Planning Inspectorate
Arolygiaeth Gynllunio

Hearing Transcript

Project:	Lime Down Solar Farm Project
Hearing:	Transcript of issue specific hearing 1 (ISH1) - Part 2
Date:	22 April 2026

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FULL TRANSCRIPT (with timecode)

00:00:08:06 - 00:00:20:11
Okay. Hello everybody. It is now 12:05 and we will resume this issue specific hearing. Please do take a seat. Um, and quieten down. Thank you.

00:00:26:02 - 00:00:52:04
Okay, so we'll pick up with item five of the agenda, which is consideration of alternatives. Um, can I start by asking the applicant to provide a brief overview, up to ten minutes of, um, how reasonable alternatives, including locations, alternative alternative technologies, um, have been considered and how these have informed and shaped the proposed development. Please.

00:00:56:17 - 00:01:30:00
Rosie Horton, on behalf of the applicant, sir, I'll provide a brief overview on the reasonable alternatives considered for the scheme in terms of locations, alternative cable route corridors bears optionality and alternative technologies. My colleagues James Daryl and Chris Jackson will then be available, if required, to provide some further details regarding how alternatives have informed and shaped the proposed development, particularly in the context of the Cotswolds national landscape and alternative construction, traffic routes and landscape and visual.

00:01:30:05 - 00:02:03:13
But I'll start with my summary, and then perhaps you could just confirm whether you need any additional details on those points. So first, just to briefly touch on the overall approach taken to alternatives, my colleague Mrs. Broderick has already mentioned this in relation to agenda item three. So I'm not going to go into a huge amount of detail other than to say that there is no general requirement in the relevant maps to consider Alternatives, or to establish that the proposed project represents the best option from a policy perspective.

00:02:03:15 - 00:02:39:23
And that's contained within MPs and one paragraph 4.3.9. However, there is an obligation under regulation 14 2D of the EIA regulations to provide a description of the reasonable alternative studied and an indication of the main reasons for the options chosen and the applicant's consideration of alternatives is therefore focused on meeting that test. There are also specific circumstances under the NPS where alternatives must be considered, and this project previously mentioned the sequential and exception test and where those specific circumstances apply.

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Those tests have been met within the application documents. The applicant has carried out a proportionate assessment of alternatives, and that's in line with NPS. M1 paragraph 4.3.22, which makes a point that consideration of alternatives should be carried out proportionately. Moving then on to alternative locations considered as part of the site selection assessment. The alternative locations that have been considered by the applicant are set out in the Site Selection Assessment Report, and that is at is volume three.

00:03:16:19 - 00:03:49:05
Appendix four one, which is AP 185. To briefly summarize, 12 potential development areas or PDAs were assessed against standardized criteria, and that included PDA ten, which forms the solar PV sites for the scheme. Of all the PDA is assessed. Major constraints were identified for all of them except for PDA ten, and the major constraints identified for the other PDA are set out in detail in annex D of the Site Selection report.

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App 185 and the relevant table start at page 82 of that report, and those constraints varied between the PDAs, but included items such as nearby heritage assets, flood risk and site size, which meant that those PDAs were discounted. The assessment of PDA ten, which is the proposed solar PV sites for the scheme, didn't reveal any major constraints within the assessment and the assessment criteria that were applied for site selection.

00:04:22:13 - 00:05:05:27
There are areas of flood zone three near Cawston and Foss Farm, and small areas at risk of surface water flooding. PDA ten is mainly grade eight grade three agricultural land with some smaller sections of grade two, and overall it was considered that PDA ten is suitable for the scheme. In addition to the PDA that have been assessed, the applicant has also carried out two high level check and balance exercises across the entire 20 kilometre search area to consider whether there are any other potentially suitable areas of land, but none of the areas identified during those check and balance exercises were considered to be suitable for further assessment.

00:05:07:00 - 00:05:36:01
The conclusion of the site selection assessment is that there are no more suitable and available locations within 20km of Melksham substation than the proposed location for the scheme. Based on the criteria that were identified for assessment, the scheme's location is therefore assessed to be suitable for the scale of solar development proposed and the applicant is considered to have appropriately met its obligations to consider alternatives in relation to site selection.

00:05:37:19 - 00:06:20:02
To touch briefly, then on alternative cable route corridors. The applicant has considered alternative cable corridors as reported in E.S. volume one, chapter four Alternatives and Design Evolution, Which is app 056, and the relevant section of that chapter is section 4.6. In summary, four routes were identified at scoping stage and one was taken forward to DCO submission that was refined in response to consultation, feedback and through consideration of potential impacts on constraints such as landscape and visual receptors, and cultural heritage and residential receptors.

00:06:22:06 - 00:07:02:27
In relation to bears, the best location for lime down D was informed by design, development, environmental survey and assessment work, and statutory and non-statutory consultation feedback, design, evolution and alternative sites considered are identified and discussed in s chapter four, app 056, and that the relevant section for that is section 4.7, which is at page 29. Land Line Dandy provides a location for bears that is in close proximity to the solar PV sites and the on site substation, and represents the option with the least overall effect.

