Appendix B: Analysis of Solar PV Sites

Contents list

1 Introduction 3

2 Keswick School 3

2.1 Site description 3

2.2 Technical 3

2.3 Roof structure and shading 5

2.4 Financial 5

2.5 Planning and permitting 6

2.6 Ownership and engagement 6

3 Cockermouth School 7

3.1 Site description 7

3.2 Technical 7

3.3 Roof structure and shading 10

3.4 Financial 11

3.5 Planning and permitting 11

3.6 Ownership and engagement 11

4 Cockermouth Leisure Centre 12

4.1 Site description 12

4.2 Technical 12

4.3 Roof structure and shading 15

4.4 Financial 15

4.5 Planning and permitting 16

4.6 Ownership and engagement 16

5 Eaglesfield Paddle Primary Academy 17

5.1 Site description 17

5.2 Technical 17

5.3 Roof structure and shading 18

5.4 Financial 19

5.5 Planning and permitting 19

5.6 Ownership and engagement 20

6 Solar site shortlist 21

7 Notes on modelling assumptions 21

1 Introduction

Array designs were created and modelled using OpenSolar, with a customised financial model constructed to allow the examination of different scenarios for portfolio size and labour inputs. Further details on the assumptions and methodology behind the models can be found in section 7.

2 Keswick School

Location: Vicarage Hill, Keswick CA12 5QB
What3words: ///mirroring.coats.pays

2.1 Site description

Keswick School is a large secondary school and sixth form college, with around 1,320 pupils currently on its roll, of whom around 40 are boarders. It is an extensive site with several separate buildings of different ages and different characters. As with most schools usage is low over summer – there is a short summer school but it only uses a small fraction of the site. The presence of boarders means that the weekend and evening usage will be higher than the average school.

2.2 Technical

The 231.4kWp array design that was used to model the generation possible at this site is shown in Figure 1. Note that in the latest available satellite imagery the Langley Building in the centre of the site is still under construction – these were completed in 2022, and panels have been appropriately sited here based on architectural drawings.

Keswick School Trust also has extensive surrounding land which could potentially host a ground-mounted solar array. Consideration of this is outside of the scope of this report.

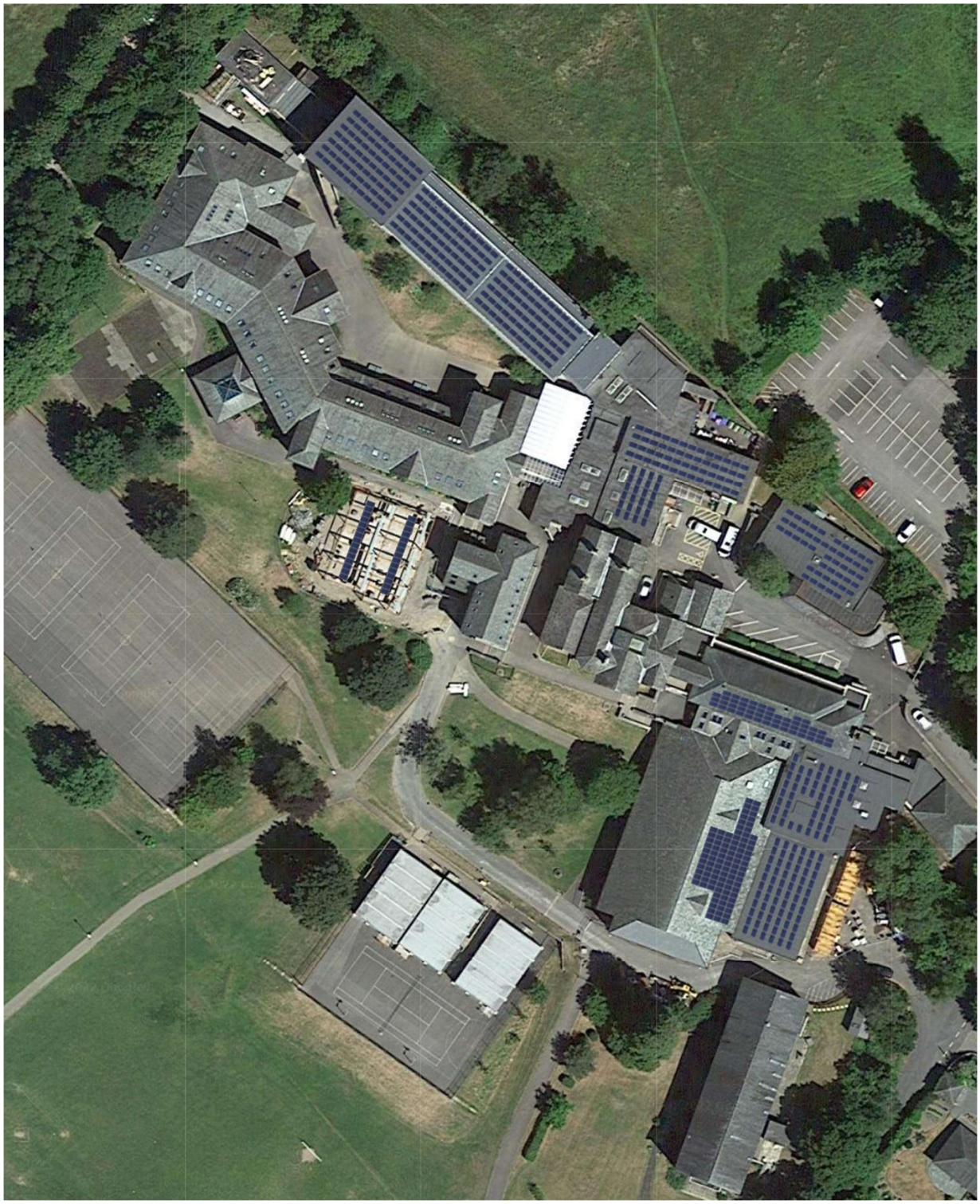

Figure 1 - Array design modelled at Keswick School

A figure for the total electrical consumption over the year of 764,423kWh was provided, split 75/25 between daytime and night-time usage. Unit prices were also supplied, valid until March 2025, from which bill savings can be derived.

