscape sensitivity, as recommended by GLVIA3². It remains unclear that satisfactory attention has been directed towards landscape sensitivity, given its importance as a consideration for the development of wind farms.
- The only consideration of sensitivity is drawn from the overall LANDMAP evaluations, and not all of these appear to have been used in determining the refined Priority Areas. Arup recognises that LANDMAP evaluations do not represent sensitivity, and that one should not be overly reliant upon them, but they do not seek to improve upon this process, as they did for the TAN 8 refinement process,³ where separate landscape sensitivity assessments were prepared for every landscape unit considered.
- It therefore remains questionable as to how informative generalised evaluation grades for relatively large areas can be. It seems clear that LANDMAP evaluations cannot be used as a proxy for sensitivity (requiring judgements of susceptibility and value) without consideration of the other variables which are typically used in assessments of susceptibility (i.e. scale, landform, landscape pattern and complexity, etc.) and value (i.e. recognition through designation, rarity, etc.).
- The level of intervisibility analysis associated with the settings of designated landscapes is very detailed, perhaps too detailed for a strategic study, with too many categories, suggesting an accuracy beyond that which can be achieved at this scale. The analysis cannot consider all the variables which determine landscape and visual effects, as there is much more to determining levels of effects than simply extent of intervisibility and distance. Taking a more simplistic approach may have helped people recognise its limitations rather than imply a level of accuracy that should not be assumed.
- It seems surprising that the refined areas do not look at residential properties, or even areas with high concentrations of residential properties, as a constraint that can be mapped, given the availability of the dataset and the practical implications that these have for the development of wind energy projects. In practice, it seems that a very large percentage of the refined areas will be constrained by proximity to properties, particularly those in more low lying areas, which raises the question as to why they have been identified as 'Priority Areas' for wind energy development.
- There is no consideration of cumulative effects in the study, nor any explicit mention of existing patterns of development. The 'cross check with TAN 8 areas' at Stage 2 Section 9 does not discuss in detail how much of each TAN 8 area has been built up, nor how much potential area still remains. From initial examination, it seems clear that many of the potentially suitable sites within the Priority Areas are already developed, and therefore they offer limited opportunity for further development. The study also appears to partially exclude sites on the NRW forest estate that have been actively promoted by the Welsh Government as sites for wind energy development.

Alternative approaches

The Stage 1 analysis, which leads to the areas of greatest, varying and least opportunity, is based on a well established approach. Assuming that the appropriate constraints can be clearly identified at each level, then the resulting areas form a useful guide to the likely constraint on any given area. As an output, this type of mapping would have the benefit of being relatively simple to interpret and apply, assuming that a clear methodology is presented. It avoids the need for subjective judgements that have been applied in the definition and refinement of Priority Areas, and which are therefore open to challenge.

This approach would reflect the 'spatial framework' advocated in Scottish Planning Policy, which presents a similar three-tier approach, though involving fewer layers of constraints.⁴ SPP clearly sets out what constraints are to be included at each level, and leaves other factors, such as landscape and visual impacts, and cumulative effects, to be considered on a site-by-site basis. This allows detailed consideration of local issues, rather than broad brush application of constraints that may or may not apply to a given site.

² Landscape Institute and IEMA (2013) Guidelines for Landscape and Visual Impact Assessment, Version 3 (GLVIA3), 2013.

³ TAN 8: Annex D Local Refinement Studies (SSA A to G), Arup (2005-2007).

⁴ Scottish Planning Policy, Table 1, page 39. <https://www.gov.scot/publications/scot-ish-planning-policy/>

If further analysis of the 'spatial framework' type approach is desired, then some form of landscape sensitivity analysis would ideally be included in the process. As suggested above, this could include high-level interrogation of LANDMAP data to identify likely relative susceptibility of aspect areas based on a range of available information, not only their overall evaluation. However, such an evaluation should only be considered as an additional layer showing likely relative sensitivity, and should not be used to define areas as being either suitable or unsuitable for development. As with all strategic scale analysis of the landscape, any assessment of relative sensitivity should not be used as a substitute for detailed site-specific landscape and visual impact assessment.

NDFW19



REVIEW OF PRIORITY AREAS FOR WIND AND SOLAR DEVELOPMENT

Historic Environment Constraints

for Innogy (UK) Ltd

November 2019

REVIEW OF PRIORITY AREAS FOR WIND AND SOLAR DEVELOPMENT

Historic Environment Constraints

for Innogy (UK) Ltd

November 2019

Author:
Reviewed by:

Mike Kimber MCIfA
Stephen Carter MCIfA

CONTENTS

1.....	INTRODUCTION.....	2
2.....	DRAFT NDF POLICIES ON RENEWABLES DEVELOPMENT	2
2.1	Background.....	2
2.2	Commentary	2
3.....	COMMENTARY ON THE PRIORITY AREAS.....	3
3.1	Background.....	3
3.2	Commentary	4
3.3	Use of buffer zones.....	5
3.4	Conclusions on the refinement exercise	5
4.....	APPENDIX 1	6
4.1	Commentary on the ‘reasons for refinement’	6

PRIORITY AREAS FOR WIND AND SOLAR ENERGY

REVIEW OF HERITAGE INPUT INTO DEVELOPMENT & REFINEMENT PROCESS

1 INTRODUCTION

Headland Archaeology has been commissioned by Innogy (UK) to provide commentary on the Welsh Government's development and refinement of priority areas for wind and solar energy. The priority areas are included in the draft National Development Framework (NDF) for Wales.

