

TEXT_SizewellC_ISH6_Session2_14072021

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00:05

Welcome back, the hearing is resumed. Can I just check with the case team that they can see and hear me and that the recording and live streaming have resumed? Yes, I can see and hear you. The recording has started, and so is the live stream. Thank you. So we're moving on now to survive and for a, and that's the potential for consequential adverse and or beneficial impacts on coastal processes arising from the H CDF, the CDF, the beach landing facilities, and associated activities. So the East Suffolk Council for the permanent and temporary beach landing facilities. From what I've read in the local impact report, the council agrees that impacts may be classified as low and there will be no significant impact associated with the stormwater outfall. But there still remained concerns in relation to the permanent eight CDF and the scdf at that time. So if I could ask the East Suffolk council first to confirm if that still reflects its position, and basically to provide me with an update on that. I will, madam I'll ask Mr. Patterson to address you on that. Thank you.

01:33

Thank you, Paul Patterson, East Suffolk Council. We have a number of issues. In response to to the question here, that I will run through and summarise our our position on I think it's fair to say that, that that these, the majority of these possibly all will be known to the applicant. And we are in the process of of an ongoing dialogue with them on it, but I will, I will run through them for the benefit of others. A planned position of the hard coastal defence and we're concerned that it's sea would extend we've heard earlier in the presentation that there will be some land would retreat of it, which we welcome. And we'll be keen to see more details with that. At the next deadline. The we have a concern regarding the risk of further seabird advanced of the structure caused by Coastal change. This, this relates to our perception that the seaward foundation of the hard coastal defence feature is and typically high by by our own design standards. And again, we've raised this issue with with the applicant and then and there was an outstanding question on that and we look forward to receipt of of a response. The concern is that if if the at the foundation of the hard coastal defence is not high enough to be resilient to change, and the and it becomes exposed and that might require an early perhaps premature adaption of that foundation that might not otherwise be required by sea level rise. Next point concerns the soft coastal defence, which we know is no more substantial and more resilient than we had anticipated from the information that we received earlier in the DCU process. We're concerned that the design appears to be moving towards favouring a more resilient non native beach composition. And we recognise that that there are potentially competing objectives here in terms of the applicants desire to minimise interventions to maintain it. But we're concerned that to depart too far from the native beach composition, then may compromise its primary function, which we've heard earlier is to sustain a sediment pathway in front of the in front of the developments, again, that that we've we've had dialogue with the applicant on that and more will come in our feedback on on the recent reports. The the adaptive profile is again a matter of concern to us. If it is required to raise the crest height in response to flood risk an increase in flood risk from sea level rise then, allied with that is a sea would advance of

particles to defence by around 17 metres. And this of course, moves the the potential obstruction that the hard coastal defence would constitute further into the the the intertidal zone. And with it potentially the soft coastal defence. And we have we have concerns that the viability of that this is known to the applicant and more work is being done on that and we look forward to receiving it. As far as the temporary and permanent beach landing facilities are concerned, then we are satisfied now with the applicant's assessment of of the impact. There has been a recently a tooing and froing good information on that, and and we're satisfied now that the issues that was raised have been resolved. Looking further ahead, then we feel that there there is a requirement and need for the hard coastal defence to be removed when no longer required to protect nuclear infrastructure subject to the outcome of the studies that I believe are planned at the decommissioning phase, our view is that the presumption should be and and the side funding plan should be based upon the assumption that the structure is removed as part of the decommissioning process.

06:32

The question also raised a point on potential beneficial impacts and and we note that that the applicant is suggested that there may be a beneficial impact over the southern minsmere frontage from releasing sediment from the soft coastal defence and a potential entrapment of material in that area. And we agree that that impact is possible. We carry out that with our concerns around the interaction of the prominent hard coastal defence and soft coastal defence and and our concerns around the viability of the soft coastal defence, and also the need to sustain a and native beach sediment corridor. And finally, the question around secondary mitigation, then we note and understand why static secondary mitigation is proposed. It's not yet fully defined. And we understand that more information will come on that through further revisions of the monitoring and mitigation plan. And we look forward to receiving and commenting on that. Thank you.

07:59

Thank you. And just just mentioned that we are looking in more detail at the removal of the H CDF and decommissioning later on under one of the later agenda items. So if I could hear now from the Environment Agency on this.

08:25

Thank you. I'll pass it to my colleague, Olli burns, response.

