

NOT CONFIDENTIAL – For public release

Council

Report of Director of Regulatory Services

DEVELOPMENT OF SMALL SOLAR FARMS ON COUNCIL OWNED LAND

PURPOSE OF REPORT

This report presents the findings of a technical and financial feasibility study carried out on five Council owned sites, exploring the possibility of developing small solar PV farms. It seeks approval for the necessary next steps in order to move a single viable site, at Watery Lane, to 'phase two' with an ambition of completing this scheme towards the end of 2024.

RECOMMENDATIONS

1. That the report attached in Appendix One and the associated business and financial cases in Appendix Two are received
2. That Council approves the recommendation in the attached report to move to 'phase two' of development work in respect of the Watery Lane, Ashbourne site
3. That approval is given to a supplementary revenue budget of £40,000 for consultancy relating to the next stage of work required, to be financed from the General Reserve.

WARDS AFFECTED

Ashbourne North

STRATEGIC LINK

The Corporate Plan 2020-24 identified climate change as a key strategic priority under the theme 'Place - keeping the Derbyshire Dales clean green & safe'. The recommendations in this report support the specific aim to 'Achieve net zero carbon emissions from District Council operations by 2030' The project should generate net revenue income for the Council from 2024/25, which will assist in meeting to Corporate Savings Target and the Council becoming more financially sustainable.

1 BACKGROUND

1.1 In May 2019 the Council declared a Climate Emergency and pledged to make the authority net zero by 2030. In October 2020 the Council unanimously approved a Climate Change Strategy and Action Plan which set out a potential pathway to achieving net zero in terms of direct emissions. The pathway to net zero, identified in the Strategy, is listed as:

- Energy efficiency improvements to existing facilities;
- Installation of biomass heating at Matlock Town Hall;
- Electrification of heating at 3 key facilities;

- Installation of roof mounted solar photovoltaics (PV) at 2 key facilities;
- Development of 2MW ground mounted solar PV;
- Electrification of the Council's vehicle fleet.

1.2 The plan outlined in broad terms the level of investment - around £2.7 million - that would be required to meet net zero and the period over which that investment would need to be made. Council noted the need to obtain funding to undertake the programme of works required.

1.3 On the 14th of October 2021 the Council approved a revenue budget of £30k to fund the engagement of a partner to carry out a detailed feasibility study into the technical and financial viability of ground mounted solar PV arrays. Actual expenditure incurred in 2021/22 was £14,589, an under-spend of £15,411.

2 REPORT

2.1 APSE Energy were commissioned to undertake the study - a local authority energy collaboration, part of APSE, a not for profit local government body who work with over 300 local authorities across the UK. The consultants engaged through APSE Energy have worked on many local authority solar farm projects and have a sound understanding of the relevant context, technology, financial and environmental considerations. They have undertaken many and varied consultancy projects which are similar in nature to the Council's brief.

2.2 The resulting report is attached in Appendix One and the Business and Financial cases for the Watery Lane site referred to on page 14 in Appendix Two.

2.3 The report concludes that while two of the five sites could be developed the Stoney Middleton site is not viable due the cost of grid connection and the sale of power.

2.4 The site at Watery Lane, Ashbourne is identified as being the single site with potential for development based on size, capacity, availability of land and cost. The report proposes that a small solar farm of at least 1MW installed capacity could be sited on the upper field (above the allotments) and the electricity sold to Severn Trent who occupy neighbouring land where they operate a sewage works.

