



**Bath & West  
Community Energy**  
Generating local energy

**13<sup>th</sup> October 2022**

## **Bath & West Community Energy**

### **Ground Mounted Solar PV for Freshford & Limpley Stoke**

#### **1 Background to Bath & West Community Energy**

Bath & West Community Energy was set up in 2010 to deliver community owned renewable energy projects in Northeast Somerset, Bath, West Wilts and the eastern part of South Glos.

To date BWCE has raised £16 million to build 13.2 MW of community solar PV and one small hydro scheme. Enough to power 4,500 homes and deliver £300,000 to date back into local communities in the form of grants.

Bath & West Community Energy is a Community Benefit Society, meaning it is required by its governing rules to prioritise community benefit. It's not for profit and is run by its members on the basis of one person one vote, regardless of shareholding, with 50% of the board elected from its membership. For further information see [www.bwce.coop](http://www.bwce.coop).

When it was established, BWCE decided to work across an area that was large enough to create the opportunity to develop a significant number of renewables projects whilst still retaining a strong link with local communities. Working at a greater scale enables BWCE to build critical mass within the community business, in order to employ experienced and skilled staff and so deliver a professional long-term and reliable service to local communities.

**We are fortunate to have built up an experienced team within BWCE, some of whom have been involved in BWCE, the energy sector and community energy in particular for many years. More details on our board and team members can be found on this link here.**

**<https://www.bwce.coop/team/>**

**In addition, you can find more information on our structure here**

**<https://www.bwce.coop/about-us/#structure>, our latest business plan can be found here**



<https://www.bwce.coop/bwce-documents/> and our latest accounts can be downloaded from our 2022 AGM page here <https://www.bwce.coop/annual-general-meetings/#agm-2022>

## 2 The Brief

We have been commissioned to investigate potential Solar PV locations within the parishes of Freshford and Limpley Stoke, on behalf of the parish councils. More specifically we were asked to review the following:

1. Identify sites with potential for community Solar PV.
2. Engage with the landowners of a site (Mr and Mrs Horler) which has been identified previously and compare this opportunity with the others in the local area.
3. Support a community consultation exercise to ascertain the local support for community energy schemes within the area.
4. Identify funding sources where possible, in particular whether the Rural Community Energy Feasibility grant funding is available.
5. Support the parish councils with an assessment on how the council could undertake a development of this kind themselves and compare that to developing the project with Bath and West Community Energy using their existing model.

Since the project began BWCE have been reporting to John Adler on progress with the various workstreams and so far, the following deliverables can be summarised:

### 2.1 New Site identification

- a. We identified 5 alternative locations in addition to the existing property owned by Mr and Mrs Horler (See Appendix 1 for map showing locations) which are:
  - i. Rejected due to planning, visual impact from nearby houses
  - ii. Rejected due to landowner lack of interest
  - iii. Rejected due to landowner lack of interest
  - iv. On hold, no response from Beeswax Dyson
  - v. Rejected due to visibility and topography
- b. Very few other opportunities were deemed suitable due to planning issues, visibility, and flood risk.
- c. The site owned by Mr and Mrs Horler is considered the best, partly by default as there are no viable alternatives but also due to their potential connectivity to the grid.

### 2.2 Engagement with existing landowners (Mr and Mrs Horler)

- d. Since the first initial meeting the landowners have been very positive and keen to work with the community.
- e. There have been delays which were due to the landowners transfer of landholding within family members which delayed our grid investigations.



- f. The landowners will be open to discussing terms when the feasibility has been determined more clearly.
- g. There is an outstanding important component of the feasibility which is still ongoing relating to the grid investigations. SSE, who own this part of the network, have provided a budget quotation which is heavily caveated. Their own network engineer believed it was not suitable for decision making. We were advised to have a surgery meeting, and which took place on 22<sup>nd</sup> May and is discussed later in this document.

