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00:00:06:16 - 00:00:11:03

Okay. Good morning again. Everybody.

00:00:15:04 - 00:00:16:05

Welcome back.

00:00:17:26 - 00:00:28:29

To issue specific hearing. Three I'm just going to check that a everyone can hear me and be the live stream and recording has resumed.

00:00:31:19 - 00:00:34:27

I have the thumbs up. The agenda is being shared.

00:00:42:09 - 00:00:52:10

Okay, we're moving on to item four of the agenda, which is need electricity generated and climate change safety major incidents,

00:00:53:27 - 00:01:09:18

three discrete subheadings under this. Before I get on to it in detail and update on the discussions around how, uh, various items will be handled.

00:01:11:15 - 00:01:59:06

And agenda changes. So we discussed earlier on about Landscape and Vigil, which is item five today. I'm confirming, I think, what I set out, that we will hear a general brief update today from, uh, attendees in the room because they to make efficient use of time that will not supplant any need or requirement for hearings, either in person, virtually, um, or to test the evidence through written questions which are coming up all through rule 17 request.

00:02:00:01 - 00:02:24:04

And the examining authority will make a decision about how to handle that as soon as is reasonably possible. The same will be taken in Thursday's issue, specifically hearing for as regards to the two items cultural heritage and cumulative impact. So for those.

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IPPs who were lining up. Experts for certainty for ish, for which would be any heritage consultant. Um, we will hear updates, which I will hope will help the examining authority in preparing those further written questions, but they will not be taking through items A, B, C, etc. in substantive detail as would otherwise have been the case.

00:02:55:03 - 00:02:59:09

I have asked the case team to hopefully get a message to.

00:03:02:03 - 00:03:25:16

A Historic England. Um, depending on their view, they may still wish to attend for that. What will be a brief update, but I think the advice would be to hold fire and attend the resumed or re briefed hearings when once we know those dates.

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The intention really is that these are updates to assist the examining authority. The the same may be uh applicable to Lincolnshire County Council's attendees for tomorrow.

00:03:40:12 - 00:03:41:00

Okay.

00:03:43:19 - 00:04:09:11

Moving back on to item four need electricity etc.. Item is failure rate of photovoltaic panels the impact on replacement consideration in climate change analysis. So it has been calculated that the 0.4% per annum failure rate over 60 years results in a replacement of 24%.

00:04:11:02 - 00:04:41:05

Of panels over the six year period or that is. Um. Interested parties have put that calculation together. Firstly, I'd like to hear from the applicant as to the the accuracy or otherwise of the maths behind this for understanding of failure rate. Obviously then of going to be exact numbers, but they need to be assumptions and built into the analysis I suppose. Illustrative.

00:04:42:22 - 00:04:59:24

Can you take the 0.4% per annum failure rate? Multiply it by 60 and give you the 24% failure rate over the lifetime. Does it work like that? If not, how does it work? Secondly, and related to that above, without trying to exact numbers.

00:05:01:15 - 00:05:44:17

What does it want to mean for a large scale scheme. So. For every million panels, um, over 60 years. Bill 240,000. Need to be replaced. Approximately. Obviously, these are never going to be firm figures. And over that 60 year period, or 21,900 days. Is that? 11 panels a day, 4000 panels a year. At what rate? Do they fail? Does it increase towards the end of their life expectancy? So to for the applicant to set out the kind of maintenance regime and the impacts it has on that.

00:05:46:02 - 00:05:46:17

Um.

00:05:48:09 - 00:06:20:19

I would. I mentioned to you. Yeah, 11 panels a day. We wouldn't assume that there would be maintenance vehicles going around to replace 11 panels every day. Could you point us to and explain the maintenance regime of how they would be dealt with and how those panel replacements have been

captured in climate change analysis and in transportation movement? When the maintenance vehicles were being accessing the site to undertake these works.

00:06:22:14 - 00:06:28:07

First of all, to the applicant to give, uh, the overview, and then I'm bringing others in.

00:06:32:29 - 00:07:13:01

Uh, can I push it with the applicant? Um, so in our response to question one point, um, 9.10 of the first, um, to the first written questions, um, which was rep 3-038, um, we gave um, a bit more information about, um, the, um, figures used for the, um, calculations for the GHG emissions, um, and predicted waste risings and how that figure had, um, come from discussions with um, uh, panel manufacturers.

00:07:13:09 - 00:07:46:20

Um, but that it also was based on, um, there not being any, um, firm data about, um, the effective life and replacement rates for, uh, panels for these types of projects because, um, these types of projects, the ones that are in existence at the moment, haven't reached, um, the end of their, their operational life. So there is limited data available in terms of, um, the frequency, um, of um, failure rates and um,

00:07:48:06 - 00:08:21:02

and whether those panels, um, that fail are replaced. Um, I think the other point, we just as an overarching point, there's a distinction between the complete, complete failure of a panel requiring its replacement and, um, a gradual decline of efficiency of a panel as it becomes older. And so there was, um, in terms of the maintenance regime, um, in terms of assessing the Rochdale envelope for both, um, climate change and transport.

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Obviously, some figures we use based on replacement, um, being a reasonable worst case scenario rather than, um, that being um, a fixed um figure of how many panels we expect to fail or whether they would in fact be replaced, if they automatically replaced, if they if they did fail. Um, and that would depend upon where, when in the life of the project it was and the impacts of that. So there is, I suppose, what I'm just trying to set the scene is that there is limited information available, because there just aren't examples of, um, projects being maintained that have been there for this length of time.

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Obviously, we have experience of the day to day management of operational windfarms at the beginnings of their operational life, which have obviously also been taken into account when, um, assessing, uh, failure rates and day to day maintenance vehicle movements. And that's been based on Igp's experience of operating, um, solar projects. But I can hand over, um, to Mr., uh, complain about the actual figures in terms of how that equates over, over the project, but I just wanted to emphasise that it's not.

00:09:40:08 - 00:10:01:05

It's not a fixed maintenance regime. It would be, you know, it would be decided as and when whether a panel actually needed replacing or not, whether it completely failed or whether it was just declining

in efficiency over the over its lifetime. But I don't know whether Mr. Hamilton is able to answer the specific question about whether you can multiply, um, multiply the numbers over the lifetime.

00:10:01:11 - 00:10:12:06

Yeah. Thank you. And don't be too fixated on any of my maths. Please offer the correct example or as correct and reasonable as it can be.

00:10:13:18 - 00:10:46:04

Yep. Bring a clamp in, uh, for the applicant. Um, so, yeah, we we have been working on the assumption that it would just be that 0.4% replacement per year. Um, again, as as this project has set out. Um, we. Yeah, we've had to make some assumptions that we've set out within our assessment and. Yes. Chapter. Um, I think we've kind of stated those clearly. Um, but there's yeah, limited information, but we want to make a reasonable assessment of what that, that change in, in PV module failure would be.

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Uh, and so that's that, that's the approach that we've taken. Um, with regards to our kind of assessment of maintenance vehicles, uh, maintenance trips. So that was based on a twice monthly, um, trips throughout the operational, uh, period of the, uh, of the development. Um, again, that was, uh, a figure that was kind of provided from us by, um, the transport consultants for the project. Uh, as a as a sort of reasonable assumption for us to, to use for our calculations.

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Thank you.

00:11:31:06 - 00:11:34:18

Just one second, Mrs. Moran. I'm.

00:11:38:02 - 00:11:38:27

Okay? Yeah.

00:11:40:19 - 00:11:56:24

The modern living underneath the power stations. Can I ask this question if there's limited data on how on the maintenance, why are we putting so many in until we get the data that we need to find out how much maintenance you need?

00:11:58:21 - 00:12:08:08

You know, why don't we start smaller until we find out what what the maintenance regime is needed and how often they fail because of the limited amount of data you've got.

00:12:08:24 - 00:12:27:04

A I so firstly, as a as a general point. Yes, director, the question is through me. Um, I will pose that question to the applicant in a in a moment. I'm just considering what we've had on failure rate. Just bear with me one moment. Thinking.

00:12:34:24 - 00:12:46:12

Thank you. Okay. So so Mrs. Warren's question about failure rate, I think if I'm paraphrasing somewhat, is that without the evidence.

00:12:48:01 - 00:13:11:17

That schemes ought to start off smaller, whilst the evidence is known about failure rate and technological improvements. I think it's a fair question. Um, so I'm going to invite the applicant to respond. To that before moving on and seeing if there's any other IPPs who wish to discuss PV failure rate this project.