08:34

Yes, thank you, Ollie brands for the Environment Agency. We I think we're on the whole we're aligned with Isa Council and this one, we are we're comfortable with that the impact assessment work done to date is robust. And it's suitably precautionary, provided that it of course, that the final designs of the HCD FNS CDF don't deviate too much from the sort of preliminary designs that we've seen at the minute. And obviously, as discussed, the work is ongoing on that. I would I would add that we we share a specific counsels view with regards to the potential composition of the CDF and we've raised this with the applicant that significant coarsening beyond the the the native sediment grading could result in a residual environmental impact. So that's that's something that we look forward to exploring further as that as the soft coastal defence feature is designed is finalised to make sure we're avoiding environmental impacts. As discussed previously, we obviously can't comment on the assessments post

2099. Because this works ongoing, we haven't seen this. But we hope and expect that it's going to include more severe sea level rise and storm scenarios. And we will afford to participate in that work alongside a soft Council and others. I mean, there is of course some residual uncertainty when you're trying to forecast coastal change and climate change into the long term in the future and we and we recognise this. Some of that is unavoidable. And but we are we're satisfied that the CP MMP provides a framework for adaptive management which should help address some of this residual uncertainty. And that's in our view that is in line with best practice for, for coastal management over long term infrastructure projects like this. And I just had to elaborate a little bit on our our, our sort of our level of comfort at the minute, we had previously raised concerns that a future site manager might reasonably look at the CDF and potentially facing increasing costs due to sea level rise and climate change impacts and decide that it was not cost effective. And that was at such a point as the design was that the the H CDF could function without soft coastal defence feature in front of it. And our understanding now, as as I think Paul Patterson has alluded to, there is that the the H CDF cannot function without the soft coastal defence feature. So in addition to an environmental mitigation incentive to maintain a functioning beach in front of the station, that brings with it a flood and coastal erosion risk management, isn't it as well. And that gives us added confidence that management, monitoring and maintenance of that feature will be undertaken in a timely manner throughout the lifetime of the site.

11:25

Thank you. Thank you. So if I could hear now from Mr. Parker.

11:36

Thank you. Yeah, there's a number of points that I'd just like to pick up if I may. One of the basic ones is that you have to query whether the fact that the hard coastal defence may be as exposed as soon as 2053. I think Mr. Dolphin said, you have to query about whether this is a failed design. To start off with the assertion we've just heard that the high cost of defence cannot function without soft coastal defence is leading me to feel that this, this whole design is probably inadequate, or ill thought through and really needs a completely independent review on this. I know that the expert group that was formed to look at for instance, the changing the coast actually looked to 2017. It feels to me like that it would be well worth having a entirely independent and like the expert group. Experts look at this and a much more holistic approach. And we've raised some of these points, in terms of or highlight some of these points with the work with University of Ulster, which we will be submitting to you for deadline five. Some of the assumptions that have been put into here really aren't aren't realistic. And that we will pick up then I'd also like to identify that in previous consultations by EDF cves. On the BLF and other excuse me, other jetties they were withdrawn from, as I understand it, partly because of a concern over the potential impact on coastal processes. Now, whilst I appreciate the desire to move materials as brought the jet is back. I think that actually understanding what those potentials are, and the view that they will have minimal impact, I think is a flawed assumption, and would really needs to be interrogated further. And I think the Environment Agency and the Suffolk Council have a major responsibility and being able to, to address that to ensure that it's fit for purpose. Just bear with me a second. Yeah, I also concur about the issue on non native materials being used, particularly the use of cobbles and some pebbles as well. This is as we get further into the future and this becomes a potential becomes a headland. Then the impact on the coast, both the north and south, I think is probably not well understood that the management plan that needs to have at least one if not two backup options if the options that they are

proposing at the moment are not going to don't work. So I think more thought needs to be put in and maybe we'll pick up this later on the agenda items on how and what other options there are if the what is being what will be built or has been proposed to build is actually built. Because future generations, we may not have the technology or the resources to be able to maintain this, particularly in event of a major event. So, I think there's a lot more work that needs to be done on this area to really understand the potential detail and the protective true precautionary approach. Thank you.

15:30

Thank you, Mr. Parker. Can I just check if the minsmere level stakeholders group want to say anything on this topic?

15:42

Thank you very much. No, I would concur with what Mr. Barton has just said, I have nothing further to add. Thank you.

15:49

Thank you. Can I therefore check if there are any other interested parties who want to comment on this topic? cat says Sanders.

16:03

Good morning. I want to come on to this topic with regard to scdf. Mr. Patterson has raised the issue of the toe depth stance and I would reiterate that point, as it is crucial to the tone not being undermined rent unravelling of the slope, rock slope. Further, as Mr. Patterson intimated the adaptive design includes a deeper and wider Toku built, but in my view is that engineer, it would be sensible to construct that deeper, wider very tone now as construction when there are raised sea levels and possible limited, soft coastal defence would pose very considerable difficulties. onto the matter of foundations for the HCBS. There's one comment about resilience needs to be considered and more detailed given by the southern Council, and Mr. Paul Collins has also raised the matter of lack of detail. And I've noticed that as many that there's been no development of the ground improvement details on the defence. It is that I wish to deal with now, the applicant has stated this improvement is to increase the strength of a peak which underlies see HCF with respect to stability, the embankment but raising them backwards on peat requires more than just considering traditional foundation base slope, the slope behaviour that one gets with traditional sand, silt and clay foundations. Pete has particular fundamental properties, it's low bolt weight, it's very low lateral resistance to lateral spreading and compressing significantly more than other cells, particularly in the long term. All these properties impact markedly on foundation behaviour on loading. And it's quite common for Phil's placed on such ground to cause displacements of repeat towards the edges of an embankment. Many grant improvement techniques struggle to cope with this type of foundation behaviour and can fail in the function to displacements. And I've dealt with a number of litigation cases as an expert witness where such failures and displacements have occurred. This particular embankment has a very narrow crest factory compared to the slopes and therefore has greater propensity for this type of behaviour. And the impact of this is that the overlying embankment may well start to spread laterally if the technique doesn't work, and that the fill may start the factory punches the ground forming continuous type of failure and continuous whilst catastrophic failures rarely occur with this sort of situation, although soft organic