00:07:05:12 - 00:07:36:19
Turning then briefly to alternative technologies, the applicant has considered alternative technologies in a proportionate way, as set out in section 410 of chapter four, app 056, which is at page 33, and some details have been provided of why other technologies, such as nuclear and wind, are not considered to be alternatives. The applicant is a solar developer and considers that this site is suitable for large scale solar development, which it is available to develop.

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To give a wider context of this. It's the government's view that new schemes across a wide range of technologies will be needed to deliver secure and low carbon electricity Systems. Therefore, the applicant consider does not consider that the different scheme in a different location with a different technology could be considered an alternative to this scheme, because all schemes coming forward might be needed. That concludes my summary. But James, Daryl and Chris Jackson can provide further summary or details on effects of the development on the CML in terms of alternatives, if that would help.

00:08:16:20 - 00:08:51:00
So I initially have some questions, not some kind of high level questions about the location, the layout and the solar technology. Um, after which I'll be handing over to Mr. Love to go through some further, more detailed questions in relation to BMV land flood risk and ecology. So perhaps if I go through the questions that I have and if, if it's then necessary to provide hand over to your colleagues to provide more information at that point.

00:08:51:02 - 00:09:10:28
Then we'll do it that way. So, um, yes. So just for the sake of everyone in the room, um, we will run through our questions on considerations of alternatives before opening up to the floor for any, uh, contributions from interested parties.

00:09:12:18 - 00:10:02:18
So, firstly, in relation to the location of the proposed development site, the site selection assessment report states that an initial search area was identified at five kilometres radius from the point of connection. However, this was later expanded as no suitable alternative sites within five kilometres were identified, so the search area was enlarged incrementally to 20km radius. And I'd also like to make quick reference to the Secretary of State's decision letter for the Helios renewable energy project, which notes that beyond five kilometers from the point of connection, increased electrical transmission losses and increased installation costs would affect the viability of the proposed development.

00:10:02:20 - 00:10:19:00
So my question for the applicant is, can you explain why a 20km radius is deemed acceptable and whether or how the viability of the proposed development is affected by increased electrical transmission losses and increased installation costs?

00:10:22:06 - 00:11:08:04
Rosie Haughton, on behalf of the applicant. Yes. So as set out in the site selection report app 185 at paragraph 2.2.7, the applicant adopted a search area within a 20km radius of the point of connection at

Melksham, and that was after first looking at five kilometres and then incrementally raising this to 20km due to a high level, high level review of sites not not revealing any sites that would be suitable available closer to that point of connection, and that is considered by the applicant to be a viable and suitable search radius for a solar project of this scale, and it takes into account the likelihood that the length of cable required would be potentially longer than 20km within that within that search area.

00:11:08:06 - 00:11:38:15
So in relation to this scheme, the cable route corridor is actually 22km because it's necessary for it to wind around other constraints along the way as it reaches Melksham substation. So taking that 22 kilometre cable route, because I think that's that's the more kind of important distance that's considered viable for a project of this type and scale, essentially because the electrical connection is viable at that length.

00:11:38:17 - 00:12:24:20
That's particularly so because the solar PV sites are close together and having sites close together. It's helpful in this context because the applicant can utilize cables that can carry electricity at higher voltages for instance, 400 kV voltages from the solar sites to the point of connection and cables with higher voltages can reduce the the current and in turn reduce the electrical losses, allowing for an efficient bulk transfer of power over greater distances. And that's not to say that, you know, 20km is is the only limit, or that it shouldn't be five kilometers in other areas, but it's deemed that it is appropriate and and viable from a cabling perspective, to go out to 20km in this instance.

00:12:24:29 - 00:12:58:08
And just to circle back to the fact that, you know, it's not the case, that, you know, the the applicant looked at 20, 20km and nothing else. Um, it was when when site selection was first looked at. They prioritized sites that were kind of within that five kilometer radius. However, when all constraints were considered, not just grid connection, the other sites that were closer were deemed unsuitable and unavailable for development, which is what has then pushed to a greater radius.

00:12:58:10 - 00:13:03:12
But it's not considered by the applicant for that to be unviable from a cabling connection point of view.

00:13:06:11 - 00:13:34:06
Thank you. So it's it's the 20km radius, um, considered acceptable due to the scale of the the proposed development and the scale of the solar generating station allows for, for such transmission losses that that it makes that 22km long cable rates acceptable.

00:13:38:10 - 00:13:44:28
Rosie Horton, on behalf of the applicant, I'm going to pass to my colleague Seigler, who can advise further on the more technical aspects.

00:13:47:06 - 00:14:24:01
Um, for the applicant, um, in relation to the lime down scheme in particular, uh, where, uh, the, uh, the solar PV areas are, um, I'm going to use the word clustered. Um, there is a single route for, for those scale of PV areas to then move to electricity through to the substation. Um, the scheme allows

for the use of a 400 kV cable between those PV areas and, um, the Melksham substation, which allows for minimal losses.

