

MAES MAWR SOLAR FARM

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1 CLIMATE CHANGE POLICY REVIEW

National Planning Policy and Legislation

- 1.1 Planning Policy Wales (2021) states that the overall commitment to tackle climate change is of paramount importance and introducing new sources of renewable and low carbon energy is essential for meeting this commitment. The report sets out the goal of generating at least 70% of its electricity consumption from renewable sources by 2030.
- 1.2 Paragraph 5.7.13 states that the Welsh government recognises an energy hierarchy to which all new developments are expected to adhere to, thereby mitigating the causes of climate change. The energy hierarchy ensures that new developments will reduce energy demand and increase energy efficiency, are suitably located and designed and assist in meeting energy with renewable and low carbon sources. The energy hierarchy will become increasingly important with increased electrification (through increased use of electric vehicles etc).
- 1.3 The report sets out the duty of planning authorities to facilitate renewable and low carbon energy developments. Paragraph 5.9.1 states *“local authorities should seek to ensure their area’s full potential for renewable and low carbon energy generation is maximised and renewable energy targets are achieved”*.
- 1.4 Future Wales: The National Plan 2040 (2021) sets out the direction for development in Wales to 2040, including key national priorities such as achieving decarbonisation and climate-resilience. This plan addresses the climate emergency and shows strong support for the development of renewable and low carbon energy (policies 17 and 18), encouraging decision-makers within the planning system to consider Wales’s target to generate 70% of consumed energy by renewable means by 2030.
- 1.5 The Climate Change Act 2008 as amended commits the UK government to reducing greenhouse gas emissions by 100% of 1990 levels by 2050 and created a framework for setting a series of interim national carbon budgets and plans for national adaptation to climate risks.
- 1.6 At present, the Third, Fourth, Fifth and Sixth Carbon Budgets, set through The Carbon Budget Orders 2009, 2011, 2016 and 2021, are 2.54 GtCO₂e for 2018-2022, 1.95 GtCO₂e for 2023-2027, 1.73 GtCO₂e for 2028-2032 and 0.97 GtCO₂e for 2033-2037 respectively. The Sixth Carbon Budget is the first Carbon Budget that is consistent with the UK’s net zero target, requiring a 78 % reduction in GHG emissions by 2035 from 1990 levels.
- 1.7 The Climate Change Act also created the Committee on Climate Change (now Climate Change Committee) to give advice on carbon budgets and report on progress. The Committee through its Adaptation Sub-Committee also gives advice on climate change risks and adaptation. Its advice regarding carbon and climate policy relevant to the proposed development is summarised below.
- 1.8 The Environment (Wales) Act (2016) provides Welsh ministers with powers to put in place statutory emissions reduction targets, including an aspiration to achieve net zero GHG emissions by 2050.
- 1.9 The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021 regulates two carbon budgetary periods; the period of 2021-2025 limits GHG emissions to an average of 37% lower than the 1990 baseline (this is updated from 33% as stated within the 2018 Regulations), and the period of 2026-2030 limits GHG emissions to an average of 58% lower than the baseline.

National energy and climate change policy

Clean Growth Strategy, 2017

- 1.10 The 2017 Clean Growth Strategy for the UK (BEIS, 2018) contains a key objective of ‘Delivering Clean, Smart, Flexible Power’ and details specific policies through which this can be achieved:
- Policy 33 of the report states the government’s intention to phase out the use of unabated coal for electricity production by 2025;
 - Policy 35 sets government’s intentions to improve the route to market for renewable technologies;
 - Policy 36 details plans to target a total carbon price in the power sector which will give businesses greater clarity on the total price they will pay for each tonne of emissions.
- 1.11 The Strategy discusses a potential low-carbon pathway whereby annual emissions are as low as 16 MtCO_{2e} by 2032. The report states this is only likely to be achieved if low-carbon power generation including renewables and nuclear has the capacity to provide at least 80% of generation demand. The report also states the penetration of low-carbon power to this extent will rely on smarter, flexible electricity networks through the use of energy storage and demand-side management.