Wind power developments often have long-range visual effects, both due to the size of the turbines, and to the prominence of their locations. This has often formed the basis for highly contentious consenting processes, where the effects of visual change on the significance of heritage assets has been a major consideration in deciding whether to grant planning permission.

In contrast, solar developments usually have far shorter-range visual effects, although within this short range they can change the appearance of large areas of land quite significantly. When this change takes place within the setting of a designated historic asset, then there is a risk of significant adverse effects occurring.

Both types of development tend to have limited ground impacts, although for different reasons. Wind turbines and their infrastructure occupy a relatively small footprint in relation to their spacing on large areas of land. Solar developments are usually installed with minimal ground disturbance techniques.

This report will provide Headland's commentary on the following:

- Heritage and the overall principle of the priority areas;
- Heritage constraints and their role in the development and refinement of the priority areas;
- Suggested alternative approaches.

As the historic environment has frequently been a major constraint in particular on the consenting of wind power development, it is important that its role in the proposed policies is clear, and consistent with the desires of Welsh Ministers to encourage wind and solar development in the face of a climate emergency.

2 DRAFT NDF POLICIES ON RENEWABLES DEVELOPMENT

2.1 Background

The Welsh Government proposes to adopt a 'traffic light' system for renewables development. Proposals in green-lit areas are to benefit from a presumption in favour of Solar and Wind energy under Policy 10. Proposals in amber-lit areas are to be considered on their individual merits under Policy 11. Proposals in red-lit areas (National Parks and AONBs) are not acceptable under Policy 12.

Within a priority area, Policy 10 of the draft NDF states that "There is a presumption in favour of development for these schemes and an associated acceptance of landscape change", although it also requires *inter alia* that adverse impacts on "the following identified protected assets... archaeological, architectural or historic assets" are minimised.

For proposals outside of a priority area, Policy 11 of the draft NDF states that – in the course of demonstrating that the proposal is acceptable – the planning application must demonstrate that there are "no unacceptable adverse effects on...the following identified protected assets... archaeological, architectural or historic assets".

2.2 Commentary

We find Policies 10 & 11 lacking in clarity as to how they will operate and what they are aiming to achieve. The levels of intended permissiveness in Policy 10, vs intended restrictiveness in Policy 11 are not clear. For example:

- The presumption in favour of development is associated with an acceptance of “landscape change”. This is not necessarily the same as adverse effects on historic assets arising from changes to their settings.
- The inclusion of the historic environment in the list of further considerations suggests that, regardless of the presumption in favour of development, historic environment impacts will continue to be a significant material consideration when considering proposals for development within a priority area.
- We are concerned that the presumption in favour of development will be difficult to balance with the statutory duty arising from S66(1) of the Planning (Listed Buildings & Conservation Areas Act) 1990, for decision-makers to have “special regard to the desirability of preserving the building or its setting”.
- It is not clear how Policy 10’s “minimised adverse impact” is intended to operate in practice. Does this mean that minimising adverse effects is considered in comparison with the positive effects of the scheme, or would the requirement apply regardless of benefits?
- It is not clear if there is an intended distinction between Policy 10’s “minimised adverse impact” and Policy 11’s “no unacceptable adverse effect”. A comparison of the plain English meanings of (Policy 10) an adverse impact that is minimised vs (Policy 11) an adverse effect that is not unacceptable might suggest that the requirement in Policy 10 is stricter than that in Policy 11.
- For example, in relation to the historic environment, Policy 10 could require the developer to make significant layout amendments to make adverse effects on the setting of a scheduled monument as small as possible. The wording of Policy 11 appears to give more scope for a balancing exercise to be undertaken. It would be helpful if the wording of these requirements could be made clearer and more consistent.

Common to both policies, it is not clear what they mean when they refer to “identified protected ... archaeological, architectural or historic assets”. Does “protected” mean a “designated asset” as defined in TAN24; does it also include assets on statutory lists (i.e. the Register of Historic Parks and Gardens); does it include assets on non-statutory advisory registers (i.e. the Register of Historic Landscapes in Wales); or does it include all historic assets? It would be helpful if the terms used were clearly defined.

Overall, we are concerned that the priority areas have been reduced considerably in size in response to consultation with stakeholders about the historic environment, yet the policies could be interpreted as still according significant weight to what might be thought of as residual heritage constraints. In practice Policy 10 may not be successful in enabling the development of wind and solar energy in the way Welsh Ministers wish, in the areas that they prefer.

3 COMMENTARY ON THE PRIORITY AREAS

3.1 Background

Accompanying the draft NDF policies, Arup has undertaken an exercise on behalf of the Welsh Government to classify Welsh land into areas of least, varying and greatest opportunity for renewables development. These were then used to develop Priority Areas for refinement. Heritage constraints relevant to the development of these areas were:

- World Heritage Sites (mapped as area of least opportunity);
- Conservation Areas (mapped as area of least opportunity);
- Historic Landscape (mapped as either of least or varying opportunity).

Following selection of the 15 priority areas a refinement exercise was undertaken by Arup. The Historic Environment was one of the topics used in the refinement exercise. The Historic Environment criteria used in the refinement exercise were chosen (on the advice of CADW) based on their inclusion on the UK list of historic assets drawn up in accordance with the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict (plus Registered Historic Landscapes):

- World Heritage Sites (WHS) and their essential settings/buffer zones plus a 3km buffer¹;

¹ The Pontcysyllte Aqueduct has a UNESCO inscribed buffer, to which the 3km Arup buffer was applied. The Castles of Edward I have defined ‘essential settings’ that are not part of the UNESCO inscription, and the Arup buffer was applied to these. Blaenavon has no UNESCO buffer, and the 3km Arup buffer was applied to the WHS boundary. The candidate slate site has proposed buffers, and the Arup 3km buffer appears to have been applied to these.