A monthly demand profile was generated by scaling higher resolution data obtained from a comparable school to the annual total. Doing so gives these approximate results for this array:

Array capacity	231.4kWp
Total annual yield	182,900kWh
Specific annual yield	790kWh/kWp
Annual onsite electricity consumption	764,400kWh
Self-consumption	80%
Imported energy avoided	26%

Most of the site is heated by gas, save for the Modern Foreign Languages building which uses an air source heat pump. There is no decarbonisation plan in place yet for the school, but it is reasonable to anticipate the electrification of heat at some point within the project. The school is not keen to host a public EV charging point due to security concerns - the presence of boarders means that even out-of-hours use of an EV charger is more problematic. However the school does aspire to install EV charging for staff and car parks are sometimes rented out, so there may be potential for public EV charging perhaps during the summer when boarders are on vacation.

It is reasonable to assume that onsite demand will therefore increase during the period of the project.

2.3 Roof structure and shading

The oldest building dates back to 1960 – this is the boarding house that formed part of the earlier Lairthwaite Secondary Modern School. Most of the site dates from the 1980s or 1990s. The flat roofs along the northern side of the site, only built in the 2010s, have recently been replaced with EPDM (synthetic rubber) and should therefore have plenty of lifetime to support an array. The pitched roofs are all finished with traditional slate. As with all the sites, a structural survey would need to be completed before being included in any community project.

Hard shading can be avoided on most of the roofs, though there will be some around the sports hall (to the southeast of the site). Trees along the margin of the site could also impact performance if left unmanaged – particularly on the eastern edge and possibly also shading the new Langley building. A site visit will be needed before an array design could be finalised.

2.4 Financial

The large size of this array and the high energy consumption mean that this site is viable as a standalone project, if assumed to be risk-free. Financial modelling suggests that it could repay a share issue in 11-14 years by selling electricity onsite at 17.5p/kWh (depending on how much free volunteer labour can be provided) and

thereafter be generating funds for community benefit – more than £265,000 by year 25[1].

As a standalone project, Keswick School could benefit to the tune of £119,100 over twenty years. At the price of 17.5p/kWh, the graph shown in Figure 2 shows how savings to the site could increase over time if the onsite PPA were to be tied to RPI inflation.

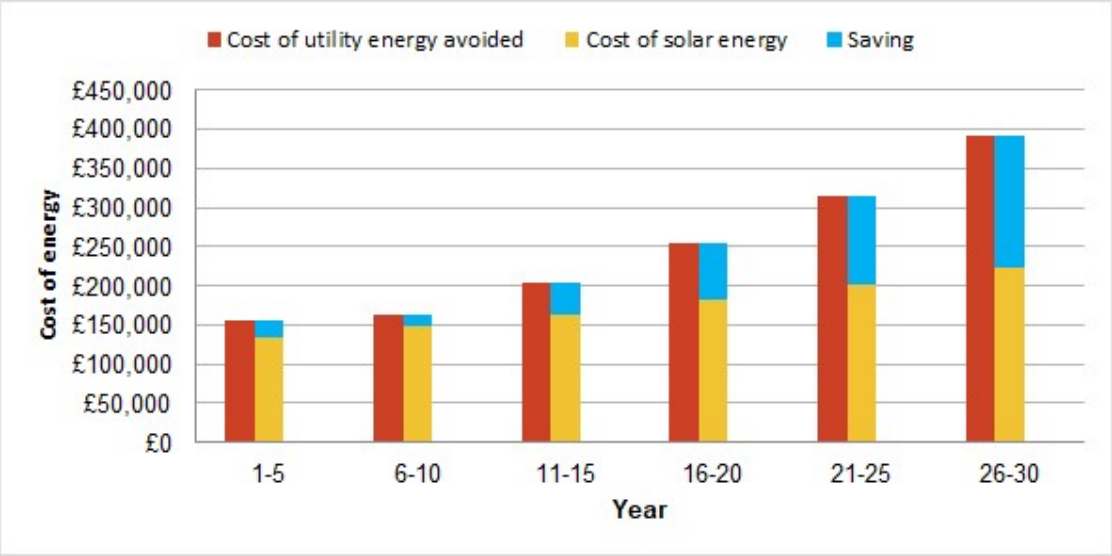

Figure 2 - savings over time for Keswick School as a standalone project

2.5 Planning and permitting

Keswick School lies inside the National Park and therefore has reduced Permitted Development rights. Instead of being allowed to proceed with only a relatively lightweight Prior Approval Application, a full planning application would be required for any photovoltaic arrays that 'front a highway'[2]. For this reason, the pitched roof of the Hewetson Building - the main, three storey 1990s teaching block that provides the frontage to the site as viewed from Church Lane to the south - has not been used to site an array. Whilst the array on the pitched roof of the sports hall could be considered to 'front' Vicarage Hill, it is set back by about 40m and screened from the road by extensive vegetation. Advice from local planning officer should be sought on this, and if necessary the array could be reduced or planning permission sought.

Electricity Northwest have confirmed that there are no capacity constraints that would affect the ability of an array of this size to get a connection at this location.

2.6 Ownership and engagement

Keswick School is run by Keswick School Multi Academy Trust, which also manages Bassenthwaite Primary School. The land and buildings are owned by a separate Trust,

[1] See section 7 for details of the assumptions used in the financial model.
[2] See the rules for Class J permitted development defined in Part 14 of Schedule 2 of The Town and Country Planning (General Permitted Development) (England) Order 2015.

the Keswick School Charitable Trust. Whilst there has been no decarbonisation plan or application under the Public Sector Decarbonisation Scheme, the Trustees have been very encouraging of efforts by the school administration to improve their environmental record, including by the installation of photovoltaics, so they are likely to be supportive. Staff also anticipate a significant level of support from the student body also.

The Trust expressed an interest in a project also encompassing a PV array at Bassenthwaite Primary School. This is a small school with fewer than 50 pupils and a small roof area, so it is not a plausible location for a community solar project as envisaged by this report.

3 Cockermouth School

Location: Castlegate Drive, Cockermouth CA13 9HF
What3words: ///fame.plump.cunning

3.1 Site description

Cockermouth School is an extensive secondary school with a sixth form and around 1,300 students on its roll. Like Keswick School it has several different buildings of significantly differing ages and construction, the oldest parts dating back to the 1950s and the newest less than ten years old. The most significant consideration at this site is the plan to demolish the 'original' school building – the area outlined with a red dotted line in Figure 3 below.

3.2 Technical

Avoiding the parts of the school that are to be demolished, it has been possible to produce an outline design for a 216kWp array as shown in Figure 3. The array is hosted on the Tech Block, North Wing and Modular Classroom building.