00:13:13:04 - 00:13:55:27

Uh, for the applicant. Just to clarify, um, part of the, uh, points being raised was about whether there would be an increase in failure rate between 40 and 60 years. And that's what I was saying, that there isn't the information available about, um, uh, how whether panels, um, fail or decline in efficiency at a greater rate the older they get that that data isn't available. There obviously is a lot of data available about the day to day maintenance of operational, um, solar projects, both those that IGP, um, uh, operate and others that um, operate currently across the country.

00:13:55:29 - 00:14:08:13

So that typical maintenance figures that were mentioned are based on operational solar farms at the moment. So we have that data. It's the data about failure rates of much older panels that isn't available at the moment. Thank you.

00:14:10:24 - 00:14:38:29

Mrs. Warren say so the answer there really is that, um, the difference between a 40 and 60 year scheme, the failure rate or the information isn't presently available in sufficient quality to be able to draw conclusions from. But there is a substantial amount of data relating to PV panels that have existed for a number of years. Does that. Answer your question, you're going to need a microphone.

00:14:43:27 - 00:15:12:06

A Christine Warren underneath the cooling towers at West Point and Power Station. Um, to what stage do they start to decline? They don't just cease to decline at 40 years. They must. They must get worse as the years go along. What age do they start to decline in and they start to fail? Um, because it's not just at 40 years, is it? It's got to be a gradual decline. It's like old age, isn't it?

00:15:13:08 - 00:15:43:15

Thank you. Yeah, I my reading and understanding is that there needs to be a number of assumptions really built into the modelling. And that is where the 0.4% per annum failure rate has been derived. I'll rather than, um, speak to it myself, I'll, I'll ask the applicant if there's anything you wish to add to that assessment of failure rate. And then I think move on from this point.

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Uh, for the applicant. I think that's where we were talking about Rochdale envelope before. We have obviously, for the purposes of the assessment, um, and based on the information available, the approach taken has been to continue to apply that 0.4% per annum, um, failure, uh, replacement rate, um, across the whole operational life of the project, which we're asking should be up to 60 years. So we haven't assessed, um, an increase in that percentage rate over, over that the, the later years.

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But what that means is, um, that therefore the maintenance, um, regime that's permitted in the um, operational Environmental management plan is constrained by, um, those assessments. So in in the event that, um, the failure rate turned out to be much higher and the applicant wanted to replace a greater quantity of panels per annum, then it would need to either provide evidence at that point in time that there wouldn't be any new or materially different environmental effects associated with doing that, or it would need to apply to to amend the development consent order.

00:17:01:14 - 00:17:33:09

If if there were, if there were new or materially different effects and it wished to get consent and the impacts of those replacement activities would be taken in, you know, would be considered, um, as part of any, um, application to amend to amend the DCO. So we've taken what we believe to be, um, an appropriate, um, and reasonable replacement rate, um, and therefore the active maintenance activities and the ability to maintain the scheme under the DCO are limited by that. Um, and therefore there is um.

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Uh, some comfort given to, um, local interested people and the, um, local authorities that we wouldn't be able to the DCO would not permit us to suddenly carry out much greater replacement activities. Um, so that that's what we're working. Uh, working within. And we base that on the information that we've currently got available to us. Thank you.

00:18:02:01 - 00:18:17:28

Okay, Mrs. Warren, I can see your hand, but we do have microphone manoeuvrability issues, and I do need to bring another IPS. Mr. Redwood, if you could just get the microphone to Mrs. Warren, and then I will move on.

00:18:21:00 - 00:18:43:13

Uh, Christine Warren underneath the cooling towers. Who will monitor the failure rate if the failure rate is higher. Will the Planning Inspectorate monitor it, or will they have to then go back to the Secretary of State and stating that the failure rate is higher than they actually predicted? Who would monitor it and would it would would it be yourself or the Secretary of State?

00:18:47:06 - 00:19:01:29

Thank you. I've noted the question. I'm going to move on because that question may be answered in the course of bringing in other IPS. Okay, Mr. McBride, I think you had your hand up. Yeah. Thank you. Sir.

00:19:02:01 - 00:19:35:17

Neil McBride, Lancashire County Council. I think it's just to put a marker down, really, in terms of talking about failure rates. And I know that, um, as the agenda currently stands, there is an item tomorrow on waste and whether, um, this topic will be, um, reintroduced at that stage. But I think there's a concern for us as a council in terms of the failure rates. Um, then obviously there will be a number of panels that will need to be, um, recycled or treated.

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And, um, it's to get an idea of the number of those panels per year, given that failure rates. And also I think the, the concern to us is that it's, um, obviously just not this one project. There's potentially ten, 11 other solar projects in the county, and we're all having a failure rate of 0.4%. Then the number of panels then obviously increases, uh, quite significantly. And to date, a lot of the sort of discussions around dealing with, um, end of life panels and things like that is sort of, well, we'll put it back until nearer the end of the life of the development, because it won't be an issue until then.

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But I think from our perspective, I think it could be an issue much earlier than that of all of these schemes are going to be, um, having failure rates of this number. Uh, and we're going to have to find some ways of dealing with that. So I just wanted to put that marker down. Now, I don't know whether you want to deal with it now or whether we deal with it tomorrow under the item on waste.

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Thank you, I.

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Yes, it does lend itself to waste. I think I'll invite the applicant to give a response, noting that it ought to be covered under the correct item at a maybe more detail. Also, just if I could invite the applicant to comment on the structure and arrangements for monitoring of decline of failure rates of PV panels, that would be, um, an issue that's essentially contained within the development consent order and the supplementing documents for um, maintenance regimes and vehicular access, which the applicant would be undertaking.

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Um, but maybe, Miss Broderick, if you could just set out for IPPs in the room, um, exactly how that is monitored in practice and what arrangements are in place then for dealing with the panels that have declined or need replacing and touch on Mr. McBride's comments about waste?

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Um, portrait of the applicant. So, um. Just to set the scene more generally for um. Interested parties benefit the way that a development consent order works. Is that the, um, relevant planning authority. So either Lancashire County Council or West Lindsey District Council, depending on the um, the nature of the matter would be responsible for um, ensure or ensuring compliance or taking action in the event of non-compliance with any of the requirements in the draft DCO.

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So the the requirements in the DCO is similar to a planning condition. However, the difference with the development consent order is that if the applicant were to breach either the requirement itself or one of the approved management plans that are referred to in the development Consent order, then that breach would automatically constitute a criminal offence and therefore there is a significant deterrent on doing such breaches. It's not the same as a planning permission, where the, um local authority can decide whether to take enforcement action or not, and only then it becomes an offence.

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It's automatically an offence under the DCO regime to breach the terms of a management plan. Um, therefore, the Operational Environment Management Plan is the document that um is going to be, um, put in place to govern um, uh, these topics during the operational life of the um, scheme. And a number of updates, um, were made to, um, the most recent version of the Outline Operational Environmental Management Plan to include, um, further details about waste management strategy.

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So the outline plan itself is it um, sets out the topic matters that will be dealt with in the final plan that will be approved. And that now includes a, um, a waste management strategy to ensure that waste is managed suitably and any waste arising, such as failed panels, are sent to suitable um hand facilities for handling um. The strategy also includes work. The wording also includes a requirement to provide um forecasts for the amount of um waste arising that are likely during operation um, and the, uh, predicted waste streams and handling capacity.

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So that kind of forward looking, um, approach, um, that, um, Mr. McBride was referring to in, in terms of having some sort of oversight of how, um, how that's going to play out throughout the operational life of the scheme is, um, now included specifically in, in the outline management plan. So we would expect the final waste management strategy to provide that information. And then there is another, um, requirement in there that it should be updated, um, uh, periodically as and when, um, local waste plans are updated to ensure that the forecasts, um, are up to date and that the mitigation measures that are put in place still works.

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So there is an ongoing requirement for that, um, waste management strategy to be kept under under review. So, um, the applicant's view is that, that their concerns can be adequately managed. But obviously if additional wording if Lancashire County Council would like additional wording to be added to the outline management plan, then we can definitely consider that if there's something else that they would like to be included, but the the final plan will contain the actual detail. Thank you.