00:14:24:17 - 00:14:45:18
Um, that's a particular um, characteristic of this scheme. Um, and therefore, I guess to your point, said the scale of the PV panels and the fact that they can be the electricity can be transmitted to the substation through a single 400 kV cable is something which supports the viability of this scheme.

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So

00:14:47:27 - 00:15:29:27
I can just just add we're just checking that the scheme referenced in in in another secretary of state decision, which I think was the healthiest scheme that you had mentioned. Um, they are not using a 400 kV cable. They are using, uh, 132 kV cable. Um, the distances for lime down are, um, slightly more, but in the same sort of, um, area as um, a number of other projects, including Ireland Green Power's consented DCS for the Cottam Solar project and the West Burton Solar project had um, just under 20km cable length.

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But again, they that the layout of those schemes um had a 400 kV substation and then a cable corridor at 400 KVS to the point of connection. In those cases, it was the existing Cottam and West Burton power stations. So I think the the it is important to see whether the schemes are directly comparable in terms of their electrical configuration. Um, when discussing sort of electrical losses and those sorts of things at distance.

00:16:01:01 - 00:16:29:22
But we will um, that's the information I've just been provided. But if there's any further information, we can provide an in the written summary to distinguish, um, why comments perhaps have been made on a particular scheme about why a point of connection needs to be a particular length as opposed to another scheme, then we can, um, if that would be of assistance, then we can do so so that you're making the correct or the comparables are, um, are of similar schemes.

00:16:30:19 - 00:16:54:15
Thank you. Yes. And you anticipate is one of my follow up questions. So thank you for that. Um, can I. Can you quantify the percentage transmission loss? You mentioned it. I think in response to relevant reps, it talks about it being negligible. You mentioned it being a very small amount, but as a as a percentage, do you know what the transmission loss would be?

00:16:55:14 - 00:17:01:29
So Simon, for the applicant, I don't have that to hand, but we'll come back, um, shortly with us and get it in the application document, sir.

00:17:02:03 - 00:17:06:28
Okay. Could you could you take that as an action point for a deadline? One to confirm that?

00:17:07:01 - 00:17:07:18
Yes, sir.

00:17:09:26 - 00:17:23:15
If the applicant. We are just. We have some. We're just trying to see whether we can get the again the information, um, through the course of the hearing. So if we're able to confirm the point, then we will come back as well during the hearing. Thank you.

00:17:27:03 - 00:17:44:13
In light of what you said about Helios and a number of the other schemes, only using 132 KB cable, is it is your scheme. They're only viable because you're using a 400 kV cable. So if you're using a one, three, two, given that distance, would your scheme not stack up.

00:17:49:17 - 00:18:29:08
So for the applicant the connection. So I guess the first point is that losses over longer distances with higher voltages. That's the kind of the physics behind it. Um, line down is connecting to a 400 kV part of the electricity system, um, and therefore um, uh, the design, uh, kind of principle has been to, um, uh, to, to connect at 400 kV and to minimize losses through, uh, through the, um, uh, the intended infrastructure.

00:18:29:17 - 00:18:45:11
Um, so, Again, I can't answer whether a 132 kV scheme would be unviable or not, but what I can say is that it would be, and that the losses would be higher. With a 132 kV cable between the solar PV panels and and Melksham.

00:18:45:15 - 00:19:03:20
And in Cambridge. Just to be clear that if in order to connect into a 400 kV substation, we have to have the equipment to step up the electricity to 400 kV. So even if it's somewhere, there would need to be a substation to to do that, um, to do that change. No. Appreciate it.

00:19:03:22 - 00:19:10:18
Um, the reason I just asked, because my ability came up from Miss Horton's summary quite a few times, and

00:19:12:14 - 00:19:49:08
I'm trying to sort of pin what that means. Viability. Is it that you is it because you need that connection? So therefore you need the 400 kV. So you've answered that question. You're right. You do need to step up at some point. Or is it the fact that you need to have this many solar panels across this many fields to make it viable. So if you had. I'm not suggesting. You know, we're stripping away your fields here, your two of your panels of fields. Um, but if for argument's sake, you you were just developing A, B and C and not D and E, would the scheme still be viable? Because I keep hearing viable and I'm just wanting to pin that down.

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For the applicant. I think if you go back in terms of talking about the grid connection, um, a 500 megawatt connection with the grid connection offer that the applicant was able to obtain. So it was

looking for a scheme that could generate, um, um, that was of a sufficient scale for 500 megawatt schemes if it had had a lower, um, grid connection. So there are a number of DCO projects that are for smaller schemes with smaller grid connections, and they would be looking for a scale of scheme sufficient to meet their grid connection capacity.

00:20:25:17 - 00:21:03:04
So I think in terms of I think the question was, could you have looked for a smaller scheme? But the applicants site selection process was on the basis that it was looking for a sufficient sites to deliver for the grid connection it had. So that was the that was the process by which it undertook its site selection process and consideration of alternatives. I think the question you. I'm not clear whether the question you're asking is whether a whether a smaller scheme would still be viable, because we're then talking about a scheme that's not is for a different grid connection.