- Grade I Parks and Gardens plus a 3km buffer;
- Scheduled Monuments under the Guardianship regime plus a 3km buffer;
- Grade I Listed Buildings plus a 3km buffer;
- The candidate 'Slate Landscape of North-West Wales' World Heritage Site plus a 3km buffer; and
- Registered Historic Landscapes with no buffer.

3.2 Commentary

The selection and use of historic environment criteria for the initial development of the Priority Areas appears reasonable and in accordance with the importance and sensitivity to change of the three categories of asset used.

Commentary on the specific reasons for refinement is given in Appendix 1. There appear to be some errors or inconsistencies in the reasons, which are indicated. However, the majority of the specific commentary relates to the general points that are discussed in this section.

We are concerned that the lack of clarity over the intended level of permissiveness in draft NDF Policy 10 has infected the refinement exercise. There does not seem to have been a clear intellectual case for the selection and application of historic environment constraints. This has caused disproportionate reduction of the priority areas on heritage grounds yet has potentially failed to ensure Welsh Ministers can adopt a permissive approach to development in the refined priority areas that remain.

In addition, wind and solar developments are very different in terms of their impact on the historic environment – the nature of visual changes and ground impacts differs greatly between the two types of development. We question whether the historic environment constraints applied are appropriate for both wind and solar development and therefore whether their inclusion in the refinement exercise has been of any benefit at all.

We have the following comments on the refinement method:

- The Hague Convention was originally adopted in order to safeguard cultural property from physical damage during wartime. The Hague Convention list may not be appropriate for defining historic assets that are particularly sensitive to the (primarily visual) changes that arise from wind and solar developments.
- The exclusion of Registered Historic Landscapes from the Refined Priority Areas appears reasonable, given that development proposals within a Registered Landscape could still, in principle, be accepted if the criteria in draft NDF Policy 11 were met.
- The use of a 3km buffer around the various categories of designated sites is a rather blunt instrument – this is discussed further below. If there has been site-specific assessment of where buffer zones conflict with the proposed priority areas, this isn't obvious from the Stage 2 report.
- We don't see why there is necessarily any enhanced sensitivity to change for Guardianship monuments compared to other scheduled monuments in private ownership. The Guardianship regime relates to the management and maintenance of a monument and we can't see any reason why this should result in the preferential inclusion in the refinement exercise of this heterogeneous group of properties. It is possible that they were included because of the numbers of visitors at these properties, but current Welsh guidance on setting states that "the number of visitors to a site or viewpoint does not affect the importance of the setting"². It would be helpful if the list of monuments used was provided.
- Similarly, although Grade I Listed Buildings and Parks and Gardens are viewed in policy terms as more important than Grade II or II* assets, it does not necessarily follow that they are intrinsically more likely to be harmed by change taking place in their settings (although an EIA process would accord any such harm greater weight). In the case of Listed Buildings, even the lower grades are protected by the statutory requirement in Section 66(1) of the 1990 Act.
- Cadw has advised Arup that proximity of Priority Area 2 to the nominated Slate World Heritage Site could affect its candidacy. We note that the candidate World Heritage Site consists of a number of separate zones not all of which are proximate to Priority Area 2. It is located in a mountainous area and each area has its own essential setting defined in the consultation management plan³ that may have varying degrees of sensitivity to wind or solar development. In our view the use of these potential

² CADW 2017 "Setting of Historic Assets in Wales"

³ <https://www.gwynedd.llyw.cymru/en/Council/Documents---Council/Have-your-say/Slates/Slate-Landscapes-ENG-190809.pdf>

constraints for policy development has been approached in too broad a manner. We note further that the WHS proposal includes a buffer zone, and that the buffering applied in Stage 2 appears to be added on top of the WHS proposal buffer, and question whether this is appropriate.

3.3 Use of buffer zones

We can see little justification for the blanket use of buffer zones around heritage assets to assist in refining the priority areas. It isn't clear whether the refinement exercise has made use of any location-specific information (e.g. topographic) in deciding whether the presence of a buffer should influence the extent of a priority area – some references within the Stage 2 document seem to suggest ad-hoc considerations of asset specific information but not any systematic usage of it.

We assume that the use of the buffer zones comes from a desire to avoid visual or other environmental change within a certain distance of historic assets of the highest importance. We think the use of 3km is potentially over-generous in some cases, and potentially under-generous in others. Much will come down to specifics of location and development type.

There is no reason why wind or solar developments within any set distance of one of these assets should necessarily cause harm to their significance, meaning that the blanket buffers could in many cases be irrelevant. There are three reasons for this:

- Intervisibility between designated historic assets and proposed developments (or in-combination views of assets and developments) is not a given, even at these relatively short distances. For example, development type, hilly or mountainous topography, forestry, and a surrounding built environment are all factors that can influence whether there is visual change to the setting of a historic asset. This is particularly the case for listed buildings in built-up areas.
- Even if visual or other environmental change is present, this will not necessarily cause an adverse impact. Welsh guidance on setting is clear that its importance lies in what it contributes to the significance of a historic asset. The impact of a proposed change requires expert assessment as to whether it will cause harm.
- It is entirely possible that unacceptable adverse effects could arise from changes to the setting of a designated historic asset at a distance of greater than 3km – for example by interrupting the intentional intervisibility of two prehistoric burial monuments. This highlights the need to look at effects on the historic environment in relation to specific development proposals, rather than rely on the application of broad-brush constraints.