### 2.3 Community consultation

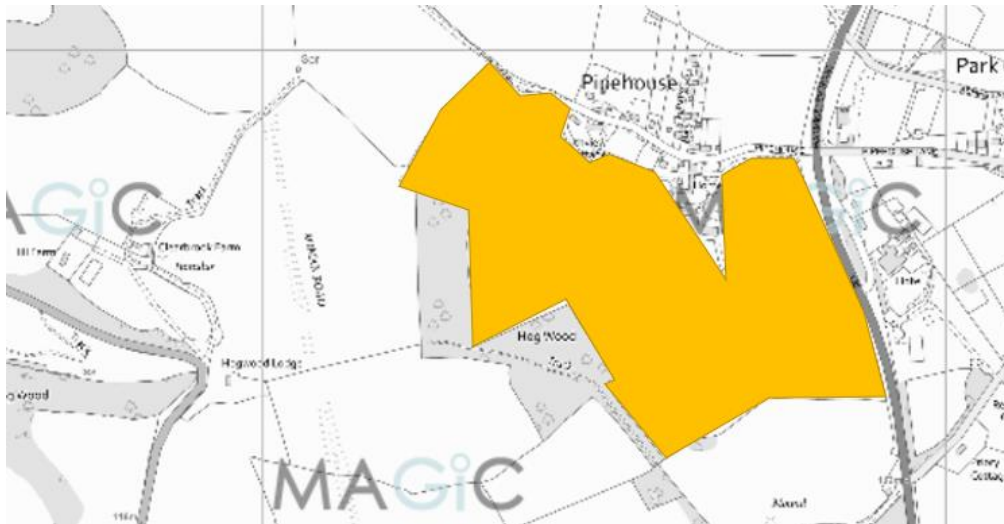
- h. A community consultation has taken place and results are very encouraging (See appendix 2 for details):
  - i. 87% support solar
  - ii. 82% support community energy
  - iii. 80% support a well sited community solar project in their area
  - iv. 12% would not support the latter and 8% are neutral

### 2.4 Funding and Grants

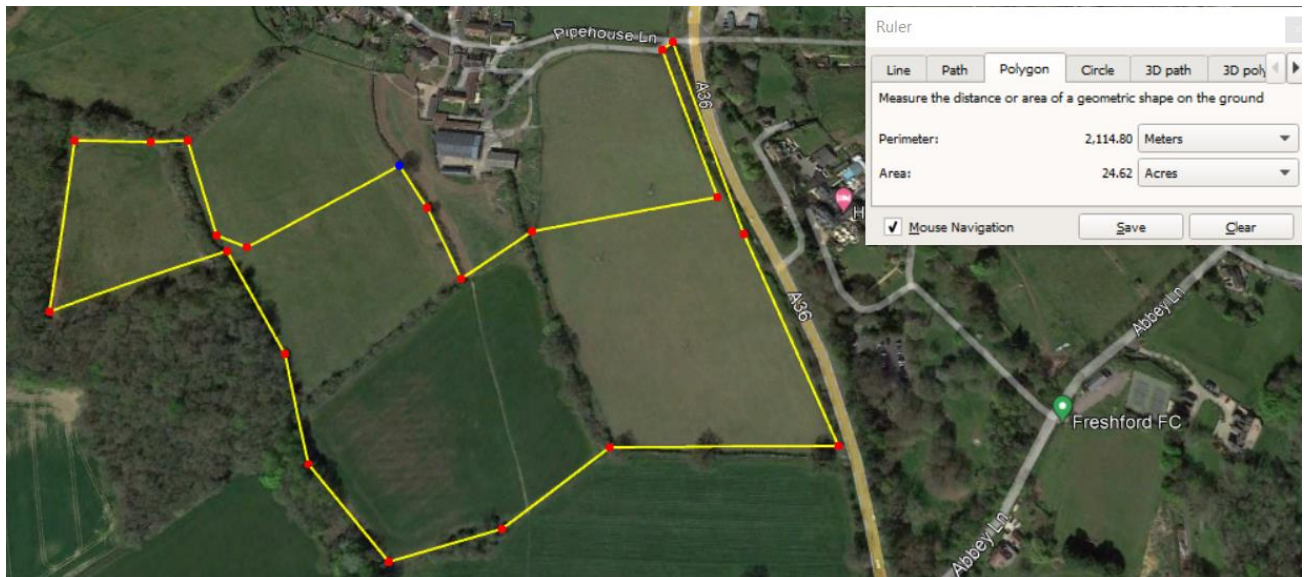
- i. Due to the delays by the key landowners the project is not currently able to apply for RCEF granting funding as the deadline for applications has passed.
- j. We informed the team about this when it became apparent this was potentially the case, and we are currently:
  - i. Seeking alternative funding solutions locally
  - ii. Investigating alternative funding routes including BWCE development funds to support the project