closure presents as they are here, then that can occur but the embankments become compromised this learned behaviour and we'd also like be compromised in this case, where we are seeing that the rock armour and therefore impact on the coastal processes. Finally, without the details, the ground proven the impact on coastal processes and geomorphology if the H CDF is removed, cannot be assessed and surfing ground improvement techniques may well leave cod columns of hard material over the ground improvement for free they will not be able to be removed because of the way they are formed. It is for these reasons that there is a need in my view for the great improvement is provided by the applicant. So this can be looked at with regard to the postal process and future. Jim.

19:42

Thank you very much, Councillor Saunders. I don't see any more hands up. So if I'm correct on that, I'll ask the applicant to respond. And Miss Philpott if it could include the response to Mr. Parker's suggestion for an independent review, because that also reflects what the National Trust had suggested in writing, which was for an expert geomorphological assessment once all the reports and information had been submitted, so if you could deal with that as well,

20:26

yes, but I was I was just going to comment on that before I hand over to Dr. Dolphin. But can I just say that, that I'll make some initial comments? I'm then going to ask Dr. Dolphin to deal with those matters within his expertise. Following that, I'm going to ask Andrew Langley, who I'm not sure that the examination has heard from before, he's the Sizewell C. Civil site establishment engineering, the EAD, just to pick up the points raised by Councillor Saunders, about the total level and the ground conditions. So before I go back to Dr. a dolphin, and I should say, I may have referred to earlier as Mr. Dolphin for which I apologise. He does have a PhD, and I've already apologised to him about that myself. And there are two points, first of all, so far as the removal of the hard coastal defence feature is concerned that, as you've indicated, is a later item. And I propose to address that at that point. And so far as independent review is concerned, although I'll ask Dr. Dolphin for his comments, I would just say by way of preface, that we have the benefit in this examination of detailed review of the assessments that has been undertaken by the suffered Council, which is Mr. Ferris, Ben has a particular role. And as alluded to access to expertise on this matter, also the Environment Agency, which is in the same position and the MMO. Similarly, and although clearly, it's unfortunate that the MMO is not here today, one can at least look at their written material. But what they bring to the process is multiple independent reviews, with appropriate expertise of the work that is being provided. And obviously, they can speak for themselves. But speaking from the applicants point of view, there is no doubt as to their independence, or the extent to which they are bringing an appropriate level of rigour to the review of our work. That's certainly how it appears from our end. And that provides, I would suggest, you and the other members of the examining authority with independent voices in relation to these matters. So I say that by way of preface, but I'll now hand over to Dr. Dolphin to speak to other points. And if he wants to add anything on that point, I'm sure he will. Thank you. Thank you, Mr. Robot. And I miss MCI Tony dolphin on behalf of the applicant. I'll start with just following on from Mr. Phillpotts point there about the MTF. Um, so I would agree with that. The expert geomorphological assessment was an independent panel. And we deliberately sought experts with the right kind of knowledge and a good knowledge of the coastline. For doing that hga. It's a little different to most tgase because often NGOs are only undertaken by a single person. And so our view was that we needed to overcome that by pulling

together a panel. So so I think that's, that's what we've done. But just moving back to the VGA and something that Mr. Parker mentioned, really just a reminder of how the E ga was used. And it did do more than this, but it's its fundamental purpose was to establish where the mitigation was needed. And although it did show that the beginning of a period in which h cdfw exposure might begin was 2053. That was exposure without any mitigation. So or rather without any secondary mitigation, so no maintenance, just allowing the post to go back. So I think although we could carry on having debates about doing this slightly differently, as I mentioned earlier, the, the main point is that the soft defence feature is needed. And so it doesn't really matter, in my view anyway, how we how we how we evolved, that soft defence feature is needed. And

25:28

so can I just, I'll just briefly interrupt it was just that there has been you will no doubt have read, there has been some criticism of that expert Doom of logical assessment that have been done. I don't want to go into the detail of that now. But I think what I'm reading the point from their IPS are making is that a that they have made that criticism of that particular one be the question is whether whether now with all the information available, there should be a later separate such assessment. So really, really, I'm just seeking your view, I mean, Mr. Phillpotts, given his view that there is sufficient, sufficient other avenues to review all the material or now before the examination. But but that's the specific point. I just wanted a brief comment from your