2.5 Figure One below shows the location of the site.



Figure One: Map showing location of Watery Lane site

- 2.6 The report identifies a number of specific issues with the site which would need to be resolved as part of the next phase of work. These include access, an existing grazing licence and the restrictive covenant in place.
- 2.7 The site has three business cases (Appendix Two) based on building out the installation by the end of 2024. It is assumed that the project would be financed with 100% debt over a 20 year term at an interest rate of 3.63%, although the actual interest rate would depend on rates offered at the time the borrowing took place. The total build cost is estimated to be £1,037,529 assuming a construction cost of £650 per kW peak of installed capacity and with an estimated grid connection fee of £387,529. The recommendation is that the Council funds the project via available funds or borrowing from the Public Works Loans Board.
- 2.8 The business cases illustrate three different scenarios depending on the use of the electricity generated - in the first model (the base case), income is derived from the sale of electricity generated to a Licenced Electricity Supplier under a Power Purchase Agreement (PPA) at a revenue calculation of 5p/kWh for a term of 25 years.
- 2.9 The second business case includes the use of battery storage to store the power generated during the day, so that it can then be sold on for premium rates, using one of the mechanisms to do this.
- 2.10 The final business case outlines the option of a 'private wire' connection to sell electricity to the Severn Trent sewage works next door. It would be necessary to ascertain the energy requirements of the site before proceeding, to ensure that a large percentage of the energy generated could be sold to the plant. As an indication the predicted income generated by sale of power via private wire to Severn Trent, assuming 100% use at a nominal rate of 12p/kWh, is £109,296 in the first year. Ongoing operational and management costs are usually paid annually in advance and are estimated to be circa £12,600 with insurance at £3,000 per year. The payback period on the investment would be 10 years.
- 2.11 If this option were deemed viable the highest return of 10.4% is possible, and a projected surplus of c£3.5m from the Council's modest investment over the 30 year lifetime of the asset. This is why this site forms the main recommendation of this report.
- 2.12 Installation of a 1MW solar PV array at Watery Lane would generate approximately 910,800kWh of electricity annually. In 2019-20 (the baseline year) the Council purchased 851,729kWh of electricity. This is likely to rise with the shift from gas to electric heating in our buildings.
- 2.13 The Strategy and Action Plan recommended a renewable electricity generation installation equivalent to 2MW. This would represent a 'negative' carbon footprint by 2030 through the generation of more electricity that the Council would be likely to consume, effectively offsetting residual emissions (from remaining use of diesel, gas oil etc.) through investment in renewable technology within the organisations boundaries. Clearly the installation of a 1MW solar PV array would leave the Council short of the likely future requirement and so there would be a need to consider what next. Page 39 of the report outlines some possible future options including the

possibility of a joint venture, purchase of additional land and development of car park solar PV installations.

- 2.14 It therefore seems sensible to view the possible development of the Watery Lane site as a starting point for the Council, to help develop confidence in the process and to develop an appetite for more renewable energy. Commitment to this project would demonstrate clear local leadership around climate change.
- 2.15 The preliminary feasibility study makes it clear that there could be the opportunity for the Council to generate income from the development of a small solar farm on the site at Watery Lane. Whilst not the primary objective of the scheme, this should be noted and consideration given to the recommended use of such income – to fund other ‘green’ initiatives or enhancement of other services. This would be a future decision for Council but an important consideration of any communication strategy.
- 2.16 In summary whilst the report concludes that the site at Watery Lane is technically and financially viable for development there are a number of key outstanding issues, grouped together as ‘phase two’ which need to be resolved so that a final decision can be taken on moving the project into a delivery phase. The costs of the necessary consultancy support for these ‘phase two’ works, as detailed below, are estimated to be approximately £40k
- 2.17 The first part of the ‘phase two’ work is acceptance by the Council of a grid connection offer. As the grid connection situation changes regularly and capacity can be short, this is one of the early priorities for action. In simple terms a grid connection is not necessary where there is an offtaker, such as Severn Trent, who is willing to buy all of the generating asset’s output. However, if the offtaker’s business closes or relocates for any reason, the Council will be left with a ‘stranded asset’ i.e. a solar farm which cannot get its electricity to any buyers. For this reason, it is almost universal practice where public money is involved to go for a grid connection, even if it is considered unnecessary at the start. Then, if the situation changes, the Council would always have the option to switch to sales on the wholesale market via the grid.
- 2.18 The Council has already had a budgetary estimate from the distribution network operator (DNO) – Western Power Distribution – for a connection to the Watery Lane site which is included in the business case. The next step is to submit a formal application. As soon as a formal grid offer is received it needs to be accepted and a small deposit paid in relation to that offer but the capacity is then reserved. The approval of payment of any deposit will be brought back to a future Council or committee meeting as appropriate.
- 2.19 There is no financial risk with accepting a formal grid offer as under the rules, deposits paid to DNOs are refundable if the scheme does not go ahead, subject to any costs that the DNO has already incurred in dealing with the application. This means that the Council is not at financial risk if the scheme did not proceed.
- 2.20 Planning consent is the next priority, as this can often take some time to complete. Although the planning process is considerably easier for solar PV than it is for other renewable energy technologies considerable support will be required to prepare such an application. The Council’s Development Manager has met with the APSE Energy consultant and is comfortable with the issues raised by solar farms and appreciates that they are a legitimate use of land. However, given potential conflicts of interest and internal resource pressures it is recommended that the Council obtains external

assistance with the planning application, seeking pre application advice in the first instance.

