P-06-1344 Moderate quality agricultural land (grade 3b) should be used for food security not solar farms, Correspondence – Petitioner to Committee, 18.09.23

Petition: P-06-1344 CAEVOD (Campaign Against East Vale Overdevelopment)

Dear Petitions Committee,

Thank you for considering this petition. The Welsh Minister's response *(included in italic print for ease of reference)* appears to be based on an incomplete assessment of Welsh Government policies and documents and as a result open to challenge. The following points are raised following considerable research by CAEVOD members although none are experts in this field.

1. *As the Minister responsible for determining DNS applications, neither I nor my officials can comment directly on any particular scheme.*

Comment:

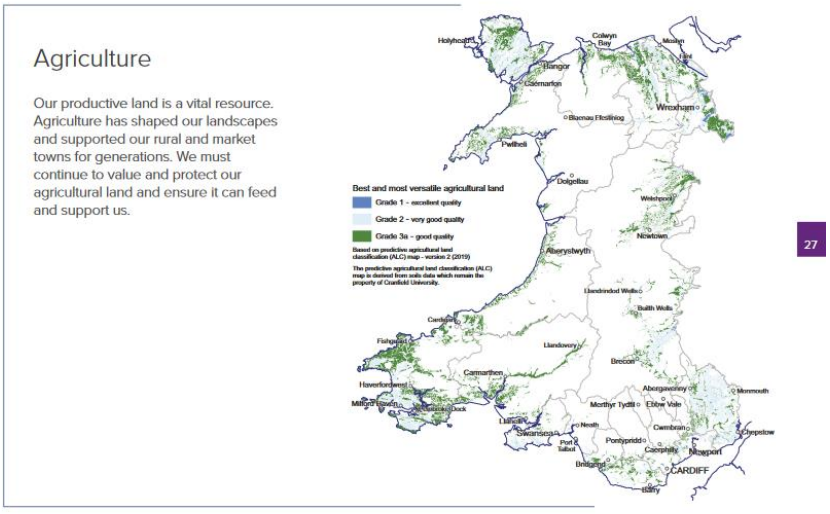
CAEVOD's petition is in response to researching several Welsh solar farm proposals listed on PEDW's website and concerns these proposals raise about the increasing use of agricultural land for solar development in Wales. There is no intention for this petition to be linked to any particular scheme.

2. *Future Wales: The National Plan 2040 in respect of high-quality agricultural land is: - 'Our productive land is a vital resource. Agriculture has shaped our landscapes and supported our rural and market towns for generations. We must continue to value and protect our agricultural land and ensure it can feed and support us'.*

Comment:

Given the rare and scattered nature of Best & Most Versatile (BMV) agricultural land illustrated in Figure 1 below, is it all available for food production?