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Thank you. Okay. So the. Two pronged response. Really, it is the DCO and there's the supplementing documents within that and the requirements within that, and the management plans within that are responsible for monitoring, checking compliance with the the wide range of requirements that would be placed on any DCO. On the point about waste and forecasting. Um, I'll just ask Lincolnshire County Council if that is useful and if there is any consideration or comments that you need to make or would like to offer that will feed into the um management relevant management plan.

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Zoning by Lancashire County Council. Um, I think it's something we'll need to go away and have a look at to see if the wording that's there. Um, sort of addresses some of our concerns. I think it's not just in relation to this project, but cumulatively as well. And how, um, that can be picked up when there's other projects and obviously there's lots of cumulative issues, um, topics. But I think that waste is one that needs to be added to that list as to, you know, the implications of a number of these projects, if you all get consented and all get built out, what you know, what happens then and what's a mechanism for dealing with more than just one project?



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Thank you. Okay.

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Mr. Pointer. You've come on screen. I'll invite you to make any further comments.

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Yeah. Thank you. Uh, so, yeah, just really to in light of the fact that, uh, um, you know, we had that, uh, um, representation made from, uh, Christine Warren, who obviously lives in Nottinghamshire. And just to give some assurance that we will equally look with Lincolnshire at the, uh, the waste management approach, uh, and, uh, and give, uh, due response to it as necessary. Thanks. Yeah.

00:27:48:28 - 00:27:50:08

Thank you, Mr. Poynter.

00:27:58:02 - 00:28:12:03

Okay, so underwrite my replacement panels. Is there any final comments? I can see West Lindsey District Council and then Mr. Pryor, if we take those in that order before moving on to item B.

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Um, Alex Blake, West Lindsey District Council. Um, yeah. Just to add a few couple of thoughts to what's been said without wandering into waste. Uh, as Mr. Bride commented on, um. Just looking at it from the ground upwards, really, in terms of the impacts that people will experience or potentially experience as a consequence of the maintenance regime. Um, we know that the applicant's response to SSC was around, uh, an increase of things, around 24% to 20, uh, for a 60 year project. So we're looking about a quarter of the of the project being replaced under the maintenance clause definition in the DCO.

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Um. In terms of area, you know, again be corrected. But we're talking what could that be around 100 hectares something of that ilk. Um, and from a West Lindsey perspective, looking again cumulatively, you know, you could be multiplying that by, uh, certainly the three projects that are currently either gone through or in examination or others that come forward. So looking practically about what this might look like for communities on the ground. Um, there's quite a lot of activity that could potentially occur.

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Um, I, I wholly appreciate, you know, the uncertainty around the maintenance profile, as in, when will the peaks happen? Um, you would imagine that the older the asset gets, the more susceptible it is to. So those, um, to failure and replacement. So where are those where are those pinch points, the lifetime of these projects going to occur? Uh, across projects. And what are the likely activities that are going to be, uh, impacting the environment and impacting communities as a consequence? So, yeah, a little bit navel gazing crystal ball.

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And it's not I'm not always expecting I'm not expecting a clear answer on this because, you know, we don't have that evidence before us as tested by Mrs. Warren. Um, but then we turn to how we control it, and we look at the ENP, um, as the mechanism and.

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Stand corrected. If I'm wrong, but the ENP is a single sign off document. As in we have to approve that document at the start. Yes, there are reporting mechanisms in there, but there is no trigger within that document that allows that sense. Check on, uh, whether a cumulative or otherwise situation could occur, um, and whether there should be some control over how those works are carried out. Um, so whilst Mr.

00:30:44:09 - 00:31:24:15

Broderick is quite right in terms of, you know, there's a scope of the DCO is framed by, uh, the AIA. And if they go beyond that, however, the judge and jury of that would be the applicant in that situation. You know, the local authorities simply wouldn't have that information before them prior to activity occurring to to ensure the safeguards for the environment and the communities that that could be affected. Um, so I think I'll pause there and leave that one there. So I'm not just griping about, you know, you haven't got a crystal ball to tell us exactly how this is going to work. It's about okay. If we accept that, how can we best control that and foresee, uh, what might happen and provide those safeguards that may not be required? I accept that, but we think the safeguard should be then in the less.

00:31:25:01 - 00:31:25:16

Okay.

00:31:26:07 - 00:31:50:19

Okay. So yes, the concern relating to failure rate and cumulative impact of it and the safeguarding mechanisms around that. I'll turn to Mr. Pryor who is next on the list. Mr. Pryor from 7000 acres. Uh, thank you sir. Mark Pryor, 7000 acres. Firstly, I think it's worth.

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Pointing out I've.

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Spent quite a lot of my career, um, dealing with the failure rates and, um, safety and the cases. So I think I can give a fairly.

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Well informed.

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View on this point.

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Firstly, the claimed, um, failure.

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Rate is a linear one of 0.4%.

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Per year, which.

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Implies that 60%.

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Of the panels.

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Will last a hundred years.

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Now, we've.

00:32:19:06 - 00:32:20:22

Heard from the applicant.

00:32:20:24 - 00:32:21:26

That they have no.

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Evidence. This is just an assumed figure.

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Um, failure rates do not tend to be linear. They tend to follow what is called a bathtub curve. So it starts fairly high when the, um, uh, the components are installed. And that is because some will have faults from their, um, manufacture, some will be, um, damaged during transport to the site and some will be installed incorrectly, which is bound to occur with more than a million panels.

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So the failure rate will start reasonably high. It will then, um, drop off. And for several years the failure rate will be very low. Then it'll start to rise at an increasing rate. And it's that rise we don't know about at all. But certainly to assume that 60% of the panels will last 100 years is taking things to extreme. So that deals with the actual physical life of the panels during the life of the panels as well.

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They will degrade. So this um, typically occurs at about 1% a year. So after 60 years, the panels will be um, and producing roughly 40% of their initial power, which is not good use of land. So they will become obsolescent. So the so the current research shows that the economic life of panels is circa 20 years.

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So it's likely that panels which are still working will be replaced on economic grounds. So if you take a reasonable worst case as required by advice notice nine, you should perhaps, uh, assume a replacement cycle for the panels every 20 years or so. And of course this will add to the waste issues.

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So the question is, will the applicant just aim to keep one set of panels in place, which is not good use of land because they will become obsolescent? Or do they intend to aim to generate as much power from that land as they can, in which case the panels will be replaced on perhaps a a cycle of three times.

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Um, and I think this comes back to the point that we raised at the last issue specific hearing about, um, what the DCO says about the, um, um, definition maintain and and repair, because at present it gives the applicant a blank check to change the panels as often as they like. So those are my main points. There's a physical life which we've discussed.

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There's also the economic life which will lead to them being replaced on on a more frequent, um, cycle, or else the scheme will become obsolescent and a poor use of land. Thank you.

00:36:01:27 - 00:36:15:11

Thank you, Mr. Pryor. Going to. Turn to. Okay, Mrs. Warren, one final comment on under this, provided it is relevant to the topic.

00:36:16:07 - 00:36:54:18

Christine Warren underneath the, uh, cooling towers, um, is the I don't understand what what it's it's classed in as what it generates, but does the amount of power that they. Applicant has said will be generated from the solar panels. Does it consider the fact that some will fail, or is it based on the fact that every panel is running to capacity and and that the fact that they're not degrading, is it based on perfectly functioning panels, what they're saying they can produce?

00:36:55:16 - 00:37:39:27

Thank you. Yes. Good. Points. So I'm going to I am going to move us on following any responses that the applicant would like to make to those comments from West Lindsey District Council and 7000 acres on the 60, certainly around the issue of panels potentially lasting 60 years or the economic life of 20 years. Um. And how those have been. Those may be captured if you could, in responding, just outline the impact of failure rate on total wattage or total energy generated and how that's contained within the application.

00:38:18:04 - 00:38:52:24

A clever project for the applicant. I'm just taking the points in turn in respect of the comments from West Lindsey District Council in relation to, um, monitoring requirements. Obviously, if the plan itself has ongoing monitoring requirements, including the provision of information to, um, uh, the relevant planning authority or requirements to do things at particular points in time, such as review

and update the plan and resubmit it for approval, then those would need to be complied with as part of implementing the approved plan.