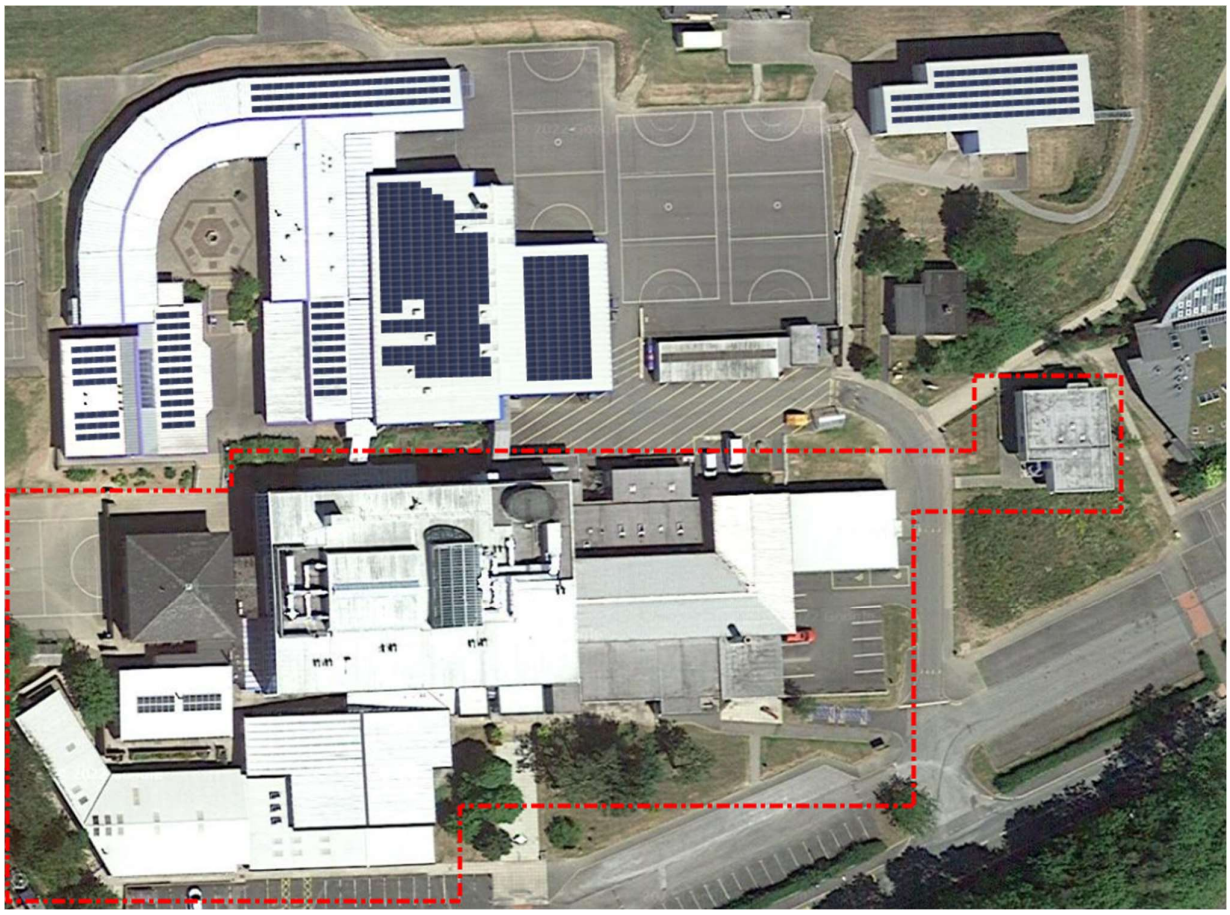

Figure 1 - Potential array layout at Cockermouth School. Red dotted line shows buildings awaiting demolition

Monthly energy consumption data have been supplied for the school covering the period from September 2021 to August 2022, during which time it consumed 645,559kWh, with the monthly profile shown in Figure 4.

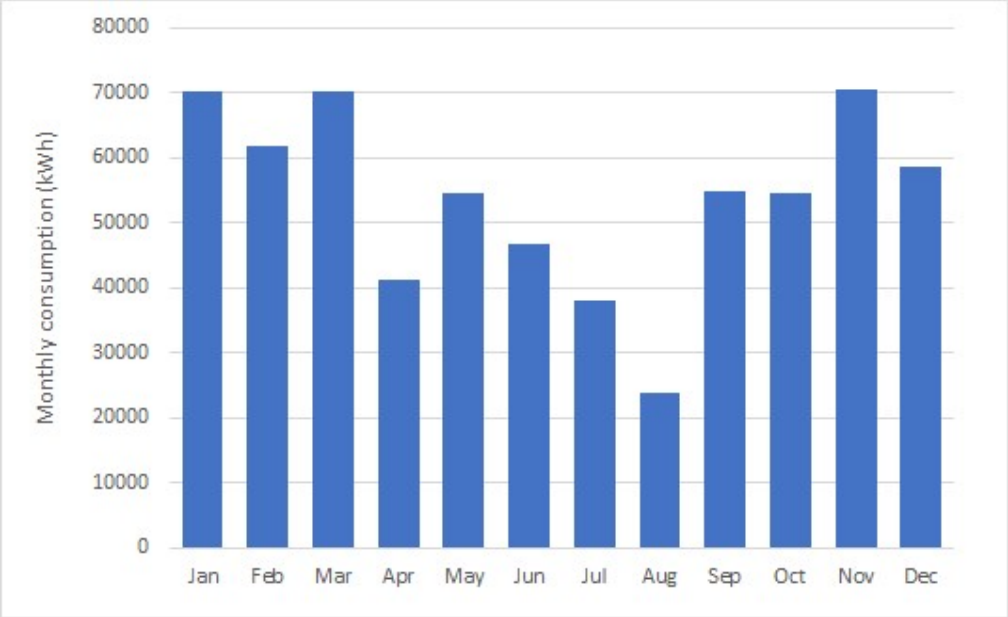

Figure 2 - Monthly electricity consumption at Cockermouth School
(data for Sep 21-Aug 22 shown in calendar order)

Modelling an array using these data gives the following results:

Array nameplate capacity	216.4kWp
Total annual yield	169,800kWh
Specific annual yield	785kWh/kWp
Annual onsite electricity consumption	645,600kWh
Self-consumption	77%
Imported energy avoided	20%

There is a modest existing PV array on the site, consisting of 24 panels on the Mike Wilde Eco Centre building (constructed 2005-6) to the east side of the site. It has not been possible to identify the capacity of this array but given its age it is likely to be around 2-3kWp, and therefore not likely to be significant in comparison to the overall demand patterns of the site.