00:21:03:06 - 00:21:36:02
No, that wasn't really what I was suggesting. I wasn't suggesting that you come in with the smaller scheme. That's not what the alternative process is about. It was just I kept hearing viability. And I'm trying to understand what underpins what makes your scheme viable to what makes your scheme unviable. So whether it's the distance from the corridor, whether it's, you know, the number of fields that you've, that you're taking, the number of panels that you're installing. I was just trying to pin that down, but you touch then upon grid connection offer, and I don't want to stray into this afternoon's because there will be questions around that.

00:21:36:04 - 00:21:39:28
So I'll just stop my questions there and pass it back to Mr. Northover. Thanks.

00:21:44:03 - 00:22:02:20
Thank you. Um, so I think if we now move on to zoom in to consider the layout of the proposed development, um, I think it might be helpful if the applicant could display page one of app 081, which is the indicative site layout plan.

00:22:09:25 - 00:22:10:20
Thank you.

00:22:12:09 - 00:22:39:10
Um, so the site layout plan shows the layout of the proposed development spread over five connected sites a to a solar development, each with its own 132 kV substation except for Linden Bay. And then there's the central 400 kV substation and Bess area. Can I ask the applicant to explain its approach, whereby there is a

00:22:40:27 - 00:22:47:02
central Bess and 400 kV substation serving all five sites.

00:22:48:22 - 00:23:08:18
Um, and distributed 132 kV substations instead of either a fully distributed approach where each site A to E has its own substation and Bess area, or a fully centralized approach where there is just one central substation in Bess area serving

00:23:10:05 - 00:23:11:06
the sites.

00:23:22:06 - 00:23:54:05
William Barrett for the applicant. Yes, I will respond in terms of the. There are several components that drive the answer to that question. And one of them is environmental and consultation, which I will briefly cover. And then the other is how that interacts with the scheme design in terms of those key elements, particularly the 132 kV substation and the 400 kV and the Bess. And for the um, overlap with the technical layout, I'll hand over to.

00:23:54:07 - 00:23:56:03
So my colleagues I collect

00:23:58:02 - 00:24:30:03
briefly on environmental and consultation, uh, going back to scoping and statutory consultation on the environmental side. That was very much part of the process, was to identify the greatest opportunities for minimising the overall effects of the what I would describe as the larger elements of the scheme. So that's the substations you've referred to, the Bess and the 400 kV.

00:24:31:15 - 00:25:12:02
We're here today. One of the primary areas at the top of the agenda is to talk about the core principles of the project and what drives. One of the core principles in the area that I'm talking to is the mitigation hierarchy. So primarily the emphasis on avoidance. Um, now that means from a footprint point of view, um, avoidance of designated areas, um protected habitats, sensitive watercourses, etc.. So those elements feed into um, the ultimate layout, um, in terms of defining what we call parameter plan areas.

00:25:12:05 - 00:25:45:13
And they are referred to in the Design Principles document. Um, I'll come back with the app reference for the Design Principles document. Add that in. Um, so that's through statutory consultation. The preliminary Environmental Information Report was a particularly important document in terms of refining those areas for avoidance. Um, because it captured that input from statutory consultees and non-statutory consultees.

00:25:47:01 - 00:26:24:29
Um, so the design process, um, from that environmental standpoint, allowed us to identify areas of land that had more, for example, screening in the case of the 400 kV. Um, more features such as topography to minimise the overall effects. So we knew that we had certain areas, um, that provided that opportunity to minimise the effects. Um, I'll hand over to PSI, who can then explain your question about why there are one, three, two kV substations in some of the eight um, and also the location for the best and the 400 kV.

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Sir. Cycle it for the applicant. Um, I want to see if I can explain a couple of the principles, um, around designing a scheme, um, like this. Um, and the principle is one of,

00:26:43:05 - 00:26:52:24
um, taking efficient and deliverable approaches and making most use of the infrastructure that we're putting, that you're putting in place. Um.

00:26:56:15 - 00:27:28:21
These, uh, these works areas, um, and the solar PV areas need to be joined up to, um, efficiently kind of coagulate into a, into a scheme, into the CIP scheme that we're, that we're hearing about, um, today. Um, and to join those different, um, uh, areas lying down A to E cables are required to, to transport the power to ultimately where it needs to go to, to the grid.

00:27:28:23 - 00:28:09:17
And the choice of how to do that is one which is particular to the layout of the schemes. Sorry, the layout of the um, the solar PV areas, the size and therefore the approximate capacities of power that can be delivered at those and the distances between them and those guide the engineers around the appropriate engineering solution. Uh, to complement what my colleague, Mr. Barrett, um, explained about the environmental and the consolatory, um, uh, considerations as to, um, how to develop a scheme which essentially ensures that, um.

00:28:11:27 - 00:28:55:08
Uh, the facilitator, if that's a word infrastructure, i.e. the transmission infrastructure is able to do its job in the best way possible without taking up more land or more resource. Um, uh, or being kind of more oversized than it needs to be to deliver the scheme's aims. So an example of, um, having a substation in each area is that that's um, that would be land in each area which is taken up with a substation rather than, uh, a solar panel and a substation doesn't generate electricity, but obviously a solar panel does.