00:38:52:26 - 00:39:26:11

So all of, um, Mr. Blake's concerns can be dealt with via the drafting that goes in the actual plan. So at the moment, as I mentioned in relation to waste, there is already some wording in there about keeping the plan, uh, making sure the plan is updated periodically. But if there is further wording that you would like in respect of ongoing monitoring, particularly on waste, and then please provide it and we can look at that in terms of including it, but it very much is the case that management plans do control ongoing monitoring and that they are appropriate mechanism for doing so.

00:39:26:14 - 00:39:59:26

Um, so there is no question about there not being there being a lack of oversight or, um, you know, not being able to revisit, um, whether particular mitigation measures are effective. That can all be built into the management plan itself. But I don't believe we've had comments back on the drafting of the management plan. So we'd welcome those if, if, if as soon as possible, if additional wording, um is required in terms of um, the comments made by 7000 acres in terms of um, failure rates, Mr.

00:39:59:28 - 00:40:31:12

Clafin can just, um, set out, um, the, uh, assumptions that have been made for the purposes of the climate change assessment. But when we're looking at, um, in this context, the impacts of replacement, but replacing the panels, there are a number of different impacts that have been assessed within the environmental statement. And that is obviously the climate change emissions, which we've talked about, um, impacts in terms of, um, waste, um, and also traffic movements.

00:40:31:15 - 00:41:02:02

Um, and in particular in terms of traffic movements, we've already outlined that they are very minor in terms of the ongoing maintenance that's been, um, assessed and assumed, and that's what will be, um, controlled via the via the management plan. So when we're talking about, um, lots of impacts on local people as a result of maintenance activities, I'm not quite sure what's being referred to here, because obviously somebody will visit the site, they will take, you know, there'll be a transport movement, the panel will be replaced, and then they'll come away from the site.

00:41:02:04 - 00:41:32:26

There's no additional Elvia impacts. There's no additional, um. Uh, impacts in terms of, you know, sort of necessarily noise other than the, the, the actual movement, you know, the activity of the maintenance. So when we're talking about additional impacts in terms of the replacement of individual panels as and when required. I'm not quite sure what's being referred to here, because the applicant's position is that maintenance activities are very minor in comparison with construction.

00:41:32:28 - 00:42:13:10

We are we have not assessed the complete replacement of the project. That's not something that's being proposed or being asked to be permitted as part of this scheme. Um, we've assessed a very small percentage of panels, um, as a, as a maximum, and there was no suggestion that they would need to be, you know, that that whole 0.4% would be taken every year. That was just the percentage that's been assumed. Um, for the purposes of, um, the assessment, obviously any operator of a generating

station will want to make sure it is operating as efficiently as possible, um, and generating, um, as much energy as it can.

00:42:13:12 - 00:42:42:22

And there will be decisions taken throughout the life as to, um, what is appropriate, um, to do, whether there is a need to replace panels, um, or whether panels that have, um, that are becoming less efficient are continued, continue to operate. So those are decisions that will need to be made throughout the operating, um, life of the scheme. But I will just hand over to Mr. Claflin, who can give, um, the details of the, um, sort of, um, degradation rates that were factored into the climate change assessment.

00:42:43:04 - 00:42:54:26

Yeah. Mr. Climate change consultant for the applicant. Um, yeah. So just for the purpose of the climate change assessment, uh, we assumed a 1% degradation in the first year and then 0.4% degradation, uh, following that.

00:43:03:21 - 00:43:33:21

Okay. Thank you for those comments. I'm going to turn us now to item B. Uh, section B of item for consideration of PV panels and associated infrastructure. The kind of wider scale weather, the weather, these be ground mounted rooftop, um, and where panels come from and the size of those panels. I will be bringing in IPPs at this point.

00:43:34:15 - 00:43:48:05

So the examination has heard in other places through other hearings and in writing about the. Uh, or from IPPs. A preference for rooftop solar versus ground mounted.

00:43:49:24 - 00:44:02:22

And again, in other hearings there's been discussions around provenance, i.e. where components and panels etc. are manufactured. There's an assessment within the climate change analysis suggesting that.

00:44:04:16 - 00:44:34:23

Uh, an amount of equipment will be sourced from China. And all of that was then used to inform the climate change analysis. Ten. The applicant confirm or reconfirm as far as is possible the the sourcing of that equipment and whether or not that's changed, I think it'd be useful to hear what options are open to the applicant or any applicant, given the global economy and supply and manufacturing bases around the world.

00:44:35:13 - 00:44:48:04

So I'd just like to invite the applicant to elaborate a bit more on decisions and whether they're purely commercial, and what alternatives would have been looked at in the first instance before bringing in IPS. Thank you.

00:44:52:23 - 00:45:26:21

And that was it for the applicant. Um, so the in terms of the assessment that was carried out from a climate change perspective, we obviously, um, in our response to question 1.9.2, um, we stated that

the assumption was made that there would be 50% of material sourced from um. From Europe and 50% sourced, um, from China. However, um, it's expected that the actual panels themselves, um, would come from China.

00:45:26:23 - 00:46:06:14

There are obviously lots of other materials that are involved in the construction of this scheme, of a scheme of this nature, um, including sort of cabling and inverters and, you know, many other types of materials that are required for this scheme. And so the assumption was considered reasonable that those other types of um, apparatus and materials could be sourced from a um, closer, uh, place of manufacture, um, throughout Europe. So the applicant's position is that it was reasonable to assume, when considering all of the materials and apparatus required for the scheme, that that a 5,050% split was appropriate.

00:46:06:24 - 00:46:37:28

Um, in terms of, um, sourcing, um, materials, we, um, have, uh. Provided in the outline. Um, skills and supply chain. Um. Statement about, you know, the steps that would be taken in terms of, um. Sourcing the materials from, um. Ethically appropriate supply chains. Um, and that, um.

00:46:39:00 - 00:47:09:16

Information was given about the position taken by um solar. UK as the body about um and uh the applicant here signing up to those commitments in terms of supply chain. I mean obviously in terms of. The actual procurement process, then that's based on a number of different factors, um, including obviously cost timescales. And there's obviously a need to meet, um, the grid connection date.

00:47:09:21 - 00:47:41:13

Um, so availability of materials as well will be a factor. Um, so in terms of art, answering your question about what sort of, um, factors would influence where materials would source be sourced from than, than it is correct to say that supply chain and availability, um, would be a factor, as they are for any large scale infrastructure that needs to be completed within a, um, specific time frame. And we are working, um, to a specific timetable here, with the grid connection date required to be met.

00:47:41:15 - 00:47:42:21

So that would be a factor.

00:47:45:09 - 00:48:17:29

Thank you. So I'm going to bring in IPS. Now noting a number of representations have been made reference to sourcing from China. These will be these views have also been set out elsewhere in um written representations. Relevant representations. Open floor hearing one open floor hearing to so whilst inviting comments on what has been said. The preference is that we keep to facts and evidence rather than opinion.

00:48:18:01 - 00:48:49:23

But we will hear what is said. Um, in doing so, if IPS could address also maybe what would be their preferred mode of delivery? What alternatives to IPS suggest? Is there an alternative to create and set

up a UK solar manufacturing base? Is that credible? How long would it take? And if that is an alternative that's being suggested, how might that work? So. First of all, I can see Mrs.

00:48:49:25 - 00:48:58:10

Warren has her hand up. Mrs. Warren. Mr. Rabbit is just on his way to you.

00:49:03:02 - 00:49:34:09

Uh, Christine Warren underneath the cooling towers at West Burton Power Station. Um, when you were talking about the maintenance of the failed panels, you talked about, um, transportation and the effect on climate and various things. What doesn't have an impact, uh, on the climate and transporting all these panels in from China and Europe. Um, so it's like a defeat in the object of being green if you're going to transport something in from a different country.

00:49:34:22 - 00:49:48:27

Um, when you were actually talking of the impact of cars that you're using to transport, uh, and maintenance, so which the impact coming across would be greater, would it or have I got that wrong?

00:49:50:22 - 00:50:17:21

Thank you for that question. I'll pause whilst inviting other IPS, but that that's noted and I will invite the applicant to respond or to draw your attention to to where the answers to the climate change analysis can be found in the applicants submission. There are any other IP's in the room online who would like to comment at this time.

00:50:34:05 - 00:50:35:10

So could I just clarify?

00:50:35:12 - 00:50:36:00

That's a very good idea.

00:50:36:06 - 00:50:46:05

Peter O'Grady, 7000 acres. Is the question purely about provenance in China at this stage, or is it about. Are you asking about all of the items on part B.