In Headland's view, there may be a role for buffer zones in detecting whether a potential constraint requires closer examination, but they should not be relied on to deconflict development policies with historic assets.

3.4 Conclusions on the refinement exercise

We understand the context of the priority areas exercise to have been to make the consenting process for wind and solar generation over 10MW in capacity easier for Welsh Ministers by giving confidence that the presumption in favour of development is reasonable. The Stage 2 reasons for refinement have attempted to grapple with some of the complexities of accommodating change in the historic environment but, in the context of a lack of clarity in the draft policies, we do not foresee any consenting benefits will arise from this process and the results of the exercise therefore appear out of step with the purpose of draft Policy 10.

The refined priority areas in their current form have been significantly shaped by heritage constraints derived from the Stage 2 exercise. However, we cannot be confident that the refined areas are appropriate to a permissive consenting regime because the refinement process was not based on an understanding of the contribution that setting makes to the significance of the assets selected. Heritage constraints have also caused the reduction of priority areas when in some cases this was probably unnecessary to avoid unacceptable harm to the historic environment. It may not be appropriate to use the buffering system for historic assets at all in policy/plan-making, in the absence of specific development proposals.

4 APPENDIX 1

4.1 Commentary on the ‘reasons for refinement’

Priority Area	Reason for refinement	Headland comment
1	The southern edge of this Priority Area for Wind and Solar Energy has been reduced to reduce impact on Grade 1 parks and gardens and guardianship monuments.	Where conflict with buffer zones has been identified, the relevant assets should be examined in greater detail.
2	The top portion of this Priority Area for Wind and Solar Energy has been removed due to a high level of visibility from Snowdonia National Park, due to the Pontcysyllte Aqueduct World Heritage Site and due to a proposed slate world heritage site.	<p>The reference to Pontcysyllte Aqueduct is presumably an error as this World Heritage Site is on the opposite side of the Snowdonia National Park to Priority Area 2.</p> <p>We think we can see how the constraints of the Castles and Town Walls of Edward I WHS and the proposed Slate WHS have been applied to reduce Priority Area 2, in combination with the Snowdonia National Park. The largest influence from a historic environment constraint is probably the proposed slate WHS. The effect of the 3km buffer zone around the generally small dispersed areas of the proposed WHS in this area appears disproportionate, particularly when compared to the smaller area covered by the proposed official buffer zone to the WHS.</p>
2	The southern area of this Priority Area for Wind and Solar Energy has been trimmed to minimise impact on Grade 1 listed buildings and Registered Parks and Gardens.	<p>The constraints plan in Appendix H of the Stage 2 report doesn't show constraints of this nature in the southern area. It does show Guardianship monuments, which appear to have affected the extent of the priority zone but these should have site specific assessment to determine whether they are sensitive to changes to their settings.</p> <p>We also note that the area is designated as suitable for solar only, which would be expected to cause shorter-range visual changes than wind turbines.</p>
3	There is a large area of registered landscape within this priority area, which has resulted in the Priority Area for Wind and Solar Energy being divided into two.	This seems reasonable, on the basis that development within historic landscapes would not normally be a priority if other land was available.
3	The edges of the Priority Area for Wind and Solar Energy have been removed to take account of buffers around listed buildings.	Listed Buildings should be considered in detail before using a buffer to refine a proposed priority zone as many (although not all) appear to lie in built-up areas or valley bottoms with potentially limited setting extents.
4	This Priority Area for Wind and Solar Energy has been trimmed to exclude the buffer area for nearby heritage assets.	Listed Buildings and Registered Parks should be considered in detail before using a buffer to refine a proposed priority zone as many (although not all) appear to lie in built-up areas or valley bottoms with potentially limited setting extents.

Priority Area	Reason for refinement	Headland comment
		We note the presence of Offa's Dyke in this area and that it is not clear whether it has been considered in the priority zone refinement exercise.
5	The boundary of Priority Area for Wind and Solar Energy 5 has been pushed back to avoid grade 1 parks and gardens and listed buildings.	Listed Buildings and Registered Parks should be considered in detail before using a buffer to refine a proposed priority zone as many (although not all) appear to lie in built-up areas or valley bottoms with potentially limited setting extents.
6	The south easterly branch of this priority area, close to the Shropshire Hills has been removed due to a combination of the visibility from the Shropshire Hills and the buffers around Grade 1 historic parks and gardens.	We question whether the two listed buildings concerned – in their valley bottom settings – would be particularly vulnerable to changes caused by wind or solar development and suggest given the topography that development-specific mitigation by design would be able to overcome unacceptable adverse effects.
6	The very northern tip and the south-western edge of this Priority Area for Wind and Solar Energy have been removed due to the presence of Grade 1 historic parks and gardens.	The Stage 2 constraint plans in Appendix H don't appear to show constraints of this nature in these areas – was this intended to refer to Grade I listed buildings and/or Guardianship monuments?
7	Priority Area for Wind and Solar Energy 7 has been reduced to exclude the buffers around grade 1 listed buildings.	Listed Buildings should be considered in detail before using a buffer to refine a proposed priority zone as many (although not all) appear to lie in built-up areas or valley bottoms with potentially limited setting extents.
8	Priority Area for Wind and Solar Energy 8 has been reduced due to a guardianship monument in the north.	We think this relates to the Fforest Castle Mound, but although it may well be sensitive to changes to its setting, we don't see why it is any more sensitive than some of the other scheduled monuments in this area and question its preferential inclusion in the refinement exercise.
9	Priority Area for Wind and Solar Energy 9 has been refined to exclude the buffers around grade 1 listed buildings.	We consider the refinement of the priority area around these assets to have been disproportionate in relation to their locations and surrounding topography.
10	The area to the westerly edge of this Priority Area for Wind and Solar Energy has been reduced to exclude the buffers around Grade 1 listed buildings. This has the added benefit of reducing the proximity of boundary from the coastline and Pembrokeshire Coast National Park.	We consider the refinement of the priority area around these assets to have been disproportionate in relation to their locations and surrounding topography.
10	The Priority Area for Wind and Solar Energy has also been reduced around the edges to the east and south to avoid areas within 3km of Grade 1 listed buildings.	Listed Buildings should be considered in detail before using a buffer to refine a proposed priority zone.

