

WESTMORLAND AND FURNESS COUNCIL

Cabinet

Report Title	Decision to build and operate a 2MW Solar Farm at Sandscale Park, Barrow in Furness and enter into an agreement for the sale of generated electricity
Date of Meeting	12 September 2023
Report Author	Allan Harty Assistant Director - Corporate Assets, Fleet & Capital Programme
Director	Pam Duke – Director of Resources (Section 151 Officer)
Lead Cabinet Member	Cllr Peter Thornton – Cabinet Member for Highways and Assets
Why is this a key decision?	Council incurring expenditure which is, or the making of savings which are, significant having regard to the Council's budget for the service or function to which the decision relates. For these purposes, savings and expenditure are "significant" if they are equal to or greater than £500,000 (YES)
Wards Affected	All
Identify exempt information and exemption category	The following Appendices contain exempt information by virtue of Paragraph 3 "financial and business affairs" of the Council and "Legal Advice " Paragraph 5 <ul style="list-style-type: none"> • Appendix 1 – Legal Advice Paragraph 5 • Appendix 2 – Financial Report Paragraph 3 • Appendix 3 – Cost Model Paragraph 3 • Appendix 4 – Tender analysis report Paragraph 3 • Appendix 5 - Subsidy control legal advice Paragraph 5
Reasons for urgency (only where applicable)	Not applicable
Appendices (if any)	<ul style="list-style-type: none"> • Appendix 1 – Legal Advice (copy enclosed for Member only) • Appendix 2 – Financial Report (copy enclosed for members only) • Appendix 3 – Cost Model (copy enclosed for members only) • Appendix 4 – Tender analysis report (copy enclosed for members only) • Appendix 5 - subsidy control legal advice (copy enclosed for members only)

1. Executive Summary

- 1.1 This report seeks approval to fund and construct a 2MW Solar Farm at Sandscale Park, Barrow in Furness at an estimated cost of £2.781m *and* award a stage 2 construction contract to build the solar farm to Vital Energi Ltd at cost of 2.481m. The £0.3m cost above the £2.481m contract value are for management, risk legal and advisory fees.

- 1.2 The report also seeks approval to enter into an agreement with an energy organisation to sell the electricity generated.
- 1.3 The solar farm will generate green electricity which will be used to offset the council's carbon emissions in accordance with the council's carbon management objectives which are incorporated within the developing Climate Action Plan 2023.

2. Recommendations

For the reasons set out in this report, Cabinet is recommended to:

- 2.1 Approve the decision to build and operate (for 24 months) a 2MW solar farm at Sandscale Park, Barrow in Furness. Operation after 24 months will be subject to a separate contract, and;
- 2.2 Recommend to full Council to approve the scheme to be included within the 2023/24 capital programme.
- 2.3 Approve the award of a Stage 2 construction contract to Vital Energi Ltd in the sum of £2.481 million to construct a 2MW Solar Farm for the reasons set out in the tender analysis report at Appendix 4, and;
- 2.4 Delegate authority to the Director of Resources (Section 151 Officer), in consultation with the Cabinet Member for Finance and Cabinet Member for Highways and Assets to undertake a selection process and enter into a Power Purchase Agreement (PPA) to sell electricity based on a 'sell direct to grid' agreement on commercial/market terms.

3. Information: The Rationale & Evidence for the Recommendations

Carbon Management Strategy

- 3.1 A carbon baseline and action plan for the decarbonisation of the council's organisational carbon emissions is identified as a priority within the council's Climate Action Plan 2023 (part 1) which was published on 11 July 2023. Part two of the action plan will be developed over the coming months and will be brought to Cabinet in December 2023 and will include further detail on the actions to be taken. The previous Cumbria County Council (CCC) Carbon Management Strategy 2022 was adopted by its Cabinet on the 22 September 2022, and it will inform the development of the new Westmorland and Furness Decarbonisation Strategy.
- 3.2 Climate change remains one of the greatest challenges to this generation, and for many generations to come. It is one of the greatest threats to humanity globally and we have already seen and experienced the devastating impacts of it here in Cumbria with extreme weather events such as Storm Desmond in 2015.
- 3.3 Following COP21 in Paris in 2015, the Paris Agreement, a legally binding international treaty on climate change, was adopted by 196 Parties. This was agreed with the goal to limit global warming to below 2°C, preferably to 1.5°C compared to pre-industrial levels. In 2018, the UN's Intergovernmental Panel on Climate Change (IPCC) issued a special report on the impacts of global