00:28:55:17 - 00:29:35:00
The benefit of that is that the, uh, the transfer of power from, from, uh, site A to site B and then on to, um. So from, I'll say from one site to another. So I'm not talking specifically about site and site B apologies, but from one site to other and then on to the, uh, The grid substation is then done at a um a without undue losses. So that's what that's what the substation uh benefit is. Um, and choosing um or selecting the layout is a case of balancing those two aspects.

00:29:35:25 - 00:30:07:05
The alternative of, uh, having no substations, um, on any of the solar PV sites. Um, transferring or transmitting all of the power at, um, a 33,000 volt type, um, level through to, um, the central substation could reduce the amount of, um, land.

00:30:07:24 - 00:30:48:27
Uh, I'm going to use the word taken away from solar PV panels. Ireland, which is a transmission infrastructure rather than solar PV panels. But then the losses associated with that transfer would be higher. So perhaps this is a slightly unsatisfactory because it's a word rather than a number based answer, but it is around balancing the need to for the scheme to be electrically efficient. Um, given the layout of the scheme, um, versus making the most use of the infrastructure which is put in around the solar PV panels to facilitate, um, that electricity getting to the grid.

00:30:50:12 - 00:31:23:07
That's, that's helpful for understanding the the thought process behind that approach. So then if I just pick up on lime down B being the site which doesn't have its own, um, substation. So could you just explain how that works? So that's transferring energy. Is it 33 kV To another substation, another 132 kV substation, or is it connecting straight into the central substation?

00:31:25:25 - 00:31:38:10
Sorry, Simon Gillett for the applicants. I think it would be best if I answered this with an electrical design in front of me. If I could take that question later or in writing, please, sir.

00:31:39:07 - 00:31:39:25
Thank you.

00:31:39:27 - 00:32:19:13
Claire, but you're the applicant, so I've just been provided with a with an answer that, um, lime down be um, on that basis of electrical efficiency and what was the most efficient configuration. And that's going to connect in directly to the 400 kV substation. So we'll go at 33 kV, um, into the 400 kV substation. So as Mr. Gillett explained, an awful lot of work is undertaken to develop a scheme that is the most electrically efficient and the inclusion of um site substations is, is is typical for these sort of as the word was used.

00:32:19:22 - 00:33:05:09
Clustered scheme. So where it's not a contiguous site and you do have cabling between solar panel areas. Other DCO scale schemes have got one, three, two kV substations within those areas that then collect the energy and transport and transmit it at the 132 kV level to the 400 kV substation. But um, that electrical um design configuration has obviously been undertaken for the purposes of a DCO examination, but is an is an ongoing is an ongoing process so that the the final scheme will develop the most electricity electricity efficient version of the project based on the final detailed design.

00:33:05:13 - 00:33:06:04
Thank you.

00:33:06:19 - 00:33:37:09
Understood. Thank you. That. That's helpful. Um, so just sticking with lime down bee. So another related question is, so the site selection assessment report states that there's a minimum individual site size, um, of 40 hectares for for an individual site to be viable. Um, can you give a bit of an explanation why that is.

00:33:37:11 - 00:34:12:11
And and if therefore the smaller sites. So line down B being 70 hectares of PV and lying down A being 94 hectares. Are they less economical efficient than the other sites that make up the development, particularly as a line down? B as well will be transmitting transferring energy at a lower voltage, so there'll be greater amounts of losses with it as well, because you just speak on that.

00:34:16:04 - 00:35:01:00

So it's time for the applicant. So the applicant is bringing forward a large scale transmission scale infrastructure project, which means it's seeking a multi hundred megawatt, um, total um total size. Um, and recognize that, um, the delivery of that maybe through multiple parcels. And again, to go back to the principle, um, the connection of a smaller number of larger parcels is more efficient for the purposes I've spoken about than a to, to connect together and deliver, um, than a larger number of smaller, um, parcels.

00:35:01:20 - 00:35:11:11
Um, in the context of this, of this scheme. Um, you will know. And it's on the public record that there are, um, solar farms which are,

00:35:13:00 - 00:35:55:26
uh, very much smaller than 40 hectares. And indeed, some people here may have solar panels on their roofs, which is also, um, obviously of a very much smaller scale. Um, and therefore it needs to be explained that it's within the context of delivering a large scale transmission connected infrastructure project that the applicant sought to, um, uh, uh, seek larger, um, uh, um, solar PV areas, um, and um, prioritize the use of those by looking at schemes that are looking at areas that were larger than 40 hectares.

00:35:56:04 - 00:35:57:15
Um, first.

00:36:02:04 - 00:36:36:01
Thank you. Um, and you also in describing the reasons for a. Approach, you mentioned, um, avoidance of impact, um, and resulting in the, the more spread out and fragmented layout of the sites. Um, and I just wonder if you could say, talk briefly on the consideration of the position that a more spread out layout of the proposed development could lead to a greater overall negative.

00:36:36:03 - 00:36:49:17
If we're talking landscape and visual, a greater negative impact with the development being potentially viewed over a greater total area as opposed to a more confined site.