Priority Area	Reason for refinement	Headland comment
11	This Priority Area for Wind and Solar Energy has been reduced in the North West to minimise visual impact from the Pembrokeshire Coast National Park, and to exclude buffers around heritage assets.	We assume on the basis of the constraints map that the dominant consideration here was the Pembrokeshire Coast National Park.
11	A small area to the North East has been removed, as it contains a Registered Historic Landscape, and areas to the South have been removed to allow for 3km buffers around historical assets.	The scheduled monument and Grade I listed building should be considered in detail before using their buffer zones to refine the priority areas.
12	Priority Area for Wind and Solar Energy 12 has been reduced due to historic assets and has been designated for solar only due to the high levels of intervisibility between the two parts of Pembrokeshire Coast National Park.	This area contains many scheduled monuments and applying the buffer zones in the way they have been used is unlikely to reduce the complexity of any assessment of impacts on the historic environment.
13	The edges of the Priority Area for Wind and Solar Energy have been shaved off where they overlap with buffers around historic assets.	We question whether this is necessary, but it appears to have had only a small influence on the extent of the area.
14	This Priority Area for Wind and Solar Energy has been reduced such that it no longer contains the area around Blaenavon World Heritage Site. The Registered Historic Landscapes have been removed.	Blaenavon was inscribed on the list of World Heritage Sites without a buffer zone, although the 2018-23 management plan for the site aims to have a buffer zone incorporated into the designation. The management group believes that visible wind power sites could threaten the outstanding universal values of the site. This position is open to debate, however the proposed buffer zone could potentially be protected with a smaller standoff around the WHS than the 3km used in the Stage 2 exercise.
14	The buffers around historic parks and gardens have been removed from the priority areas, as these are often designated for their views.	<p>This is a very general assertion and we are not persuaded that it is accurate, nor that it is particularly relevant in the southern part of this zone, which has been designated as priority for solar only.</p> <p>There has also been some use of buffers around Grade I listed buildings to exclude areas from the priority zone, which we are not sure is appropriate given their nature and location.</p>
14	<p>It is considered that the south of this Priority Area for Wind and Solar Energy is more suitable for solar development than wind due to the nature of the landscape and the heavily populated area.</p> <p>Grade 1 listed buildings and their buffers are contained within this area. Design Guidance to enable the</p>	There appears to have been some location specific consideration of the use of buffers in this area and a similar approach to the other areas would be helpful.

Priority Area	Reason for refinement	Headland comment
	Glamorgan Heritage Coast to retain its special character whilst accommodating solar development will be required.	

DRAFT WELSH GOVERNMENT NATIONAL DEVELOPMENT FRAMEWORK

**Review of Policy relating to Large-scale Onshore
Wind from an Ecological Perspective**
Prepared for: Innogy Renewables UK Ltd

SLR Ref: 414.02273.00068
Version No: 2
September 2019



BASIS OF REPORT

This document has been prepared by SLR with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it by agreement with Innogy Renewables UK Ltd (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

CONTENTS

1.0	INTRODUCTION	1
1.1	Background	1
1.2	Scope and Purpose of this Review	1
1.3	Evidence of Technical Competence	2
2.0	REVIEW FINDINGS	3
2.1	National Development Framework (Consultation Draft)	3
2.2	Priority Areas for Wind and Solar Energy – Executive Summary Stages 1 and 2.....	3
2.3	Stage 1 – Development of Priority Areas for Wind and Solar Energy.....	3
2.4	Stage 2 - Refinement of Priority Areas for Wind and Solar Energy	4
3.0	SUMMARY AND CONCLUSIONS.....	7
3.1	Conclusions	7
3.2	Alternative Approaches.....	7

1.0 Introduction

SLR Consulting was commissioned by Innogy Renewables UK (Innogy) in September 2019 to carry out a review of the spatial approach to large-scale wind energy development taken within the Welsh Government's National Development Framework (NDF) Consultation Draft, in respect of ecology and biodiversity. The review findings are presented in this short report.

1.1 Background

The Welsh Government has recently commenced a consultation on their Draft NDF, which is intended to set the direction of and priorities for development in Wales from 2020 through to 2040. The Draft NDF includes a section regarding the future development of large-scale renewables, specifically onshore wind and solar power. Policies 10-13 in the Draft NDF address this topic.

The Draft NDF identifies 15 Priority Areas, within which there is a presumption in favour of large-scale onshore wind and solar energy development. Any developments outside of the Priority Areas will not carry explicit Welsh Government support but may be deemed acceptable, with proposals being determined on their individual merits. Development of large-scale renewables is not acceptable within National Parks or Areas of Outstanding Natural Beauty (AONBs).