00:50:46:27 - 00:51:02:08

But on item B? So I'm inviting comments about what you have heard, but also, um, I think 7000 acres make the point number of times of the preference for rooftop PV rather than ground mounted.

00:51:02:21 - 00:51:03:06

Yeah.

00:51:03:08 - 00:51:09:25

So if there's anything to add. Yeah. Above which you've already submitted in writing. Um, this would be the opportunity.

00:51:11:03 - 00:51:28:24



Yeah I think. There's a there's a couple of points. Um, I mean, Miss Broderick mentioned initially about, uh, at the end of the last section that solar energy works and makes a contribution. I think none of us are denying that. Um.

00:51:30:12 - 00:52:07:11

I think the, uh, that the the concluding point about the residual impacts. Uh, you know, the benefits outweigh the harms is effectively where we where we disagree. And, and this is where extensive ground mounted schemes like are being proposed here, um, fundamentally are not a necessary way of being able to or having to decarbonize. So the the question that we've raised a number of times that does not appear to have been addressed is, um.

00:52:08:17 - 00:52:43:14

Why we are still kind of pursuing many, many schemes of this scale, which would seem to completely, um, undermine the need for rooftop solar. Now, the applicant nominally agrees with the principle of rooftop solar. Uh, and every applicant that we go to a hearing for, um, describes that they support the ongoing development of rooftop solar in principle. And yet scheme after scheme after scheme of large scale ground mounted solar comes forward.

00:52:44:08 - 00:53:19:17

Now. Uh Skidmore review last year called for a rooftop revolution. Lots of places, you know, CPRS and all sorts of places, uh, a campaigning for, um, a a rooftop deployment at scale. And yet we seem to not be pursuing that as a country. We're heading down this this path of, uh, large scale or ultra large scale solar deployment. Um, we have, uh, referenced a couple of, uh, reports.

00:53:19:19 - 00:53:43:08

They're not done by us. They're they're they're independently done ones from the UK Warehouse Association. Uh, ones from eco tricity. In terms of, uh, the potential for, uh, warehouse, uh, solar and also rooftop solar in the UK. But we've also highlighted the example of Germany as a, as a, as a rooftop. Um.

00:53:45:01 - 00:54:31:20

Uh, or as an example of rooftop deployment. So, you know, we we're not decrying the need for solar. We're not. Not decrying the need for seven, uh, 70, uh, gigawatts of solar. Germany has already installed 80GW of solar. Uh, the vast majority of that is on rooftops. Uh, and Germany has no scheme, uh, at the size proposed by these developers. So the case put forward by the applicant that it is an essential requirement to decarbonize to achieve 70MW, uh, 70GW, should I say, would be would be wrong in in comparison to the to the clear example proposal put forward as Germany.

00:54:32:12 - 00:55:07:03

Um, and in terms of the, the pace of, of decarbonization, which is a another point that's raised separately by the applicant. Um, the UK has 16GW of solar installed. Germany installed 14GW last year alone with ten gigawatts on rooftops. So that the argument that the only way to decarbonize quickly is through ground mounted schemes of this scale is simply not borne out by the evidence, uh, experienced in other countries.

00:55:07:05 - 00:55:07:20

Thank you.

00:55:08:15 - 00:55:17:05

Thank you for that, Mr. O'Grady. Yes. Uh, familiar with some of those comments from 7000 acres. Written submissions.

00:55:18:25 - 00:55:50:12

I'm conscious that some of that may strain to government policy or policy development rather than the merits of the applications. But I'm going to invite the applicant to to give a response to Mrs. Warren's question, um, which was around climate change analysis and to if you would be so kind as to point. IPS to to where that climate change analysis is within the application submission.

00:55:50:15 - 00:56:06:01

And then also about this point that Mr. O'Grady has made, I suppose really around the impact of. Rooftop versus ground mounted solar that has been stood out through 7000 acres. Submissions.

00:56:07:13 - 00:56:31:25

Uh, Claire, the applicant, just in terms of the reference. So the climate change, um, assessment is set out in chapter seven of the environmental statement, and that's Rep 1-012. If you were looking to find the actual detailed document. But Mr. Lampkin can briefly explain, um, how traffic movements are taken into account when doing a climate change assessment. Thank you.

00:56:32:28 - 00:57:42:03

Yeah. Mr.. Clapping for the, uh, applicant. Um. So yeah, I think the the question was around, um, whether or not the kind of, um, the, the, um, emissions associated with developing the scheme itself would kind of outweigh any, any savings. Um, so, yeah, we've looked at that, um, in detail, uh, looking at the embodied carbon required for, um, making the, uh, the products that are going onto site. So the PV panels and batteries and cabling, um, as well as packaging, uh, and transportation, including shipping and um, transport by roads, um, within, within that uh, assessment, which has just been referenced, uh, and the findings of our assessment show that the savings when compared to, um, generating the same amount of electricity by, uh, by the means, the way it's currently generated, um, are, are kind of far outweigh those benefits outweigh the, uh, the emissions generated in, in producing the scheme.

00:57:43:18 - 00:57:54:12

Thank you. Um, Miss Broderick, just on those other points about rooftop solar, is there anything you'd like to add that you.

00:57:55:18 - 00:58:26:24

Abjectly applicant. As you correctly identified, most of the points made were really relating to policy and the government's policy in relation to rooftop solar. The applicant has um, throughout the examination saying that um, ground mounted solar is required in addition to rooftop solar. However, for this particular scheme, um, we were looking for, um, the ability of a scheme to generate 480MW of electricity, electricity at the point of connection at West Burton Power Station.

00:58:26:26 - 00:59:01:10

And the site selection process showed that there was no suitable sites where rooftop solar could be deployed or on a brownfield site in order to, um, generate that quantity of um, electricity, and therefore a ground mounted solar project was the only viable option for delivering this grid connection offer. Um, comments made about rooftop solar and the deliverability of rooftop solar, I think are outside the scope of this hearing, given we now have designated national policy statements.

00:59:01:12 - 00:59:09:25

And obviously, requirements for developments to have solar are a matter for the local planning authority and not related to this scheme. Thank you.

00:59:10:21 - 00:59:11:06

Thank you.

00:59:17:16 - 00:59:45:02

So I had. Some questions relating to size and scale of panels. Um, I think I'm going to save some of them for written questions, as well as noting that they might overlap with landscape and visual impact, which, um, as we've discussed, will be taken at a later date, subject to an update this afternoon.

00:59:49:04 - 00:59:54:11

A brief question, really, with reference to size of panels. Um.

00:59:55:28 - 01:00:32:27

During the written questions. The first set of written questions. There was a question in there about the existence of anything of comparable sized panels around about the 4.5m. Mark. And the response was that I suppose really the question is if a member of the community wants to go and see what one of these solar farms look like with four meter high panels, where could they go? The answer was that there are some consented schemes within the UK, but my understanding is that there isn't anything comparable at this point in time, certainly in the UK.

01:00:32:29 - 01:00:38:07

Is there any international examples that the applicant is aware of?

01:00:54:04 - 01:01:27:07

Uh, collaborated with the applicant. Um, in our response to question 1.1. 19, we did refer to a scheme that was under construction. Um, we don't have at the moment a current, um, update on what status that is at. But we can, um, look into seeing whether we can find out any information. We can provide that as a post hearing note in our written summary, if there is now something that, um, that somebody could actually see on the ground, um, in terms of international examples, we'll need to take that point away.

01:01:27:09 - 01:01:32:27

We don't have that information to hand, but we can, um, see whether there are any examples, um, of that.

01:01:33:06 - 01:02:03:26

Thank you. Yes. Yeah. Obviously in the question there was a reference and that is useful if, if you don't mind just, um, taking that as an action point to see where that is in current. Status of construction that would be useful. I note. I have some hands raised. Um, Mr.. I'm going to come to Mr. Pryor first, partly to give Mr.. Richard the chance to get over to Mrs.

01:02:03:28 - 01:02:05:14

Warren, say, Mr. Pryor.

01:02:06:05 - 01:02:37:08

Uh, thank you, sir. Mark Pryor, 77,000 acres. Perhaps I can assist. Um, there's scheme in, um, um, Morocco, the X Lynx scheme, which is being, uh, connected to Britain. It has, uh, consented grid connections and is due to have the first phase come on scheme in 2029. That does have 4.5m high sky, um, tracking panels.