00:36:52:18 - 00:37:00:03
Claire, for the applicant, I think Mr. Jackson might be the best place to respond to this. So I'll just let him introduce himself and can respond. Thank you.

00:37:03:00 - 00:37:11:29
On behalf of the applicant. Just to point of housekeeping, James, do a formal introduction as I haven't spoken yet today. Position qualifications.

00:37:14:01 - 00:37:15:03
Certainly. Go ahead.

00:37:15:29 - 00:37:50:27
My name is Christopher Jackson. Professionally as Mr. Jackson, I am the director of landscape architecture at Lambro. I oversaw the authoring of the LVA, as well as being involved with the

approach to the overall landscape, mitigation and layout of the schemes, response to some of the landscape, and visual effects and issues that were identified for the various design iterations of the scheme. And I have significant experience of authoring and reviewing landscape assessments for large scale Grand Master solar schemes and other renewable energy schemes.

00:37:50:29 - 00:38:21:15
Residential schemes. I've spoken at numerous DCO hearings and public inquiries. And just to come to your your points regarding the dispersed nature of the scheme, and one of the what we consider to be the benefits of a scheme of this nature is that by having a series of dispersed sites, it allows us to have a scheme that is in and amongst the landscape, rather than taking that and taking it in its entirety as a consolidated site.

00:38:21:17 - 00:38:55:21
So what that allows is for the existing terrain, topography, landscape features that are already present within the countryside that the site is situated within to provide screening, mitigation and spatial separation between the different sites that we have. For example, at London we have the five sites which are then separated, so it's not one contiguous solar array. So that allows us to to utilise the existing landscape, fabric and framework that is in place across that landscape.

00:38:55:23 - 00:39:28:11
And then through the mitigation hierarchy, we can further approach to the avoidance of panel infrastructure within those the the order limits, and then apply mitigation for the use of landscape interventions, whether that's through replanting or augmentation of the existing hedgerows, gapping up new tree planting. Um, and again, that's, that allows us to, to, to significantly enhance the amount of vegetation we have across the scheme.

00:39:28:13 - 00:40:04:02
It also allows us to focus down onto the existing landscape character assessments, the nature recovery plans and all of those other documents and publications that we have to feed into that mitigation approach that we undertake with the design of the scheme. So what we look at is trying to create an approach to the mitigation that allows the scheme to be accommodated within its receiving landscape and utilize, Utilizes the existing landscape to enable enable that screening and absorption into the receiving context.

00:40:05:21 - 00:40:40:29
Thank you. And this is certainly something we'll delve into in greater detail over the course of the examination. Um, particularly the, the, the experience as you move through the landscape and the sequential experience of the proposed development. But as a understanding of the reasons for the approach you've taken. That's helpful. So thank you. Um, I would like to now, um, move on to a few questions in relation to the selection of solar photovoltaic technology.

00:40:42:18 - 00:41:17:19
Um, so perhaps we can take that plan off the off the screen. That's okay. Uh, so in chapter seven, it states that, uh, the total energy generated by the scheme would be around 23.54 terawatt hours and 24.26 terawatt hours over the 60 year scheme lifespan for tracker and fixed panels, respectively. So

my understanding from that is that fixed panels would actually be more efficient in terms of energy generation.

00:41:18:08 - 00:41:39:27
On the other hand, if chapter three states that single access tracker systems with bifacial panels can produce 35% more energy than fixed tilt mono facial panels. So can the applicant clarify whether single access tracker panels or fixed panels would generate more energy?

00:41:42:03 - 00:41:43:02
Initially.

00:41:45:21 - 00:41:48:21
So for the applicant, um.

00:41:52:07 - 00:42:36:15
A fixed south facing panel itself. An 800 watt fixed south facing panel, will achieve a load factor of something like 10.5%. Um, a tilting or a single axis tracker panel. The same panel would achieve a load factor, which is higher than that because it is looking more directly at the sun through more of its operational time. So the answer to your question in relation to, um, kind of an individual panel or a comparable megawatt scale, is that, um, is that the single axis tracker is, um, more productive? Use the word more productive rather than more efficient.

00:42:36:17 - 00:42:40:14
If I may, um, however,

00:42:42:14 - 00:42:51:21
given an area of land of a particular fixed area, um, assuming it's a flat rectangular field,

00:42:53:14 - 00:43:28:22
Efficient layouts of single axis trackers would be able to fit less total megawatts in that area than an efficient layout of fixed south facing and the. The applicant has made assumptions around and has delivered an indicative designs on that which have fed into the benefits and environmental assessments. Um so. And um, and those support those numbers that you that you've stated.

00:43:28:24 - 00:43:53:18
Um, I guess therefore there's, there's two, two answers to your question on a single panel level. Um, uh, the single access tracker is more efficient, but over a layout of a scheme where potentially a higher megawatt, um, installed capacity can be achieved through fixed south facing. Um, the more energy that that scheme may be more productive.

