East Anglia_ISH2_3rdDec_Session 3

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00:08
Good afternoon, everyone. And welcome back. Just before we start case to confirm that we are being recorded and you can see in here

00:18
I can confirm Mr. Hockley. We're being recorded, and I can see and hear you. Excellent. Thank you very much, Miss hopewell. Well, that's great. Okay, and just before we commence on agenda item for B, I thought it was worth noting that I'll carry on the same approach as we carried out for agenda item for a day. So I intend to go through the agenda items, exploring the items with the applicant primarily, but sometimes we have other parties, and then obviously ask for any contributions from other interested parties before reverting to the applicants. Before we move on. Everyone is obviously Welcome to contribute and can let me know by just raising your virtual hand. In the interest of fairness, I will try to avoid going back to parties want to have already spoken on a particular item.

01:00
We'll look first at overarching siting and design issues. And this is of course, we're talking about now the design and impact of the proposed substations stroke transmission systems connections, including the proposed National Grid substation, and connections to the grid.

01:15
So we are also due to consider landscape and visual impact the historic environment and achieving good design. Although I'm sure you'll expect a lot of these topics do overlap. And so we may seemingly jump around a little bit. So if we start some overarching design questions, and firstly to the applicants, please your answer to

01:36
our written question 1.0 point eight quotes in one as using design council cave and commit yourself to design review of the landscape and building design proposals and states at various design documents will be updated for deadline free. You also mentioned that you see no need to appoint a design champion or external design panel given in house skills that you have.

01:58
The national infrastructure strategy published by HM Treasury, about a week ago, states that the government is committed to embedding good design in all major infrastructure projects, and expects all infrastructure project to have a board level design champion in place by the end of 2021. Either the project programme or organisational level supported where appropriate by design panels. Could you

briefly outline your design strategy for us and confirm that your projects will meet the expectations of the national infrastructure strategy? Where appropriate?

02:37
Sorry, do we have the applicants?

02:40
Good afternoon, Mr. Ennis, thank you. Did you hear that, stewardess? Yes. Good afternoon, close up off of the

02:48
applicants. Um,

02:51
the question is quite far reaching in the sense of, I would suggest that the approach and how we've gone about designing the project, actually is at different layers. And what I would say is that in terms of the approach that the first is, understanding what we need in terms of that electrical requirements, those physical, physical aspects that we require to provide, and how they need to be set out and orientated, and then how they are cited, and how then we could set up the mitigation and how it fits relative to what we're unable to do. In terms of our of the landscape response. In terms of the Design tab, we are going to potentially update our position in relation to deadline three, and we will take on board the recently announced national infrastructure position.

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But equally we do have a, you know, we've done it before we understand the process. And we understand the importance of I suppose the best description is effective engagement, a series of levels,

04:07
B, local councils, parish councils, etc, as part of that process. And that's certainly something we've already achieved and worked with in other projects. And so it's not just, you know, having one person championing design we view design as a process. And I suppose the concept of a design champion is somebody who leads the process and ensures those design elements are taken forward. We certainly have already put forward and are continuing to evolve through the our outline,

04:42
design plans for the onshore substation National Grid substation, which we submitted the course a process that we believe will help to achieve good design, but in terms of no one person in terms of the team

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It's really, at this stage I could talk I'm and I can bring in an electrical engineer to tell you what we can do, I can tell you bring in the landscape advisor to tell you how we've approached it. And, and, and I think probably the one thing that I think if we could take at this stage is that, in essence, the, we have a rock cell envelope, which we've assessed and provided what we believe is

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an appropriate response in terms of mitigation. But these things do evolve in the process of the final design of the project. And it is inevitable in a national scale infrastructure project for large scale elements of the project to be subject to further design and build post consent.

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And simply put the costs involved in terms of doing some of the

05:58
service, etc, on a very, very substantial scale. And equally, the studies have to match effectively the technical evolution of exactly where the project will be. And there is a bit of, we are in stages. And I think it's important to understand that we are in stages of we are at a stage of this project, where we can first see where a lot of the supply chain is developing, that then influences First of all, potentially offshore technology and deployment, that then influences the decisions around the more detailed technical specification of the grid. And ultimately, to the substation design. Now, we're at a stage for having undertaken that level of engagement, that we are, as outlined yesterday, capable of delivering a further squeeze to the Rochdale envelope, which in terms of this type of project is actually fairly critical in terms of what we can and can't do in terms of develops the project. These will further refine potentially through the final design iterations, because there'll be an element of design and design in terms of of those final contracts. But we haven't been able to engage with the supply chain. And we are making progress in terms of that. And I suppose part of, of where we are in terms of of the design isn't part going to be reflected by that further material that we're putting in at three and four, which is a further stage of the advancement of the project. And equally in that context is the commitment we made a deadline to regarding the potential footprints, again, in terms of particularly when we're talking about the substation, it's those elements of squeezing the Rochdale envelope and minimising the impacts through that is actually fairly fundamental and critical. And that's what we have continued to do. And I must say that we are at a more advanced stage of that process then would be standard at this stage of a project, we have sought to genuinely push forward some of those issues to help us help move towards mitigating some of those effects, as regards the the say, for example, taking signup, final build buildings etc. Again, once those are designed as part of that design process, again, we have experience in working with the council's are setting out a number of range of designs and then coming to a solution after there has been a essentially a due process of considering those designs. And as I said that hopefully sets a sort of broader context to the approach. But we do genuinely believe that that final element of design in terms of things like building materials etc, is one which should be undertaken in consultation and with a suite of materials at a time when we know exactly what those buildings will be height wise scale massing, etc. That is when you get the opportunity to really put in that design work in consultation with others.

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Okay, thank you for that minister. Mr. Ennis, I think what that would lead me to say is

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clearly you mentioned there about design of buildings and materials and so on, is there anything that you can do

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earlier on in terms of parameters?

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So we have

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it might be a good time now I don't know if you if your team is aware of the design work carried out in the Borealis project.

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So and obviously that might well be something that you need to take away with you if you don't have any knowledge of that but and the type of work that they they were they were doing during the examination stage on on design.

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I can run for

10:00
To predict if that would be useful.

10:02
So that would be very useful.

10:05
Okay, so

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the Boreas project

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contains more detail

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and makes explicit commitment. So to produce a design guide for the substation

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provide to a strong explanation of the design process. And then contains various dependencies as well.

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All of which are missing at the moment from from your design and access statement,

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including the outline of Design Guide, which has a strong focus on the detail of landscape mitigation.

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And he's largely intended as a vehicle for further consultation with stakeholders in the community

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includes photographs, for instance of agricultural style building, so to kind of parameters I mentioned before and preliminary design report, which starts to deal in detail with possible materials, colours, zoning and layout.

11:09
So is that something that you want to take back with you and come back to me later deadline?

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Obviously, it's all on the on the national infrastructure website. If you look at the Boris

11:21
project,

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I'm more than happy to do so I'm I think we, as I say, Elizabeth the applicant , we have done quite a lot of work in it or not accept the same format with the angular one with the council's we have produced the design statement that we put in at that stage, which ultimately led to

11:43
the ultimate discussions and that. So I'm pretty sure we can, we'll take that away and come back to you soon. Okay, thank you. If we could just dip back into what you said about design champion or design panel. And obviously, your comments from deadline to at that

12:02
design champion, obviously, it can provide integration, a silo approach, need, and also makes a link between project design by consultants and project delivery by contractors.