warming of 1.5c above pre-industrial levels, acting as a stimulus for Local Authorities to act on the 'climate emergency'.

- 3.4 In June 2019, the UK Government passed legislation committing it to achieving 'net zero' greenhouse gas emission by 2050. This was a notable change on the target set in 1990 of achieving an 80% reduction in emissions by 2050. In the UK, we have seen significant and encouraging legislative and policy developments in the last 2 years including the Environment Act 2021, UK Net Zero Strategy (UK Net Zero Strategy) and UK Hydrogen Strategy (UK Hydrogen Strategy).
- 3.5 Westmorland and Furness Council is working towards the reduction of its organisational carbon emissions to net zero by 2037. Carbon dioxide, alongside other Green House Gas (GHG) emissions are classed into 3 categories: Scope 1,2 and 3 which are defined below:
- Scope 1 - Direct GHG emissions from buildings, plant and vehicles owned or controlled by the council, e.g., natural gas used in boilers or fuel used in company owned vehicles.
 - Scope 2 - Indirect emissions associated with purchased energy consumed by the council, e.g., grid supplied electricity.
 - Scope 3 - All other indirect emissions that occur in the council's supply chain, e.g., business travel, purchased goods, and maintenance contracts.
- 3.6 Carbon emissions should be reduced in line with the energy hierarchy where the priority is to reduce energy demand followed by improving efficiency and then integrating renewable energy sources. Any remaining emissions can then be managed, including via 'inset' by renewable energy generation on council owned land and buildings.

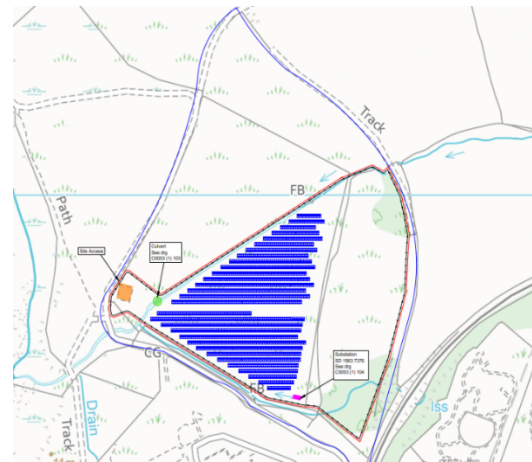
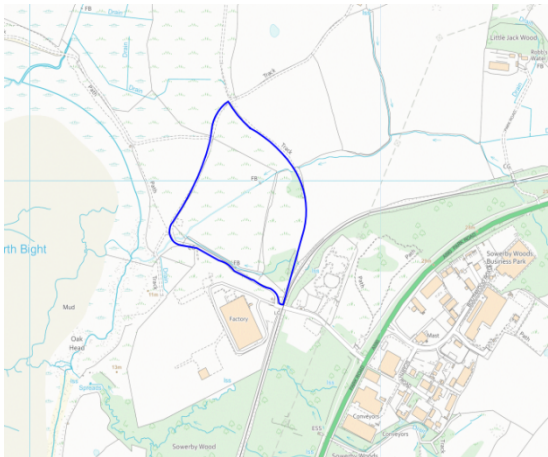
The energy hierarchy is:

- Prevent – the need for energy consumption by ensuring that the wastage is avoided or reduced
 - Reduce – the amount of energy consumed by the upgrade of the current building systems and equipment to equivalent and more efficient systems
 - Recover – 'used' energy and resources and re-use where there is an opportunity
 - Replace – the energy consumed with renewable energy supply options
- 3.7 Multiple decarbonisation workstreams are ongoing to prevent, reduce and recover energy. A key measure to "replace" energy consumed with renewables is to develop solar farm infrastructure on council owned land. Solar developments will also allow the council take greater control of energy cost into the future. The cost paid for electricity currently is around 39 pence kWh for electricity, but it is a constantly changing market. The volatility in the price has been significant over the last 12 months.
- 3.8 Over the past 18 months the council has developed the renewables workstream and has gained planning permission for a solar farm development at Sandscale

Park, Barrow, see images below for the site location and indicative layout of the panels.

Image 1: Council Ownership

Image 2: Proposed Site Layout



- 3.9 The Council has received independent external legal advice on the construction and operation of the solar farm which has concluded that the Council is able to a. build and operate the asset and b. sell the electricity generated.
- 3.10 The Council is working with specialist solar contractors, Vital Energi, to design the solar farm. The procurement route for the project allows the contractor to be awarded the construction stage contract (Stage 2) and first 24 months of operation if agreement on quality and price can be reached. Vital Energi were procured by Cumbria County Council through an open procedure in accordance with the Council's contract procedure rules.

The tender process launched on 06 February 2023 and the Council invited bids from organisations via The Chest. Nine tenders were received, four of which were compliant. The tenders were assessed on a 50% price / 50% quality basis. The quality component was comprised of three questions of which 25% was focused on methodology, 15% was focussed on staff resources and 10% was focused on programme for the works. The price component was related to tendered price of design and construction components, scored on a comparative basis with the lowest bid receiving 100% of the available marks.

The tender returns were scored by three competent assessors. The assessors were brought together by a moderator to report scores which were entered into a final score record.

The Tender Analysis report at Appendix 4 sets out the basis for the award of Stage 1.

- 3.11 On 22nd August 2023 Vital Energi offered the Council a stage 2 construction price of £2.481m to construct the solar farm with target completion date of 11th July 2024. The Council, and its advisors have assessed the price to be acceptable to undertake the works and operations which is in accordance with the pre-tender estimate and have made a standard 7.5% allowance for contingencies above this cost should unforeseen issues arise.

- 3.12 The estimated total cost to develop the Solar farm through construction is £2.781 million which reflects the construction cost in addition to professional fees and other project activities including management, risk, legal and advisory fees. This is the cost that will require funding.
- 3.13 The solar farm is designed to operate over a 35-year period and the energy production from the solar farm is expected to be 89,258,554 kWh.
- This is equivalent to powering the Council's five leisure centres each year or approximately 730 homes each year.
 - The proposed solar farm could generate the equivalent of approximately 30% of our electricity consumed based on our benchmark consumption year of 2019/20.
- 3.14 The Council, with support from its advisor Greencat Renewables, has undertaken financial analysis regarding the sale of electricity from the solar farm. The analysis provides comparative prices which are being paid for Power Purchase Agreements (PPAs) in the current energy market.
- 3.15 The PPA (Power Purchase Agreement) options assessed as part of the report are:
- Direct to grid through a Power Purchase Agreement (PPA) with an energy supplier; or
 - A sleeved PPA. Electricity Slewing is a means of selling electricity generated from the solar farm to a specific offtaker for an agreed price. In this case, the Council would sleeve the electricity back to its own facilities and purchase additional energy to make up any shortfall.
 - Private Wire whereby the electricity generated from the solar farm is sold directly to an external business located close to the solar farm via a private wire and not via the electricity network.
- 3.16 PPA deals are commonplace with multiple energy organisations offering agreements. Npower is the council's electricity supplier, and the council can access a PPA agreement under the existing contract, although the terms offered may not be the most advantageous.
- 3.17 The life of the solar farm is 35 years and the preferred long-term solution for the Council is likely to be a 'sleeved PPA' effectively using the electricity generated to help power its own buildings. The second option is to sell electricity directly to the grid for income. Entering a sleeved PPA agreement is complicated by the lack of evidence of generation in the first 6-12 months and is not recommended immediately.
- 3.18 It is usual within the industry for the first 6-12 months, sometimes up to 2 years, of generation to be covered by a flexible direct to grid PPA agreement due to the uncertainty over the output of the Solar Farm upon commissioning. Within this period the output of the solar farm is monitored and will be used to inform a fixed price offer in the future.