01:02:37:10 - 01:03:13:24

And they will produce in summer three times the power of of equivalent um panels in the UK and five times, uh, the power in the winter months. And that is due to give the UK 11 um, gigawatts of power, which due to the mixture of solar panels, batteries and a wind farm that will provide consistent power to the UK for 19 hours a day.

01:03:13:26 - 01:03:27:15

So if we're looking at this 70, um, gigawatt, um, uh, target 11 and the gigawatts will be on stream in the next, um, six years or so.

01:03:29:05 - 01:03:39:18

Thank you. Thank you for that point and information. Um, Mrs. Warren, any so comments really relevant to size of panels?

01:03:39:26 - 01:04:05:08

Um, Christine Warren, underneath the cooling towers. Um. The panels. Um, I live underneath the cooling towers, which are fairly high structures. Why could they not be placed back where the cooling towers were? Um, and go upwards with the cooling towers and make them, um, because they're big enough structures. Why aren't we using a site that's already going to be available instead of all the land?

01:04:06:03 - 01:04:07:21

Thank you. Okay.

01:04:11:27 - 01:04:36:10

So we have we've had the point, which was more of a general point and clarification from 7000 acres about. A scheme of comparable sized panel, which I've noted. Um, is there anything the applicant wishes to say in consideration of siting PV panels where the cooling towers at West Burton are located?

01:04:38:01 - 01:05:13:28

Uh, for the applicant. Um, yes. Just in relation to the example, um, given by 7000 acres. Our understanding is that that the connection to the UK, um, it the consenting process for that hasn't started yet. We understand that it is applying to be a nationally significant infrastructure project, and therefore will require a DCO um, of its own. Um, is our understanding, but we will double check the current position. But in terms of that being an example of an operating project that connects to the UK, that's that's some way off.

01:05:14:13 - 01:05:47:18

Um, in terms of, um, the use of the site at West Burton. Um, we have set out in the site selection process that we did look at all brownfield sites, um, within, um, the sort of search area for the point of connection. Um, but those sites had to be available for use for this project. And the site at West Burton is not available. It is either currently operational land or where it's being decommissioned. The landowners, um EDF, have other plans for that land and therefore it was not available for use for solar panels.

01:05:47:20 - 01:05:48:05

Thank you.

01:05:48:13 - 01:05:49:26

Thank you. Okay.

01:05:56:16 - 01:06:04:13

Mr. O'Grady. I'll bring you in if it relates to those items that we've had without repetition.

01:06:06:15 - 01:06:55:22

Yeah. I just wanted to clarify. So Peter O'Grady, 7000 acres. Just wanted to clarify and just make sure a point, uh, the point that we've made with regard to roof and, um, and ground mounted, um, I don't want it just dismissed as all this is policy. Because I don't think this is just policy. As an as the examining authority. My understanding is that you're going to look at the needs, the benefits and the harms. Okay. Um, this is about how do you mitigate the impacts of development and something quite unusual about a solar farm being an end SIP, because fundamentally you can disaggregate the, the, the, the, the project and actually deliver exactly the same capacity in an entirely different way.

01:06:55:24 - 01:07:33:15

It's not like a, a motorway or a, uh, you know, a bridge or something like that. Um, you can disaggregate it and do it in a completely different way. And that's the, the, the point of you can get the same benefits without any of the harms of, of a development at this scale. And I think the other point is, um, you know, I don't I don't want you to think that we're against all ground mounted solar. We're not saying that all of this can be done on rooftops, but I think we we have, uh, given the example of, of of Stowe Park Solar, it's 37MW.

01:07:33:17 - 01:08:20:24

That might not sound like a lot of megawatts, but for the UK, that is a big scheme. That is already a big scheme. Um. That is something that the developer has chosen. Panels that are two to 2.5m high, so they are not so imposing on the landscape. They have selected land where they can connect directly to a passing transmission line. And I think the point that the the applicant has clearly demonstrated in

their answers is that they have reverse engineered from a position of I have a grid connection, how can I manage enough solar panels to fill it? And therefore how can I find the land that's there? That's their proposition.

01:08:20:26 - 01:08:30:16

It's not about how do I deliver? An amount of capacity, because otherwise there are different ways of doing and it doesn't need to be an insight proposal. Thank you.

01:08:32:08 - 01:08:46:19

Thank you, Mr. O'Grady. Okay. That's noted. I'm going to. Moving on to item C, is there anything this project you wanted to briefly say before I move on to item C?

01:08:47:22 - 01:09:25:01

Um, for the applicant? All I would just direct um, 7000 acres to is section 3.2 of um NN1, which specifically considers that point. Um, and it does set out that, um, there is an urgent need for all of the types of infrastructure, and the Secretary of State is not required to consider separately the specific contribution of any individual project to satisfying the need established in the NPS. So it's um, it also says that it's not the role of the planning system to deliver specific amounts or limit any form of infrastructure, and it's for the industry to propose new energy infrastructure projects.

01:09:25:03 - 01:09:59:06

So, um, when we're looking at alternatives, which is your role in, uh, or the examining authority's role to recommend the secretary of State whether the applicant has considered alternatives to the scheme, then we are looking at reasonable time that we considered for providing the 480MW, and that is the appropriate process to follow. Um, we've looked at whether rooftop could deliver it and it can't. Um, and so we have satisfied the test. So I just wanted to make clear what the actual tests are for this scheme.

01:09:59:08 - 01:10:00:16

Thank you, thank you.

01:10:00:18 - 01:10:01:05

Okay.

01:10:02:23 - 01:10:22:12

I'm going to move us on to item C. I said I would take a break around 1:00, but in the interests of concluding item four, I think we will move on to part C to allow a break following that into the afternoon session. So this is.

01:10:24:06 - 01:10:27:24

Battery energy storage system. Maintenance and safety.

01:10:30:04 - 01:10:56:03

Noting revisions to outline RBS, SNP outline, battery storage safety management plan and the references provided in the. Um, in the agenda. So IPPs and statutory consultees note that battery energy storage system has the potential to pollute the environment. The Environment Agency

recommend that the applicant considers the impact to all environmental receptors during each phase of the development.

01:10:57:27 - 01:11:26:13

The environment has stated that provided the outline, b SMP has scope to address this for all battery types. The Environment Agency is happy with the approach suggested. Firstly, then can the applicant update on the scope and confirm that scope of the OBS SMP and how far it complies with what the Environment Agency has said about addressing um, safety for all battery types?

01:11:33:17 - 01:12:07:12

And that was it for the applicant. And before I hand over, uh, to Mr. Gregory, obviously, as you mentioned, an updated version of the outline battery storage safety management plan was submitted, a deadline three, which was rep three, dash 032, which has taken on board a number of amendments in relation to changing guidelines and also discussions with the um Lincolnshire Fire and Rescue. Um, the uh, environmental statement. And the plan has assessed um impacts on all types of risk receptors.

01:12:07:14 - 01:12:33:15

So both um human receptors and ecological receptors when putting in place the appropriate mitigation measures. So our um, uh, from our perspective, we're content that, um, the outline plan does cover all of those potential impacts. However, in terms of the specific point about different battery types. I'll hand over to Mr. Gregory to give some more information on that.

01:12:37:19 - 01:12:39:09

Uh, Paul Gregory for the applicant.

01:12:40:02 - 01:13:10:11

Um, so the, uh, battery chemistry, um, that was referenced both in the outline safety management plan and also in the revised, uh, toxic emissions plume analysis. Uh, was, uh, referencing chemistry, which in certain thermal runaway scenarios, uh, produces more hydrogen. And as also consulted on the emissions document.

01:13:10:13 - 01:13:40:29

Uh, the UK Health and security Agency who defined the sort of toxic emissions that they had concerns with battery storage. Um, the chemistry was, uh, mainly selected because of the generally higher levels of HF that would be produced. So in, in both the modelling, um, and also in the uh, outlined battery safety management plan, then this was the reasonable worst case.

01:13:42:02 - 01:14:04:03

Uh. Example and, you know, distances to receptors, um, was, uh, very carefully considered. Uh, and the levels of emission under Public Health England were modeled to show that there would be no significant impacts, uh, to those respondents.

01:14:06:25 - 01:14:14:22

Thank you for that. Just on a couple of acronyms, HF and LPF. Could you just remind IPPs? Yeah.