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And I wondered if if it would be useful if you could reconsider an independent design champion or panel for your project?

12:37
Well, we'll do that as part of the process of coming back on the on the automatic, it's all linked? Yeah, I suppose. We are already on the process of building the both the onshore substation outline design,

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and also a similar document for the National Grid as well. So we're already on the line of building that plan, I suppose. But that's the point where that would be most relevant. And potentially, to the extent to which we can build in some further further detail to that. Yeah. Thank you. Also, also in network, I think if any inaction any ideas on how, how it will be secured, as well, will be useful. Yes, I think that's probably enough. That's probably we, we have give consideration to how those design elements are secured.

13:32
I think we've already thought about the principle of that. And I suppose it's the detail of some of the matters that contained the method and the wording, but yet follows from Yeah, okay. Okay. Thank you. And this is kind of, they're all on the same subject at the moment. But your answer to those first set of questions you'd mentioned design will be advanced with the council's during 2021. So it's more

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asking really whether that would be advanced, as we've really discussed there, we have the examining authority to during the examination proposal.

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Yep.

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Can I do first of all, in terms of dealing with development with the council's I think one of the things that

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we're conscious of is that in any major infrastructure project, in terms of as the project moves forward into actual delivery, that the the volume of work that that poses both on the Africans and the council is fairly substantial.

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And in particular, where you're trying to carry out engagement

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That's a process that should properly take time, as opposed to be one where you're trying to put sort of technical documents in for approval, where, you know, racking up it that that that that was the reason why that approach was going to be adopted with the council's early was essentially to avoid the point of, essentially, if you're going to engage in a series of people and a series of groups, you can't really do that potentially, once the pressure is on in terms of that delivery time scale. And so it was really to try and say, to make that effective, we were seeking to do that in advance of that process, to seek to ensure that there was the proper time available, and that the inputs could be properly considered, and not pre judged. And so that's the reason why we would do that, at in that timing context. And it was supposed to be and it is intended to be a positive one, whereby the approach to, to engagement and working through a design that the counsellors and others feel is the most appropriate for the site

16:14

is one, which is given the appropriate time. And that the reasoning behind that approach was to try and make sure that there was sufficient time available to do that properly. And effectively. Thank you, I think what, what, what maybe, we're looking for, and I understand what you say there is kind of more more information on how the design process we managed, who will be consulted, and the further detail of design requirements.

16:44
How that will be developed prior to submission to the to the council's

16:52
you also mentioned I think, at the deadline, one that the outline onshore substation design principle statement could be a certified document. But he suggested that that would be more appropriate than the design and access statement.

17:06
My question then would be, why not both with an enhanced design and access statement.

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And along with the issues that we've talked about already, I think you'd be useful to all parties really, if

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a design access statement could contain illustrative material possible alternatives and sell a helpful way of showing intentions and ambition.

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Yep, I think I think I'm better not just responding off the hook, I need to think through that and how it worked best we did fit it was very important for the particularly onshore substations to

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essentially be getting there obviously has to be an integration to the whole design. And I understand backhaul ticular point and I suspect that's what you're getting at as I'm expanding then and trying and have it in the time axis statement that you don't look at the pieces of infrastructure in isolation, without having the sort of wider context or how it fits with other matters, and certainly would be, again, part of the the overall design process. And in particular,

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you know, how the,

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the the aliens and the breakdown of landscape management plan and ecological management plans would work relative to essentially, those aspects that they're in and around the substation, I think.

18:39

Because there are there are connections and relationships between those aspects. And I can I can get the point that you can't really look at it in isolation when you've got those things also being brought together. And I don't think we have ever looked at these matters in isolation. And certainly, our attempts within matters, like the Outland irlams plan was a sense essentially, an integrated approach. And, you know, one of the issues about bringing these three projects, the sort of two projects together with the with,

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with the overall perspective was to serve these matters can be looked at holistically and a response but holistically rather than viewed as individual projects being mitigated on an individual basis. And in a way

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we can come and look at that later if you need to, but one project or another would end up with a very similar landscape response. And we from the outset, felt that an integrated approach was the right one in terms of working out the response to the to the to the response to most successfully delivering the landscape management plans and holistic manner.

19:53
Okay, thank you. It's this this is covered similar ground

20:00
Sorry,

20:01
I just finished up that I see another place. So yes, Simon Martin, and landscape visual advisor for the African, it was just the follow up on some of that discussion. So just in terms of

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my experience on recent amset projects, and particularly, our involvement in the applicant's East Anglia one project was just to, you know, and let you know, really that the we were we were involved in the detailed design document for East Anglia one. And that process I think, was undertaken as part of the decio can sub consent conditions stage for for that project, rather than during the the examination period.

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But the applicant is,

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is very happy to engage in that process or a similar process that we went through for assembly one with

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the various stakeholders that were involved in that.

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And, I mean, I think ultimately, that design document, something similar to, I think, perhaps what you seen there for Borealis in terms of how it looked at

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the treatment of the substation infrastructure, its design, and how it responds to the, you know, to the local context.

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to things like the materiality of the buildings, for example, the colour and form of the buildings in so far as we can, we can influence those elements of the design into to fit with the local, the local character. And that would be something that we would propose to do and continue to do as part of as part of these projects. And we think would work well to take a similar approach

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forward with the, with the council's and potentially the, the external Design Review Panel, that design council were involved in the Stanley Irwin

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substation design document and contributed that sort of external independent peer review

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to the

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substation design elements I mentioned before, but for materiality of the buildings, but also the, also the landscape design and what we could do with the external

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space in terms of landscape treatment around the substations and, you know, went into quite a lot of detail about colours, and, you know, looking at local colours in the local vernacular and types of fencing and, and so on material treatments for the for the

22:37
ground areas and substation,

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which we're very happy to continue to do us as part of this project.

22:47
Okay, thank you. I think what I'd say,

22:51
in response to that really was, that's very useful. And obviously, you know,

22:56
we're not expecting a completed design, you know, and, but we've referenced at EA one.

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The, as I understand it, the detailed design document for a while and was produced after the decision, whereas the various design access statement was produced prior to recommendation,

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in line really, with changing government policy about promoting good design, these things got pushed forward further, earlier on in the process.

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I was curious about that

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becomes,

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for us in terms of stage in a process, we also have to engage effectively with the supply chain, to make sure that we have sufficient details to make the design meaningful, or otherwise, what you end up with the criticism is that effectively, we've had a discussion of a design concept that doesn't actually get delivered, because there's a separate process that goes in. So in terms of taking this matter forward, I don't know we've probably proposed trying to give greater certainty as to the process, how we've managed this process going forward. And as I say, we've already given indications that's like the logic for the material at deadline three,

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I think that we would be able to meaningfully

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get material into the examination that would have been properly considered with the supply chain. Therefore, anything that we produce at this stage would probably be pretty indicative, and it would be the start of a design process at max. So I think I do have to flag but there is a limitations to what we provide in probably the rest of the examination and increase when we when we could potentially deliver that. Okay. I think what

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I think as you alluded to yesterday, really indications that deadline free and more substantive information by deadline for would be useful.