26:23

Yeah, I think I I would agree with Mr. Phil part, I think that the recent modelling does allow us to look more accurately into that future situation. And I think the important thing to remember is what is it that's left across the longer term scale, or timeline of this project. So we have a limited number of miles from the beach dining facility. They're very transmissive to sediment, they only have very, very small and local effects. So it really does drift back purely to what will be the effects of the of the wider geomorphological context on sizewell seas, maintenance obligations for the soft defence feature. And that's a complex story that we'll come on to when we get down to the discussion around sea level rise and the sandbanks. And but I don't think that any further assessment would help with understanding the impacts of the development on coastal geomorphology. Okay, shall I carry on to just summarise your remaining points? Yes. So I would just agree that the matters of composition of the soft coastal defence feature need further attention. We are planning, more modelling to to look into that a little further. And I would agree with what both the Suffolk and the Environment Agency said there is a balance to be had. Getting the particle size at a level that we're not having to maintain too often and having no impact on the longshore transport regime. I would point out that and one of the conditions we modelled in tF 545, which is Library Reference, our EP three dash zero 48 was a future condition that might arise during decommissioning or beyond decommissioning, which does mean that the soft maintained coast at sizewell could become a four land. And even though it is releasing sediment, it may begin to disrupt longshore sediment transport. But that matter is already in hand, because we have the right monitoring to detect whether there's been a blockage. And we also have those three mitigation methods I mentioned earlier for beach maintenance, in order to correct that. So so I don't think there's an issue there. And we have added a short section to the next version of the monitoring plan to more explicitly reflect this point. I don't think I have any other comments. Thank you. Thank you. Thank you very much, Dr. Dolphin. Thank you, madam. And then I, as I indicated, finally, I just want to go to Mr.

Andrew Langley. And as I said, He's the civil site establishment engineering leads he can deal with the questions of toe level and ground conditions from an engineering perspective. Thank you. Good afternoon, underlying number of Africans checking in seeing me Thank you Yes, I can.

30:02

So I've been dealing with point number one the terror level. So in our representation to dashboard one six, we outline the modelling undertaken to assess the terror level being set at zero metres our D, significant modelling has been done to underpin this in the presence of a maintain beach, and then the wave action of a one in 10,000 year event and the storms that will come from that to the life to 2140. You can see in table three dash three that higher levels from that modelling or determine so the set of zero metre level is actually semi conservative to give us a level of duality and to make sure that we have got a good set the adaptable design as well can just deal with ground improvement and the question was on council Sanders and point two, the C defence has exceeded the classification requirement from there and our SC two SC two. That means that its core and its substrate have to be performing at a level over the life of the operational punch 2014. To do this, we have Ireland in table three data of rep 2116. The system that makes up that claim from rock armour through the core into the substrate, there was cancer Saunders worries about ground conditions, various means or available to us to do that, from rigid inclusions to stabilise to peat to soil mixing to achieve that. And at present, we are currently doing testing of that material in laboratories and plan to do in situ tests at the time to verify that stuff FBI though in our and the various regulatory bodies. That also allows for a 200 millimetres of settlements over the life and also safeguards, the adaptable design that's also being proposed. So that'd be required from the monitoring agency level. Thank you. Thank you. Mr. Phillpotts that clewd your response? Yes, thank you very much, unless you have any further questions

32:20

that I haven't thank thank you. Right. In that case, we'll move on to the next agenda item, which is the vulnerability of the coastline to erosion with particular regard to the role played by the sidewall damage banks and the correlate line crack outcrop. So a number of IPS have raised the question of the Filner ability of the coastline to erosion and criticise the applicant's assessment, for example, in relation to its consideration of the size for dunnage banks, and also the role of the crag outcrop. So my questions are therefore, in broad terms, what difference would any note notable reduction in the damage banks make to the rate of coastal erosion? Given the historical pattern of the banks? Is that a likely scenario? And in any case, what regard should be had to that possibility? And then finally, should the vulnerability of the coastline to erosion be at what we've dealt with the last point weeks that was dealing with an independent experts? So those were the questions that I do have, under this item, the Environment Agency if I could check your position on this. I do know actually looking at em six, Volume Two, paragraph ca 34. That was required. Obviously, that's historical. But it does record at that time that the Environment Agency considered that there was no accelerated rate of erosion, but there is also specific reference to the changing form of the direction sidewalk banks in that paragraph. So if I could have your up to date comments on that, please.

34:14

Sex madam Cameron's GED Environment Agency, I will pass to my colleague Molly burns to to give you some detail. Thank you.