Energy White Paper: Powering Our Net Zero Future, 2020

- 1.12 The Energy White Paper builds on the Ten Point Plan to set energy-related measures in a long-term strategic vision, working towards the net zero emissions target for 2050. It establishes a shift from fossil fuels to cleaner energy in terms of power, buildings and industry, whilst creating jobs and growing the economy. In addition to this, the best solutions should be determined for very low emissions and reliable supply, keeping cost low for consumers.
- 1.13 Focusing on electricity is key for the transition away from fossil fuels and decarbonising the economy by 2050. Some commitments from this white paper include:
- Accelerate the deployment of clean electricity generation through the 2020s
 - Invest £1 billion in UK’s energy innovation programme to develop the technologies of the future such as advanced nuclear and clean hydrogen
 - Ensure that the transformation of the electricity system supports UK jobs and new business opportunities, at home and abroad.
- 1.14 The Net Zero Innovation Portfolio has been developed, and aims to “*accelerate the commercialisation of innovative low-carbon technologies, systems and processes in power, buildings and industry to set the UK on the path to net zero and create world-leading industries and new jobs.*” It looks to focus on ten priority areas, including energy storage and flexibility to decarbonise the energy system.
- 1.15 Key commitments relating to the energy system include:
- “*Publish a new Smart Systems Plan in spring 2021, jointly with Ofgem, and define electricity storage in law, legislating when Parliamentary time allows;*
 - “*Through the Net Zero Innovation Portfolio, we will launch a major competition to accelerate the commercialisation of first-of-a-kind longer duration energy storage, as part of our £100 million investment in storage and flexibility innovation, with delivery from spring 2021; and*
 - “*We will legislate, when Parliamentary time allows, to enable competitive tendering in the building, ownership and operation of the onshore electricity network.*”

National Infrastructure Strategy, 2020

- 1.16 The National Infrastructure Strategy focuses on the investment and delivery of infrastructure, which is fundamental to delivering net zero emissions by 2050. The strategy sets out the UK Government's plans to deliver on this target, decarbonising the economy and adapting to climate change:
- Work towards meeting the net zero emissions target by 2050 – Decarbonise the UK's power, heat and transport networks, and take steps to adapt to climate change impacts. This will require increased investments in network infrastructure, storage and increased renewable and low carbon generation capacity.
 - Reducing emissions across whole sectors of the economy must be done in a sustainable way that minimises cost.

The Sixth Carbon Budget: The UK's Path to Net Zero, 2020

- 1.17 It has been advised that *"the UK sets its Sixth Carbon Budget to require a reduction in UK emissions of 78% by 2035 relative to 1990. This will be a world-leading commitment, placing the UK decisively on the path to Net Zero by 2050 at the latest, with a trajectory that is consistent with the Paris Agreement."*
- 1.18 Meeting the recommended budget will require major investment, with the upscaling of low carbon markets and supply chains. These investments should also have climate resilience in mind to account for the impacts of future climate change. Key objectives should be:
- reducing demand and improving efficiency: require changes that will reduce carbon-intensive activities and the improvement of efficiency in the use of energy and resources;
 - take-up of low carbon solutions: phase out fossil fuel generation by 2035;
 - expansion of low carbon energy supplies: increasing renewables to 80% of generation by 2050; and
 - electricity generation: will require a significant expansion of low carbon generation; This includes low cost renewables, with more flexible demand and storage.
- 1.19 Increasing the renewables penetration in the UK electricity mix to 80% by 2050 will largely be met with intermittent, non-dispatchable generation types. The CCC suggest that on average, 3 GW per year of solar generation will need to be installed to reach renewable supply targets.
- 1.20 The budget report also breaks the economy down into sectors and provides emissions projections for each, these show the necessary decarbonisation trends that must be attained to reach net zero. The pathway for the manufacturing and construction sector shows it must reduce emissions by 70% by 2035, and 90% by 2040 from 2018 levels. It is recommended that this will be achieved by fuel switching, carbon capture and storage, and improvements to resource and energy efficiency.

Policies for the Sixth Carbon Budget and Net Zero, 2020

- 1.21 This policy report accompanies the CCC's advice on the Sixth Carbon Budget, and sets out the broad policy changes that could deliver the budget and the UK's net zero target.
- 1.22 The report identifies carbon leakage as an issue of importance to the UK's climate targets, and as such is relevant to consider within the policy context of the Project. Carbon leakage may occur if, for cost reasons related to climate policies, production is transferred to another country resulting in increased emissions in that country.
- 1.23 *"The design of policies to reduce UK manufacturing emissions must ensure that it does not drive manufacturing emissions overseas"*. While this would reduce reported UK emissions, it would not reduce global emissions and would be damaging to the UK economy.