25:00
Certainly for our benefit, and I think for the councils and local stakeholders.

25:15
Okay.

25:18
Okay, thank you for that. And there was a couple of other still on it on the subject to overarching design, but there's a couple of

25:26
issues I wanted to pick up.

25:28
And that I noted and deadline to information that finish floor levels are to be determined or maybe not determined, but more information provided a deadline free.

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And I noted that the council's in their local impact report state that finished floor levels of 19.8 metres and 21.4 metres IO D are within the outline onshore substation design principle statement. And that different finish floor level figures are in the old limbs where there's levels of state to be 18.2 and 20.7 metres od. So really, I was on this question, I was looking for any more clarity on that issue.

26:07
I'm going in it's for the Applicant for good to hand over to Brian mcgillis who I think could assist on backmatter Thank you.

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I, brahma grellus for the applicants. Yes, just to confirm a deadline free we will be submitting

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further and rationally clarification on the ground level off the

26:34
sorry, once our substation National Grid

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Okay, and can you can you give us any information about the discrepancy between those two documents?

26:45
I suspect that was starting to our final editing pushes to to find links to documentation site WP clarified at on more certainty will be added at deadline free in terms of our commitments regarding building the overall building heights on the onshore substation, which are related to the finish grade levels at the onshore substation. Thank you. And will the clarification note or further information or deadline free? But I understand that obviously some cutting field will be required on the site. But the details of this aren't clear.

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Will that clarification no include further assessments of cut and fill

27:29
and uses for the cut and fill material? In essence? Brian regards for the applicants. Yes, that will.

27:38
Thank you put up.

27:41
Okay, and I just wanted now to move on to the question of

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AI s or GIS as Erin, she likes your gas insulated. And

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it's a question about national grid substation. So we you know, understand that that's not you necessarily, but your answer to the written question 1.0. point five seems to suggest at the National Grid substation, and is likely to be errante related. Could you confirm that and? And why'd you why'd you take that view? In essence

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that's the question to the applicant.

28:38
Hello, hi. I do the materials say on behalf of the applicant and in the consent with because we are concerning on behalf of national grid have allowed for both

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a switchgear configurations both is in GIS, with the one being the one that is the front runner is a is because this is what how they're building their substations normally. And the fallback is GIS. I understand that from a content point of view, these two options need to be kept open for the time being. Okay. So see, you're assuming is because Is it fair to say that's what they normally build? Yes. Okay. Thank you. And

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is a is chosen is it? Well, that's put it more bluntly, but is it cheaper than GIS

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dimitriadis on behalf of the applicant a as has

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a cheaper cost in terms of capex capital expenditure from cost to purchase the the equipment and it is more expensive in terms of maintenance in the long term because it as you can understand because the fact that it is exposed to the environment and

30:00
Whether it requires a lot of

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operation maintenance, whereas GIS, it has a higher upfront cost capex, but then because it is fully enclosed and is protected from weather from vandalism from this and that it requires minimum, minimal maintenance. So it's cheaper in the long term. I say, thank you. And you're kind of same vein, I believe your substations approach proposed to be GIS.

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Is that correct? And On what basis did you make that decision?

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hi to them

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on behalf of the applicant, indeed, we do prefer GIS. Because first and foremost, we can achieve a significant footprint reduction in the overall compound substation compound, up to 30 35%. Just to give you an indication, and the second reason is because we can fully enclose the switchgear in a building. And hence, we can protect it from snow, from sand from

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weather,

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and also from vandalism. And so we

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we also prefer distribution because we believe it's a it's a, it's a, it's a good design approach, the building can be easier to incorporate into the wider landscape and the

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and

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the surroundings of the environment. Because you can paint the building the colours to match the surroundings and so on and so forth associate it gives us a lot of flexibility in terms of good design, and the reduced footprint overall. Thank you. That that's all that's that's very useful. Very interesting. I suppose my question leading on from that was, obviously you've you've outlined the benefits of duress

in terms of good design. And why wouldn't that that same good design be applied to the National Grid substation?

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Thank you to the materials from the applicant, I

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would not like to comment on behalf of national grid in this moment, I think they are open to both options will have discussed both options in our a continuous engagement. We have him

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obviously, they have their own standards, because they are the National Grid transmission operator, they have their own supply chain, and they have access to that supply chain. And for years and years, I have been developing substation, substation, substations with a is so yes, this is where they're coming from.

32:54
But again, in the continent, we have kept both options open.

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So as to achieve the best

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possible outcome into understand Thank you. I think it's, it's more a case of obviously you you've very usefully there tells about the environmental benefits of GIS over iOS,

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and the application contained to the National Grid substation. So the question would be, you know, how would that like to progress in the examination period? are we likely to receive more information on on the choice of technology for the National Grid substation.

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as we understand it, enough to create a transition, we'd rather retain the flexibility of having either gi si es equipment, and their preferred option is the a is.

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But obviously, given those two options, we've potentially put both in and give you the information to enable that. But I think there's this a separate point is that, whilst we are all looking at it from a single asset perspective, we're looking at our substations, they have to look at their network. And that's what's got to be economic and efficient. And obviously, they have their own duties to be met in that respect.

34:28
And so it's not just, it's their network that they're looking at, and what however, how can that be economic and efficient? And I think it is a question that you can properly put to them. But as advised

moment, we have not received an indication that they would wish options to remove during examination. And it would be intended that those options both remain on the table with the worst case is

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Haven't been assessed, but also subtle variations with the key is also illustrated to you in the material that's been submitted.

35:11
Okay, thank you for that minister. And it's I think that's probably an action for us to take away to, to question National Grid further on that. So thank you for that that was useful.

35:25
I have some questions now on the overall layout. And just for obviously, everybody else listening, have a few questions now and overall layout, and then I will open the floor if you'd like while we're still on the overwriting site in overarching excuse me, citing and design issues.

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So the

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question to the overall proposed layout the project, including all three substations,

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as I understand it, a new MP general arrangement is to be submitted at deadline free. And I wonder if there's any indication on what you can give on what the likely changes within that at this stage.

36:07
Hi, Simon Martin on behalf of the Applicant just in terms of the hideout just in terms of the changes specifically to the to the LM clinic deadline three that we're currently looking at. And the main change is the reduction in the footprint of the substations to as 170 by 190 metre footprint or both of the two project substations. So I could just pick those figures again, for me, please. Yes, one one engine 90 metres I 170 metres. Okay, that's a reduction. Yep. It's a reduction of 20 metres on each right at the substation footprints from what was assessed in the environmental impact assessment, and was originally presented in the the erlend in the NDS documents. And so the changes that we're currently looking at in terms of the polam reflect that update in the in the preferred arrangement, essentially,

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there's, there's a sort of 40 metre overall difference in terms of the western edge of the of the Western substation. And so there's a movement in that Eastern direction of the of the substation footprint. And the key thing really, that that allows, as well as increasing the distance from some of that some of the key receptors

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is that there's an area of woodland planting on the, on that western side of the site. So we're looking currently at just how we can retain that Woodlands as part of the landscape scheme.

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And extends that existing Woodlands along the western edge of substations so that we have a greater screening function on the on that side of the site. And so that's that's really, I would say, that's, that's one of the key areas we're looking at in terms of the change to the overland.