## 3 Site Review – Homewood (Owners, Mr and Mrs Horler)

If grid capacity were available, we believe it may be possible to build at least 5MWp of Solar PV on this land, potentially laid out as indicated in the diagram below, subject to detailed further technical assessment. Land area 43 acres (not including buildings).



### 3.1 Proposed Solar Area (roughly compatible with 5 MW)



#### Notes on Proposed Solar Area Map:

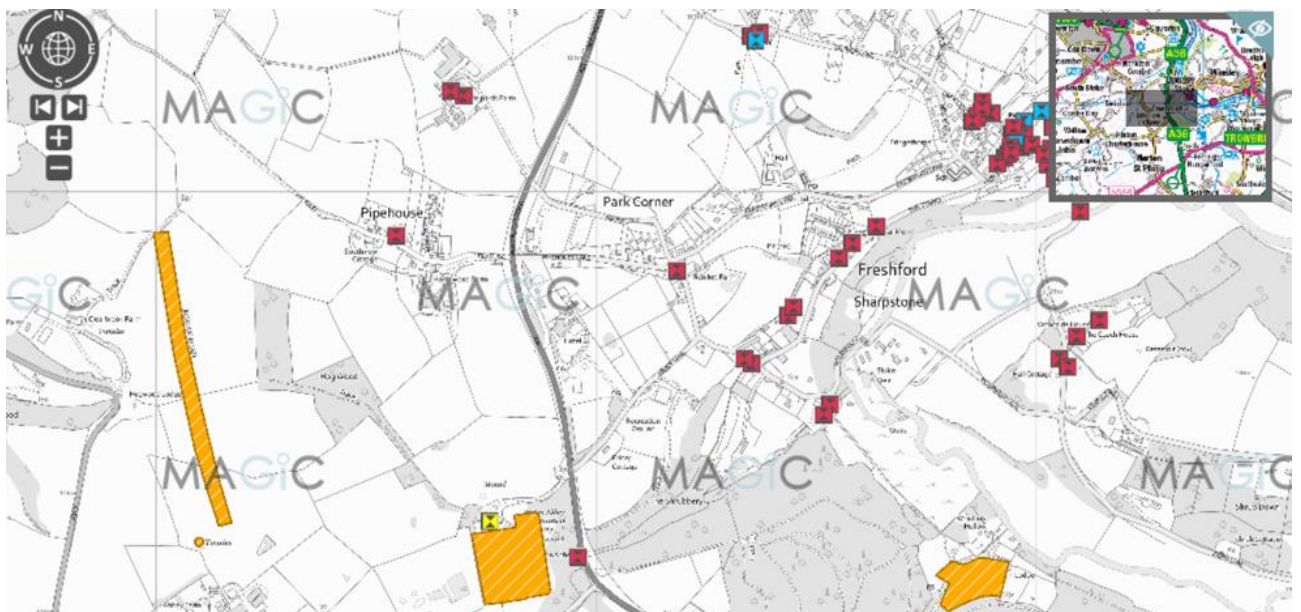
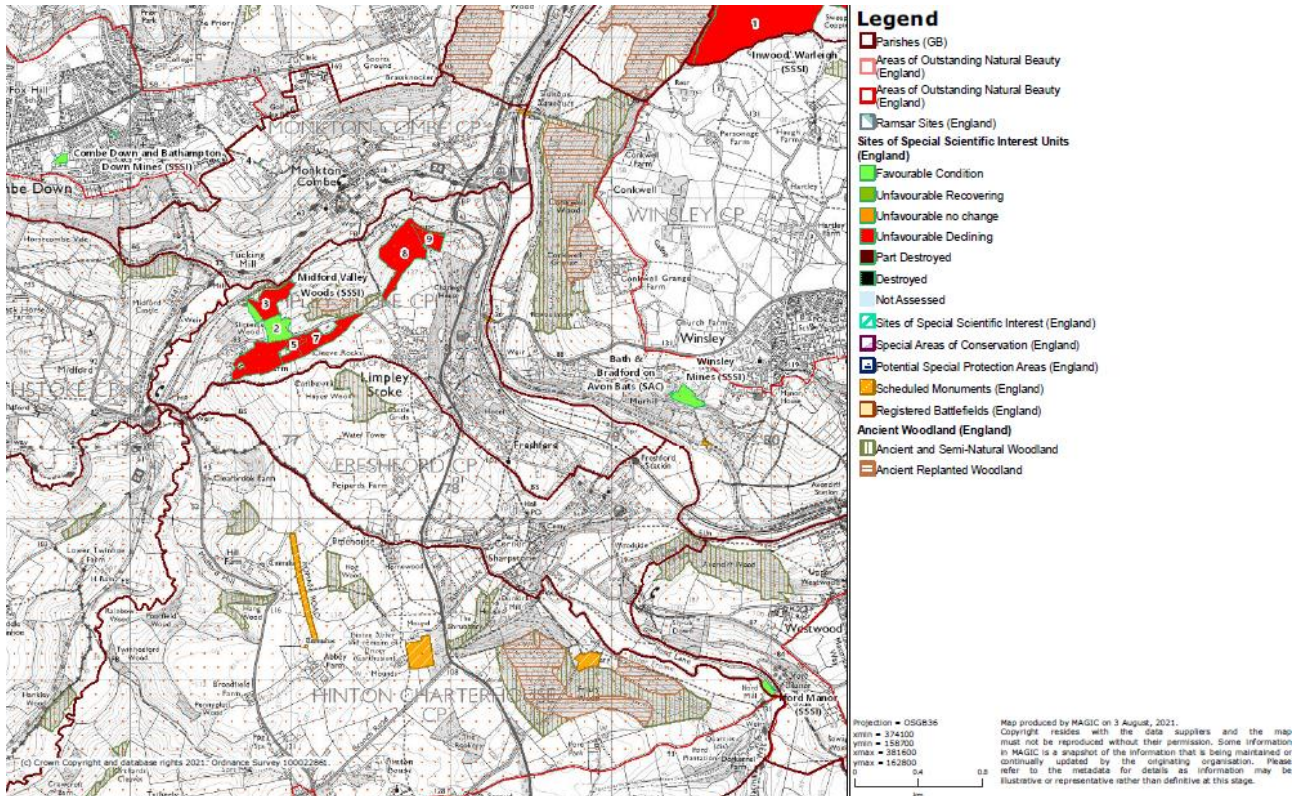
- Access would be via the existing driveway off the A36
- Not all of the field by the A36 is being used due to close proximity of houses (possibly owned by Homewood also).
- Fields to west are selected to avoid close proximity to houses also
- Footpath may need to be re-routed around edge of field

### 3.2 High Level Planning Assessment

#### Key risks:



- The site is situated in an Area of Outstanding Natural Beauty and Greenbelt. This will require special consideration for planning application and strong emphasis on engagement with pre-application.
- There are one or two listed buildings which would require a visual impact assessment and a scheduled monument in a neighbouring field.
- All of the above will require a strong emphasis on visual impact management, ecological management and strong community consent.