This building also has a ground-sourced heat pump and a small wind turbine associated, 9m tall and most probably with a capacity of around 6kW. The output of this turbine is likely to have been significantly affected by the construction of the modular classrooms in 2014 (see Figure 5) and again is not expected to be significant in comparison with the overall demand of the site.

Aside from the GSHP in the Eco-centre, the rest of the site is heated with conventional gas boilers. It is likely that when the school is redeveloped heating will be electrified, so increasing the demand.

The school have expressed willingness to contemplate ground-mount solar or another wind turbine. Both of these are outside of the scope of this report, with onshore wind currently experiencing a de-facto ban in England.

Figure 3 - the wind turbine adjacent to the modular classrooms at Cockermouth School (still taken from Roland Hill YouTube video)

3.3 Roof structure and shading

Most of the roofs used for the modelled array are trapezoidal profile sheet steel roofs, either flat or with a shallow pitch of around 5 degrees, necessitating racked array mounting. The eastern part of the Tech Block slopes at around ten degrees and so has been modelled as a standard parallel mounted array. There is significant amounts of plant and other obstructions on the roof, most notably a tall chimney, but hard shading can largely be avoided. The main three-storey building to the south may have a limiting shading effect during winter months until it is demolished. The replacement building is expected to be built to the north of the remaining buildings so no shading effects will be caused.

As with all sites, a full structural survey should be carried out. In particular the strength of the modular classrooms on the northeast of the site will need to be verified. It is likely that their prefabricated construction will not be able to support the weight of ballasted racks, but it is also unclear whether the roof structure is strong enough to have fixed mountings attached.

There would be an opportunity to install new solar panels during construction of the new building, avoiding the costs of separate scaffolding. The school management have said that they would be open to this being done as part of a community project, and with the likely increase in electricity use as transport and space heating are electrified it may become an attractive option for all concerned.

3.4 Financial

As with Keswick School, taken at face value the available roof size and demand would support a standalone community solar project at this location if assumed to be risk-free. Capital could be repaid in between 11 to 15 years by selling electricity onsite at 19p/kWh depending on the level of free volunteer time available from the community organisation, with around £260,000 raised for community benefit by year 25.

Savings from the solar array could start at £14,400 in year one and total £199,500 over 20 years. The graph shown in Figure 6 illustrates the savings possible for the site from an onsite PPA price of 17p/kWh rising only with RPI inflation.

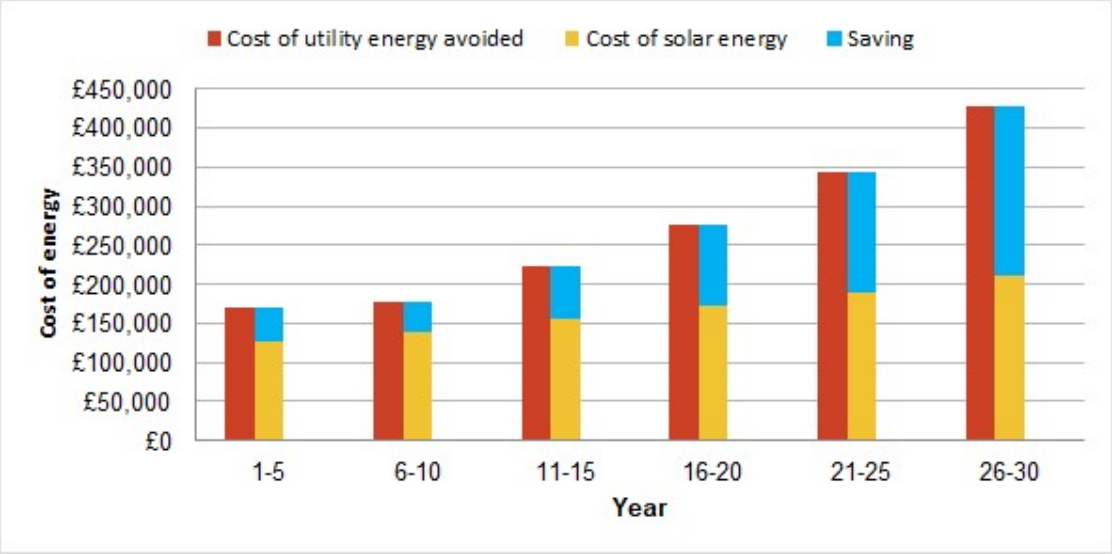

Figure 4 - Costs and savings for Cockermouth School over time as a standalone project

3.5 Planning and permitting

Cockermouth School is situated approximately 1km outside of the boundary of the National Park, and is outside of the Cockermouth Conservation Area, so it has full Permitted Development rights and should face no particular difficulties gaining Prior Approval for a solar array.

Electricity Northwest have confirmed that there are no capacity constraints that would affect the ability of an array of this size to get a connection at this location.

3.6 Ownership and engagement

Cockermouth School is a Single Academy Trust, with the Trust owning the buildings outright, according to the Business Manager. This simplifies to some extent the process of getting agreement to lease roof space, but as with all Academies, the approval of the Department for Education will still be required when negotiating a lease.

Cockermouth School can claim to be an early mover in the challenge of tackling the climate crisis. It was the first secondary school in Cumbria to be awarded Eco School status and was awarded a Green Flag award for its performance. The Mike Wilde Eco-

centre was the first purpose build eco-centre on any school in the country, inspired by the Eden Centre in Cornwall, and aiming for energy neutrality with the installation of a small solar array and wind turbine already noted. There was a surge of interest in 2019 with a "Green Planet" environmental group being set up and pupils attending the Cumbria Youth Climate Summit. It is likely that a solar project will find significant support within the school community.

4 Cockermouth Leisure Centre

Location: Castlegate Drive, Cockermouth CA13 9JR
What3words: ///buying.published.fears

4.1 Site description

Cockermouth Leisure Centre is based around a 130-year-old former Army Drill Hall which was converted into the current leisure centre. A second building housing a 25m long pool was added in 1978 and the original building was extended in the 1990s to add new changing facilities and an indoor climbing wall. The most recent part of the building is the foyer area with its distinctive curved roof, which opened in 2008.