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Currently, we're also looking at a number of other

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areas, just to to address the various comments that we had from, from stakeholders through the process. I can I can go into those of you if you wanted to further here.

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Or we can obviously

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be including those in in the deadline, three submissions. If you could give us a brief summary. I think that that would be useful. Thank you. Yeah, sure. I'll just get a plan up in front of me, of course. So this is all coming in at the deadline for is that correct? Do MP general arrangement?

38:57
That I believe that's correct. So yes, that's what we're working towards currently is as an updated version of the our MP generator drawings. Yeah, thank you. And there is a package of drawings that goes with that.

39:11
The other updates that we're currently looking at on that plan, and the areas to the to the size of the site between Friston and the substations. And we're looking at what else we can do really in terms of screening and mitigation planting in that area. And you'll see from the submitted documents and the description really at the end that our priority in that area through the landscape design was to try to retain some of the open character of the landscape and the setting of the village

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while it while also trying to provide a kind of layered screening

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approach to

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that area and just trying to strengthen some of the existing field boundaries through through filling hedgerows and planting

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individual trees along field boundaries at larger size to try and recreate some of the historic pattern of the landscape in that area. And so we're looking further at that, I suppose is what I would say in terms of whether we can include

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some areas some additional areas of small

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field planting in and around the edges of the field system in that area to try and strengthen the level of screening increase the level of screening in views from Friston in the northern edges of Reston

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so that's one area, we're also

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strengthening some of the planting to the north of the National Grid substation,

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we've had another look at the ceiling and compounds in particular, how we can, how we can strengthen and enhance some of the landscape screening around those particular features in the landscape.

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We were aware of the constraints of planting woodland sort of in close proximity to overhead lines. And I think in the in the submitted draft of the plan, we concentrated really in that area on hedgerow planting, grassland restoration that that kind of thing, but we're looking at increasing the cover of sort of

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lower sort of species woodland species, shrub species in that in that area to try and provide more screening from the north.

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And there are warning to other areas just in terms of the covert of wooden blocks to the Cypher forest and more farm, which is trying to an area of planting in there that we can shred them

42:06
as well as

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realigning some of the some of the planting where we're looking at the public rights of way again.

42:18
So I think those are the

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those are the main things currently. So thank you for that that's useful, I look forward to receiving that.

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It's taking a step back, almost really from the detail that you've just gone through there. But if we could then move back to

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a wider level, if you like, and the approach taken to the in terms of the hidden and integrated approach and so on in terms of the overall layout.

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And your answer to the written question, one, zero 14 you stay to process that resulted in the overall layout as it stands at the minute.

42:58
My question really would be could a more dispersed layout more dispersed in terms of the substations themselves retain valued local features, such as, for instance, that the pathway which we'll go on to talk about later on, but the central path from little more farm to the church at Friston, and allow within the more discreet blocks, if you like more small individual blocks of landscaping.

43:23
Yet Simon Martin LBI, advisor for the Applicant?

43:27
Yes, it's zooming out to that again. And that goes back to the

43:33
process of micro siting, really, that was undertaken to try and refine the best location for the two the two onshore substations at the site. And

43:45
I mean, I think, but you know what, on the one hand, you you might avoid that impact on the public right of way, we should have more dispersed layout be considered. I think there are a knock on effects of doing that in terms of having the most more dispersed

44:01
arrangement.

44:03
We did look at a number of options during the early part of the the micro sightings sort of stage and they are shown in the site selection chapter in a series of figures there. And one of the main drivers was in terms of the colocation and micro siting of the substations site was was to try and reduce

landscaping visual impacts and try and try and consolidate and contain development insofar as possible with the, the size of the substation footprints that we have, and

44:41
really trying and co locating them that in that way we felt minimises wider character change on the landscape and

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wide visibility of the substations on other receptors in the wider area.

44:58
And I think there's also a

45:00
No more rationale really in terms of the appearance of the substations when they're viewed in close proximity to the to the headline, which you maybe lose if substations cited, you know, in a dispersed position from the light. Yeah. Yeah, those are our, our considerations really at that, that that stage ultimately,

45:27
you know, we felt we got to. And

45:32
this was an optimal alignment insofar as we could with with the footprint that we have in the available space, and to allow the maximum screening by both the existing Woodlands at a grove word and Lauren Cova. But also in terms of

45:50
having a very kind of clear screening zone, if you like, between the colocated substations and, and the main receptors. And I think that could have been more difficult to achieve if they'd been more dispersed and spread out in the landscape.

46:08
So, yeah, that that'd be

46:13
my mission really, initially. So that was your rationale. Fair. Fair enough. Okay. Thank you for that.

46:20
We have obviously started to move slightly into landscaping visual impact, which will, which we'll cover in a second under under four Bay. But before I do that, I think I'd like to open up the virtual floor as it was to see if there are

46:36

I see hands going up already very useful, if there are interested parties who would like to make comments on overarching siting and design issues. So the first hand I saw up there was

46:52
Mr. keys so keen first ACS, please.

46:57
So thank you

47:00
for being Mr. Bedford put his hand up this was good thing.

47:04
So I'd like to make five points and five matters if I may within design topic a first to do with parameters we the parameters of course, is set only to the extent provided for in the requirements in part three of the draft DCO.

47:23
The detail also requires Of course, the certification of the outline onshore substation design principles statement, which is as you would have seen a very brief and rather generalised document, but requirement 12 two requires submission of detailed design to accord with those principles for the two SPR substations. And although it wasn't originally the position in I think following on from one of your questions, panels questions is now is now said that similarly, the National Grid substation will accord with a with a design principles station statement, which is obviously welcome because they've been even less detail on national grid and SPR. The main requirements I want to talk about for a moment 12 in terms of the SPR substations, 12 three and five set broad limitations on scale in relation to the height of the substations but a maximum 15 metres high for the buildings 18 metres high for the electrical equipment. And I think there's also the control of the fenced areas where the substations the National Grid, substation parameters, which is requirement 12 seven and 12. Nine vary significantly depending whether they go for an AI s or a GIS substation, which is a point you've already touched upon.

48:37
Because for ayahs is much lower up to six metres building height, but a much larger compound area of I think some 45,000 square metres for AI as compared to up to 16 metres high and about 17,000 square metres area for GIS. But sir Stacy's position is that an election needs to be made, not left until post consent as between AI s and GIS because, and Jeff has many years experience with both technologies were indeed at the moment as I understand it, there's a GIS substation of a bramford. And the requirements of the current projects have been available for years. And so they simply should be further along in the design process and have not therefore progress with the project adequately. And again, this is another matter which touches upon natural national grid's lack of participation in these proceedings. But so that there's another point apart from choosing because they know how both these work is that if land is acquired sufficient to accommodate the larger footprint is requirement but then the choice of GIS technology is taken up that would of course free up land, which could be used for the

infrastructure needed for future projects. And that's of course, the matter relevant to the CPO topic amongst other things that were talked about two days ago in terms of the

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Take.