- 3.19 Following an initial period, the Council can seek to procure an organisation to enter a sleeved PPA. Unlike a direct sell to grid agreement, the market for sleeved PPA's is developing and the nature of the agreement cannot be ascertained before construction. There is a risk that a sleeved PPA may not be feasible once the generation is determined and matched to Council owned buildings. As such, for the purposes of this report, the more commonplace, direct sell to grid agreement will be used for the economic analysis.
- 3.20 The analysis by the council's advisors' states that the energy market continues to be uncertain and volatile. A 2023 fixed market price is therefore used as a basis for the council's business case.
- 3.21 An initial agreement for a PPA is unlikely to be longer than 1-2 years and will require renegotiation throughout the solar farm's lifetime.
- 3.22 As the final price is unlikely to be offered until a few weeks prior to the completion of the solar farm, and prices can change daily, it is recommended that the agreement for the price of electricity should be delegated to the Director of Resources (sct 151) so that an agreement may be reached at the appropriate time.

Project Costs, Funding and Savings

- 3.23 The following core financial considerations have been made:
- The solar farm is estimated to generate 2,550,244 kWh of electricity on average each year, for 35 years.
 - The estimated capital cost of the Solar Farm construction and operation for 2 years is £2.781 million which is to be funded from a combination of capital receipts and prudential borrowing.
 - The estimated price achievable from selling the electricity to grid is between 7p pKwh and 15p pKWh.
 - The estimated operational costs are c.£0.050m / annum which will increase with inflation which is modelled at 4% and will be deducted from the income. The basis for Inflation is 2% above the Bank of England Base rate which is based on the Consumer Price Index.
 - Operational costs will be met through income generated from the solar farm. The model indicates that project would not be able to meet the cost of operations and borrowing if the price per Kwh fell below 5-6p.
 - With borrowing accounted for, over a 35-year period, at the modelled target price pKWh the surplus income generated by the Solar Farm is estimated to be on average up to £0.400m per year (this will be lower in the first years).
 - The basic payback period is 9 years based on a sell to grid price of 15p/Kwh and 14 years based on a sell to grid price of 10p/Kwh.

Carbon Savings

- 3.24 The development of the solar farm should result in carbon savings of around 607 tCO₂e/annum against the councils Scope 1 and 2 baseline which is measured in 2019. The saving figure is calculated using the latest Department for Energy Security and Net Zero (DESNZ) figures and guidance. This saving will reduce over time as the electricity grid decarbonises.

- 3.25 A saving of 607 tCO₂e is equivalent to planting approximately 700,000 trees. It is anticipated that the solar farm will inset c. 4-5% of the council's scope 1 and 2 carbon emissions measured against a 2019 baseline.
- 3.26 Carbon savings also have additional value to the council which are associated with the cost to decarbonise a tCO₂e. Should the council choose not to develop the solar farm, to make equivalent savings toward net zero, the council would need to pay for other decarbonisation interventions. The governments Valuation of Greenhouse Gas Emissions (2021) identifies, in 2023, that a value of between £126 and £378 may be placed on decarbonising a tCO₂e. In basic terms, to offset 607 tCO₂e could cost between £0.076m and £0.229m. Whilst the business case of this development is not reliant on this benefit, and can be justified on the income generated, it is important to highlight this additional benefit which may become more important for future solar schemes where business cases could be marginal.