34:25

Thank you, Karen. Yes, so obviously we recognise that the size of our donors bank complex is a very major control on the morphology and the grip size will be through its role primarily of restricting wave height on the initial zone. And the Coraline Craig we view again is it is a significant cruise control on beach morphology directly but also indirectly on through through its role anchoring the size or damage bank complex effectively. Now we are positioned at this stage, we're satisfied that the work that's been done looking at these two controls is robust and is given a good understanding of the dynamics that they undergo under varying conditions and that they have undergone historically. And we It is our view that there isn't any credible evidence to suggest the loss of these controls entirely throughout the project's lifetime. Having said that, we are encouraged that the beach modelling work that's been produced in these these latest phases of modelling work particularly the the work on as reported in Tr 545 is is precautionary enough that it that it is capable of accommodating fluctuations in the bank and the crag and the morphology and the role that they can bring. And I think in particular, I would refer to our understanding is that the the latest modelling work reported in Tr 545 uses wave data from the the size of a wave rider boy which is offshore of the size of Danish banks, and it applies that data directly into a model domain which begins in short of the banks. And so, in effect, our understanding therefore, is that the modelling discounts the influence of the banks on on wave height. So, immediately it is precautionary in that regard. And so, therefore, we consider that it is it is sufficient to accommodate some some some of the natural dynamic fluctuations in in bank crest height, for example, throughout the lifetime of the project. And again, I would say that the the CPM MP, again is a key mechanism to pick up any any changes any fluctuations beyond those that have been predicted in the work to date, and for those to be discussed and agreed by the marine technical forum with the applicant. So, again, that is a that is a key component in our sort of current level of comfort with the the assessment around these two controls. Thank you.

36:51

Thank you. Thank you. Could I hear from the east Suffolk Council, please on this?

36:59

Isabella to four for a Suffolk Council. The Council's position is aligned with the EAS madam so we don't propose to repeat that.

37:08

Right. Thank you. Mr. Parker. Can I just say that Mr. Burns's frozen on my screen? If that's not the case, for everybody, it may be an indication that I might have a problem coming up. But in the meantime, if I could, if people can still see and hear me, if, if you can, if I could hear from Mr. Parker. Because, Mr. Parker, you've you've raised this point quite strongly and say that since the banks are already known to be changing this course into question, long term stability off the coastline. So if I could hear from you on this, Mr. Parker.

37:54

Thank you, Mr. guy. Oh, I can hear you loud and clear, by the way, so and see you. So that's, there's no problem with that? Yes, thank you. I think there, there are a number of issues I'd like to pick up here.

One of which is the inconsistency of the evidence that's being produced and presented to through the various documentation that's come out in the pre decio, so the TR reports and so on, that came out, it states quite clearly that the damage bank is critically important to the shoreline processes and indispensable wave relief feature. And this is supported by a whole range of academic research and I think is generally accepted in the decio itself. The claim it identifies the banks are maintained by several sediment delivery from the northern Cliff erosion, and they should be regarded, the bank should be regarded as a permanent wave relief feature for modelling purposes. And then this approaches represents the worst case, conservative side, worst case or conservative modelling. So what they were trying to say in the, in that documentation is that actually, the worst case situation would be if the banks were in place now, there was some information that came out just then which I wasn't aware of whereby some of the modelling she's coming forward is assumes the banks are not there. But I think we need to have a really clear understanding of what CFS EDF arc are saying will happen and what evidence there is behind that, because we're getting conflicting messages. When you forensically look at the documentation that's come out so far. One of the clear things is that the banks are wave attenuation. So they do reduce The power of the wave and have done so, since their formation. It is clear that if those those bangs are moving and there is evidence that has been provided by the the that is available and we have submitted to the planning Inspectorate to show that the banks are moving. And I don't have clear understanding or knowledge of how those banks will move, and what the consequences of them they are. But if it is fairly straightforward that if there is more energy that's coming ashore, because the banks are diminishing, sea levels are rising, then the erosive capacity on that particular part of the coastline will increase. So, therefore, this isn't clear the how that has been effectively models and how that will come together. So, it also doesn't take into account asymmetric changes. So, things which are happening along the coastline, how there are consequences within the size, well frontage. So, I think that what has been produced so far is inconclusive and inconsistent. I look forward to seeing what is going to come through and perhaps a further iteration of tr or further interrogation Tr 545. So that we can really understand how vulnerable this particular bit of coastline is. One of the points I do want to hire a new concede Sorry, I beg your pardon is that I believe, you and the other inspectors went to thought ness, and saw how when there is a peak or focus of a rose of activity, how damaging that can be, and that very much we believe is controlled by offshore banks. So as the offshore banks change around the size will era, then it makes logical sense that the erosive powers may well change significantly. The banks will also reduce in power of course with with increasing the sea levels because of that debt. The other question I would like to highlight is the resilience of the crag. I haven't seen any detail about analysis of how effective or how vulnerable the Craig is offshore, you will have seen various fragments of Craig which has been washed ashore at thorpeness. Whilst that's only a small amount, it was only a small storm. But with increasing sea temperatures, acidification, increasing storminess and catastrophic failures. Actually, how robust is that, Craig? And is that something that needs to be factored in into the analysis? So I think those are the key points that I wanted to highlight. So bear with me, I just check my

42:55

notes. The other thing about the crash course is that both sides will own sides will be are effectively built on craigmore size we'll see will not be so that any resilience and protective nature of that crag will not apply to size. We'll see. I think that concludes what I want to say. Thank you.

