

Application by BSSL Cambsbed 1 Limited for East Park Energy
Response to Technical note on replacement Works EN010141/DR/8.36
From Shaun Woodward – Local Resident - Opposing Development

Dear Mr Sword

Due to a worsening illness and the subsequent death of my father two weeks ago, I have needed to move North to help [REDACTED]. I am currently arranging the funeral which is next week. This has negated my ability to fully engage with the later stages of the examination process for a number of months now. Please accept my hurried comments below in good faith. I hope you are able to give the points raised suitable consideration.

Your sincerely

Shaun Woodward

Response to EPE comments about replacement of solar panels at 20 year mark.

1/. 2.3.1 Components – Table 1 Indicative Lifespan of Scheme components

This shows material changes from the original application.

a/. String inverters will require changing at 20 years, Centralised inverters at 20 years, Solar Transformers at 20 years. Fencing replacement is now reduced to 10-20 years potentially requiring 60 kilometers of fencing and supports requiring replacement up to four times during the life of the scheme. If fencing embeds with hedging and planting this will be a time consuming and disruptive task and require considerable manpower. This has significant works associated with it. This work should be accurately reflected and all associated traffic and GHG/carbon impacts included in overall calculations.

b/. The BESS units and Auxiliary Transformers are shown for replacement at 20 years but research suggests depending on usage the effective life of the cells may be much less, requiring a third or even fourth replacement over 40 years. Can the applicant confirm with total confidence the BESS units will only be replaced once in 40 years? If guarantees cannot be given that only once replacement will occur, allowance for the additional effect on works, traffic, workers on site, and GHG/Carbon calcs should be included in all calculations now, not 'pushed down the road'.

c/. The original application stated about 3.5 million metres of cable of various gauges using three main types. Replacing 10% of cabling as stated is about 350,000 metres. A considerable undertaking, from initial, fault finding, then replacing. Even if replacement is evenly spread over 40 years this is still 8750 metres per annum. Nearly nine kilometers per annum which will require workers and traffic.

Have allowances been made for additional effect on works, traffic, workers on site to cover the work above? For clarity I suggest the precise GHG/Carbon effects for ALL replacement works should be itemised and included in the relevant section of the application.

2/. Paragraph 2.3.5

This section mentions panels will be replaced:

"Larger replacement campaigns may also be undertaken where a particular panel model becomes obsolete, where spare parts are no longer readily available, where compatibility with inverters or monitoring systems becomes an issue, or where replacement of a wider group of panels is more efficient than repeated piecemeal interventions".

What interchangeable spare parts are on sealed solar panel units, and this suggests replacement of non-compatible parts in future may require more extensive replacement activity, and therefore more extensive labour-intensive work than the routine 420 panel/5 man team swap over outlined in the application.

3/. Panel degradation and case for not treating as 'maintenance'

In section 2.3.9

There is a clear push by the applicant to remove transport restrictions for the extensive 20 year replacement works, by converting it's status to maintenance which would ignore the traffic and effects of certain types of work as highlighted above in my point 2/.

This is totally unacceptable. ALL works during 'Construction', '20 year Replacement', and 'De-commissioning' phases should be subject to strict traffic controls to protect the locality, the roads, historic buildings, and the welfare of local people, the amenity.

To clarify : Whether the panels are replaced in batches of 20% over 5 years or 100% in 2 years, the number of transport movements, diesel use, GHG and carbon calculations will be broadly the same, perhaps even increased with this piecemeal approach.

I wish to highlight that this total replacement of all panels is only required because the performance of the panels will have degraded so much after 20 years that and the developer is replacing ALL of them for new panels at very significant cost for commercial reasons. This reflects just how 'significant' the income drop from degraded panels will be to make such a total comprehensive exchange remotely worthwhile.

Therefore that 'significant' cost MUST be less than lost income from energy/income/subsidy by continuing with the original underperforming panels at the 20 year point.

For example, if a typical panel bought in bulk costs around £80, to replace 695,760 panels is a £55 million pound investment, without transport or installation or any replacement cable or infrastructure costs.

