3 NEED AND ALTERNATIVES CONSIDERED

Introduction

3.1 This chapter of the ES provides a summary of the need for the Proposed Development and a description of the reasonable alternatives considered by the Applicant during the evolution of the Proposed Development and through the EIA process.

3.2 It includes a summary of the reasons for the selection of the site, together with a description of the alternative design and layout options that have been considered. Further information is provided in the Planning Statement and Design and Access Statement (DAS) that accompany the planning application.

Need for the Development

3.3 The need for the Proposed Development stems from two sources:

1. Energy security in the context of increasing demand for electricity;
2. The need to decarbonise energy systems and combat the potentially devastating effects of climate change on current and future generations.

3.4 Consideration of need, having regard to the relevant national and local policy context, is provided below.

National Grid Future Energy Scenarios (July 2021)

3.5 'Future Energy Scenarios' (FES) (National Grid, 2021) outlines different credible pathways for the future of energy for the next 30 years and beyond. The document considers how much energy is needed and where the energy could come from. In all scenarios, the demand for electricity increases; this is brought about by shifting away from high carbon fuels to hit the Government's net-zero emissions target by 2050 and the predicted increase in electric vehicles ahead of the 2040 ban on petrol/diesel driven vehicles.

3.6 For electricity supply, in all scenarios, there are significant increases in renewable energy generation. The key messages of the FES report, with regards to the Proposed Development, include:

- Significant investment in low carbon electricity generation will be required across all net zero pathways;
- Between 34GW and 77GW of new wind and solar generation could be required to meet demand in 2030.

3.7 National Grid anticipates annual electricity demand in the UK could more than double from 294TWh in 2020 to up to 702TWh by 2050. Similarly, peak demand in 2020 of 58GW could almost double to up to 113GW over the same period. There is, therefore, an urgent need to increase electricity capacity in the UK to ensure a secure and stable supply in the future and achieve renewable energy and net zero targets.

Welsh Government Declaration of Climate Emergency

3.8 On 29 April 2019, the then Environment Minister, Lesley Griffiths, declared a climate emergency in Wales on behalf of the Welsh Government (WG).

Welsh Government Commitment to Net Zero by 2050

3.9 On 9 February 2021, the WG set out its legal commitment to achieve net zero emissions by 2050.

UK Government Commitment to Net Zero by 2050

3.10 On 27 June 2019, the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The target will require the UK to bring all greenhouse gas emissions to 'net zero' by 2050, compared with the previous target set within the Climate Change Act (2008) of at least an 80% reduction of emissions by 2050 (against the 1990 baseline). In support of this target, the Energy White Paper: Powering our Net Zero Future (DBEIS, 2020a) was published, setting out the pathway to achieving net zero through greater reliance on solar and wind energy.

3.11 Net Zero 2050 – A Roadmap for the Global Energy Sector (International Energy Agency (IEA), 2021) outlines the essential conditions for the global energy sector to reach net-zero carbon dioxide (CO2) emissions by 2050. The Roadmap calls for scaling up solar and wind technologies during the 2020s, reaching up to 630GW of solar and 390GW of wind by 2030, four times the set levels in 2020.

3.12 The Roadmap stresses that for solar, this equates to installing the world's current largest solar farm roughly every day.

National Planning Policy Context

3.13 Planning Policy Wales, Edition 11 published February 2021 (PPW), Future Wales - the National Plan 2040, published February 2021 (Future Wales) and Technical Advice Notes (TANs) set out the national planning policies of WG. Following the publication of Future Wales, TAN 8: Planning for Renewable Energy has been revoked and there is no longer an energy-specific TAN.

3.14 PPW paragraph 5.7.14 confirms that WG targets for the generation of renewable energy are:

- Wales to generate 70% of its electricity consumption from renewable energy by 2030;
- One Gigawatt of renewable electricity capacity in Wales to be locally owned by 2030; and
- New renewable energy projects to have at least an element of local ownership by 2020.