- 2.21 Agreement with Severn Trent over a private wire connection is also of considerable importance, as this provides the best business case and use of the power locally. Severn Trent will need to be approached and the Council will need to prepare in advance its offer in relation to the sale of electricity, including determining the price at which the power will be offered. Before proceeding, the Council needs confirmation from Severn Trent that it will purchase the majority (if not all) of the power generated. This is also likely to take time, but can be done in tandem with the planning and grid work.
- 2.22 The report identifies a number of specific issues with the site which would need to be resolved as part of the next phase of work. These include access, an existing grazing licence and the restrictive covenant in place.
- 2.23 The site is adjacent to Ashbourne Cemetery. The latest Burials Review, undertaken in 2017, indicated that there were 11 years provision remaining in the existing cemetery. More recent informal evaluations suggest this is now 8-9 years. The review suggested that the site could be used to provide additional space if developed. It is worth highlighting that ground mounted solar is a temporary development and following its useful life can be removed if appropriate, and the land reverted to its previous use.
- 2.24 It is the advice of APSE Energy that the work required must be done in the correct order, to ensure that the Council does not expend any more money than is necessary whilst 'deal breaker' issues remain unresolved. Whilst consultants will be engaged to provide specialist support significant internal capacity will be required to progress – including from officers in legal services, estates and facilities and the finance teams.
- 2.25 The report also highlights the importance of developing a communications plan, which will detail all of the activity the Council intends to take to make people aware of the proposal. It recommends consulting widely and genuinely as a landowner in advance of any development in order to engender community support for the proposals. It will be of particular importance to work closely with the adjacent allotment holders.
- 2.26 The Stoney Middleton 'Edge Lane' site has also been included in a feasibility study commissioned by Hope Valley Renewables – a community energy group. Hope Valley Renewables are a community benefit society formed in 2021 with the objective of bringing forward low carbon projects that can primarily be funded by the community with project surpluses being invested in supporting further environmental improvement initiatives in the local area. Their study reached a similar conclusion to the APSE report – that the site is not currently viable for development due to high DNO grid connection costs. They have placed the project on hold to focus on other initiatives and will review the viability in May 2023 when DNO connection costs are expected to be reviewed.

3 RISK ASSESSMENT

Legal

- 3.1 As the recommendations propose that the Council gives approval to move to “phase two” of the development work relating to Watery Lane, this will allow for further

investigation into the suitability of the proposed project. On that basis the legal risk is assessed as low

- 3.2 There are a number of matters raised in the report that will be investigated further in the phase 2 works, including legal issues relating to the land. Legal risks will need be assessed during the phase 2 works. A full risk assessment will be needed before a final decision on the project is recommended.

Financial

- 3.3 The estimated cost of the necessary consultancy support for these 'phase two' works is £40,000. As this is a one-off revenue cost, the use of the General Reserve as a source of financing is consistent with the criteria set out in the Council's Medium Term Financial Strategy. The general reserve currently has a balance of £999,838. Therefore, the financial risk is assessed as low.

- 3.4 The financial risks for the delivery of the solar PV scheme will be higher. Whilst the report concludes that the site at Watery Lane is technically and financially viable for development there are a number of key outstanding issues, grouped together as 'phase two' which need to be resolved so that a final decision can be taken on moving the project into a delivery phase. Such risks include:

- Cost overruns, which can be mitigated by robust estimates, site surveys, due diligence during procurement and the inclusion of contingency sums;
- Increased cost of borrowing;
- Income risk – if Severn Trent Water do not agree to a 'private wire connection';
- Warranties.

- 3.5 All of these risks can be managed as part of the process. A good programme of preliminary work and a sound procurement exercise will assist in managing most of these risks. A full risk assessment will be undertaken before a final decision is recommended.

4 OTHER CONSIDERATIONS

- 4.1 In preparing this report, the relevance of the following factors has also been considered: prevention of crime and disorder, equalities, environmental, health, human rights, personnel and property.

5 CLIMATE CHANGE

- 5.1 The recommendation aligns with the Council's ambition to be net zero carbon in respect of emissions from its own operations by 2030 as detailed in 2.10. Production of locally generated renewable electricity on the Watery Lane site would have clear climate

change benefits, decentralising electricity production and reducing emissions associated with burning fossil fuels.

- 5.2 Moving the project into the next phase require significant time, resource and investment – all of which will have an indirect climate change impact. It is considered that this is outweighed by the future benefit.
- 5.3 Climate change impacts of the development itself will be evaluated in future phases, as appropriate. Quantification of benefits, in terms of emissions reductions will also be assessed.
- 5.4 The Government is legislating to place ever more stringent targets in relation to carbon emissions. The Climate Change Act 2008 (as amended) provides the current targets, which will be very challenging in themselves. It is not yet clear whether part of the burden of delivering them will fall on to local government.

6 CONTACT INFORMATION

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7 BACKGROUND PAPERS

None

8 ATTACHMENTS

Appendix 1 – Report on proposals for a solar farm programme on Council owned land.

Appendix 2 – Financial cases for Watery Lane solar installation