### 3.3 High Level Grid Assessment



The above map identifies the cables crossing the Homewood location.

- The initial budget offer from SSE was encouraging but loaded with caveats so having limited value for decision making. A connections surgery with SSE was booked after discussion with the network planner. The network planner admitted he was unable to see what headroom there was clearly on the network and was basing this on broad assumptions.
- The surgery took place in late May 22<sup>nd</sup> due to a long backlog in SSE administration and the findings were:
  - Due to the size of the cables in the local network the maximum likely grid capacity is circa 800kW to 1MW without major long distance cable route back to Bradford on Avon substation
  - Still a possibility that this capacity may require reinforcement.
  - Only way to confirm this is to make a formal grid application
- BWCE has been engaging with SSN, WPD and National Grid ESO to understand the massive constraints on the network. This site is connected to a regional network with significant



transmission level upgrades planned, which have an impact downstream on projects of all sizes on all voltages. This can result in most projects over 1MW being:

- Constrained when energised
- Delayed until grid capacity is available after the major transmission upgrades, potentially up to 2027-2028
- As a result of this BWCE have modified the report to review whether a 1MW site could be feasible for this location.

### 3.4 Potential Project Timeline (as if developed by a new Freshford and Limpley Stoke business).

Recognising the Parish Council’s desire to compare taking on the development and ownership of the project with the alternative of BWCE developing and owning the project, the following timeline is drafted as if the project was to be delivered by a new Freshford and Limpley Stoke community energy business.

If BWCE were to take on the project there are some efficiencies that could be provided, and some tasks would not be necessary. As a result, we estimate that we could be commissioning the system 6 months earlier in November/December 2023.

If the project were to be delivered by a new community energy business, then BWCE would be happy to provide free support in a spirit of co-operation (although this may be limited due to the available funding, we have to undertake our other work). For example, providing advice (by telephone) around project planning and during project development, sharing drafts of key documents, such as the lease and financial model and providing access to pre-existing research and development, for example information on supply chain costs.

However, it would be for the new business to take responsibility for leading and managing the project development, managing risk, procuring suppliers and contractors and raising finance.

<b>Step Description</b>	<b>Target Date</b>
Initial consultation with Parish Council	Oct 2022
Identify and agree financial and incorporation model for the ownership of the solar park	Dec 2022
Agreement in principle and ideally exclusivity agreement with landowner signed	Dec 2022
Apply for grid connection with network operator	Dec 2022
Identify feasibility and development funding source	Dec 2022
Grid offer received	Feb 2023
Develop a financial model	Feb 2023



Engage designer to design solar park	Feb 2023
Identify a long-term power purchase agreement solution	Feb – Mar 2023
Engage legal firm to develop a lease and power purchase agreement	Mar 2023
Planning scoping, review of key issues and mitigation	Feb - Mar 2023
Consultation around lease agreement with landowner and agreement of heads of terms	Mar 2023
Engage with suppliers to confirm construction costs of the solar park	Mar 2023
Engage with suppliers to confirm the operational, maintenance and asset management costs for the solar park	Mar 2023
Option and Lease agreement finalised	Apr-May 2023
Technical studies and site surveys	Mar 23 – Apr 2023
Planning Pre-app	Mar 2023
Planning consultation with community	May 2023
Secure suitable long term power purchase agreement at the right price and terms in principle	Jun 2023
Finalise financial modelling	Jun 2023
Finalise pre-planning design for solar park	Jun 2023
Planning application	Jul 2023
Planning Determination	Nov 2023
Development of debt funding model and share offer	Sep-Oct 2023
Finalise funding model and share offer document	Nov 2023
Subject to successful planning and grid applications, development of final model	Dec 2023
Finalise design of solar park	Dec 2023
Develop specification for Solar Park design and construction	Dec 2023
Tender with supply chain to secure prices for installation	Jan 2024
Develop specification for operation and maintenance and asset management	Jan 2024
Tender with supply chain for operation and maintenance and asset management	Feb 2024
Confirm commitment to long term power purchase agreement	Feb 2024
Fund raising campaign	Jan - Mar 2024