There are associated buildings to the east which are used by the Army Cadets.

The leisure centre is currently open seven days a week, 6am to 9pm on Monday to Friday, 7:30am to 3pm on Saturday and 8:30am to 3pm on Sunday.

4.2 Technical

The former Drill Hall has a roof that is unsurprisingly problematic for its age, so the following array design is proposed that avoids this roof:

Figure 1 - Modelled array design at Cockermouth Leisure Centre

There will be some shading of the curved roof from the ridge of the Drill Hall during the mornings. The westerly aspect of the array in general creates a generation pattern skewed to the afternoons, which does not complement the afternoon closures at weekends. However, monthly consumption figures supplied by the site show that the site has a high annual consumption figure of 212MWh, so we can be confident of a good level of self-consumption.

Half hourly electricity consumption figures were provided for the year to December 1st 2022. The monthly totals for these figures are shown in Figure 8.

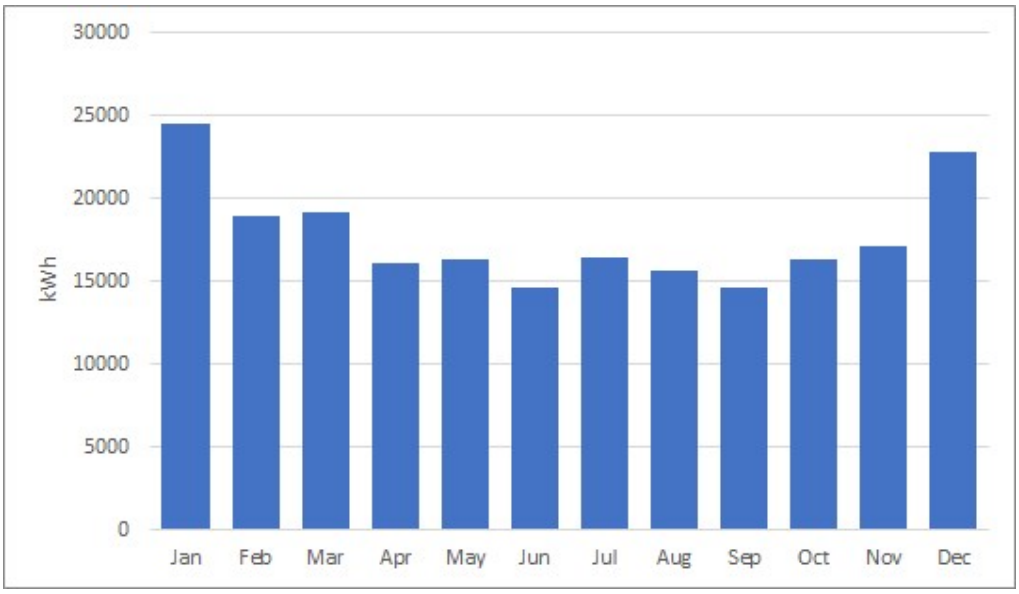

Figure 2 - Monthly electricity consumption profile for Cockermouth Leisure Centre (in calendar order)

The average electricity consumption profiles across a day reflect the opening schedule as might be expected:

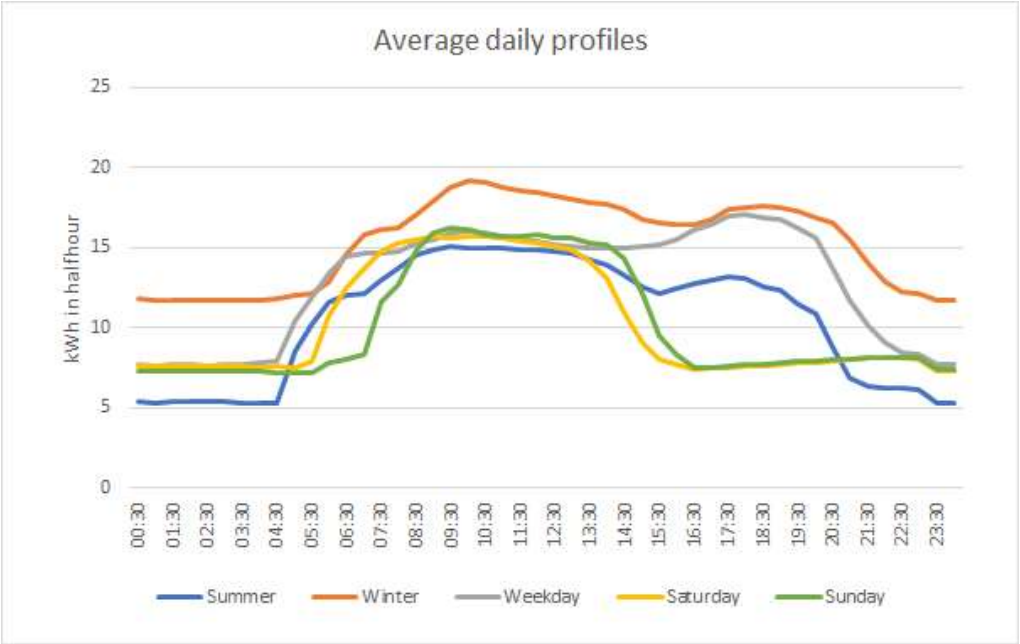

Figure 3 – Average electricity usage profiles for Cockermouth Leisure Centre

The following results were obtained from modelling the array:

Array nameplate capacity	106.5kWp
Array annual yield	85,300kWh
Specific annual yield	801kWh/kWp
Annual onsite electricity consumption	212,400kWh
Self-consumption	72%
Imported energy avoided	29%

Although heating for the site is provided by gas, swimming pools typically require a high level of electricity input year-round for pumping, filtration and ventilation. Gymnasia will usually incorporate air conditioning, with demand for ventilation and air conditioning increasing in summer. The long opening hours for most of the week help to increase the self-consumption.

4.3 Roof structure and shading

As already noted, the main hall has an old roof which is requiring frequent repair. At the time of making contact it was undergoing repair work to storm damage, with partial replacement of the roof anticipated in coming years. The ability of the 1978 swimming pool building to support a rooftop array is not guaranteed. A full structural survey will be required, but the structure appears to be based around a steel beam construction, with wooden cladding to the exterior and a roof surfaced with bituminous felt. Mounting an array to a felted roof requires that the waterproofing layer is pierced to create fixed point mountings for the array. These mounting points must be carefully waterproofed before the array is fixed. This will increase the cost of installation and also bring an increased risk of failure of the waterproofing.