Figure 1**: PDF page 27 Future Wales: The National Plan 2040.**



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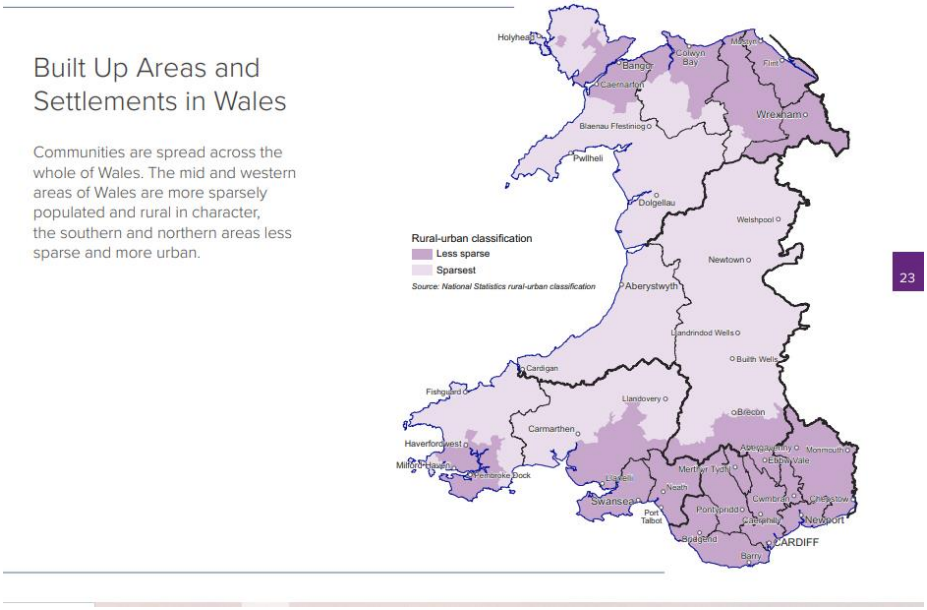
- BMV agricultural land (especially grade 3a) is often found within areas of 3b land. Retention of this BMV land for agricultural use is only considered if the amount of BMV land within the solar farm proposal 'exceeds the 20 hectares threshold over which the development of BMV agricultural land for alternative uses is considered to be nationally significant' (p35 PEDW website Inspector's Report 2021-08-10 DNS/3245056). In other words, if less than 20 hectares BMV land will be covered by a solar farm proposal it is likely to be lost to this development.
- When comparing Figure 1 with Figure 2 (Built Up Areas & Settlements in Wales) below, a significant amount of BMV agricultural land falls within these urban/semi-urban areas making it vulnerable to loss for housing and other urban development.

Figure 2**: PDF page23 Future Wales: The National Plan 2040**



3. *BMV agricultural land accounts for 10-15% of land in Wales. The 10-15% range reflects some uncertainty in the Predictive Agricultural Land Classification Map. Certain site-specific limitations were not included in the production of the Map due to a lack of available data. These include frost risk, agricultural flood risk, pattern limitations, micro-relief limitations and chemical limitations. The severity of these limitations may limit some areas currently graded as predictive BMV agricultural land.*

This statement suggests that the % of actual BMV agricultural land is likely to be nearer 10% than 15%. Is this really sufficient to *'feed and support us'*?

- How much land will be needed to '*ensure it can feed and support us*'? No information is given.
- This statement drawn from p12 of the following Welsh Government publication https://www.gov.wales/sites/default/files/publications/2022-08/review-welsh-soil-evidence_0.pdf, omits the bullet point that follows it: 'Only 32% of total BMV land (296,897 ha) is used to grow crops (including arable crops, uncropped land, and high value horticultural products; 95,500 ha), the majority of BMV land is under grassland. Most arable production (ca. 60%) occurs in ALC land grades 3a and 3b, with very little occurring in the grade extremes. **ALC subgrade 3a represents the core BMV resource. Due to the large extent of agricultural production on subgrade 3b land, future review of the ALC and policy might include or split the 3b subgrade**.' (emphasis added).

- *ALC subgrade 3b accounts for an additional c.23% of agricultural land in Wales….. 3b is defined as, "land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year".*

This statement clearly illustrates that 3b land is an important food resource and is capable of growing a wide range of crops. Even if productivity may be less than 3a for some crops it is still widely used by farmers to grow a range of commercially viable crops suitable to feed humans and animals. Its inclusion in with the BMV figures above still only gives a total of 33-38% of the land area in Wales capable of food production – even if all this land was actually used to produce food, is this figure really enough to feed the Welsh population and significantly reduce our food miles carbon footprint?

4. *The table below illustrated the latest available data on the quality of agricultural land used for solar PV sites in Wales by area (hectares).* ***This covers the period 2012-2020 and excludes DNS permissions****.* (emphasis added).

Grade 1		Grade 4	
Area	%	Area	%
0	0	254.8	17
Grade 2		**Grade 5**	
Area	%	Area	%
268.1	18	116.3	8
S'grade 3a		**Non-agri**	
Area	%	Area	%
202.4	13	15.6	1
S'grade 3b		**Urban**	
Area	%	Area	%
660.8	43	3	0