00:43:55:12 - 00:44:23:20
So can you just then explain why tracker panels are being proposed? Given that the overall height of a tracker panel is greater, and so therefore the potential visual impact could be greater than that of a fixed, fixed south facing panel. And so potential. Is there a greater visual impact and less energy generated as a benefit?

00:44:26:16 - 00:44:39:28
Um, so I'm going to answer that in two parts, if you don't mind. Cycle it for the applicant and I'll answer the question around, um, uh, um, around those, um, those layouts. Um, and.

00:44:42:13 - 00:44:43:01
Um.

00:44:46:06 - 00:44:58:03
If you can just clarify again exactly what What in terms of electrical generation, your question was and then I'll pass to my colleague for the Elvia aspect.

00:44:58:05 - 00:45:26:00
So from what you've said, what I understand is across the scheme, using single access tracker panels will be less productive than using fixed south facing panels. So I want to understand why tracker panels are being being proposed because they're they're taller than fixed panels when they're at their highest point. Um, but they're producing less energy.

00:45:27:17 - 00:46:10:16
Thank you sir. Um, so I get it for the applicant. So the first aspect is around the, um, the concept of the of the Rochdale envelope, and therefore the effects of the larger physical panel needs to be assessed. And I'll defer on that point to, um, to my colleague in terms of energy generation, the indicative designs have been, uh. Um, what the indicative layouts have been, um, have been designed based on, um, products that are available in the market now and assumptions based on on those panels that are available now and reasonable assumption on, on layouts for that.

00:46:11:27 - 00:46:41:28
Um, the applicant, um, maintains that um product development between now and the point when the panels, if consented, would be would be procured and installed means that a number of design iterations through at that um detailed design stage, um, yields the potential for a greater output from the single axis trackers. Um, and therefore that is the preferred but not only approach.

00:46:42:11 - 00:46:50:28
Um, and hopefully it answers your question on on energy generation, sir. And I'll hand over to my colleague, Mr. Jackson, around Elvia.

00:46:51:00 - 00:46:54:16
Mr. Jackson, before you come in, can I just follow up on that? Um,

00:46:56:15 - 00:47:12:28
we're 20, 26 now. Of what point are you intending to start construction? Should you get your DCO? It's the first question. And then secondly, at what point do you expect to be commissioning electricity to the grid?

00:47:17:08 - 00:47:51:16
Uh, Simon Gillet for the applicant. Um, the, uh, lime down has a grid connection agreement, um, uh, which has secured a prioritization in national grids, um, connections reform processes for a, um, a

connection before the end of 2030. And we will hear from National Grid what their date is for that firm connection point, and that that date will be the target for, for commissioning.

00:47:51:27 - 00:48:03:13
Um, the site, um, the, uh, might defer to my colleague, Miss Broderick on the, um, the construction program, elements of that.

00:48:04:01 - 00:48:38:15
Uh, Claire project for the applicant. So I think what we've said is obviously the earliest point of construction would be later on in 2027, assuming consent is granted within the time frames that are anticipated for the for the process. Um, as Mr. Gilet said, we've obviously said it's anticipated to be a two year, um, construction program. Um, as it's been said, the exact date of the point of commissioning isn't currently known as part of those Niso upgrades.

00:48:38:17 - 00:48:44:17
So in terms of working out the exact commissioning date. We don't have that. No. That's fine.

00:48:44:27 - 00:48:46:22
There wasn't. I wasn't trying to pin it down.

00:48:47:04 - 00:48:52:04
I think I think the question was, how much can we expect technology where it was going with it? Absolutely.

00:48:52:10 - 00:49:22:24
That's the reason for the question was you're suggesting that in the period from where you've modelled this up in your application is before us, and the time you come to do your detailed design, we're really only a year away. And what I'm hearing is that maybe, you know, tracker panels all of a sudden will miraculously be way more productive in the next 12 months when you're procuring your panels. And I was trying. You've clearly read that that where I was going with that. I mean, how will we seem to have lost a connection or I have or.

00:49:22:26 - 00:49:30:28
No, I'm okay. Um, how realistic is it that the technology is going to move on that much to make the track of panels more productive?

00:49:31:27 - 00:50:02:01
Clare, project the applicant just before we go into the the question of productive, I think there's sort of two elements. There's one there is technology that is currently um, available, but may not be available at scale. So there may be the technology that exists, but the supply chain is not currently there. So one of the questions that the applicant will need to discover is not only the availability of technology, but also what's available as part of the supply chain. So that is a factor in the consideration.

00:50:02:03 - 00:50:33:16
So when we talk about technology advances there's both an advantage in the actual panels themselves. But then also are they available at scale. I think what Mr. Gillett was trying to, um, that there are

different sort of elements that need to be taken into account in terms of, obviously the kind of the, the total amount of energy that can be generated, but also then the, um, how that energy is captured throughout the course of the day.

00:50:33:18 - 00:51:24:01
So I think Mr. Gillett had had mentioned, but what is also explained is obviously one of the the benefits of the tracker panels is obviously that the duration of the day that these those panels are able to capture electricity as well as the total amount of generation. So I think in terms of productivity, we are also looking at the the difference between tracker and and fixed, um, has a slightly more nuance to it rather than just the total amount of productivity, because you're also then looking at the the duration of the day that those panels may be able to generate electricity to, to the grid, which is also a fact that's taken into consideration when the applicant is making a final decision on whether to, um, which type of technology to proceed with at the detailed design stage.