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So that's the first point, sir. The concern, yes Rochdale envelope of course, the principles recognise, but there's a very real danger that with such expansive parameters, absent proper justification and the DCR, as drafted would fail to ensure good design. And so one of the difficulties we have and I and with respect I think the examining authority may also find is that it's very difficult to be able to judge from an electric electrical engineering perspective, for example, or otherwise, whether these parameters are excessive or not. One of the reasons why I say such things they are in that they're too flexible and what sort is insufficiently controlled at the moment because of the environmental harm. Because is that when you look at what's happening elsewhere, in terms of best practice, I'd like to just like one example of a low impact so called low impact design in for an onshore substation in West Sussex, the ramping substation, so I'm sure you're familiar, to some extent with that.

51:03
Now, that's been developed with a limit height limit of up to 8.3 metres maximum, apart from the super grid, transformer horns as they call the 10.5 metres on a similar footprint area, not not similar shape, but similar footprint area, the design power capacity is 700 megawatts, so not so different to the eight or 900 that we're dealing with here, although the built capacity was 400 megawatts, the switchgear is a is and of course there are differences in transmission voltages, etc. And I'm sure Mr. In his in due course, will say that there are all sorts of differences except that this, isn't it. I'm not saying what's it rampion needs to be put here. But what rambin shows us is that there has been real effort they're made to minimise effects. And also, sir, that the original design proposals considerably improved as a result of the consultation and examination process.

51:56
So when you contrast what's happening here, the SPR substation design appears to be based largely on a replication of what's been put in an Ei EA one bramford.

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We know that the project note we just heard a few moments ago from SPR, that they're recently proposing a reduction of approximately 10%, down up to 190 by 170 metre footprint. And that would allow a piece of woodland to be retained to the west. But of course,

52:30
there's a fundamental difference between bramford and Friston. We're dealing with a much more sensitive site here. One is on an existing substation site, not a Greenfield site in a value landscape. So that comes on to the third point, I'd like to make that the concern is that this development area is materially oversized, particularly because the draft DCO provides for generation capacity to be as low as 100 megawatts capacity, which is set out in the definition of work one in schedule. One. And

secondly, so you've already got the point that we're very concerned about the likelihood of future projects needing to connect to the grid at first and, and so that matters because the history of wind farm projects and the details on this. So there's more chapter and verse in Stacy's written raps, design, written reps, reference 1357. But the history of these projects is that they're often downsized in terms of generating capacity. Because of the DCA parameters, the changes have not been required, and they don't sort of change changes that follow have not required approval, because they're already set in the parameters. So that means that the full extent of the parameters can be built out, even if they're no longer justified. And even importantly, so even if the benefits that are said to outweigh the harm, that this sort of stage of the exercise are therefore turned out to be that turned out therefore to be materially reduced. So with that in mind, so one of the controls are perhaps massive for another day, but one of the things you'll know Stacy's say is that the applicant should be constrained to deliver a project within a more limited range of output not 800, down to 100, or 900, down to one done, but a much more rigorous constraints so that an application for a change in the project would be required if the proposed capacity was be to be materially reduced, because to allow otherwise, so enables a loss of economy and efficiency, which we're hearing so much about from SPR, but potentially material lack of the benefit that said to justify the scheme. So that also feeds into the point I made yesterday. I won't repeat it now about the once this becomes operational and the opportunity for things to happen under PD rights, and that's another concern about the AI is on Veilleux, which may only be used for GIS, I won't I won't, I won't repeat the point

54:48
as the National Grid, the design parameters for the substation provided are as we understand it standard size requirements for a substation required to connect to the

55:00
To projects. So we don't see any, in reality, any real attempt to design this facility to fit its surroundings, and no focus on mitigation or low impact design. So we've got SPR who are essentially a replicating a one, albeit with a 10%, roughly reduction. Now we're told in footprint National Grid simply plunking a standard issue, substation on this side. And so if it's right that, as we're hearing that all that's really being planned for here, despite the evidence the country and I don't get back on the points that we've we've dealt with already on cumulative impact. But if it's right that this is really just about these two projects, well, NGS should be asked to confirm that the proposed National Grid substation is purely for the purposes of VA one and MDA to to comply with the requirements of the electricity act, etc, that we talked about earlier. And therefore ensuring that the design capacity the land, take physical arrangements, etc, instead of this proposed broad expanse, that all those things are limited to what's necessary to accept the rated power from these projects and not capable of accepting further capacity without the approval of another consent application. So the last point I'd like to deal with is this idea of design, review, design champions.

56:28
The design principles statement, all indeed, whether it's that or an additional requirement should require in our submission, the design to be subject to independent design review by industry, leading power engineering consultants. So against the strict criterion of achieving the lowest possible landscape and environmental impacts. So that so importantly, we're not just dealing with aesthetics

here, the technical design choice of the electrical power equipment that has been selected can be properly scrutinised, as well as the as the aesthetic design, because otherwise, the danger is that the aesthetics or the focus of scrutiny without any proper thought as to whether the technical spec is properly justified, and that should follow as a coherent part of any review. And so what I mentioned earlier, the design quality differences between what's proposed here and say ramping well there sir, as I understand there were major international design companies used

57:28
bramford ea one we've got in house SPR design teams now, I mean, no disrespect to them, I'm sure they're the you know, experience of what they do, but the difference of approach is very marked. And given the sensitivity of this location, if this scheme is consented and you know, my clients position is that it should not be, but if it is, it should be of a high standard of design. So with that in mind, sir Stacey's also strongly support the the appointment of a design champion. I know you've raised the point and asked SPR to reconsider the point but that's plainly sensible, unnecessary step to advise holistically on the quality of sustainable design, and the use of indeed the uses over design approach methodology and through Siena, Hinkley, C. And also, sir, you may think it but belt and braces, but it's certainly

58:17
my clients position that an overview panel. So not just relevant experts, but also importantly, the authorities and the community or representatives of the community should be created to allow for proper input from stakeholders because it's this local community that's going to be blighted by this substations. And they should therefore absolutely have a meaningful say as to how these very large structures that will dominate the local area are to be developed. So that's I can assist you further. Those are the points that I wanted to make on on a cube. That's very useful. Thank you very much, Mr. cageless. Excuse me for those very clear submissions. Thank you. Now, if I could go to Mr. Bedford for the county council, please.

59:10
Thank you, sir.

59:14
Michael Bedford for Suffolk County Council dealing with

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these overarching siting and design issues. First, you will have noted from our joint local impact report that the Suffolk Council is taking the lead on design and masterplan matters, which with risk of oversimplification is the built environment, the details of the buildings and so on. So I'm not dealing with that we're dealing with design, and particularly the interface for citing in that more overarching sentence. What we are anxious about is that the principles and the parameters are properly considered in this examination.

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And the key matters with significant implications are not simply deferred to the post consent stage. On the basis, the applicant says, Well, we don't have sufficient detail. We're not that far advanced with our contractors and our supply chain relation to that. And we say it's important that the cases are grappled with this stage, obviously, from the regulatory point of view, in terms of the EIA requirements, and there's got to be a project which is capable of being meaningfully assessed, as regards it impacts.