43:13

Thank Thank you. Thank you very much, Mr. Parker. Whilst I could hear you very clearly, I was did not have the pleasure of seeing you. So I've still got Ollie burns on my screen. So

43:28

that may be better for you than for me.

43:31

I am going to just leave and rejoin the meeting, and sorry, the hearing and I'll just ask my colleague, Neil Humphrey to take over while I do that, so thanks. Thank you very much for that, Mr. Parker. Mr. Humphrey, are you able to take over?

43:51

I can do that now. Right. The next thing good. We hear from any other interested parties who want to make a comment on this issue.

44:09

I'm not seeing any hand up at the moment. So I will go to Mr. Philpott whether you want to respond now, please.

44:18

Thank you very much, sir. Yes, sir. Just two points. I'd like Dr. Dolphin to come back on. Obviously, when I hand over to him if there are other points he's picked up that he wants to comment on. I'm sure that the main but I don't believe that there's anything arising from what the environmental agency or consequently East Suffolk have said that invites a response. But Mr. Parker has raised a number of points amongst them an allegation that the assessment in relation to the banks is inconclusive and inconsistent. And I'd like Dr. Dolphin to deal with that. We're dealing with the spatial scale of The assessment and therefore questions or thought ness and so on to the next agenda item. So the only other one is resilience of the crag. So I was going to ask Dr. Dolphin to respond to those and any other points that he feels necessary. Thank you. Thank you. Thank you. And Hello, Mr. Humphrey. I'm turning it off. And on behalf of the applicant, I want to go to dolphin. I won't repeat the summary that Holly burns gave, that covers most of it except to say that the banks are very complex as complex geomorphic interplay between rising sea levels, the effect that has on erosion of cliffs in the area, particularly as far north as Cove height, and the work from Susan Brooks and and Tom Spencer show that as time goes by as the cliffs erode, greater length of cliffs will become vulnerable. And so there's a general expectation that sediment supply will rise as a result of, of sea level rise. So there's a and that sediment moves down the coast and, and the sediment transport pathways such that the sandy component, a good percentage of it arrives at at the size Well, denish banks. So because of those, that complex interplay, it's not really possible for us to predict very well, exactly what will happen to the bank in future. This bank is moderately deep, and it has some sections that are really quite deep, in particular, between size well, and the size, well, part of the bank and the damage part of the bank. And that means that there's a lot of variability in how the bank dissipates or removes wave energy. And I just want to briefly talk about, perhaps in his written representation, Mr. Parker could provide some information on the on the quotes that he was giving, just to see where in the timeline they occurred. Of

course, as this project developed, we began looking at the evidence for the bank and its movement and what was said in the literature and the obvious first principles that a relatively shallow feature will remove some wave energy. Later on, once the modelling was running, it was established that the bank's primary role, especially the shallower parts of it, are to effectively put a cap on those very large storm events, but less so for moderate and very, very regular energy arriving at the coast. So it is true that if in future, the bank doesn't keep pace, with sea level rise, and does become deeper, the inshore wave energy will rise relative to the offshore wave energy. And I think an important point to acknowledge there as well is that there will be a degree of compensation for that, as shown by the UK cp 18, climate change predictions, which show the annual wave height and the annual maximum wave height so effectively capturing those largest storms that that is predicted to decrease. So I think I think that's an important point. What does this matter with respect to ice? Well, the main point really is the soft coastal defence feature. And we're there to be a rise in overall in short wave energy subject to the longshore patterns of sediment transport that may increase pressure. And I think we have that captured in our in our modelling by modelling quite severe scenarios. And as already mentioned, we we take wave data from the seaward side of the bank and propagate that directly on shore.

49:20

I think there might also be some off topic aspects here around the flood risk assessment and the safety case which are not for me to comment on. But the sandbank was dealt with in in modelling that fit into that process in which it was removed. So that's probably worth mentioning briefly as well. And the last point, I think, was around the resilience of the Coraline crack. So the the the topography of the crag as it extends out from the north side of thorpeness. towards sizewell Bank is a series of North, northeast trending ridges. And those ridges are present in all of the bathymetric data sets that we have heading back to the 1830s, indicating that they're fairly stable and resilient. And indeed, this is a rock. It's not the hardest rock in the world. It's not granite. one imagines that fishing activities, anchors, and so on may cause pieces to break off and indeed, natural erosion and weathering as well. But what we see is that as a as a morphological feature, there's been no change over the last 150 years. So I'm not expecting that that will change. I'm not an expert to want to comment on the acidity comment or that I really don't think that's going to be an issue. But I think that's something we could take away and offer a written reply on. Thank you, Dr. Dolphin. Mr. fell apart. Is there anything else you wanted to add? No, thank you. That those are that those are our responses. Okay.