00:51:24:03 - 00:52:00:18
I think, um, maybe Mr. Jackson could perhaps, um, respond to the Elvia impacts, but I think it's also and I think you'd already noted that we're talking about the maximum height of the panel at its full tilt. and in terms of when in the duration of the day that is likely to occur versus that. So when you're looking at, obviously the purposes of assessment, we've assessed the reasonable worst case, which is the panels at their full tilt. But it also does need to be taken into consideration that they won't be at full tilt for the the majority of the day.

00:52:00:20 - 00:52:05:25
But Mr. Jackson will provide some more information, just not from an LVA perspective.

00:52:07:12 - 00:52:41:06
Chris Jackson, on behalf of the applicant carrying on, I know we've jumped around a little bit, but to come back to the the the envelope and the approach that's been taken to the to the panel technology. So the design parameters sort of design principles and parameters document which is app 269, which sets out the um, the requirements for the for the panel infrastructure. The fixed panels are identified as a height of 3.5m, with the track panels being at 4.5m at full tilt, as Miss Broderick just alluded to.

00:52:41:14 - 00:53:13:13
Um, the if you if you imagine the tracker panels, there's a large tabletop with a central axis. That access point is mounted at 2.5m. So when the panels tilt, they tilt around a 2.5m access point, which obviously actually is lower in actuality than the the uppermost limits of a fixed panel at 3.5. Now, that tracker panel will will start at full tilt at 4.5, track the course of the sun and rotate back flat. And then for efficiencies, continue to track it for the course of the day.

00:53:13:15 - 00:53:47:12
So there will be periods of the day where the panel is actually set at 2.5m. There will also be period when it starts at 4.5m. So you have a variation in the visual impact that's associated with those tracker panels. Whereas the fixed panels will always be at 3.5m at their highest ditch. And we've also looked at a minimum separation distance of 2.5m between the panels as well. So again that's the that's the. Intermediary rows between the panels. So that's the the parameters and principles established within App in 269 which sets out the um the panel infrastructure.

00:53:47:14 - 00:53:58:26
And again the the Elvia assessment has been been based on the Rochdale envelope looking at that worst case possible, worst case at 4.5m with the track panels being at full tilt.

00:54:01:19 - 00:54:32:20
Okay. Thank you. And um, how how have you considered the balance of visual effect over the day where you have the the greater adverse effect in mornings and evenings? Um, relative to how people might experience those. So, for example, commuting through the landscape to get to work in the mornings and evenings is when the the panels are at their highest.

00:54:33:00 - 00:54:55:04
Um, and if, if um, that for a great portion of the day, the panels are potentially lower than a fixed panel, but the time in which most people experience and view the panels is when they're at their highest. Um, yeah. I just want to know how how that's been considered in your approach.

00:54:55:26 - 00:55:26:16
Chris Jackson from the applicant. And one of the things that we're not discussing as well is, is seasonality. So obviously with the the there is a greater level of sunlight in the summer months than in the winter months. And obviously the sun gets higher in the summer months and it does in the winter months. So your your specific reference there to, to commuting times. Uh, the if you, if you take that let's say 8 or 9:00 and until 6:00 in the middle of summer the sun's come up at 5:00. So by that period of time it will have dropped slightly.

00:55:26:18 - 00:56:07:13
The the 4.5 will already be tracking for its arc and will be sitting at a slightly lower, and heights. Now, I suppose based on the Rochdale envelopes. Come back to what you're asking. We've we've applied the mitigation hierarchy to look at that worst case and to mitigate effects from that worst case. So in this case, that's that's the, um, the management within the, the Olymp, which is secured through room requirement seven of schedule two of the draft DCO for the growth of the hedgerows to 4.5 or up to 4.5m to provide greater enclosure and screening of that.

00:56:07:15 - 00:56:10:16
That worst case scenario as looked at for the Rochdale envelope.

00:56:13:03 - 00:56:39:15
Okay. Thank you. Um, and just the I think you've you've confirmed it. But just to clarify, um, in chapter eight, it states that maximum height, the tracker is 4.5. And in the same paragraph it states that the maximum height of the fixed solar panels would be 4.5 as well. Is that a. Is that a typo? And it should be 3.5 for the fixed south facing panels?

00:56:40:22 - 00:56:53:14
Um, I believe so. I'll double check that and take that away, but that sounds like that's a typo indeed. The. As I set out, the design principles parameters are as set out with an app 2697.

00:56:54:10 - 00:56:55:05

Thank you.

00:56:56:28 - 00:57:23:11
Um, so I think now is probably a good time for us to, uh, break for lunch, after which our, uh, Mr. Love will take us through some further questions on the consideration of alternatives. So it's just after one now. So if we break for 45 minutes and come back at 1:45. Um, yeah. So this hearing is adjourned. Thank you.