3.15 It is noted that it is vital that we reduce our emissions to protect our own wellbeing and to demonstrate our global responsibility. Future Wales together with PPW seeks to ensure the planning system focuses on delivering a decarbonised and resilient Wales through the places we create, the energy we generate, the natural resources and materials we use and how we live and travel.

3.16 Regarding energy generation, Future Wales identifies that Wales can become a world leader in renewable energy technologies. Wales' wind and tidal resources, potential for solar generation, its support for both large and community scaled projects and commitment to ensuring the planning system provides a strong lead for renewable energy development means it is well placed to support the renewable sector, attract new investment and reduce carbon emissions.

3.17 Future Wales contains two policies (17 and 18) of specific relevance to the Proposed Development.

3.18 Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure – expresses strong support for the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. The policy states that in determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency.

3.19 In respect of large-scale solar, Policy 17 states that all proposals should demonstrate that they will not have an unacceptable adverse impact on the environment. It also expects proposals should describe the net benefits the scheme will bring in terms of social, economic, environmental and cultural improvements to local communities. New strategic grid infrastructure for the transmission and distribution of energy should be designed to minimise visual impact on nearby communities.

3.20 Policy 18 – Renewable and Low Carbon Energy Developments of National Significance – deals with Developments of National Significance (DNS). It is a criteria-based policy which states that such developments will be permitted, subject to Policy 17, and the following:

1. Outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);
2. there are no unacceptable adverse visual impacts on nearby communities and individual dwellings;
3. there are no adverse effects on the integrity of internationally designated sites (including National Site Network sites and Ramsar sites) and the features for which they have been designated (unless there are no alternative solutions, Imperative Reasons of Overriding Public Interest (IROPI) and appropriate compensatory measures have been secured);
4. there are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;
5. the proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;
6. there are no unacceptable adverse impacts on statutorily protected built heritage assets;
7. there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;
8. there are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA-7T);
9. there are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;
10. the proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources;
11. there are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.

Local Policy Context

3.21 The development plan for the site for the purposes of Section 38(6) of the Planning and Compulsory Purchase Act 2004 is the Rhondda Cynon Taf County Borough Local Development Plan (LDP), adopted 2011.

3.22 Policy AW 12 – Renewable and Non- Renewable Energy requires that development proposals which promote the provision of renewable and non-renewable energy will be permitted where it can be demonstrated that there is no unacceptable effect upon the interests of soil conservation, agriculture, nature conservation, wildlife, natural and cultural heritage, landscape importance, public health and residential amenity.

Overall Need

3.23 Overall, there is a significant need to increase electricity supply based on predictions of future consumption due to electrification of transportation and heating in particular.

3.24 Given the climate emergency, there is a need for the electricity to be produced from zero or near zero carbon and greenhouse gas emission sources.

3.25 Solar power, and other sources of renewable energy, have an important role to play as part of the mix of energy sources required to meet increasing electricity demand in the future and national carbon and greenhouse gas reduction targets, in particular the Welsh and UK Government's legally binding targets of net zero carbon emissions by 2050.

Alternatives Considered

3.26 The EIA Regulations 17 3(d) require that an ES should include:

'A description of the reasonable alternatives studied by the applicant or appellant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the significant effects of the development on the environment.'.

3.27 Schedule 4 of the Regulations expands slightly on the information for inclusion in environmental statements and states:

'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the applicant or appellant which are relevant to the proposed development and its specific characteristics and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.' (Schedule 4 (2))

3.28 This section therefore sets out the key reasons for the selection of the Proposed Development site and current layout, taking into account environmental effects.

'Do nothing' scenario

3.29 Under the 'Do nothing' scenario, the site would continue to be used for agriculture. The benefits of producing renewable energy to feed into the electricity distribution network and help the Welsh and UK Governments to respond to energy security needs, the climate emergency and reach greenhouse gas reduction and net zero targets by 2050 would not be contributed towards in this scenario.

3.30 The hedgerows and trees would remain in situ and the field margins would continue to be managed. Due to this management (including maintaining short grasses and heights of hedgerows) the habitat value of the field margins would remain species poor under this scenario.