Financial close for share offer and senior debt	Mar 2024
Lease agreement signed	Mar 2024
Long term Power purchase agreement signed	Mar 2024
Update prices with supply chain in final tender if required	Apr 2024
Agree EPC construction contract with supplier to design and build	Apr 2024
Satisfy any preconstruction planning conditions	Jun 2024
Construction begins	Jul 2024
Construction site management	Jul to Sep 2024
Formal Commissioning and testing of solar park once constructed	Sep 2024
Supplier completion of snagging or post construction works	Oct 2024
Handover of park for asset management	Nov 2024
Engage operations and maintenance resource for post warranty O&M	Nov 2026
Warranty period of solar park ends	Nov 2026
Commence new operating and maintenance agreements with suppliers	Dec 2026

### 3.5 Indicative Costings

To give an indication only, the table below provides a summary of the level income and expenditure on a cash basis (ex VAT) that might be generated for a 1.2MW solar farm, given the assumptions as outlined. Prior to carrying out a full feasibility study, it is not possible to say whether this is what can be achieved on this site.

If Bath & West Community Energy were to develop the Homewood site, all finances would be open book and open to question by your nominated stakeholder representatives.

With regards the community fund, it should be possible to ring fence a specific sum each year for allocation, just within Freshford and Limpley Stoke via our community fund, subject to us receiving eligible grant applications in that year. We would need to confirm this with the trustees of the community fund. The sum to be allocated could be determined each year depending on performance. The figures in the table

It may be possible for the Parish Council to retain the overhead allocated to BWCE if the project was developed and owned by the Parish Council. However, if so, the council would need to decide whether it could run the project on a purely voluntary basis and if not, whether it could be run for less than this.



	<b>1st year</b>	<b>Lifetime</b>
<b>Income</b>	£131,680	£4,738,120
<i>Rent</i>	<i>(£6,731)</i>	<i>(£301,220)</i>
<i>Operations &amp; maintenance, inc. reserve</i>	<i>(£8,100)</i>	<i>(£473,264)</i>
<i>Import electricity and comms</i>	<i>(£3,190)</i>	<i>(£147,206)</i>
<i>Insurance and audit</i>	<i>(£3,030)</i>	<i>(£141,209)</i>
<i>Asset management</i>	<i>(£6,600)</i>	<i>(£309,900)</i>
<i>Miscellaneous</i>	<i>(£2,000)</i>	<i>(£93,909)</i>
<i>BWCE Overhead</i>	<i>(£5,000)</i>	<i>(£234,773)</i>
<b>Total Opex</b>	<b>(£34,651)</b>	<b>(£1,701,480)</b>
<b>Member interest</b>	<b>(£48,374)</b>	<b>(£838,532)</b>
<b>Member capital</b>	-	<b>(£1,293,511)</b>
<b>Community fund/surplus</b>	<b>(£5,000)</b>	<b>(£234,773)</b>
<b>Tax (VAT/Corporation)</b>	-	<b>(£317,678)</b>
<b>Balance</b>	£43,656	£352,146

#### Assumptions:

- Member interest at 5%
- No member capital repaid in first 3 years; all capital repaid within 20 years
- Retail Price Index 10%/yr dropping to 5% for 2 years then down to 2.5%
- 20-year PPA starting at 11p/kWh
- Installation costs at £750/kWp installed
- Total capex approx. £1.3 million
- 100% equity funded
- Project life 30 years
- Assumes rental of 13 acres of which 7 are used by the solar array, the rest to further enhance biodiversity



### 3.6 Considering Different Development Routes

Three approaches to the development, ownership and operation of the potential project have been discussed with community representatives, all three delivering renewable energy assets that are held on behalf of, and for the benefit of the wider community.