The foyer roof is of trapezoidal profile steel construction again based on steel beams (this time curved) and steel roof purlins. This is very likely to be able to support the load of a PV array with few problems, but should be included in the structural survey for completeness.

4.4 Financial

The additional costs of the installation, combined with the small available roof space means that this site would have to charge 22.5p/kWh for onsite usage to be viable as a standalone installation, even if volunteer labour could be guaranteed from a community energy group to manage much of the administration costs. As a standalone scheme, it offers savings of around £4,600 in year one. This high unit price and modest savings mean that it would in all likelihood not be an attractive offer.

As a component to a portfolio where overhead costs are shared, however, it can make a decent contribution. This could offer the site savings of around £8,300 in year one and a total of £128,000 over a 20 year project. The graph shown in Figure 10 illustrates the savings possible for the site from an onsite PPA price of 16.5p/kWh (representing a 45% discount on the assumed price of 30/kWh) rising only with RPI inflation.

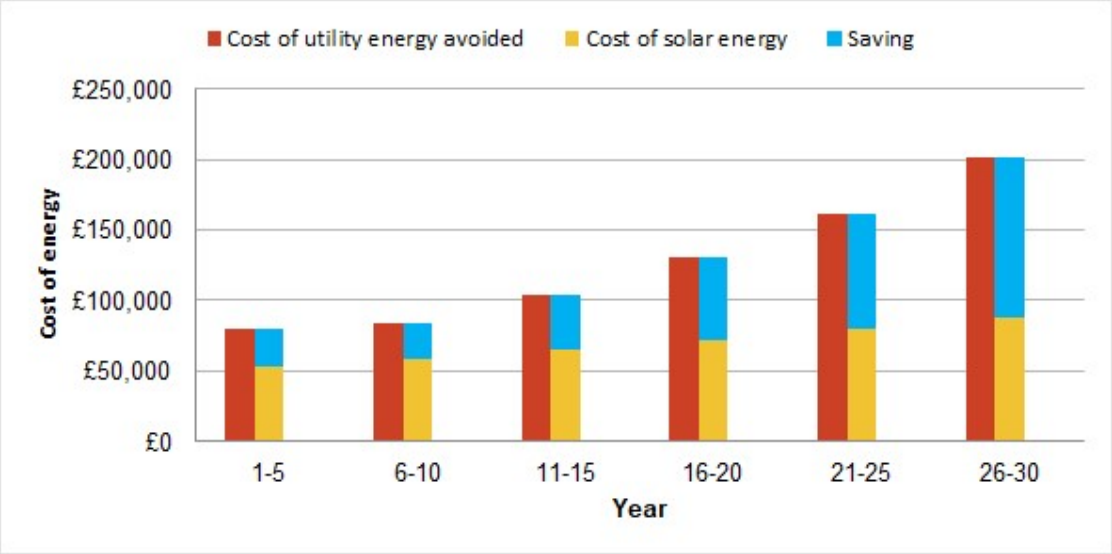

Figure 4 - Modelled energy costs and savings for Cockermouth Leisure Centre as part of the portfolio

4.5 Planning and permitting

Cockermouth Leisure Centre lies just inside the Cockermouth Conservation Area, and therefore does not enjoy Permitted Development rights for rooftop solar. The array on the pitched roof of the swimming pool faces onto the car park and is clearly visible from the access road. It also directly faces the Tute Hill motte, a scheduled ancient monument, which is situated just to the west of the car park. It is therefore likely to be considered a sensitive environment and would require a full planning application.

Electricity Northwest have confirmed that there are no capacity constraints that would affect the ability of an array of this size to get a connection at this location.

4.6 Ownership and engagement

The building is owned by Allerdale Borough Council but the facility is currently managed by Better, a trading brand of GLL (Greenwich Leisure Limited). GLL is a social enterprise with significant commitments to sustainability, and so is likely to be very supportive of any rooftop solar project. However, the building itself is owned by the Council so any lease would have to be signed with the Council separately to a PPA with the site operator. Elsewhere, Councils have built the purchase of electricity from a community owned array into site management contracts, protecting the community energy organisation in the event of the site management contract changing hands. This should be uncontroversial, given the reduced cost of electricity from such an array.

5 Eaglesfield Paddle Primary Academy

Location: Eaglesfield, CA13 0QY
What3words: ///skirting.legroom.foreheads

5.1 Site description

Eaglesfield Paddle Primary Academy is owned by a Single Academy Trust and has 219 pupils between the ages of 3 - 11. As with most primary schools it is principally active between the hours of 9am and 3pm, though there is also a breakfast club and an after-school club, and the building is often leased for activities and events at evenings, weekends and during holidays.

Much of the site is only single storey. There is an existing array consisting of two solar panels already in place on a SSE facing pitch on the main hall. It is not clear what condition this array is in, but it is too small to materially affect the demand of the site or the profile of the net demand.

5.2 Technical

The following outline array design (total capacity 47.75kWp) was used to model the generation possible on the site:

Figure 1 - Potential array design for Eaglesfield Paddle Primary Academy

The school was able to supply us with a years' worth of energy bills from August 2021 to July 2022. The pattern of monthly usage across the year (reorganised into calendar order) is shown in Figure 12.