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The Rochdale envelope obviously, is a tool, which can enable some flexibility because you can look at a worst case, but it can't be used as it were as a simple excuse to avoid all grappling with fundamental issues, just on a minor point of detail. And hopefully, Mr. Ennis can clarify this, in his final remarks that when he referred to the applicants looking at squeezing the envelope, I take it from that, that he means shrinking the envelope, because squeezing could could, depending on your set of concepts have a slightly different meaning. But I'm hoping that what he's meaning, and certainly seems to be what we're getting through the indications coming from the applicant is that they're looking to reduce footprints, reduce building heights, reduce levels, and so on. And that obviously, we welcome

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again, just on the point that has been made by the applicant about the difficulties of assessing too much at this stage, and finding that what you've assessed isn't actually what is billed, it is not uncommon to find with a national infrastructure project, that the contractual arrangements are not in place at the time that the examination takes place. But nonetheless, promoters do frequently produce what they call a reference design. And the reference design is then used and tested for the purposes of the examination and parameters and requirements, then set by reference that reference design, obviously, then the contractual stage, it has to come in at a later stage takes place under the umbrella of that reference design. And so it's that's, that's really where we see things needing to go.

1:02:37
On the issues about changes, obviously, as I say, we welcome the reduction in footprint that was highlighted in the project update, and we welcome the potential reduction in heights to some of the structures and the base levels. We have the reserve opposition till we seen the detail, we also welcome the provision of the outline,

1:03:00
onshore substation design principles for the National Grid substation, which we feel is as necessary. But those types of design adjustments, don't with respect to the applicant address, the bigger picture in terms of adaptability, and fitness for purpose. over the longer term. I don't want to rehearse the game, the points we dealt with yesterday about expansion of the National Grid substation, to match

1:03:32
prospective future reasonably foreseeable projects. But we see that as a fundamental element of good design, and therefore a matter that does need to be grappled with this stage.

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On then the point about the sub, the National Grid substation, and GIS or AI s. So you will have seen that we submitted at deadline to the report from Mr. Bradshaw of AFL why that's rep 2037, which I assume that you've taken on board. Could I just pause for a moment just to inquire

1:04:11
Do you have any matters that your the panel wish to put to Mr. Bradshaw, who is here in terms of elaboration or clarification of his report? Or are you content that can be taken as read and you've absorbed that information, such as you need to? I don't have any questions or clarification on that at the moment, Mr. Bedford. So if you can assume that that's taken as read and if we do have any questions, then they'll follow in writing? Well, I'm grateful.

1:04:39
That I say and again, you've already alighted on the point about the the implications between the two systems, we would echo Mr. Keens remark that really, this examination, there needs to be a resolution to that issue in terms of national grid.

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First question, is it going to be AI s? Or is it going to be gi s? There are pros and cons of both. You heard some of those points rehearsed. If the project is or the projects these DCA projects are being viewed purely in isolation. At the moment, we are leaning in the light of Mr. Bradshaw's report, considering that

1:05:23
GIS is likely to have more benefits than dis benefits, but that is subject to the caveat. And the point we stressed yesterday, that there really does need to be a wider examination of the other projects and how they fit into the jigsaw before one can probably come to a concluded view as to which of those two methodologies has the most advantage.

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And then there is a final point, if I can just touch on at this stage, but I will want to probably refer to it under one of your other items as part of the

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four B, I know that you said that you didn't want to get into the detail of drainage today. But there is a specific point on drainage which arises out of the suds infiltration clarification note, which was submitted by the applicant deadline to where we certainly want to just at least highlight to you a technical disagreement with the applicant about that, because it has implications for the sizes of the infiltration basins, that would be needed. And that has a knock on implication for the as it were the available land particularly that might be available for other national grid connections. And so, at some stage, we would like to briefly just rehearse that will be that we would leave the detail obviously to written representations either deadline free or or whatever. So those are the points I just want to make at this stage. Thank you very much Mr. Bedford, us very useful indeed.

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Now if I could go to Naomi gould please for a Suffolk Council.

1:07:14
Hi, my name is Naomi Gould East Suffolk Council . And so in terms of the this aspect, the design issues, and we certainly welcome the applicant's commitment at deadline to to reduce the overall footprint of the substations and, and obviously also their commitment, as they've said today to reduce the the height of the infrastructure, and also the finished ground levels deadline three and understand we'll get even more details the deadline for

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but and they've submitted the outline design and principal segment for both the National Grid substation which will also recommend for the onshore substation, but we recognise that there's some additional points we'd like to see in the design principles statement, and which we think would better reflect some of their other commitments in other documents. So that and I think, as it was pointed out, so that the documents and all relate well to one another, and contain the same sorts of information. So one of our first points is that we would like a commitment to, from the applicant to make every reasonable effort, and obviously post consents during their design process to reduce the footprint and the height of the infrastructure as much as they can. And this commitment would reflect what there's written in the design Nexus statement. And then on paragraph 33, and 34, where they've said that that's essentially the aim of the post design process is to reduce that infrastructure. And therefore, we'd like a commitment reflecting that in the design principles statement, in addition to

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would also like a commitment for the inclusion of the current modelled, finished ground levels, so that that then becomes a maximum parameter, and then a commitment to achieving the lowest practical finish ground levels, which to minimise the visual effects, which is another commitment, which obviously, the applicants have detailed in response to written questions. And again, we see then that commitments have been made. So then it should be detailed in the design principles segment. And in addition to that, and as it's been mentioned today, the design review is a process and there's been discussion of the engagement that would be involved in that. And we feel at the moment, the design principle statement doesn't set out that engagement clearly enough for in particular the community to understand where their involvement

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would be, we understand obviously there would be

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a focus with the local authorities, which obviously we welcome. But we also see a significant role for the local community to play in this process. And how that would be whether that would, you know, workshops, for example and how that would materialise. So we'd like to see sort of an outline of that process so that there's a clearer picture and a better transparency.

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And

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moving on to the National Grid infrastructure. We,

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obviously, as sort of others have mentioned, as well, we believe the design of the National Grid substation should take account of the likely future projects in and which may involve master planning the scheme in such a way to facilitate those future schemes. But we know obviously, though, those points were mentioned yesterday, and we supports the comments that have been made by miskeen is to Bedford in terms of the we'd like to see full assessment of the GIS option for the substation, so that we can make an informed comparison between the two options. And, and then we can provide an informed commitment to one technology over the other.

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And also obviously support that. Yeah, that would, it would be beneficial to have a resolution to which technology could be used during this examination, rather than leaving it to the post consent

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process. In addition to that, then that we also note, obviously, and we've welcomed the applicants, and commitment and work they've done in trying to achieve reductions in the footprint and the size of the infrastructure, and that they've done this through their engagement with their supply chain. And therefore, we invite national grid to carry out the same work to try and achieve similar reductions during this examination process, rather than us having obviously the rock shell envelope of the worst case scenario, we'd like to see everyone to strive obviously to achieve the best case scenario, rather than the worst.

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We also support the point made by Mr. Kane in terms of the permitted development rights and consider that we would also want to see these removed for the National Grid substation. So that expansion of this couldn't be done through this route, and that this will be given appropriate degree of scrutiny through the process.