Net Zero Wales, Carbon Budget 2 (2021-2025), 2021

- 1.24 Net Zero Wales (NZW) follows the last Plan: Prosperity for All, a Low Carbon Wales (2019) which covered the first carbon budget. It builds on Wales's decarbonisation strategy and sets out the policies and proposals to meet Wales Carbon Budget 2 (2021-2025) and set Wales on a longer-term pathway to net zero. NZW recognises the need to 'outperform' the second carbon budget of 37% average reduction in emissions, as the third carbon budget (2026-2030) requires an average reduction of 58%, reflecting the scale of change that must be made now to ensure this budget is also met.
- 1.25 This strategy sets the ambition to increase renewable energy capacity by 1GW by 2025 in order to progress towards a decarbonised energy system. Of most relevance is Policy 22 – *"increasing renewable energy developments on land through our planning regime"*.

The Path to Net Zero and Reducing Emissions in Wales, 2020

- 1.26 The CCC's advice supports the Welsh government's target to reduce all GHG emissions to Net Zero by 2050. A number of carbon budgets have been recommended, as follows: the Third Carbon Budget (2026-2030) should be set at an average 58% reduction compared to 1990 levels; the Second Carbon Budget (2-21-2025) should be tightened to a 37% reduction compared to 1990 levels. Both budgets have been recognised within the Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021.
- 1.27 Four key actions have been identified by the CCC to enable Wales to meet its net zero ambition. These include the recommendation to expand low carbon energy supplies in order to drive grid decarbonisation.

Industrial Decarbonisation: Net Zero Carbon Policies to Mitigate Carbon Leakage and Competitiveness Impacts, 2020

- 1.28 This research paper was commissioned by the CCC to address concerns regarding the impact of carbon policies on carbon leakage. The paper focuses on recommendations to enable deep decarbonisation of UK industry in line with net zero pathways, whilst also mitigating carbon leakage and competitiveness impacts.
- 1.29 The suggested policies have not yet been incorporated by the UK Government, however they do highlight that carbon leakage is an issue that must be considered, and work is currently being undertaken to address it.

Environmental Audit Committee: Carbon Border Tax Measures, 2021

- 1.30 The Environmental Audit Committee (EAC) has announced an inquiry into carbon border adjustment mechanisms in order to address carbon leakage and reduce the carbon footprint of imported goods. In turn, this may prompt other manufacturing countries to decarbonise.
- 1.31 This carbon border adjustment mechanism, should it be implemented, will play a role in enabling the UK to meet its environmental objectives whilst considering wider impacts, risks and opportunities.

Net Zero Strategy: Build Back Greener, 2021

- 1.32 This strategy sets out the UK's long-term plans to meet net zero emissions by 2050 and gives the vision for a decarbonised economy in 2050.

- 1.33 The policies detailed in the strategy will be phased in over the next decade or beyond in order to continue decarbonisation towards net zero. They also aim to keep the UK on track to meet upcoming carbon budgets.
- 1.34 This strategy brings forward the ambition for a fully decarbonised power system by 15 years, building on the targets set out in the Energy White Paper and the 10 Point Plan for a Green Industrial Revolution. The ambition is to fully decarbonise the UK's power system by 2035, with electricity sourced predominantly from wind and solar generation, supported by nuclear power in addition to an increase in energy storage capacity, gas with CCS, and hydrogen to increase the flexibility of supply.
- 1.35 Further, the strategy outlines aim to support the decarbonisation of the construction and building sector. Reporting on embodied carbon in buildings and infrastructure is sought to be improved, alongside reductions in embodied carbon by way of material substitution, where appropriate, and resource efficiency.
- 1.36 The strategy recognises the importance of addressing the risks of carbon leakage, so policy interventions within the UK do not lead to increased emissions elsewhere. Options will continue to be explored to mitigate carbon leakage, with key efforts to address it through global action on industrial decarbonisation and climate regulation, with continued monitoring of related global policy developments.