Information on how the 15 Priority Areas have been identified and refined is provided in three reports produced by Ove Arup and Partners on behalf of the Welsh Government (see Section 1.2).

Innogy has significant concerns about the spatial approach to large-scale renewables taken by the Draft NDF and is therefore seeking to put forward a case for an alternative approach in their consultation response to the Draft NDF.

1.2 Scope and Purpose of this Review

The overall purpose of the review was to inform Innogy's consultation response to the Draft NDF. The specific aims of the review were: to comment on whether the spatial approach taken in the Draft NDF to the development of large-scale renewables is suitable in respect of ecology and biodiversity; and, if appropriate to do so, suggest an alternative approach (or approaches) to the consideration of ecological issues.

The review included the relevant sections of the following documents:

- Welsh Government. National Development Framework 2020-2040. Consultation Draft: 7 August – 1 November 2019 (pages 36-42 in relation to renewable energy);
- Ove Arup and Partners. Priority Areas for Solar and Wind Energy – Executive summary stage 1 and 2 (12 July 2019);
- Ove Arup and Partners. Assessment of onshore wind and solar energy potential in Wales – Stage 1 – Development of Priority Areas for Wind and Solar Energy (7 March 2019); and
- Ove Arup and Partners. Assessment of onshore wind and solar energy potential in Wales – Stage 2 – Refinement of Priority Areas for Wind and Solar Energy (20 June 2019).

In terms of scope, this review relates to large-scale onshore wind only and does not include consideration of solar power. The review covers generic issues relevant to ecology and biodiversity but does not comment on site-specific issues or the siting of specific priority areas or individual development sites. Please note also that the review excludes any consideration of peat, which is understood to have been carried out under a separate commission relating to geology and hydrology.

1.3 Evidence of Technical Competence

The review was undertaken by Duncan Watson CEnv MCIEEM, an ecologist with over 20 years' professional experience who has worked on numerous renewable energy projects in Wales. This report was subject to a technical review by Bob Edmonds CEnv MCIEEM, an ecologist who also has over 20 years' professional experience.

2.0 Review Findings

2.1 National Development Framework (Consultation Draft)

Renewable energy is addressed in pages 36-42 of the Draft NDF and is the subject of four policies (Policies 10-13). The Draft NDF adopts a traffic light-based approach to its policy on large scale wind and solar renewable energy projects, as follows:

- *“RED: Large scale onshore wind and solar energy development is not appropriate within National Parks and Areas of Outstanding Natural Beauty.*
- *AMBER: Areas not within the Priority Areas. These will not carry explicit Welsh Government support and proposals will be determined on their individual merits.*
- *GREEN: Priority Areas for Solar and Wind Energy where there is a presumption in favour of development and where the principle of landscape change is accepted.”*

Although the relevant section of the Draft NDF refers to ecology and biodiversity, by making reference to nature conservation sites and species in Policies 10 and 11, the Draft NDF itself does not include detailed consideration of ecology and biodiversity. No further comments on the Draft NDF itself are therefore provided here and comments instead focus on the reports setting out the approach to the development of the priority areas featured in the Draft NDF (see Sections 2.2-2.4).

2.2 Priority Areas for Wind and Solar Energy – Executive Summary Stages 1 and 2

No comments are provided here on the executive summary report, which simply provides a short summary of the key findings presented in the more detailed Stage 1 and Stage 2 reports. Comments on the more detailed Stage 1 and 2 reports are provided in Sections 2.3 and 2.4 respectively.

2.3 Stage 1 – Development of Priority Areas for Wind and Solar Energy

Stage 1 involved the development of initial priority areas for large-scale wind and solar in Wales. These initial priority areas were then subject to refinement during Stage 2 (see Section 2.4).

Key steps in Stage 1 (taken from Section 3.1 of the Executive Summary Stage 1 and 2 Report) were:

- *“Initial definition of constraints and opportunities, working with stakeholders and experts*
- *Initial development of digital tool*
- *Development and analysis of options, working closely with stakeholders to test and refine these*
- *Development of initial priority areas for wind and solar refinement*
- *Development and analysis of policy options, recognising that the areas could be subject to a range of approaches to policy”*

Three levels of constraints were identified: fixed constraints, representing areas of least opportunity; variable constraints, representing areas of varying opportunity; and overlay constraints, which were provided for information only and may be used to support further assessment at a regional and local level at a later stage.

With regard to ecology and biodiversity, fixed constraints included European sites (i.e. Ramsar Sites, Special Protection Areas (SPA), Special Areas of Conservation (SAC) and candidate SAC) and areas of ancient woodland. Variable constraints included woodland, peat >45cm deep, Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and UNESCO Biosphere Reserves. In our view the identification of fixed constraints relating to ecology and biodiversity is appropriate – European sites and ancient woodland would effectively be no-go areas for wind development under current planning policy. We were slightly surprised that SSSIs and NNRs

were included as variable constraints (suggesting development in these areas is possible) as in our experience these would usually be regarded as no-go areas. We would also query the inclusion of all woodland as a variable constraint, as in practice the level of constraint presented by, e.g. mature broad-leaved woodland is much greater than that presented by, e.g. coniferous plantation. We also note that other features which could prove to be constraints to development at a site level, e.g. non-statutory sites, are not identified as variable constraints.