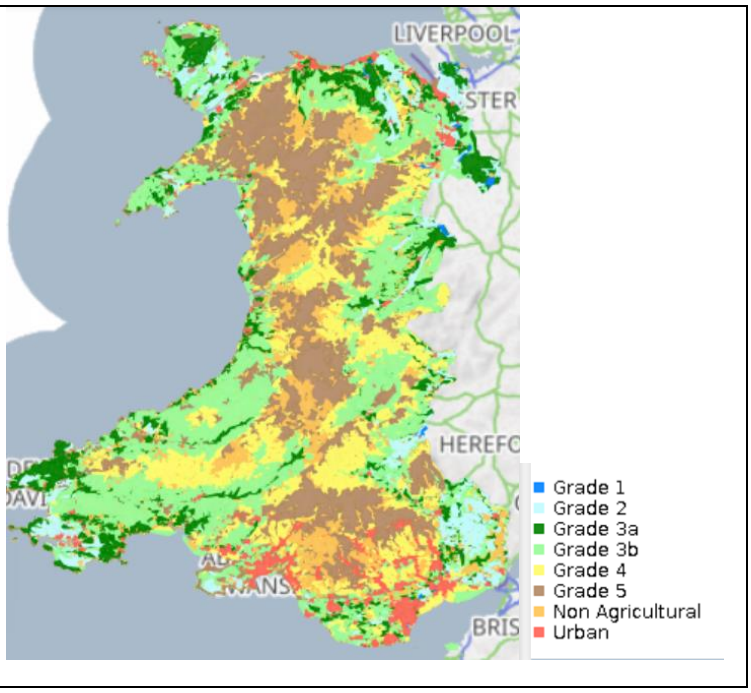
Comment:

From this data it can be seen that:

- the total area covered by solar panels up to 2020 (excluding DNS permissions i.e. solar farms that are larger than 10MW) is 1521 hectares.
  CPRW (2023 data) calculates the additional land covered by existing and proposed DNS solar farms as at least 2652 hectares **so the total land area covered by solar panels will be at least 4173 hectares**, nearly 3x more land than the Welsh Minister's data suggests.
  https://cprw.org.uk/wp-content/uploads/2023/07/Developments-of-National-Significance-RWAS-V1.7a-20230711.pdf

- Despite 3b land being capable of commercially profitable food production it is being favoured for solar PV sites over less useful lower grade land (3b=43%, lower grades=26%). This overuse of 3b land is likely to be much higher once DNS solar farms proposals are taken into account. These developments need to link up to main National Grid routes at points that are easily accessible and the land is not steep for construction vehicles, which tends to be on flatter higher-grade land (see National Grid network & ALC predicted grades maps below).

National Grid network



ALC predicted grades

https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/network-route-maps
https://datamap.gov.wales/maps/new?layer=inspire-wg:wg_predictive_alc2#/

5. *The ALC grades definitions are published in the 'Revised guidelines and criteria for grading the quality of agricultural land' (MAFF 1988). The Welsh Government continues to ensure the Agricultural Land Classification System is fit for purpose.*

   Subgrade 3b is defined as, "land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year".

   BMV land often contains lighter and easy to work soils, it requires fewer "passes" by agricultural machinery to establish seedbed. The reduction in the amount of time machinery spends on the land helps reduce fuel, labour, and maintenance costs. It also reduces the potential for damage to soil organic matter. Horticultural and root crops grown on BMV land can also be harvested in a cleaner condition reducing loss of soil, water usage and crop wastage.

Comment:

The Agricultural Land Classification (ALC) grading system which is being used to determine which land can be used for solar farms is based on a 1988 land classification scheme. However, the 1985 ALC map for England & Wales which ran alongside grading system is now considered obsolete and has been replaced by the Predictive Agricultural Land Classification Map 2 for Wales 2017.

Why has the ALC grading system itself not also been updated?

The following document (listed on page 3 of the Welsh Minister's response) recommends that the factors that determine the ALC grades should be reviewed https://www.gov.wales/sites/default/files/publications/2022-11/agricultural-land-classification-technical-review-scoping-study.pdf.