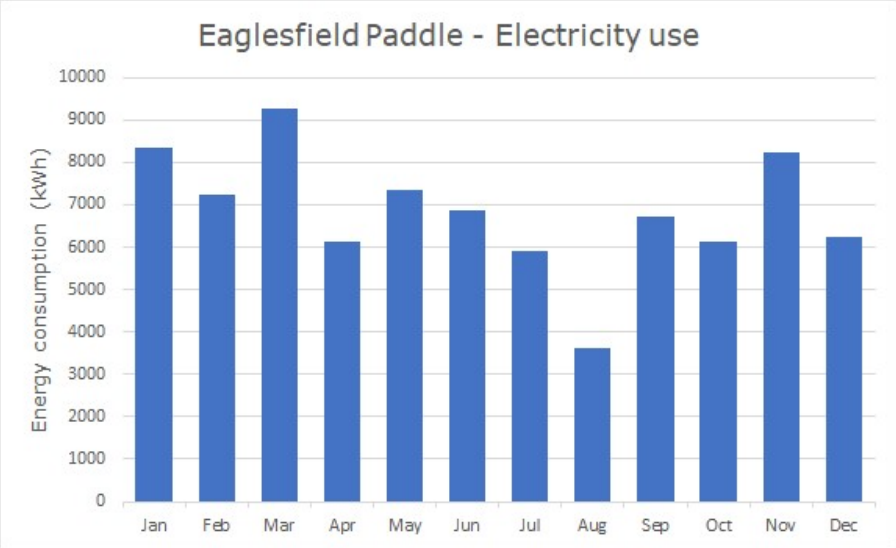

Figure 2 - monthly energy use at Eaglesfield Paddle Primary School

The results of modelling the site on this basis are:

Array nameplace capacity	47.75kWp
Total annual yield	36,900kWh
Annual specific yield	773kWh/kWp
Annual onsite electricity consumption	82,052kWh
Self-consumption	68%
Imported energy avoided	31%

The site upgraded to a biomass heating system within the past ten years, so significant future changes in onsite consumption are only likely if EV charging is installed on site. The school would not be a plausible site for public charging but staff and visitor EV charging could be anticipated in the medium term, increasing the self-consumption figure.

5.3 Roof structure and shading

Parts of the building itself date from 1814, but the majority of the school is only about 20 years old. The roofs are made of traditional riven slate, and a conversation with the site contractor confirmed that they are in good condition and there are no plans to replace or repair them in the near future. The roofscape is complex with different parts pitched between 22 and 40 degrees, as measured from architectural plans submitted with planning applications. Some of the roof is not easily accessible for PV installation.

There is no significant shading from nearby obstacles, though there will be some small shading impacts from adjacent roofs during the early morning, and one tree (marked

above with an 'A') within the school area that could impact the adjacent row of PV panels if allowed to grow without any management.

5.4 Financial

The small size of this array would not work as a standalone solar project prospect; whilst the modest income from selling electricity onsite could cover the overheads of managing the administration of the system whilst providing a modest return to investors, this would require considerable incomes of free volunteer labour, would not support any discount on grid price, and at the end of the project would not have sufficient capital to repay the shareholders.

As part of a portfolio of all four sites, however, Eaglesfield Paddle Primary School would make a small contribution, and could benefit from solar panels to the tune of around £49,100 over a period of 20 years, depending on the price agreed for onsite usage. The graph shown in Figure 13 shows how savings to the site could increase over time if the portfolio discount of 45% were applied to onsite electricity sales and the PPA were to be tied to RPI inflation.

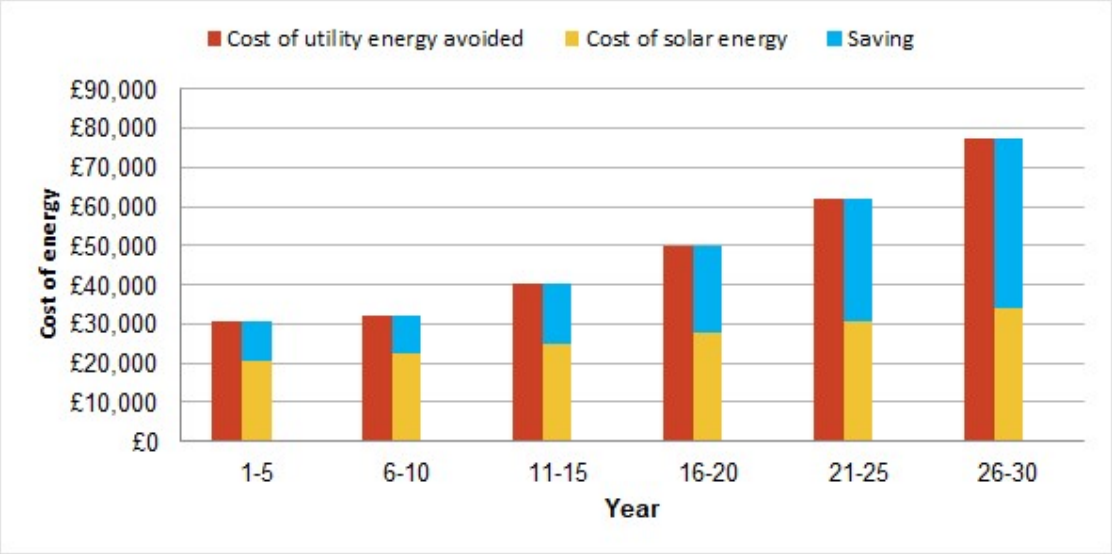

Figure 3 - savings over time for Eaglesfield Paddle School as part of a portfolio

5.5 Planning and permitting

The site is just within the National Park boundary – in fact, the north and west boundaries of the site are the edge of the National Park. Permitted development therefore cannot be taken advantage of for arrays that 'front a highway'.

The arrays at this location face at 90 degrees to the adjacent highway, the A5086, and thanks to the screening from trees to the south of the site cannot be viewed except at an oblique angle when immediately adjacent to the school (see Figure 14).

Figure 4 - Screening of array from adjacent highway

This also mitigates any concerns about potential glint and glare affecting the highway. The site is surrounded by farmland so there are no concerns about effects on adjacent properties. It would therefore be possible to proceed with only a standard Prior Approval application at this site, avoiding the need for a full planning application.

Electricity Northwest have confirmed that there are no capacity constraints that would affect the ability of an array of this size to get a connection at this location.

5.6 Ownership and engagement

Eaglesfield Paddle Primary Academy has long been keen to make positive environmental efforts, both for the sake of their educational offer and to reduce their environmental impact. The school business manager engaged enthusiastically with the process and the school is keen to see progress with a solar installation in any way possible.

As a Single Academy Trust the school has some autonomy to engage with the process, and has no established Decarbonisation Plan. The land and buildings belong to a separate Trust – the Eaglesfield Primary School Trust (EPST) - the school having been a Voluntary Aided Church of England school prior to conversion to an academy. This increases the number of stakeholders involved, as any lease agreement will have to be negotiated with the EPST, separately to a PPA with the Academy Trust. Also, as with all Academies, the approval of the Department for Education will still be required when negotiating a lease.