Embodied Carbon

- 3.27 It is important to acknowledge that building most forms of infrastructure will generate carbon, largely through construction. The PVsyst model produced for the outline design estimates that the development (modules, supports and inverters) will generate around 5180 tCO₂ of embodied carbon over its lifetime.
- 3.28 The embodied carbon for the project will be included within the Council's wider scope 3 emissions baseline. The Council is working to reduce its Scope 3 baseline towards net zero by 2050 through development of a supply chain strategy.

4. Link to Council Plan Priorities: (People, Climate, Communities, Economy and Culture, Customers, Workforce)

- 4.1 One of the key priorities detailed in The Westmorland and Furness Council Plan is 'For the Climate,' which states that *'the Council is working hard to ensure that the area we serve becomes carbon net zero by 2037', and our organisation, as soon as possible.* Without the development of renewable technologies, such as solar, to address its residual emissions it is unlikely that the Council will achieve this goal.
- 4.2 The development of the solar farm will deliver against the Council's Councils Climate Action Plan 2023 (Stage 1) which is the key strategy related to the Climate priority.

5. Consultation Outcomes

- 5.1 Throughout the initial feasibility and planning stages of the solar farm, consultation sessions were held with members of the former Cumbria County Council Barrow Local Committee where a presentation was given on the proposals and the timeline for the project. Members had the opportunity to ask questions and were fully supportive of the solar development.
- 5.2 The planning application for the solar scheme was submitted to the former Cumbria County Council planning department in September 2022 with approval achieved in March 2023. Throughout the application process, regular updates were held with planners where any queries from consultees were responded to and addressed by the applicant. The scheme went to the February 2023

Development Control and Regulation Committee where it received full support from the planning committee.

6. Alternative Options Considered

6.1 Option 1: Do Nothing. Do not build the solar farm or enter agreements for the construction of the infrastructure and using or selling electricity produced. This option would result in a barrier to the council meeting its climate and net zero ambitions. **This option is not recommended.**

6.2 Option 2: Commit to fund, build the solar farm, and award contracts for both the construction of the infrastructure and using or selling electricity produced. **This option is recommended** as it aligns with the recommendations detailed in the council's Climate Action Plan (2023) and would support the council's ambitions towards net zero for scopes 1 and 2 carbon emissions by 2037.

Risks

6.3 There is a risk that the price available to sell electricity of the solar farm is below expectations, caused by a volatile energy market resulting in reduced value for money of the project and a longer payback period. This risk is mitigated by engaging market expertise to help the council secure the best Power Purchase Agreements. The risk is also mitigated (or balanced) by the relationship between the selling and buying price of electricity. i.e if the sell price for electricity from the solar farm reduces, the buying price for our electricity to serve the council's wider estate will also reduce which will make savings in the Council electricity budget.

6.4 There is a risk that the construction of the project is delayed by lead in times to secure solar panel modules caused by high market demand for solar infrastructure components resulting in additional costs and or reputational harm. This risk is mitigated by dialogue with the contractor to understand lead times and maintaining a realistic programme at all times.

6.5 There is a risk that electricity northwest (ENW) is delayed in undertaking the non-contestable works / grid connection of the solar farm, caused by poor performance of ENW contractors, resulting in additional costs and or reputational harm. This risk is mitigated by early dialogue with Electricity Northwest and advanced programming of works between the Council's contractor and the ENW contractor.

6.6 There is a risk that energy generation from the Solar farm is lower than expected, caused by poor performance of the panels resulting in reduced value for money of the project and a longer payback period. This risk is mitigated by employing professional designers to baseline the solar output against previous industry generation models.

6.7 There is a risk that reputational damage is caused to the Council and unethical supply chains are supported caused by sourcing of solar panels from unethical suppliers, resulting in an undermining of the Council's climate change leadership and negative impact on the communities within which the panels are produced. This risk is mitigated by working with the contractor who is contractually obliged to provide ethically sourced panels. This risk is mitigated by using an advisor to assist the Council with decision making on panel supply.