1. Developed and operated via the existing community business, Freshford and Limpley Stoke Energy Community Shares (FLECS), which built out a solar array linked to the community shop in Freshford.
2. Developed and operated by a new community business set up to deliver this project
3. Developed and operated by Bath & West Community Energy

All options will require the raising of funds to develop the project, approximately £80-100,000 to cover developing and submitting a planning application, negotiating a lease agreement with the landowner, securing a firm grid offer from Western Power Distribution, designing the solar array and carrying out the financial modelling, and installer procurement necessary to underpin the capital fund raise.

The community business concerned will take on management and delivery of this development process outlined in more detail in section 3.4 above.

Following the successful development of the project, capital funds in the order of £1.3 million will need to be raised to build the project from community shares and possibly community bonds or senior debt.

The responsibility for raising these funds will rest with the community business charged with developing and operating the project.

Whilst an initial priority should be raising funds locally, the fundraise will need to go further afield to raise the level of funds required. One approach could be to focus a share raise locally and then raise bonds that don't offer membership and governance rights, from further afield. Though the balance between shares and bonds might also require shares be offered wider than just Freshford and Limpley Stoke.

If either option 1 or 2 are chosen to take a project forward, we would strongly recommend ensuring that the community business concerned:

- has the board experience and expertise necessary to build trust amongst potential investors (without knowing who is currently involved on the FLECS board)
- can access the capacity necessary to oversee and drive the development process
- is prepared to take on the risks associated with developing and operating a £1.3 million asset

Funding to support the development work is harder to secure now with the demise of the Rural Community Energy Fund. But other sources do exist, for example, the West of England's Green Recovery Fund.



Options 1 and 2 would free up the BWCE allocation, effectively doubling the community benefit generated by the project. This does assume that there are no administration costs incurred by the community business and all work is done on a voluntary basis.

### 3.7 Next Steps

We would welcome feedback and/or questions on this brief summary and if the Parish Council is so minded, a commitment to work with us to develop the project.

If there is interest, maybe a sub-group of the Parish Council might like to engage with us in the short term to resolve any issues prior to a final decision on the way forward.

If the Council wishes to proceed through setting up its own community energy business, then we will help where we can, as we believe in community action and are keen to see as many community energy projects flourish as possible. But as flagged above, it will be up to the new community business to take responsibility for delivery.

Please give me a call when you have had chance to digest or if you have any queries

Yours sincerely

A handwritten signature in black ink, appearing to be 'Alex Lockton', written in a cursive style.