UN Climate Change Conference of Parties (COP26), 2021

- 1.37 The CoP are (typically) annual climate summits, attended by world leaders globally, where the effects of measures introduced to limit climate change are discussed.
- 1.38 At the COP26 summit in November 2021, parties voted to adopt the draft COP26 report (UNFCCC, 2021), known as the Glasgow Climate Pact. This included commitments to phase down the use of coal and supports a common timeframe and methodology for national commitments on emissions reductions. Countries were tasked to return in 2022 with more ambitious 2030 emissions reductions targets, to continue to work towards limiting warming to 1.5 degrees as established in the 2015 Paris agreement at COP21.

British Energy Security Strategy, 2022

- 1.39 Building on the ten point plan for a green industrial revolution and the net zero strategy, this policy paper references solar projects such as the proposed development in the following statements:
- *“With the sun providing enough daily energy to power the world 10,000 times over, solar power is a globally abundant resource. There is currently 14GW of solar capacity in the UK split between large scale projects to smaller scale rooftop solar. The cost of solar has fallen by around 85% over the past decade, and can be installed in just one day on a domestic roof. We expect a five-fold increase in deployment by 2035.”*
 - *“For ground-mounted solar, we will consult on amending planning rules to strengthen policy in favour of development on non-protected land, while ensuring communities continue to have a say and environmental protections remain in place.”*
 - *“We will also support solar that is co-located with other functions (for example, agriculture, onshore wind generation, or storage) to maximise the efficiency of land use. We have also included solar in the latest Contracts for Difference auction round and will include it in future rounds.”*

Local Energy and Climate Change Policy

Rhondda Cynon Taf Local Development Plan (LDP) up to 2021 (2011)

- 1.40 Rhondda Cynon Taf County Borough Council are currently preparing the Local Development Plan (LDP) which will replace the current adopted LDP. The LDP will be a long-term land use and development strategy, focused on achieving sustainable development, guiding development, setting out policies and safeguarding areas of land requiring protection or enhancement.
- 1.41 Given the revised LDP has not yet been adopted, relevant policies within the LDP are as follows:
- 1.42 Policy AW12: Renewable & Non-Renewable Energy: “The provision of electricity from renewable sources, coupled with energy efficiency and conservation measures, are key elements of the UK energy policy and have the potential to make an important contribution to meeting the challenges of climate change. Proposals that encourage the harnessing of renewable energy from a range of sources ... will be supported. In considering proposals, the need to harness energy from renewable sources will be carefully balanced with the impact on local communities, the landscape and ecological interest.”

Rhondda Cynon Taf County Borough Council – Revised LDP 2022 – 2037, *Draft Delivery Agreement*. (2022)

- 1.43 This draft agreement states that Rhondda Cynon Taf County Borough Council should ‘be resilient to climate change (using the latest UK Climate Projections, flood risk and vulnerability assessment data) and support the transition to a low carbon society in line with the latest carbon reduction targets and budgets as set out in the Environment (Wales) Act (Part 2)’.

Summary

- 1.44 UK Carbon Budgets commit the UK to reducing GHG emissions by 100% of 1990 levels by 2050, with an interim target of a 78% reduction by 2035 in order to ensure UK emissions remain consistent with the goal to limit warming to 1.5°C. The Welsh Carbon Budgets (2021) limit emissions within 2026-2030 to an average of 58% below the baseline.
- 1.45 In order to achieve these emissions reductions, the deployment of clean electricity generation must be accelerated through the 2020s to decarbonise the energy system (HM Government, 2020). The Sixth Carbon Budget (2020) includes the key objective to phase out fossil fuel generation by 2035, and to increase renewable energy to 80% of generation by 2050. This is mirrored within Welsh policy where decarbonisation is a national priority, with goals to generate at least 70% of Welsh electricity consumption from renewable sources by 2030 (Welsh Government, 2021a and 2021c). It is anticipated that this decarbonisation will be met largely by solar and wind power, with 3GW per year of solar generation required to reach renewable supply targets (Committee on Climate Change, 2020).
- 1.46 The effects of construction and supply chain emissions (including those taking place outside of the UK), and any associated mitigation, must be taken into consideration when considering the significance of emissions. The manufacturing sector within the UK must reduce emissions by 70% by 2035 from 2018 levels (Committee on Climate Change, 2020). Further emissions from construction and manufacture, whilst not taking place within the UK (they may result from carbon leakage), and therefore not considered within the UK Carbon Budgets, are still of global importance and significance.

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