> **PDF page 10** 'Given that the guidelines were published over 30 years ago, it is important that the threshold limits for establishing grading are reviewed and updated to ensure they are valid and appropriate for the future. In addition, major advances in technology (e.g. GIS or remote sensing) since 1988 may provide methods for assessing criteria that were not previously possible'.
>
> **PDF page 73** 'many of these changes are considered important for the ALC to reflect current climatic conditions and continue to be of relevance in planning decisions.'
>
> **PDF page 88** 'The ALC system was designed to identify land that is best suited to productive agriculture. The system does not consider the sustainability of production or the wider environmental or amenity value of any land.'
>
> **PDF page 90** 'It is very likely that the overall ALC grade of some sites will change, particularly those that are close to the boundary between two Grades for a particular limitation.'

Surely this suggests that relying on the current fine distinction between grade 3a and 3b land in determining which land should be retained for food production and which can be used for solar is a mistake?

Why is other agricultural information not being taken into account in this DNS decision for example: the current & historical agricultural use; land management practices that enhance the quality and ease of working of 3b land increasing its productivity to grow a wider range of human and animal crops; the location of subsidised crops held by Rural Payments Wales?

Even the aforementioned report **PDF page 88** advises 'Review the potential benefits of expanding the ALC guidance to include additional reference crops'.

The Land Quality Advisory Service (LQAS) assesses soil survey data provided by developers and carries out further investigation if deemed necessary. Why does the Developments of National Significance process not make more use of the LQAS to oversee the planning and performance of developers' soil surveys including site visits to confirm the accuracy of their land grading first hand? Discrepancies do occur, for example Scruton Solar Farm, North Yorkshire, the developer's survey graded the agricultural land as 3b but the subsequent independent survey graded it as 2.

The phrase subgrade 3b suggests that this land is of much poorer quality which is not necessarily the case. The 1988 land grade 3 is now subdivided into two grades, subgrade 3a and subgrade 3b. LQAS have advised CAEVOD that the cut-off point between the physical characteristics of these two grades can be quite fine.

6. *Non-BMV land tends to be made up of heavier wetter soils and those in colder wetter climatic zones which limit their workability and cropping potential.*

Comment:

Climate is changing. Within the lifespan of current Development of National Significance proposals, Wales is expected to become warmer and rain patterns change. This will alter some of the physical characteristics of the soil. BMV agricultural land may no longer be able to realise its cropping potential as the climate becomes warmer with longer dryer spells in the summer stunting crop growth. As a result of this surely there could be an increased need non-BMV land with its ability to hold onto water to make up for this shortfall in food production?

This likely loss of BMV land is made at several points in the report https://www.gov.wales/sites/default/files/publications/2022-11/agricultural-land-classification-technical-review-scoping-study.pdf. For example, **PDF page 90** 'In comparison with the original data Keay (2020) reported that under the 2020 medium scenario the proportion of land in ALC Grades 1, 2 and 3a decreased whilst the proportion of land in Grades 3b, 4 and 5 increased.'

7. *Over the summer, Welsh Government will publish an evidence review into 'The impact of solar photovoltaic (PV) sites on agricultural soils and land quality,' Report Code: SPEP2021-22/03.*

Comment:

Developers describe current solar farm proposals as temporary structures with the land being returned to its previous agricultural use after 40 years. However, the following statements suggest that the actual long-term impacts of solar farm development on agricultural land are still not fully understood. Following publication of this document why is the Welsh Government not initiating an immediate moratorium on all solar farm development?

> **PDF page 8 (Literature Review):** 'There are few studies of solar PV sites and their impact on agricultural land and soils.'
> **PDF page 15** 'There is limited evidence specifically relating to solar PV sites to confirm the benefits to soil health.'
> **PDF page 15** 'Soil compaction can vary from short term and very low impact to irreversible. The assessment of the impact on agricultural land quality was demonstrated and that in wetter areas there is loss of BMV agricultural land and in slightly drier parts of England and Wales there is generally loss of versatility of the BMV agricultural land.'
> **PDF pages 13-15** provides an insight into the destructive impact on the soil structure of installing and subsequent removal of huge numbers of solar panels (whether on long metal poles or concrete bases) and deep trenching miles of cables on agricultural land. Further, the Inspector's Report DNS/3245065 acknowledges that this impact results in a permanent change in land use due to the very real difficulties in restoring the soil structure so that it can be returned to its original agricultural use.
> **PDF page 21/22 (Roundtable Discussion**) 'Risks posed by solar PV sites to soils and land: too much trenching, leaching of toxic material from batteries, introduction of concrete to site, … lack of understanding about soils best practice amongst developers, environmental

best practice guidelines are currently focused on biodiversity only, inadequate soils management planning, inadequate decommissioning statements may result in failure to return land to pre-development condition.'