3.31 The Proposed Development would result in ecological benefits; by changing the management regime of the field boundaries (such as alternative cutting programmes and the absence of pesticides and herbicides from spray drift), the floristic diversity of the field margins and the habitats they provide would increase through the use of a species rich grassland which may include wildflower meadows. The introduction of the habitat enhancement areas would increase habitation for great crested newts and provide a greater variety of flora species. Under the 'Do –nothing' scenario, these benefits would not be achieved.

Site Location

3.32 Elgin Energy EsCO Ltd is committed to delivering renewable developments across the UK to meet the changing needs of current and future generations. In the context of the current climate emergency and the national commitments to meet net zero targets, there is an increased demand to obtain our energy requirements from green sources across the whole of the UK in locations where renewable technologies are optimised to maximise site efficiencies. Elgin Energy EsCO Ltd undertakes continuous nationwide assessments of land opportunities but, in order for schemes to progress, this must be where land is available in agreement with landowners' commitments to supporting the provision of green energy production to meet a sustainable future.

3.33 Large scale ground mounted solar farms are generally located in the open countryside. Sites large enough to accommodate a financially viable scheme, with sufficient MW output, are difficult to find in settlements, particularly the towns and villages that are found in the area local the Proposed Development. Difficulties in finding suitable brownfield sites include:

- Not enough rooftop areas or existing brownfield land available and competition from other high value sectors such as residential and mixed use for such sites;
- Unsuitable roof structure and standards (including roof orientation, shading, presence of plant and other equipment);
- Complex multiple landlords/tenant agreements; and
- Sites within settlements are likely to be considerably more visible to more people.

3.34 In terms of the consideration of alternative locations, a number of other sites were considered within the RCTCBC area but were discounted for a range of reasons including limited options for connection to the electricity distribution network, prominence in the landscape and visually owing to topography and lack of vegetation screening, and landowner issues and access constraints.

3.35 The key reasons the site was selected and taken forward include proximity and ease of connection to grid infrastructure and because the land parcel is large enough to make the scheme commercially viable. From a visual effect perspective, the field boundary hedges are in good condition allowing considerable screening from local views. In addition, the transport network and access routes to the site are suitable to allow the construction of the Proposed Development.

Site Layout and Design

3.36 An evaluation of site constraints and opportunities was undertaken to inform an initial concept design. This has subsequently been refined through a combination of technical assessments and engagement with various stakeholders. As a result, the Proposed Development presents an opportunity to provide the following:

- Approximately 30MW of renewable electricity to feed into the electricity distribution network and support the Government's Net Zero targets.
- Provide areas of habitat enhancement.

3.37 Constraining factors that affected the layout and design include:

- A number of existing public footpaths running through the site
- Agricultural land grade: majority Grade 3b with some Grade 3a
- Ancient woodland adjacent to site boundary
- Sites of Importance for Nature Conservation adjacent to site boundary.

3.38 The EIA process has influenced the iterative design process of the Proposed Development, through the identification of the above constraints, responses to consultation undertaken to date, and identification of environmental effects. Therefore, there have been a number of iterations and refinements to the layout of the Proposed Development.

First Design Iteration

3.39 The initial site layout was considered and amended by the Applicant prior to November 2021 when a layout was issued to RCTCBC as part of the pre-application process. This layout took into account the constraints listed above.

Second Design Iteration

3.40 Following consultation with RCTCBC a second iteration was created taking into account ecological mitigation and enhancement measures raised by RCTCBC. This iteration also took into account the results of the topographical survey and other site constraints including overhead lines and public footpaths.

Third Design Iteration

3.41 This iteration took into consideration the detailed design proposals and accommodated the results of the Tree Survey and incorporated root protection zones.

Current Layout

3.42 The current project layout is provided in **Figure 2.1** of this ES. Following consultation with RTCBC's Ecology Officer further comments were received in relation to the potential for deep peat on parts of the site. Further site investigations were therefore undertaken and have resulted in an amended layout in order to avoid areas of deep peat.

References

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017

Planning and Compulsory Purchase Act 2004

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