6 Solar site shortlist

The following sites comprise the original shortlisted sites deemed the most viable of the 61 submitted.

Site	w3w or grid ref	Area	Address	Postcode
Cockermouth School	///fame.plump.cunning	Cockermouth	Castlegate Dr, Cockermouth	CA13 9HF
Cockermouth Leisure Centre	///buying.published.fears	Cockermouth	Castlegate Dr, Cockermouth	CA13 9JR
James Walker	///enough.described.economies	Cockermouth	Gote Road, Cockermouth	CA13 0NH
Jennings Brewery	///desktops.shins.that	Cockermouth	Brewery Ln, Cockermouth	CA13 9NE
Lloyd BMW Dealer	///deprive.camcorder.lipstick	Cockermouth	Laithwaite, Low Rd	CA13 0HH
Caterite and Grapevine Buildings	///hydrant.myths.butterfly	Cockermouth (Embleton)	Embleton, Cockermouth	CA13 9YA
Greta Motor Bodyworks	54.605183, -3.141042	Keswick	Industrial Estate, Southey Hill, Main St, Keswick	CA12 5NR
Inn on the Square	///painting.shrub.page	Keswick	Market Square, Keswick	CA12 5JF
Keswick School (Secondary)	///mirroring.coats.pays	Keswick	Vicarage Hill, Keswick, Cumbria,	CA12 5QB
King Kong Climbing Walls	54.612791, -3.045732 ///motive.takeovers.lives	Keswick	Threlkeld Quarry	CA12 4TR
McKane printers	54.599830, -3.134603	Keswick	Southey Yard, Southey St	CA12 4EF
Millfield Retirement Home	///detect.alternate.investor	Keswick	28 Penrith Road, Keswick	CA12 4HB
National Trust Offices	///cursing.village.prospered	Keswick	Bowe Barn, Borrowdale Rd	CA12 5UP
Skiddaw Hotel	///ranked.price.snowboard	Keswick	31 Main Street, Keswick	CA12 5BN
St Herbert's Primary School	///encloses.camera.signified	Keswick	Trinity Way, Keswick	CA12 4HZ
The Borrowdale Hotel	///grandson.rolled.nipped	Keswick	Borrowdale Valley, Keswick	CA12 5UY

7 Notes on modelling assumptions

The rooftop solar arrays on each school were modelled both in isolation and as if part of a professionalised community solar portfolio. Most such portfolios rely heavily on unpaid volunteer time; this was a variable that could be switched in and out in the model to examine the effect that this has on the profitability.

In each case the following quantitative assumptions were used:

Energy costs

Energy sales onsite were priced such that onsite sales would begin offer an initial 45% discount on their electricity bills.

Where sites did not provide the unit rate from their electricity bills a conservative figure of 30p/kWh was used, reflecting the rates currently offered for nondomestic sites under the Energy Bill Relief Scheme.

Grid export prices, although currently high during the energy crisis, have been modelled as descending during the early years of the project back to something like a normal pre-spike level by year four and then increasing only at the average long time rate of retail energy price inflation (4.9%). This is why the total savings presented across a 20-year project are less than 20 times the first-year savings: the level of savings achieved in the first year decrease quickly and do not recur until around year 13.

Inflation has been similarly modelled as reducing from its current spiking level back to a long term average of 2.5%.

Figure 15 shows the effect of these assumptions for a site starting at 30p/kWh projected for 30 years.

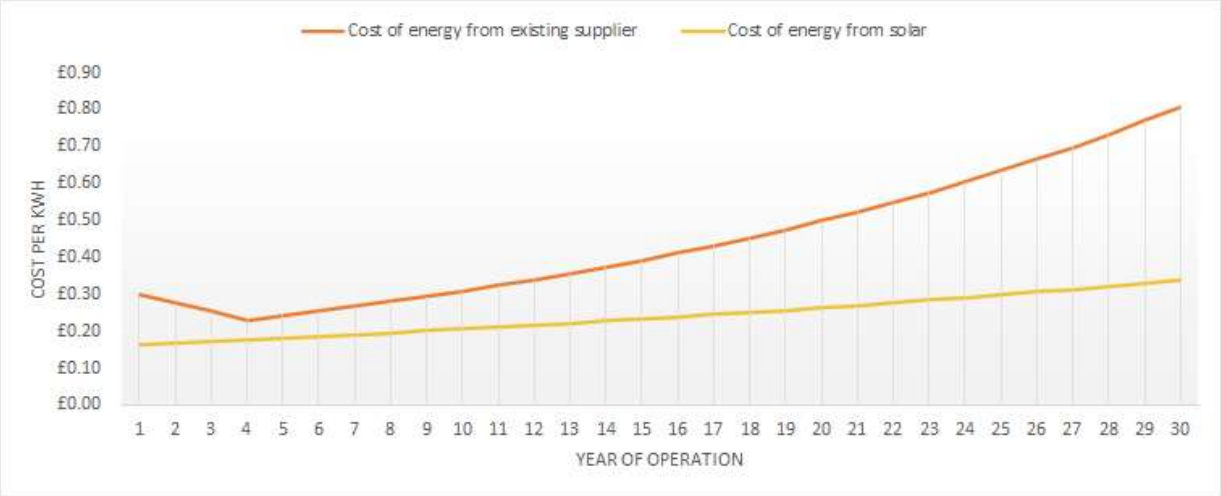

Figure 1 - Price projections for a site with import costs of 30p/kWh in year 1

Installation

Mid-range 375Wp panels were used in the site modelling, representing a slightly pessimistic case for an installation that is still a year or more away from commissioning. We are seeing many installations taking place using 400W+ panels now so this is likely to be the norm when the sites are commissioned.

Installation costs were estimated on a sliding £/kWp scale, banded based on the size of the installation and with uprating applied to account for complex roofs such at the bituminous pitched roof at Cockermouth Leisure Centre. Installation costs for this portfolio range between £805/kWp and £910/kWp.

Other notes

The PV array assets have been depreciated over 25 years.

The cost of administering the portfolio is a complex estimation based on the size of the arrays and the size of the community organisation formed to manage them. The following components go into the operational expenses:

- Metering and monitoring
- Insurance (for array as well as directors and public liability)
- Inspection and cleaning
- Component replacement
- Billing
- Management and administration of finances, membership and company

No site visits were carried out for this desktop assessment, with all data collected from the site owners and/or occupants alongside publicly available information.