51:09

Thank you very much. I think Miss Mackay is back with us now. So I will hand back to miss MCI for the next part of the agenda.

51:18

Thank you, Mr. Humphrey. And apologies for that. But I did hear most of what the applicant said on that. And obviously, I look at the recording. So if we've, as I understand, finished that sub item, if we go on now, there is some overlap, potentially between the next two items. So I'll understand if people stray a little, but I prefer to keep them separate. So firstly, the spatial scale of the coastal processes assessment, and whether the geomorphic contact should be regarded as extending beyond sight or be. So obviously, in writing, and there's been some criticism already today of by our IPS of the spatial extent of the coastal processes assessment unit, for example, Alton, or Association suggests there is

no justification for considering the greatest sizable Bay as a self contained so and maintaining that the coast to the south will be unaffected. So that's the sort of Chris's criticism that is before the examination. I was wanting comments from people on that. So the environmental agency, if I could ask you first to respond.

52:42

Cameras get Environment Agency, I will pass this query to my colleague, Gary Watson. That's okay. Thank you. Good afternoon, Madam.

52:56

With regards to the immediate assessment area proposed by the things, we regard the other northern area of the blind harbour on to be to be an inappropriate northern boundary for the assessment area. And with regards to the southern area, which is currently baldness, the NES itself, we are aware that there's been some erosion pressure issues, that fallenness village which is immediately to the south of the fatness. And and we are aware that those are part of erosion pressures have been linked to the we're propagation as a result of the same bank and the the Coraline Craig, that's been mentioned already. The sovereign Council, however, the lead authority for the management of that village, so we would defer this to them. But I believe they have indicated they would like to see some extension to the south. And, and we would support them in that.

54:04

That Thank you. Thank you. So if I could hear from from it leads us on to a Suffolk Council. And certainly, certainly on the next item, I'd note, I've noted what you'd said in the statement of common ground on this, but if you could respond on the extent of the spatial context.

54:30

Thank you, madam. Yes. I'll ask Mr. Patterson, again, to address you on that.

54:37

Thank you, Paul Patterson is sort of counsel. So our our position here is that that we are, we are satisfied that the spatial scale of the coastal processes assessment done to date is reasonable however, however, we do believe that the size well A as it's defined should be taken to include thorpeness village frontage. And this does stray thinking to our response on the next item D regarding monitoring, but we feel that we feel that there is a sediment connectivity between thorpeness village and the the area over the what has been defined so far as the size well Bay and that the sediment transmission there is is reduced but not prevented by the presence of the of the thorpeness feature and the Coraline Craig. So, our our request, therefore would be for the sizewell Bay frontage to be regarded as including the thorpeness village frontage. Thank you.

55:59

Thank you. Thank you. Could I have from the olden or Association on this place? a palace Nam drusus there?

56:19

No, I shouldn't be all right. Yes, thank you. I'm bit like a broken record, perhaps keep stressing, we are talking about learning German, we're talking about something that's going to be in place till 2140 or 2190. This is not just enough to 510 years, which wouldn't cause us any concern. And there are things like in the shoreline management plan, one of the background papers I can give the reference written actually says that a change in the rate of literal drift or changes in the severity of wave action could affect the stability of awkwardness from mortality offered haven. So it though it Okay, it's 10 years ago, they said it. But there's a recognition that over time, if something changes seriously, then we could be we could end up with something rad badly affecting the NES. I know, obviously, welcome suggestion, we go far south as thoughtless village, but I think it needs to go further. We've got a big settlement over there. And then we have the ordinary history, whose eastern bank relies entirely on the shingle there. And that coming through? So yeah, it's probably as much as I need to say I'll try and be as short as possible. Yep. So it's, it's simply not good enough to say, Oh, it's nearly It's all right. It's not very far, we are talking about a very long term thing being in place, and we want to safeguard the whole coast. Thank you.

57:57

Thank you. Mr. Parker, have you anything else to say on this on this point?

58:06

Yes, thank you. And maybe I've seen as I can. I've got two very quick points. One is that we have been advised that actually, there's been insufficient spatial scale for this three kilometres, I think, is where they're proposing. But actually, the complexity of how the coastline changes and moves needs to be looked up in a much wider scale now, quite, how far that should be, I think is would be would be needed for discussion. And I fully concur with Allison Andrews just now, the vulnerability of orphan, the origin or all Bre thorpeness do need to be taken into account. But I also want to pick up the fact that Tony dolphin was talking about the sediment coming from benek Eclipse. Well, if sediment is coming from benek, Eclipse that is important for the longshore drift of so going in front of sighs, well, then surely that area should be monitored as well. So I would very much wish to have this widened significantly now, of what level what detail except, you know, there's a whole gamut of questions to be heard behind that. But actually, to limit it just to that three kilometre patch, I think is short sighted and certainly with long term considerations, definitely needs to be extended significantly. Thank you.

59:45

Thank you. Thank you. Are there any other interested parties who want to add anything to this? Keith Martin?