01:14:14:24 - 01:14:50:23

So uh, lithium ferro lithium ion phosphate or lithium ferro uh phosphate. Uh, so that's the lithium ion chemistry. Uh, we're typically with battery storage. Um, uh, the two major chemistries used are NMC nickel manganese cobalt or or alpha. So that's the battery chemistry material and hydrogen fluoride. Uh. Is produced, um, at varying levels during thermal runaway.

01:14:50:25 - 01:15:02:29

And that has a, you know, kind of have, you know, very detrimental effects to human health. Um, okay. In certain dosages.

01:15:03:24 - 01:15:34:07

I think I understand. So in, in the applicants view, then the Environment Agency concern was that. The OBS. SMP hadn't addressed all battery types, but in addressing this worst case scenario, battery type, which under certain circumstances creates a greater level of toxicity, you would consider that to be addressing any range or number of.

01:15:34:29 - 01:15:40:29

Battery types, which are maybe less toxic or less prone to pollution. Pollution.

01:15:41:25 - 01:16:02:22

Uh, Paul Gregory for the applicant. Uh, yes. So, as I would understand it, under the DCO that the at the detailed design stage, if granted consent, that those emission levels could not be exceeded and, uh, site level consequence modeling would be conducted. Um, to demonstrate that was the case.

01:16:03:24 - 01:16:06:04

Thank you. Okay.

01:16:19:15 - 01:16:30:11

Okay, I see that I have one hand raised before I move on to my next question. Mrs. Warren.

01:16:36:18 - 01:17:07:19

Uh, Christine Warren underneath the cooling towers at West Mountain Power Station. How much? Um, um, information is there on the effect on people from the emissions from the, um, battery packs? I live, uh, fairly close to where you're going to put some at West Burton Power Station. Um, I have brought up in the past that we have got, um, children. Uh, we have lost two children within the village, and I don't think there's been enough research done.

01:17:08:02 - 01:17:30:09

Um, whether there's any cause of, uh, from the electric, um, generated that, um, is how much, uh, research have you done that? My life. I'm old, so it doesn't really matter. Um, will be impacted by my health. Will be impacted by your battery packs, um, emitting whatever you've just said because I didn't understand it.

01:17:31:19 - 01:17:59:00

Thank you, Mrs. Warren, I will. Put that to the applicant. In a moment. There are a number of other issues raised by IPS regarding attention to be applied to the impacts on groundwater and surface water from the escape of fire, water and or foam, and any contaminants that it may can obtain. So suitable



environmental protection measures should be provided, including systems for containing and managing water runoff.

01:18:00:17 - 01:18:01:05

Um.

01:18:03:18 - 01:18:04:07

I suppose there are.

01:18:04:22 - 01:18:15:29

A couple of questions there. One on the environmental protection measures to be included for managing water runoff.

01:18:17:16 - 01:18:57:24

Any fire. Water runoff should be contained, not drain, to soak directly into the ground. That's the Environment Agency's for you. Could I invite the applicant to set out the layers of protection that prevent the sourced pathway receptor pollution occurring? Um, also, any commentary on smoke generated by a battery fire, which would presumably be toxic on different scales depending on the battery chemistry, how that's been assessed, and then relating that to the proximity of off site receptors that impacts on health of local communities.

01:19:02:06 - 01:19:43:13

Paul Gregory for the applicant. Um, with regard to, uh, fire fighting, water runoff. Um, the outline plan, um, sort of references latest National Fire Chiefs Council guidelines. So again, it is an indicative plan at this stage. So, uh, the the statement is that the the system will be capable to capture the nominal minimum level of two hours at 1900 liters per minute, um, plus an additional, uh, amount for to correspond with any sort of rainwater and be it sort of pen, stock valve or whatever.

01:19:43:28 - 01:20:18:25

Uh, if granted consent, then, you know, there are 3 or 4 different solutions that I've been involved with on on battery energy storage systems that are capable to capture that water, to test it, either to release it if there's no pollution concerns, uh, or to be anchored away off site, uh, if the levels of pollution are above the Health England Environmental Agency levels. Okay, I would you know, I've also been involved, you know, on several recent, um, significant scale testing of a variety of different battery systems.

01:20:18:27 - 01:20:55:09

And you know, what we, uh, refer to as boundary cooling. So that would be if the fire service were directing sort of hose sprays at adjacent equipment to stop the spread of a fire. Um, that in all those types of cases. So there's no direct impingement on battery systems within the energy storage enclosure. Uh, that the levels, uh, are nominal and would be able to be released, uh, into, uh, into the general drainage system.

01:20:55:28 - 01:21:38:27

Um, if there's an integrated fire suppression system, then that water is captured separately in separate tanks. And, you know, almost certainly, uh, that would be contaminated. So that would be obviously

disposed of within all the, uh, environmental, uh, permitting, um, system. Um, and again, you know, I have been involved in some recent testing of, uh, cabinet systems where even with direct hose streams, um, that the, the levels of pollution were below, um, Public Health England levels.

01:21:38:29 - 01:22:11:10

And, you know, there was some recent, uh, environmental reports on, uh, in on both NMC and LP, um systems in New York state, which will be delivered in the next couple of months. And again, both with regard to, um, a nearby school, toxic air emissions, um, where, uh, absolutely below the levels considered any danger. Uh, and also with regard to firefighting, water runoff.

01:22:11:17 - 01:22:24:10

Um, again, these were all, um, as I understand it so far in the preliminary report, um, not considered to be of any significant threat to, to local communities.

01:22:29:06 - 01:22:29:21

Thank you.

01:22:35:25 - 01:22:55:07

Just on the impacts on, I suppose, Mrs. Warren's question from some moments ago. Any could you point us to any evidence, any research around impact on from the health relating specifically as opposed to battery storage?

01:22:55:09 - 01:23:32:00

So so Paul Gregory for the applicant, um, so under operational circumstances, um, then uh, lithium ion battery systems will not be releasing any emissions that are of any threat to, uh, you know, even within the container, for example, the enclosure, um, the data that, uh, was used for the, uh, toxic, the revised toxic, uh, emission, uh, modelling again and working with the UK Health Security Agency is we had access.

01:23:32:02 - 01:24:09:02

So I, I also work directly with battery manufacturers or original equipment manufacturers. Obviously commercial sensitivities make it very difficult to release certain information to the public domain. But on that document, we had access to a battery test facility in the UK, where we had data from a whole range of battery types and chemistries, system designs at various scale levels, and we were able to leverage that with some recent test data that I had myself, um, on batteries.

01:24:09:04 - 01:24:39:17

So we're very confident that the conservatism, i.e. the worst case, uh, emissions, uh, the, the temperatures we assume for the fires that the burn out times, etc. were actually highly representative of current, uh, commercial battery systems and therefore the the modelling that was conducted in that report at distances to respondents, etc..

01:24:40:03 - 01:24:57:20

Uh, we are very confident that that is, in my view, in the UK, you know, having worked on several of these types of projects is that it's the most accurate and up to date information that is available in a public forum, shall we say.

01:24:58:14 - 01:25:41:21

In collaboration with the applicant. Just to add that the, um, there was an addendum submitted at deadline three, um, to provide some further information, um, to the air quality chapter that Mr. Gregory is speaking and their reference for that is Rep 3-040. So that document includes the, um, the modeling that was done in response to um, request for further information from um UK Health Security Agency. Um, also just to clarify for this, whilst obviously the concerns raised apply to all projects that have energy storage as part of them, this particular scheme does not involve any energy storage.

01:25:41:23 - 01:26:25:16

Actually, at West Burton Power Station, I know there is another development that has um, consent for battery storage. There are just to be clear, the battery storage for this scheme is located within the West Burton three site. However, the impacts that Mrs. Warren was concerned about have been fully assessed and they are contained within the environmental statement. I also just wanted to add that obviously this, as Mr. Gregory alluded to, this is an evolving area as more and more of these schemes are, um, consented and operated and the guidance and the procedures continue to evolve, um, and the outline battery storage plan has very much been based on um, current, uh, and the preferred options.

01:26:25:18 - 01:26:57:13

But obviously the final plan for this will be based on, um, the appropriate guidelines and guidance that apply at that point in time. And obviously the actual operation of the facility will have to comply with any other laws and regulations requiring, you know, relating to safety and emissions that apply throughout its operational life. So it's very much a an outline plan based on um, current, um, expectations and procedures. But the final plan will be as up to date as possible.