7. Financial Implications and risk

- 7.1 The proposal is to construct and operate a solar farm at Sandscale Park, Barrow. The project was included in the MTFP (Medium Term Financial Plan) 2023-2028 as a significant pending capital programme scheme that required further review and business cases to be developed before Cabinet could approve and recommend the scheme to Council. This report provides the evidence of the business case.

The project will cost £2.781m and is to be funded from a combination of £1.70m of available capital receipts and £1.081m from already approved prudential borrowing.

- 7.2 The estimated annual borrowing costs are £0.048m repayment of capital over 35 years (MRP (Minimum Revenue Provision)) and £0.048m interest (at an average borrowing rate of 4%). The operation for the solar farm is funded through the capital contract and thereafter from the sale income.
- 7.3 Income will be generated from a power purchase agreement between the Council and an energy organisation to sell the energy which is produced. The income generated will cover the cost of the borrowing repayments and the annual revenue operational costs and still provide a positive gross revenue income stream estimated at up to £0.400m per annum (lower in the first 2 years) but this will only be confirmed when the delegated decision to enter the contract to sell electricity is confirmed. This will support the financial sustainability of the council as well as achieving the non-financial benefits listed in the report.
- 7.4 The council has been advised that the energy market is volatile. There is a risk that the price achieved via the power purchase agreement is lower than the rate upon which the financing was modelled. The modelling allowed for flexibility/pricing variances. The final price will be appraised against the relevant viability criteria to ensure value for money.

8. Legal and Governance Implications

- 8.1 External Legal advice has been sought and is attached at Appendix 1.

Under paragraph 6.37 of the Contract Procedure Rules the Executive Director in consultation with the relevant Cabinet Member is authorised to award contracts of up to £5 million. Due to the value of the contract the decision to award is a key decision.

- 8.2 The report seeks approval to enter into a contract with Vital Energi Ltd. Pursuant to rule CPR 6.8 the relevant award criteria are MEAT.
- 8.3 The Council's statutory powers to produce and sell electricity are derived from section 11(1) of the Local Government (Miscellaneous Provisions) Act 1976 ("LG(MP)A"), which provides local authorities with express powers to produce, use, sell or otherwise dispose of electricity. Section 11(1) further provides that a local authority may establish and operate such generating stations and other installations for the purpose of producing electricity (or heat, or both). The Council has obtained external legal advice in this respect a copy of which is appended to this report.

- 8.4 The Council has sought subsidy control legal advice which is attached at Appendix 5.
- 8.5 With regard to any proposed Power Purchase Agreement, pursuant to CPR 6.41 where a director proposes to apply to provide services to another organisation the Chief Legal and Monitoring Officer must be consulted about the terms and conditions on which the services are to be provided and regard had to the advice received.
- 8.6 Delegated decisions are subject to the requirements to consider whether they are Key decisions and also an Officer Delegated Decision Record will be required and published.

9. Human Resources Implications

- 9.1 There are no significant HR implications for this project. The solar farm will be constructed by an external contractor and managed by the Council's capital programme team. The Council will enter into a contract for the operation of the Solar Farm after a two-year aftercare period which will be undertaken by the contractors.

10. Equality and Diversity Implications (including the public sector equality duty, Armed Forces Families, Care Leavers and Health inequalities implications)

- 10.1 From an initial assessment there are no adverse equality impacts on any part of the community and has the ability to have sustained benefits. It is widely acknowledged that carbon emissions have, and will continue to have, a harmful impact on the environment in which we live. This, in turn, has a harmful impact on health and wellbeing of our communities and will impact those on lower incomes and with poorer health the hardest. Westmorland and Furness Council has an important leadership role in Carbon Management, it is therefore vital that the council clearly communicates the benefits of managing energy and reducing carbon emissions to improve health and wellbeing and reduce health inequalities.

11. Background Documents

Exempt:

Appendix 1 – Legal Advice
Appendix 2 – Financial Report
Appendix 3 – Cost Model
Appendix 4 – Tender analysis report
Appendix 5 – Subsidy control legal advice