I argue that in reality, this '20% pa exchange approach' is inefficient, and is unlikely to happen simply because it will be less profitable for the operator for the following reasons:-

- If all panels become operational at broadly the same time, logic dictates that their performance will degrade at roughly the same rate (although there may be minor discrepancies due to panel brand, where a panel has been sited, and other site factors). This means optimally they will all need changing at the same point.
- If the developer is using a system of only 20% changeover over five years treated as 'maintenance' it means at best they will be removing 50% of all panels before they reach their maximum 'degraded' level for replacement (ie. replacing in years 18, 19 and first half of year 20), whilst 50% will be left running inefficiently for up to another two and a half years... ie. Replacing in the second half of year 20, then yrs 21 and 22. These are significant numbers of panels!
- Each 20% replacement 'campaign' of the 695,760 panels is nearly 140,000 panels. This constitutes a significant solar scheme in it's own right, which at 80GW would be well over the original 50GW threshold for NSIP's, and regarded as an NSIP in it's own right.

- If the degraded panels become SO inefficient that EPE are happy to finance replacing ALL of them with a 5 year replacement strategy, that leaves tens of thousands of panels performing inefficiently in place for up to two and a half years whilst also removing panels early which are still working within tolerance. That doesn't make sense... The income loss of executing this strategy must be substantial.
 - I believe if the DCO grants 'maintenance' status for this work, which EPE seek for the replacement phase of all panels, I believe they will undertake it in much less than 5 years for commercial reasons as explained above. It must be in their commercial interests to do it as quickly as possible once the panels reach an unacceptably degraded level of performance. Any compression of the panel replacement schedule, even a small one will concentrate construction traffic and activity unacceptably on an unchecked and open road system. This should be honestly and openly reflected in the application, and clear restraints included in the DCO to prevent changes to compress replacement and use open roads etc in 20 years time. It must be controlled and restricted in the DCO now.
- The applicant is at pains to point out traffic effects will be negligible for the 20% renewal stages, and seeks these works to be regarded as 'maintenance' in the DCO and as such approval from Local Authorities will not be required unless over this level, giving entire freedom to use any routes and roads to undertake this route.
- I strongly dispute this approach, which should be firmly locked down in the DCO, with the same restrictions as the original construction phase. So as not to make a mockery of the concerns of interested parties and the original restrictions for the construction phase.

To reconfirm: 20% of 695,760 panels is nearly 140,000 panels. This constitutes a significant solar scheme in its own right, which at 80GW would be well over the original 50GW threshold for NSIP's, and regarded as an NSIP in its own right.

4/. Policing the DCO

In addition which entity will be policing how many panels are being changed, traffic levels, and when changes are undertaken in 20 years time? Particularly if no local authority trigger is needed within the DCO. It gives open, potentially unaccountable flexibility for the developer to do what they wish.

If the DCO grants such permission, and the works are labelled in the DCO as 'maintenance' activity, instead of a major total refit akin to the construction phase of the entire site with the same restrictions all roads can be used as currently drafted. The applicant is seeking to enable all types of vehicles to be used on all roads, and no longer tied to any fixed routes required during the initial construction phase. If agree, effectively all traffic required to replace all panels and infrastructure will be enabled to drive where it wants to, including HGV's through total unsuitable roads and from all directions including driving past Graded and listed buildings. This must not be allowed to happen. The number of vehicle movements over the roads will be the same irrespective of flexing over time. Historic building foundations will not respect the fact that the replacement timeline for passing HGV's is expanded.

5/. Paragraph 2.3 12 - Query over physical replacement of all panels at 20yr mark.

The applicant states that a team of five workers can replace 420 panels per day at the 20 year point of the scheme, when the initial set of panels are degraded to a point which is commercially unacceptable to the applicant.

Five people in a team or, or multiples of five are identified with roles as:-

- Three to unbolt, and fix the new panels,
- One to manages pallets and telehandler
- Fifth team member to reconnect and replace any damaged cabling and check connection.

I contest this is not practically possible and wildly optimistic on the following grounds:

- 420 panels assuming a 7.5 hours day (no breaks) is about 1 panel replacement per hour.
- This should include manpower and time for loading, transporting and delivering those panels from the site 'D' storage warehouse, then lifting off the delivery vehicle and moving to the required part of the scheme (which could be up to 6 miles away). They will be installing the 420 replacements whilst carefully disconnecting, unbolting, and removing the 420 old panels. So physically they are handling 840 panels and reconnection during the replacement process, not 420.
- After 20 years the new panels are unlikely to be of the same manufacturer or exact style, perhaps not even the same size, so it may not be so simple to exchange old for new. I doubt the mounting frames will need replacement or much modification but does the applicant know? How can they know, in which case their calculations is guesswork only. The applicant says they don't know the design or supplier for future new panels so any claims of replacement and any credible rate of installation cannot be verified.
- The newly delivered panels will be cling wrapped or banded which will also generate considerable waste packaging which will require handling. If it's windy this will be especially important to avoid polythene wrapping being strewn across the site. It all takes time and people.
- After 20 years the fixing on galvanized steel framework may well be corroded. Removing freshly installed bolts and/or fixings is not the same as removing 20 year old weathered and potentially corroded fixings. The galvanised steel support structure specified will rust at contact fixing points where the zinc coating is damaged. Even using angle grinders or other means to remove panel fixings will take additional time, and new any fixings will need to be positioned and secured and new string invertors installed.
- The applicant states that the removed panels will either be 'recycled' panels must be done with care, carefully restacking them onto pallets and then onto trucks to return to storage in the operational building in Site 'D'. They cannot be manhandled or damaged during removal. It will require time to stack panels on pallets, strap down, protect and wrap to avoid them falling off the trucks on the (up to) six miles journey back to the Site D depot building and for transit beyond which may require additional repacking depending on destination. More time and manpower.
- I note the storage building stated in the DCO is being now used for storage of fencing, transformers string inverters cabling etc. It must have elastic walls! ...or they are all to be delivered 'just in time'... very convenient on paper but unlikely. For example, are 20% of the Chinese panels (140,000 panels) to be delivered from the Felixstowe docks on 234 articulated lorries... just in time? I doubt it. Maybe 70,000 panels on 117 artics, or maybe 35,000 panels on 59 artics... I don't think even this quantity would fit into the storage building... 59 containers is a large volume... If not they will need to be delivered from Site D and placed in pallets between the arrays. More time more labour. If storage is between arrays before installation they will also be exposed to theft without extensive security – More manpower and time.
- To break down 'just in time' deliveries to even smaller quantities than this may be possible but breaking down loads into

ever smaller quantities delivered over long time frames on multiple shipments from China risks non delivery, late delivery, insolvency of manufacturer, change of product spec or potential price hikes. I think this developer may buy and store in bulk elsewhere before bringing into the site to achieve 'just in time'. This means double handling, will increase carbon footprint and add traffic movements from Felixstowe to storage facility, and then 'just in time' storage to site. This should be accounted for accurately if employed.

- Clearly `If the applicants information is incorrect as potentially indicated by the GHG calculations, traffic movements, and the number of workers on site, and commuting journeys relative to what is claimed.

Can the developer provide physical proof for this speed of refit with 5 person teams, when all aspects of the installation are included? I think not.

6/. Site parking for Maintenance (20% panel replacement)

I note the applicant is proposing each site will have car parking for many cars, to accommodate use of all roads during the '20% per annum maintenance' change of panels, but this will still require substantial numbers of people, and if the DCO is granted as drafted the workers will be driving on all normal roads within the locality unrestricted. This should be accurately defined and limited to controlled access to all sites at the 20 year 'Replacement' stage .

7/. Water Supply

Today 10th July, Anglia water placed a hosepipe ban on restrictions on water use for this area. In other parts of the country, the same is happening.

What provision for a water supply has EPE secured with Anglia water? How will the applicant access water for the effective running of the site, particularly cooling BESS units and in case of a firefighting a catastrophic incident, or thermal runaway? The proposed tanks will give some degree of cover but not for very long if multiple pumps are engaged. See volume rates for fire tender water pumps.

8/. Panel Washing

The total glass area of the panels is approx. $1.3 \times 2.4\text{m} = 3.12\text{SqM}$ per panel. $695,760 \times 3.12 = \text{approx. } 2.2 \text{ Million sqM}$.

Despite the applicants claims that the panels will wash them selves, this is unlikely with a 30 degree angle, particularly when farmers are harvesting and the air becomes loaded with dust. It settles on our homes locally so it will also settle on panels along with bird dropping and other detritus. Assuming say a meagre 500ml per panel for washing, this equates to 1.1 million litres of water just for a single wash. What provision has been made to use such quantities of water, and how will the applicant access this water and justify it's use. Failure to clean panels at least once per year after harvest and leave dust on the panels could lead to hot spots and premature panel failure, but will also severely impact on the panels efficiency and the operators income. The activity of washing will require considerable manpower and vehicle movement on this scale which should also be factored into carbon and GHG calcs, traffic movements and labour commuting to site.