Alarmingly the following statement illustrates the clear loss of BMV despite policies to preserve it.

PDF page 23 'The report on Solar PV Sites in Wales for Work Package 2b (10/10/2022) did include an ALC analysis of operational sites in Wales and the finding was that 31% of land used is BMV.' …'However, this analysis was of operational sites and was based on the June 2021 BEIS Renewable Energy Planning Database.'

This review raises further concerns:

Inaccurate information - **PDF page 12** 'The BEIS Renewables Database is described as being 'as accurate and comprehensive a snapshot as possible of projects'. 'During the review, several sites were identified, which were not included in the BEIS Renewables Database.'

Increased loss of agricultural land - **PDF page 10** 'The data shows that there is a significant increase from 2018 in projects with a generating capacity close to 50MW (BEIS Renewable Energy Planning Database June 2021). For projects close to 50MW each development typically requires a land area of 60-80 ha. For larger projects with a generating capacity of 350MW the land area required is about 800ha.'

Lack of current knowledge - **PDF page 28** (Recommendations for Future Work) 'Analysis of ALC Grade and BMV land take for developments that have been constructed or been awarded planning permission since the date of those visible on the satellite images available during the Work Package 2b study in June 2021' and 'The impact of re-powering solar PV developments beyond a typical 40-year period on the soil and land.'

The following document https://publications.parliament.uk/pa/cm5802/cmselect/cmwelaf/607/report.html (PDF page 10) states 'Climate change is already having a clear impact on farming…. Wetter weather will increase challenges to livestock production with increased flooding of fields potentially reducing the crop production used to supply bedding and feed. We are concerned that a reduction in yield, as a result of environmental factors, could reduce the viability of farms and, in turn, could have negative consequences for the cultural, economic and social significance of family farms in Wales.'

The average agricultural land holding for farms in Wales is 48ha https://senedd.wales/research%20documents/16-053-farming-sector-in-wales/16-053-web-english2.pdf . The advent of 50MW solar developments typically of 60-80ha (stated above) will clearly tie up large swathes of agricultural land and the loss of entire farms in one generation seems inevitable. How does this align with *Future Wales: The National Plan 2040 in respect of high-quality agricultural land is: -'Our productive land is a vital resource. Agriculture has shaped our landscapes and supported our rural and market towns for generations. We must continue to value and protect our agricultural land and ensure it can feed and support us'?*

A lot of work has clearly gone into the above document however it is disappointing to see the repetition of often touted mantras that are inaccurate at best and in some cases clearly wrong.. for example:

PDF page 9 'Developers identify geographical areas of interest, either because it is known that there is spare capacity on the grid or the area has a high solar irradiation. Using a combination of desk-top and on-site searches, land which is free of development constraint is identified….. Following the identification of constraint free land and interested landowners further steps are undertaken.'
Through reading the environmental statements of many large solar development proposals in Wales and England it is clear that development constraints are not seen as red lines but more as hurdles that developers seek to minimise so they can be discounted. For example, Local Planning Authority landscape designations both to protect certain landscapes and identify solar search areas are often ignored.

PDF page 11 'Grass on the site is usually grazed by sheep.'
This statement is frequently cited by solar farm developers, yet this document fails to provide any supporting evidence. In reality sheep are rarely seen grazing on solar farms. Why is this? It certainly sounds a good idea and some studies show it to beneficial e.g. https://files.bregroup.com/solar/NSC_-Guid_Agricultural-good-practice-for-SFs_0914.pdf but…there is no contractual requirement for this to happen, sheep are fussy eaters and do not graze the sward uniformly, it is simply quicker and cheaper to employ a contractor to keep the grass down by cutting with a machine.