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We see you're welcome the outlines National Grid design principle statement that that's been submitted, and that was something that we had sought. And we see that there's a few additional points in that that should also

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be reflected in the principles that have been set out. Some of these reflects what we've requested in terms of the onshore substation principles. So I won't go over them too much. But again, another commitment to wood, reducing to reasonable while making reasonable efforts to reduce the size and scale of the substation,

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and an inclusion of a maximum current modelled finished floor, finished ground levels, and as well as a commitment to achieving the lowest practical finish ground level. And we see that the design principles statement at the moment we don't believe includes the ceiling and compounds, which, at the moment, the way they are planned. They

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seem to be located purely for sort of engineering reasons and with no consideration taken to the sort of hetero boundaries that they plough through, etc. And, and we'd like to have consideration of the siting of the ceiling and compounds in the design and post consent. And in the design access statement. Again, there is

1:14:21
wording, which I think is in paragraph 69, which identifies that post consent factors such as proxies and planting in addition to the overhead realignment work will influence the decision in relation to the final location cillian compounds. So it is indicated that it won't just be down to the fact of where they sit in relation to overhead lines, there'll be other factors and we would like to be obviously involved to ensure those other factors are actually taken into account. And where field boundaries can be retained, they are retained

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and in addition to that,

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We see this, again with the similar to the design principles for the onshore substation that we'd like the process of how the post consent engagement would work, and, and how that would involve the local community and stakeholders. So it's set out again in that document in an outline form.

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And moving on then to we also see sort of noise as a key part of the design. And we understand they'll this will be considered separately, separate hearing. But I think it's obviously important to mention that in the design of the substation, that noise should be taken situation, because depending on how the substation is designed, and, and the layout is formed, there's obviously inherent mitigation for noise which can be incorporated into that, and therefore we'd like to see the design. That minimises the noise noise output of the substation. We support the other submissions in terms of see the design champion and also support the request for sort of further more details and information to be provided during the examination and within the documents on design. And, and also, lastly, in terms of we obviously the information that the applicants going to provide at deadline three and a deadline for we can obviously review that and provide further details on that. And as of when we've seen the details. Cool. Thank you. Thank you very much skilled, very useful indeed. Okay, if I could now go to council fellows for Old Town Council, please.

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Yeah, so yesterday, sir. Um, I've been listening intently. And I, I agree with all the rate, the points are raised by Mr.

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Neal earlier in terms of Mr. Key keynote earlier, in terms of the concerns about the in information, I think my Internet's a bit I'm my voice is coming back to me. And so we just try, I can hear you perfectly. Okay. So I think it's quite unclear. The information and the principle about how far advanced design needs to be, because to be able to assess it as good as others have said, you need certain parameters. And there's too many options currently. And there seems to be too much power in the hands of the developer. And I certainly don't think and I know, from fellow council members and other councils would not want discussions to be only with the local authority, once approval has been given. It needs to be done at an earlier stage where consultation can take place with the public, with communities. And for you, yourself, sir, to be able to properly examine. So I don't have anything else to add, except what I will share this with colleagues and we will put our relevant representation in again to you by the next deadline. Thank you, but we remain concerned. Thank you very much cancer fellows. And the last hand up I have is for Mr. Fletcher of historic England place.

1:18:22
Thank you, Mr. Hockey is very kind of you. Well, first, you're representing historic England. And I wanted to raise a point about the place of historic environment in in design, the role of design in mitigating impacts on historic environment, I think that is somewhere where we we need to express and continue concerns. And as you're aware, we've identified harm to the significance of some areas church and this is something I believe you'll be coming on to in in in the next item. However, in terms of design, there is a there is a role

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for mitigation is very much part of the process, we've discussed embedded mitigation with the applicant we've discussed, design matters and all that kind of sort of interested I'm and I know the commitment from the applicant, I've received a document a couple of days ago with some design changes which will reserve comments on it at this time. And however the there is still an issue of the impact on historic environment from the from the mitigation of the planting itself. Firstly, whether the mitigation is successful, and whether that would serve to help the design sorry, when the designer mitigation would actually would actually reduce any of the impacts on historic event, particularly the church in which we've raised concerns, and whether further planting and issues around sort of, you know, switching around a mitigation would in itself be harmful. And this is something we've discussed in a number of other hearings, elsewhere in

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you know, the mitigation itself can in the wrong place can deliver you know landscape

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changes which are which are not necessarily welcome. And I think there is a role for historic environment in the design process. And if you're I would sort of urge the applicant really to take on board these are the brand matters within this this redesign process and then that we would welcome a commitment from them to reengage with historic alarm and try to ensure that you know if mitigation is proposed that it that it is cognizant of those historic environment issues.

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Thank you very much. Okay. Thank you very much, Mr. Fletcher. That's useful.

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Okay, so if we can revert back to the applicants, please, if there's anything you want to come back now, or if you want to come back in writing? And also if you could just pick up the clarification to point us by

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Mr. Bedford, please, about squeezing or shrinking the envelope? Thank you.

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Yes, I'm calling on behalf the applicant is perhaps a loose term and terminology at the as well, we will set out and deadline three, squeezing, I've mean, both the footprint, but also we shrinking some of the size of the proposed infrastructure. So the footprint is one element. But there are also other elements of the changes that are proposed, which would potentially have beneficial effects and reducing effect. So it was that point is that there is a shrinkage of some of the equipment in terms of height, in particular, which at this level, is irrelevant.

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I'm just going to perhaps, ask,

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yes. Okay, first of all go to because we've had quite a discussion about how we go about

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designing a substation and what goes into it, and why things are a certain size. And I think it would be useful for to to perhaps just come in on that, because I don't think it's really fair to compare a 400 megawatts substation with a 900 megawatt substation, and he can perhaps explain why there are differences and what the consequences will be, and other other factors such as voltage that would come in as well. So I'll just hand over to Tara to deal with that particular aspect. Because it's really a technical one, I don't really want to keep bringing the technical people back. If we've got them here. I'd rather they answer those questions now. And obviously, if there are further questions down the line, we can do so but that's a technical question. So be pleased if you could perhaps respond to that. Thank you. Thank you very much, Mr. Inglis. Good afternoon dimitriadis from engineering on behalf of the applicant.

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Here the few requirements, the participants and I will pick up on some of those,

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alongside my explanation of how we approach design for a substation of this size and magnitude. And the first thing I want to say is that we are talking about certain features and aspects and aesthetics and how things will look. But we, I think, in the process, we might forget that

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behind all of this, there lies an electrical system, and

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it is a very

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integrated system from end to end. And that system doesn't stop within the confinement of the substation, okay? It starts at the generator and ends at the 400 kV side, where we connect to the grid. So there is a certain set of criteria that we apply to approach that design that design envelope.

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The first is that we apply a holistic approach. For the reason that I just explained, it's a it's a fully integrated system. So its component communicates and talks to each other, the changes we'll make at the generator side affect a lot, what happens in the substation, and vice versa. Okay, so I want everyone to appreciate that. The second thing is that there is certain principles around that design, we need our system to be

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reliable, meaning it has to have the ability to deliver power, both during normal and abnormal conditions. So for example, if a component goes out of service for any reason, and now it's a fault, then the rest of the system has to cope with it. Okay, by achieving the minimum disruption in service, that system will also have to have to be efficient. So how much power from what we got from the wind is translated to electricity in the grid. The system has to be grid code compliant.