Alex Lockton

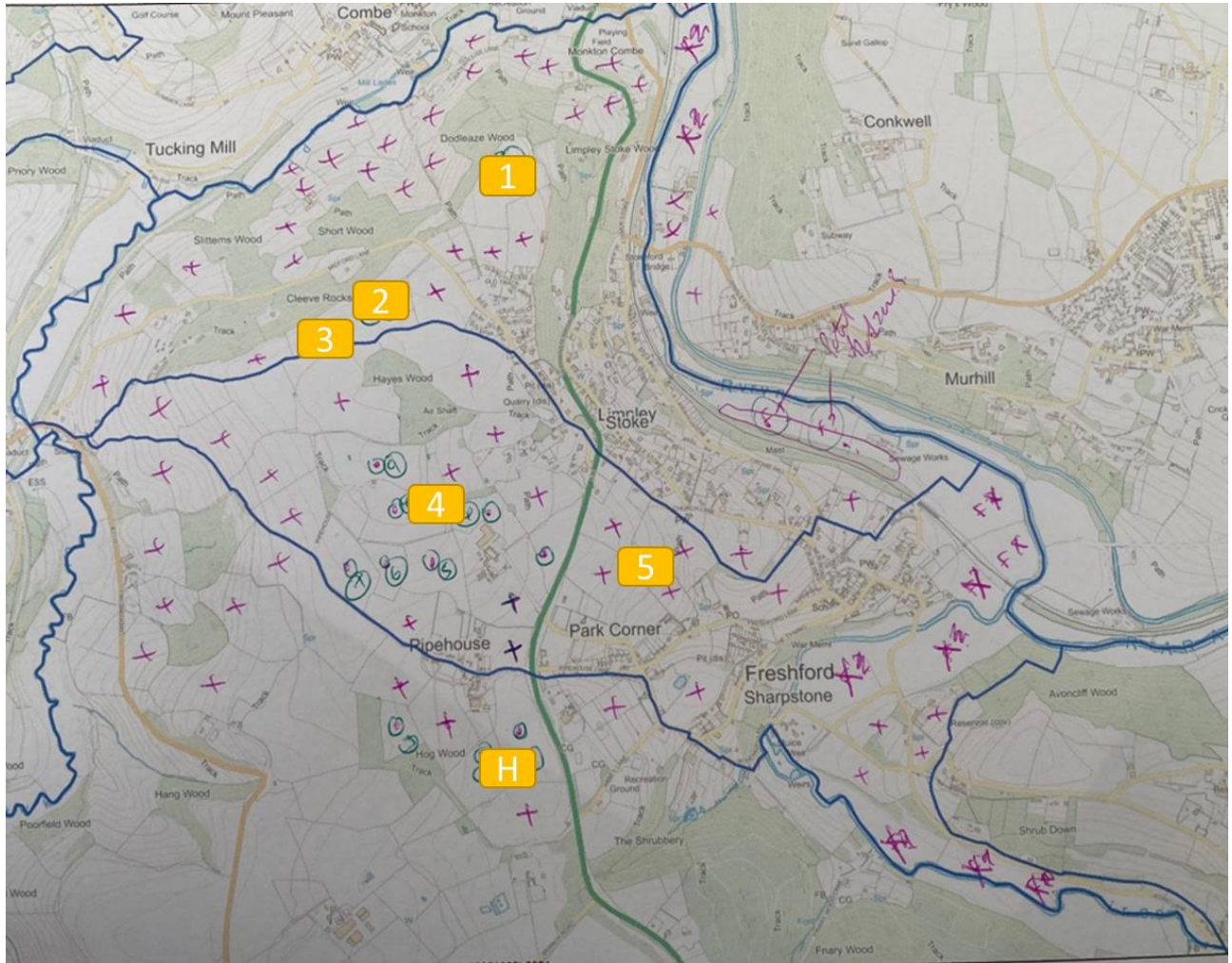
Project Developer

Bath and West Community Energy



## 4 Appendices

### 4.1 Appendix 1 – Alternative locations map





## 4.2 Appendix 2 Community Survey Results

Question No.	Question
1	Do you agree that the climate emergency is a major challenge today?
2	How supportive are you of renewable energy as a means of helping to reduce climate change?
3	How do you feel about Solar Power technology?
4	How do you feel about Freshford and Limpley Stoke having its own Community Renewable Energy project? This would include a) Residents being able to invest in the project and receive annual interest. b) Surplus income being available to fund community activities that promote sustainability.
5	Would you support a ground mounted solar array (solar farm) sensitively sited to minimise visual impact, ideally including measures to increase biodiversity and the potential for the development of other community amenities (e.g. a community orchard).

Question Id	Against	Neutral	Support
1	6	6	114
2	3	5	118
3	5	10	110
4	9	14	103
5	15	10	101

### Question Percentages

Question Id	Against	Neutral	Support
1	5%	5%	90%
2	2%	4%	94%
3	4%	8%	87%
4	7%	11%	82%
5	12%	8%	80%



Question Counts					
Question Id	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	3	3	6	14	100
2	1	2	5	16	102
3	2	3	10	27	83
4	5	4	14	25	78
5	11	4	10	23	78
Question Percentages					
Question Id	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2%	2%	5%	11%	79%
2	1%	2%	4%	13%	81%
3	2%	2%	8%	21%	66%
4	4%	3%	11%	20%	62%
5	9%	3%	8%	18%	62%
<b>No. Responses:</b>	126				