It is disappointing that this document has not gone further to consider whether sufficient evidence exists to support developers claims that solar development actually improves soil diversity and biodiversity (which favour crop production and the environment). If these improvements are correct they would be directly related to the management of the land, and as with grazing sheep, must become a contractual obligation to ensure they happen.

8. *Future Wales policies 17 and 18 set out the Welsh Government's policies for renewable and low carbon energy development, including the key criteria for the determination of DNS. These key criteria ensure that applications for DNS are rigorously assessed so that communities, designated areas, landscapes and natural resources are protected from unacceptable adverse impacts. Policy 18 also requires consideration of the cumulative impacts of existing and consented renewable energy schemes where this is appropriate as well as the provision for '…effective restoration'.*

Comment:

CPRW has recently stated that the DNS system is not fit for purpose.
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjUya2m76mBAxUwWUEAHeYaAK4QFnoECBAQAQ&url=https%3A%2F%2Fcprw.org.uk%2Fwelsh-government-planning-system-not-fit-for-purpose%2F&usg=AOvVaw1lQEtBEX-R1c20j450TCxU&opi=89978449 .

From our research of solar farm proposals there is far too much reliance on the developer identifying suitable areas for solar development – why is the Welsh Government not doing this? Developers are also asked to provide information about their perceptions of unacceptable adverse impacts, cumulative effects and plans for effective restoration. The DNS process provides no definitions or examples for such criteria instead these definitions appear to be decided by the Inspector after submission on a case-by-case basis. This is not helpful for either the developers investing heavily in

their proposals or the communities left wondering for months/years what is going to happen on their doorstep.

We would like to draw the committee's attention to our second petition 'Improve the quality of information used in Developments of National Significance' which unfortunately did not gain sufficient signatures for separate consideration. Our research has found that apart from ALC grading there are few independent checks on the information developers provide to back up their assertions and no checks at all on the developer's credentials and previous record to turn their plans into reality.

9. *I can confirm that there are no plans to review the policy on Best and Most Versatile (BMV) agricultural land to include Subgrade 3b land.*

Comment:

The comments above illustrate that the Welsh Minister's response to this petition is not consistent with Welsh Government Policy - *Future Wales: The National Plan 2040 'We must continue to value and protect our agricultural land and ensure it can feed and support us'.* The response has failed to address:

- the ongoing loss of BMV land (despite PPW's approach to avoid the development of BMV land if alternatives exist and the Welsh Minister's reiteration of the protection of this finite resource to Chief Planning Officers in March 2021)
- this rate of loss is likely to increase significantly because to be commercially viable, solar farm proposals are becoming significantly larger and more frequent close to existing grid connections which often cross more favourably graded agricultural land.
- PPW's approach to avoid the development of BMV land is further increasing the loss of 3b land
- 3b land is commonly used by farmers in Wales to grow a wide range of crops for human and animal consumption. Its preservation for this use makes sense to future-proof our food supply particularly in response to climate change.

Further, the Welsh Minister's response ignores much of the information in the guidance it quotes; selecting points that support its argument rather than making a more balanced assessment. The most recent Welsh Government publication referred to in point 7 highlights just how little is known about the long-term effects of solar development on the agricultural capability of the land – surely this emphasises the need for a much more cautious approach when considering solar development on any agricultural land?

In summary, to meet the Future Wales 2040 commitment that agricultural land in Wales can '*feed and support us*' it would be prudent at the very least for the Welsh Minister to exclude all grade 3a and 3b land from solar development. It is hoped that the Petitions Committee will recognise the ongoing and inevitable further loss of productive agricultural land and will go much further by recommending to the Welsh Minister that:

- solar farms should only be located on brownfield sites, and solar panels should only be on building roofs. If agricultural land has to be used for solar development, then it should be land that is graded 4 & 5, free from planning constraints and not currently used to feed livestock.
- a moratorium on all solar development should be bought into effect immediately until the amount and location of land to '*feed and support us'* has been determined by Welsh Government to meet this Future Wales 2040 commitment.

Thankyou.