There are several references within the Stage 1 report to buffer zones being applied to constraints. It is not clear whether buffer zones were applied in relation to ecology and biodiversity-related constraints at Stage 1 and if so what size of buffer zone has been applied. Table 10 in Appendix A to the Stage 1 report suggests that buffer zones were not applied, stating that only *“AONB, National Park and existing building constraints will have buffer zones applied”*. However, this appears to be contradicted in Section 7.2 of the Stage 2 report, which states that the Habitats Regulations Assessment (HRA) for the Draft NDF¹ is based on the premise that *“all the Priority Areas for Refinement contain buffer zones for the various [European] sites”*. Clarity regarding the application of buffer zones would therefore be useful. We would also question the validity of applying fixed buffer zones to ecology and biodiversity-related constraints as we believe the need for buffer zones, and their extent, can only be determined on a site and feature-specific basis.

Following the definition of constraints, four different scenarios were developed, each of which had varying levels of constraints applied. Scenario 1 applied fixed constraints only, Scenarios 2 and 3 applied varying levels of variable constraints and Scenario 4 applied all variable constraints. The preferred scenario incorporated some minor revisions to the list of fixed and variable constraints and resulted in outputs showing areas of greatest opportunity, areas of varying opportunity and areas of least opportunity. It is not clear how much of the area shown as having varying opportunity is subject to variable constraints relating to ecology and biodiversity.

The next step was to identify initial priority areas for subsequent refinement. 15 areas were developed, primarily based around the areas of greatest opportunity. Grid and road infrastructure, wind speed and the relationship with the old TAN8 Strategic Search Areas (SSAs) were also considered. It is not clear whether variable constraints relating to ecology and biodiversity were taken into account during this process and more detail regarding the identification of the boundaries of the initial priority areas would have been useful. However, based on the wording in Section 5.5 of the Stage 1 report it is considered unlikely that ecology and biodiversity were taken into account during the identification of the initial priority areas, other than through the avoidance of larger areas of fixed constraints.

All 15 of the initial priority areas will almost certainly contain variable constraints relating to ecology and biodiversity. Some will also contain fixed constraints, particularly where such constraints are relatively small, e.g. smaller SACs or areas of ancient woodland. The extent to which these constraints could preclude future wind development within each priority area is not known. It is possible however that wind development in some priority areas could be significantly constrained by ecology and biodiversity-related variable constraints such as SSSIs. In such cases the policy presumption in favour of development would seem to conflict with other policies, e.g. policies protecting SSSIs, and it is possible that large-scale wind development is not actually feasible across large parts of the priority areas.

2.4 Stage 2 - Refinement of Priority Areas for Wind and Solar Energy

Stage 2 aimed to refine the initial priority areas identified in Stage 1, considering certain constraints in more detail. These constraints (taken from Section 3.2 of the Executive Summary Stage 1 and 2) included:

- *“Landscape and visual assessment*

¹ Arcadis for Welsh Government, Wales NDF – Implications for the Natura 2000 network of Priority Areas for Renewables Development across Wales, March 2019. [note that review of the Arcadis report was beyond the scope of this review]

- *Centres of population*
- *Vehicular access*
- *Ecosystem services and resilience*
- *Historic environment*

Of the criteria considered during the refinement of priority areas only one, ecosystem services and resilience, is relevant to ecology and biodiversity. To enable consideration of ecosystem services and resilience the locations of “*areas of multi-benefit of woodland, heath and wetland creation*” and “*hotspots for biodiversity*”, provided by Natural Resources Wales (NRW), were plotted against the initial priority areas.

However, NRW subsequently advised (Section 7.2 of the Stage 2 report) that “*ecosystem services and biodiversity hotspots maps should not be used to influence refinement.*” They went on to state that “*this information is better suited to later stages of the decision-making process using area statement mapping at a local scale*”. We agree that plotting of the ecosystem services and biodiversity hotspots data is not appropriate for the refinement of priority areas as such areas are widespread throughout Wales and would be impossible to avoid. However, we are concerned that leaving consideration of these data to a later stage in the decision-making process, as suggested by NRW, could result in the identification of significant constraints to wind development across many of the priority areas. In such cases the policy presumption in favour of development is likely to conflict with policies relating to the protection of ecosystem services and biodiversity. As noted in relation to Stage 1, it is possible that this could in turn mean that large-scale wind development is not feasible across large parts of the priority areas.

Section 3.1.2 of the Stage 2 report refers to LANDMAP, an all-Wales landscape resource where landscape characteristics, qualities and influences on the landscape are recorded and evaluated². One of the layers in LANDMAP relates to “*Landscape Habitats*”. Although LANDMAP landscape habitats have been identified with reference to a number of ecological criteria, LANDMAP is intended as a resource to identify landscape quality and has therefore not been considered in this review. It is noted however that the LANDMAP layers have only been used as a secondary reference in the refinement of priority areas, providing an additional evidence layer where there were difficult decisions to make (Section 3.2.2 of the Stage 2 report).

On the basis of the above, ecology and biodiversity would appear not to have influenced the refinement of the initial priority areas. One exception to this is in respect of European sites and Section 7.2 of the Stage 2 report states that “*Priority Areas for Refinement have been refined to exclude SACs and SPAs wherever possible. Small SACs centrally in the priority areas should be addressed through design guidance.*” As noted in Section 2.3 it is not clear whether buffer zones have been applied to European sites during the refinement process and if so, what the extent of these buffer zones was. As stated previously we would question the validity of applying fixed buffer zones to European sites as we believe the need for buffer zones, and their extent, can only be determined on a site-specific basis.