01:26:57:19 - 01:27:12:27

Thank you. Thank you for that clarification, Mrs. Warren. I can see your arm is raised. I am going to come to you. I need to just see if any before we conclude. Item C, if any of the IPPs wish to comment on what they've heard.

01:27:16:15 - 01:27:37:00

So I can see. Well, I would take West Lindsey District Council on 7000 acres. Mrs. Warren, if you can just hold on for two questions, and then I think that will draw a line under this topic for today. Um, having heard anything back from the applicant. Okay. West Lindsey District Council.

01:27:37:25 - 01:28:10:11

Thank you sir. Russell Clarkson for West Lindsey district Council. It's just really sickened with the clarity really in terms of the the best. Uh, we were talking earlier about the failure rate of the PV panels, and I appreciate that. The safety management plan does address the safety measures in the event of failure of batteries. Well, I'm not altogether clear on and apologies if it is so that we've within the documentation is if there's an assessment of a failure rate, anticipated failure rate for the batteries and also the life cycle of the battery.

01:28:10:13 - 01:28:49:03

So in understanding the extent to which the batteries individually will need to be replaced during the lifetime of the development, bearing in mind that we are now looking at 60 years rather than 40. I think I have seen the documentation that there is a view that the best will be looked to replaced at least once in its entirety, and the implication it could be replaced twice. So I suppose it's just looking for a little bit of clarity really, in terms of the maintenance side of things, is there a likelihood that there'll be incremental changes throughout the lifetime of the development, or we'll be looking at wholesale changes of the best in its entirety once or more during during the lifetime? Really? Thank you sir.

01:28:49:26 - 01:28:54:24

Thank you. I'll hold on to that one for a moment, Mr. Pryor. Sometimes naked.

01:28:54:28 - 01:29:29:01

Thank you sir. Mark Pryor, 7000 acres. Um, first of all, two, um, general points, uh, N-1, uh, excludes and battery storage from the CIP, um, and process. Um, second point is, it's our belief that, um, something like a Bess does not need to be located on, um, farmland. It could be on, on a brand, a brownfield site, such as at the grid connection.

01:29:29:24 - 01:30:02:14

Um, just to move on to the questions you raised. Firstly, the, um, battery storage, um, management plan has improved since the last versions because it now does take account of a thermal, um, runaway. The previous versions just took account of a fire, but there's still a big gap. And we've touched on on water. But it's not just the water runoff. It's the supply of the water to douse and cool a thermal.

01:30:02:20 - 01:30:46:10

Um, run, run a runaway. The evidence shows that you will need more than two hours of water. Uh, example for that is the 20 megawatt, um, thermal, um, runaway in a Bess in, um, at Liverpool that had to be doused for 59 hours. There was a planning application for a 50 megawatt Bess in Yorkshire and Yorkshire Fire Brigade worked out they would need 5.5 million litres of water to deal with an event there.

01:30:47:03 - 01:31:19:09

There is not enough water on on site, and we don't believe there is enough funding to cope with that volume of water. And there are not the local mains that can, um, supply that. So that's still it is an issue. The applicant needs to store more and water on site or connect to larger mains. And of course all of that will have to have buns of the correct size.

01:31:21:08 - 01:31:41:27

Thank you, Mr. Pryor. Okay. And a final comment from Mrs. Warren before we go back to the applicant, bearing in mind, as we have heard, there is no within West Burton solar project there. There is no proposal to store energy on site at West Burton Power Station.

01:31:42:02 - 01:32:04:09

It's just a question. I'm going to ask, uh, Christine Warren. Underneath cooling towers. There was two points. Uh, one. You said this for solutions. Does that mean it's for problems? And the second is, um,

you didn't give a date on the research. Um, that was available. Um, and one of the comments was, in your opinion, is that research in itself?

01:32:06:26 - 01:32:31:09

Okay. Thank you. So I'm going to bring in the applicant for one last time before we do break. There's the question of clarity for West Lindsey District Council on replacement of energy storage system 7000 acres about the level of water. And is it sufficient and water runoff. And then, uh, a comment back to the evidence that you submitted a while ago.

01:32:33:20 - 01:33:14:23

Paul Gregory for the applicant. Um, so with regard for West Lindsey, so the battery cells, which are commercially available at the moment. Typically every two years there's a new cell, a new generation of battery. So it's an evolving sort of process. Uh, the sort of average lifespan for about best system is between 12 and 20 years currently. Okay. Um, the commitment in the outline plan is that with the battery management system, a high level of what we call data analytics, which is monitoring each cell, um, from a variety of and again, it is actually scoped out in the report.

01:33:14:25 - 01:33:46:15

So, you know, you can actually, uh, if you've got an underperforming cell, you can even maintain and decommission at a cell level. Again, if you have an underperforming module at any point within that life cycle, you will spot that it's underperforming. And it can be just we call it plug and play. You can take it out and putting a new one. And then so with regards to the safety management plan, you will have a decommissioning plan that goes from start through to end of life cycle decommissioning okay.

01:33:46:17 - 01:34:18:00

So there are various levels of monitoring and decommissioning that can take place, uh, throughout the proposed lifecycle. Just to dial it back a little bit to the PV panels. So what battery OEMs manufacturers do is they will put systems through accelerated accelerated lifecycle testing. So whilst you wouldn't have had a system that's had 20 years in the real world, they will put it through the requisite number of cycles over a a very short time frame. Okay. So that's typically how that that would happen.

01:34:18:18 - 01:34:57:11

Um, so with regard to the fire water runoff. So two separate uh areas there. The first one was Liverpool where there was not, um, an emergency response plan in place. The local fire service did not. No, uh, the type of system that was in there. Um, so they did, in fact, uh, direct, direct hose streams on there for 56 hours. Um, there have been a significant deflagration there wasn't any explosion prevention or control systems in the enclosure, which, uh, the will be, um, there's a commitment by the applicant to, to do that.

01:34:57:20 - 01:35:36:00

Um, so that was really a an untrained fire service response. Um, obviously not their fault. Where, um, obviously what would happen when you put direct hose streams on the battery system is you may well, uh, put out the fire and cool it, but you're going to be significantly shorting the other units, so

you're actually prolonging that incident. Um, you know, so normally, uh, 2.5MW hour container, you know, probably would have burnt out sort of in, in sort of 12 hours.

01:35:36:02 - 01:36:19:09

So because of the response, then that incident was significantly prolonged. Um. The Outline battery Safety management plan is only saying at a minimum, it will conform with the current National Fire Chiefs guidance, which is two hours at 1900 liters per minute. You know, that is not um, and that the so we are then uh, committing that at if granted consent at the detailed design stage, the, uh water will be requisite, um, for what is required for the system that is selected.

01:36:19:15 - 01:37:02:11

Again, the safety management plan makes clear that hose streams would not be directed on the battery systems themselves. If there is to be any direct suppression, that would be either an internal fire suppression system or, uh, I've been involved with several systems now which are called thermal management systems and which are now being sort of, uh, quantified and clarified, certified by NFPA in the US and UL, uh, which where you can directly access the cells themselves to add, uh, more efficient cooling with, uh, less suppression agent.

01:37:02:14 - 01:37:40:20

Okay. So, um, the comments from the Yorkshire Fire Chief, I believe you prefaced it by saying we have had no guidance, and I don't we will we really require training in these sort of circumstances? So those calculations were based on, uh, just some data from two Tesla car fires, which again, don't bear any relation to the battery system that would necessarily be stored on that site. Obviously, with electric vehicles, the battery packs have to be totally waterproof to pass certain testing and certification standards.

01:37:40:22 - 01:38:15:18

So again, whenever we look at fire and explosion testing and uh, uh, data, then you compare apples with apples, you know, not apples with pears. So, um, there's a commitment in the outline plan that, uh, the, uh, that firefighting water would be for boundary cooling only and that the, uh, system that was selected at the detailed design stage would have had full scale testing to establish boundary cooling requirements and site design spacing.

01:38:18:02 - 01:38:19:04

Thank you, Mr. Gregory.

01:38:22:18 - 01:38:54:23

I think that concludes. Matters under Fauci. So I am going to move to the. Break now. When we come back, there will be the curtailed update really on Landscape and Vigil, which is item five followed by item six. It's. Nearly 21. Are. To give everyone enough time to take lunch. I'll recommend that we all come back at 215.

01:38:57:09 - 01:38:57:24

Thank you.