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So we'll have to adapt

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To the

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relevant codes and standards, I will mention to the grid code in the security and quality supply standard both national grid documents as well as all of the other national and international standards and norms that have to be applied in electrical design process. And last but not least, safety, we have to design the system to be safe and that's something that we cannot negotiate it's of paramount importance to achieve safety in electrical design first and foremost. Now,

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the first approach the first stage of approaching the design is by establishing what we call a reasonably worst case

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design envelope and for that we have a good connection point we'll have a capacity that we are thinking we can inject to the system, we have selected our transmission technology, which in this case is hv AC. And we am will inform that design envelope with with the worst case reasonable parameters for the equipment that we think should be in that envelope, okay. So, yes, I agree in this case, we have used the comparative assessment with a one identify not the rating of the equipment, but the number of the treatment, how much those units we will need, okay, in order to inform that reasonably worst case envelope

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we and at that point will have made

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a key decision in the design, which I consider good design decision to opt for 275 kV as the export cable voltage. Now, a

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one of the participants mentioned brought the rampion example to the table, which me personally I don't think it's a it's a fair to compare

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a wind farm the size of a two or a one or two rampion, which is half the capacity and at a much, much lower voltage 150 kilowatts. Plus, I don't know what is going on in that compound in that substation compound because I don't have this information. But that would like to mention and bring to you. Another example, which is much more similar to the wind farms we're trying to build. And that is of more i is, which is a Scottish wind farm. I believe it's currently in construction, it's developed by a joint venture, I cannot recall the names, it's connecting to the 275 kV transmission system. And that wind farm is exporting is going to explore the 900 megawatts of capacity very similar to a two and now that wind farm will be transmitting the capacity to the grid via three circuits of 220 kV

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whereas we chose here to go for 275 kV. Hence, we are reducing massively, I would say massively because I believe that we're reducing massively the footprint of our project by opting for a higher voltage which for us, we call it innovative because we have never done it before. And as an indication, because I have the footprint numbers for that we inform our substation footprint we're on substation is 62 or 63% less than that of more eyes just because we made that decision

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to opt for a higher voltage. Now, all of this information we have it at the big conceptual design stage it is there as I just said there is no worst case envelope Okay. The next stage is to establish for the electrical system, the rating of the equipment okay. And for that we need to carry out power system studies. We have recently completed

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conceptual power system studies and for the first time in the design process, we now have we know exactly

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exactly pretty much within plus or minus 510 percent, how big will be the equipment in terms of its rating okay. So we know that the Transformers will be x MVA, the start combs will be x MVA and so on and so forth. And that with that information, we can now go back and submit to deadlines as my colleague Colin is mentioned, new

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refine, find a modifying a substation footprint

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which is

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as you will see if that saves important reductions in

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Both the footprint and the height of the electrical infrastructure and the building that comes with it. Okay. Okay, and one, one more thing I would like to say,

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the, the next process is to go with this outcome of the power system status to our supply chain, and say, please provide us with bids on for that piece of equipment, in dimensions in weight and everything. And that will give us a lot better information in terms of sizes, because at the moment, as you can understand, this is a 275 kV substation which we have never built. So we have used a one as a comparison, but obviously, we don't have the in house data to inform the design envelope as good as we would like. Okay, so this is the next process. And this is how the design will involve.

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And so, one last remark, we do not replicate in our design.

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Between when from when from Okay, as a designer, I think this is disrespectful, I find it this disrespectful because its design is unique. And because safety comes first, it would be

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a tremendous mistake to go with this approach to inform reasonably worst case design and develop as the first step to a

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very detailed design process that we end up saying, yes, this is acceptable, but not in the in the latest stages. Okay, very much. Thank you for that. That's very useful. Just to two points, if I could just pick

up on there. And one of them. Would you mentioned, Maurice, if there's any information that you could submit to the examination on Maurice, that would, of course, be very useful. And just to say, obviously, I heard all your comments are about rampion.

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And they're very useful. But just to

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clarify that, I think Mr. Keane was he clearly acknowledged that there was differences between the systems he was using as an example of design. So that's fine. Thank you very much. Mr. Is it was there anything else you want to come back, I am not going to respond to every single matter that's been raised in these design matters. But I think it's perhaps helpful just to do with a couple of broad principles, because obviously might be relevant further down the examination. In terms of the sitting m compaines. You know, we've had detailed discussions with national grid, and we're more than happy to come back you with the limitations of citing in relation to this the sitting and compounds, it's certainly our understanding that there are limitations as to where those are going. And we've had detailed discussions with National Grid related to that. And rather than take further time up now, we can probably deal with that in response in writing. But let's say that was a specific matter raised, and we'll come back on that there was one further matter raised by Mr. Kean, which was, essentially, I think, the concept of how much control other parties should have in the ultimate taking forward of the detailed electrical and engineering design of the project. And I would just like to flag that there are and my solution, severe limitations with that approach, in terms of by that stage of the process, we may well be against pretty hard deadlines in the way that the delivery of offshore schemes work. And the idea that we would have had set out a whole design concept to a contractor, which is unique in the world, and somehow somebody is going to come back and start saying we should be changing that and going back again, it simply wouldn't work in terms of the progression of a nationally significant infrastructure project. But I was going to bring in Brian mcnellis on that point, because I'd certainly think he would be able, probably just shortly just to set out some of the rotations of that process, and how difficult it would be to actually manage your practice. Okay. Okay.

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Call me on over to me. Just now you're at a later point. Sorry. I was just going to hand over to you that just because the minute I've set out that broad parameter, and I thought I thought was was I'm certainly aware of how, broadly speaking take it from concerns deliveries is handled. I thought you're better placed to give that particular issue some ad, please. Yeah, sure. Brian mcnellis for the applicants. Really just to reiterate Colin's point, they do onshore substation, same principle statement and the National Grid substation, they aren't laying National Grid substations, the same principle, those set parameters around our

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our design process about the sets parameters around the the features that we will incorporate within the design

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iteration process that does make reference to design reviews by as an example, this design consultant, it does make reference to engagement with local communities and parish councils except on the local authorities. So that that that process is embedded within the sideline, substation, same principles statements. In terms of the the interaction with our design team, and the procurement process, these are, again, as Kelly mentioned, Major, nationally significant infrastructure projects in order to to have a process whereby we are progressing with the design works that are necessary in order to discharge the requirement 12 provisions of the decio on detailed design, if we were to incorporate and progress with our procurement process, and have a an engineering design review, at the back end of that process, in essence, we're probably talking about 12 months of procurement work and detailed design work that would then be subject to review and subject your question by parties who are not privy to the the safety considerations and the procurement and commercial design considerations that they can submit have gone through overlap 12 month period in order to arrive at that the same that is submitted to discharge to the requirements of the dcl.

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Okay, thank you, obviously, yeah, we've been through the design enough. Our suggestions in this session. So that's useful. Thank you.

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I can see your hand up from Mr. Keen QC. And Mr. Keen, I'm not going to come back to you on free. And apologies for that. But I did mention that start the session, that in the interest of fairness, I will try to avoid going back to parties once I've already spoken on a particular item. So and obviously, if there's anything that you do want to come back on, then you're very welcome to put your submissions in in writing. So thank you for that. And apologies. I think it's probably now a good time to have a break because we've been in the session for over an hour and a half. So it's just coming up or it's 1517. So I suggest that we break now until 1535.

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Okay, so we'll return now till 1535 Thank you