One other exception relates to the River Dyfi UNESCO Biosphere, which has been given as a reason for the exclusion of TAN 8 SSA D from the refined priority areas (Section 9.6 of the Stage 2 report). UNESCO’s Biospheres have three aims: “*Conservation protecting, wildlife, habitats and the environment; Development – encouraging a sustainable economy and community; and Education – supporting research, monitoring, and building global networks to share and learn to inspire communities to work together*”³. In our view large-scale wind power is not necessarily incompatible with a UNESCO Biosphere and we are aware of several other wind projects

² <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en>

³ <https://www.dyfibiosphere.wales/what-is-a-biosphere>

operating within other Biospheres, e.g. the Galloway and Southern Ayrshire Biosphere Reserve. The exclusion of this area, in part due to the presence of a UNESCO Biosphere, is therefore questionable.

3.0 Summary and Conclusions

3.1 Conclusions

The approach to the initial identification of priority areas for wind and solar development was based on the identification of fixed and variable constraints. In our view the fixed constraints relating to ecology and biodiversity, i.e. European sites and ancient woodland, are appropriate. We have concerns regarding some of the variable constraints, e.g. the inclusion of SSSIs and NNRs as variable, rather than fixed constraints, which suggests that development within some SSSIs and NNRs may be appropriate. We also have concerns regarding the inclusion of all woodland as a variable constraint as there are significant differences in the ecological value of different woodland types, e.g. mature broad-leaved woodland and coniferous plantation, yet these appear to have been treated the same in the identification of priority areas. We would also highlight that other features which could prove to be constraints to development at a site level, e.g. non-statutory sites, are not identified as variable constraints and have therefore not been considered.

In our view there is a lack of clarity running throughout the Stage 1 and Stage 2 reports in terms of how exactly the boundaries of the priority areas have been defined and specifically how ecological constraints have been taken into account (or not) in the definition of the priority areas. It is also unclear what, if any, buffer zones have been applied to fixed ecological constraints during the refinement of the priority areas.

All 15 of the refined priority areas will almost certainly contain variable constraints relating to ecology and biodiversity, which could include potentially significant constraints such as SSSIs. They may also contain large numbers of additional ecological constraints such as areas providing ecosystem services, biodiversity hotspots and non-statutory sites. It is noted that NRW expect consideration of these constraints at a later stage in the decision-making process and it is also noted that Draft NDF Policy 11 requires that adverse impacts on nature conservation sites and species are minimised by development within the priority areas. The Stage 2 report also accepts that *“wider matters, at a site-specific level, will need to be considered in the context of more detailed planning as sites come forward”*. It is possible therefore that wind development in some priority areas could be significantly constrained by ecology and biodiversity. In such cases the policy presumption in favour of development would seem to conflict with a number of environmental policies and it is possible, in practice, that large-scale wind development is not feasible across large parts of the priority areas.

Other than European sites and ancient woodland, which are effectively no-go areas for wind development under current planning policy, the identification of priority areas does not appear to have considered ecological constraints (although as noted above, there is a lack of clarity within the Stage 1 and Stage 2 reports in terms of how exactly the boundaries of the priority areas have been defined). It is therefore likely that most, if not all, priority areas contain a number of potentially significant ecological constraints to development and it is possible that many sites within the priority areas could even be more constrained, in terms of ecology and biodiversity, than sites outside the priority areas. This could either result in many sites within priority areas being too heavily constrained for wind development or, given the policy presumption in favour of development and acceptance of landscape change within the priority areas, sites being developed that result in adverse outcomes for ecology and biodiversity. In respect of ecology and biodiversity we therefore believe that the priority areas approach, as set out in the Stage 1 and 2 reports, is both unclear in its approach and unbalanced in the weight given to ecology and biodiversity constraints other than European sites and ancient woodland. We therefore conclude that this approach is seriously flawed.

3.2 Alternative Approaches

As set out in Section 3.1 we believe that the priority areas approach is seriously flawed in terms of its consideration of ecology and biodiversity. However, other than abandoning the priority areas approach and considering all sites against a criteria-based approach which seeks to address relevant ecology-related legislation

and policy and maximise biodiversity benefits, e.g. through Habitat Management Plans and other similar initiatives (as now), we are not in a position to suggest any alternative approaches.

EUROPEAN OFFICES

United Kingdom

AYLESBURY

T: +44 (0)1844 337380

BELFAST

T: +44 (0)28 9073 2493

BRADFORD-ON-AVON

T: +44 (0)1225 309400

BRISTOL

T: +44 (0)117 906 4280

CARDIFF

T: +44 (0)29 2049 1010

CHELMSFORD

T: +44 (0)1245 392170

EDINBURGH

T: +44 (0)131 335 6830

EXETER

T: + 44 (0)1392 490152

GLASGOW

T: +44 (0)141 353 5037

GUILDFORD

T: +44 (0)1483 889800

LONDON

T: +44 (0)203 805 6418

MAIDSTONE

T: +44 (0)1622 609242

MANCHESTER

T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE

T: +44 (0)191 261 1966

NOTTINGHAM

T: +44 (0)115 964 7280

SHEFFIELD

T: +44 (0)114 245 5153

SHREWSBURY

T: +44 (0)1743 23 9250

STIRLING

T: +44 (0)1786 239900

WORCESTER

T: +44 (0)1905 751310

Ireland

DUBLIN

T: + 353 (0)1 296 4667

France

GRENOBLE

T: +33 (0)6 23 37 14 14