59:57

Yes, thank you, Madam Chairman. Could I strongly support Alison Andrews and Bill Parker, please. ska thinks similarly. The spatial extension extend certainly as far south as shingle Street. And I support bill Parker in the thoughts about Banneker cliffs being the boundary to the north. As I said, right at the very beginning, our concern is also of time. And I understand the applicant's concentration on looking after the front as well as nuclear activity. But the impact of the platform on the coast will continue long after 2190. And the worst effects of the platform probably won't be felt until that time rather than during its lifetime as a nuclear plant. Thank you. Chris Wilson. I could hear from you, please. Thank you, Mr. Chi

christopherson, representing together against ties, we'll see really just wanted to quickly endorse what the previous speakers have said. And looking at here and the impact on the communities. And basically, you're only going to look at Slauson and so the offered nessa Yeah, the movement there. And I really think the assessment should go far further south than that has been proposed. The applicant is was naturally concerned about protecting and looking in his own locality. But there's obviously a great scope for further for what they're doing impacting on lots of other people and property owners and, and certainly like to see the the assessment extended considerably further south end, and also north. Thank you.

1:01:49

Thank you. So Paul Collins, minsmere level stakeholders group. Yeah, I

1:02:00

mean, I just endorsed what Mr. Parker and the other speakers have said, we do really want to make sure this is properly monitored up and down the coast. And whilst the major impacts may not be clear, at this point from the small amount of monitoring and predicting that has been done by the applicant, it doesn't mean that the long term effects over a long period of time are not going to be quite significant. So I would support those. Thank you.

1:02:31

Thank you. Thank you. So they're no more hands up. So if I could hear now from the applicant in response.

1:02:44

Thank you, madam. Before I go to Dr. Dolphin to respond to those points. As I understand it, the issue that you wish to focus on on this part of the agenda is the extent of the assessment, the spatial scale of the assessment. In terms of the spacial scale of any monitoring, which was I think, mentioned by some interested parties, that's a matter to be approved pursuant to the CP MMP under requirement seven a and I know you want to discuss requirements seven, eight later. So I'm anticipating that Dr. dolphin's comments will focus on the scale of the assessment. And what's been said about that?

1:03:27

That's right, that actually the following Agenda Item does mention a few locations which have already been touched on. But if we keep them separate for now, we'll we'll certainly be an opportunity for him to comment on that.

1:03:42

Thank you. So I'll hand over to Dr. Dolphin. Thank you. Thank you. And Hello, Miss MCI turned off and on behalf of the applicant. I think the key thing to focus on here, as you've indicated as the impacts the development has doesn't remove any sediment from the system and has very minor impacts in terms of their magnitude and their spatial extent. And the reason why we don't focus beyond the greater size well Bay is because the impacts are contained very well within it. And that, obviously if our modelling demonstrated there were impacts that went beyond the boundaries of the area set in the scoping report, the greater sizewell Bay, then we would be needing to look at a wider area. So that's the reason

why and none of the work on impacts shows any sediment connectivity that would were an impact would pass beyond. For example, beyond thought Next to the south, or beyond, or even to thorpness nor going north, beyond the minsmere sleeves. And so that's really that's really the basis for for the scale that's used and why we think that's appropriate.

1:05:19

Thank you. Right, just taking with Mr. Phil pop that concludes your response. Yes, madam it does. Thank you. Right. So there is a saying over that with the next agenda item, which is looking at whether other locations such as South world thorpness, or Bre, and others have been mentioned whether they should be included in the baseline monitoring and mitigation proposals. So this is a point that's been raised by a number of interested parties, including the origin or Association, Mr. Parker in the National Trust. And it's also referred to in the state of common ground with East Suffolk council as one area of uncommon ground being the inclusion of fatness village. So perhaps if I could just turn to a Suffolk council first. So if I could have your comments on that. Thank you, madam. Yes. Mr. Patterson, again. Thank you.

1:06:28

Thank you, Paul Patterson, East Suffolk cancel. Our view is that the the potential for change to occur over the thorpness village frontage. The potential for further change to occur in addition to what we've seen over recent years, and and what in our view is evidence of sediment connectivity with the greatest size well, bay leads us to the view that it is appropriate from a precautionary point of view to include thorpness village within the baseline monitoring area. We think it's better to have a data for us to to be able to analyse and and build up an understanding of how the shoreline there is changing and what what are the factors for it. And if there is a link to the development, that may change over time, our view better to have that baseline over a period of years, rather than to act in a reactive fashion, shall we say after the event. And so for that reason, we feel that an extension of the baseline monitoring area to include thorpness village is necessary. We We We We have had discussions with the applicant on this. And and we hope to have further discussions and lead to an acceptable outcome. Thank you.

1:08:09

Thank you. Could I hear from the Environment Agency on this point?

1:08:17

Cameron skirt Environment Agency. Thanks, madam. We have no further comments to make them. Those who made on the nature Under Item.

1:08:27

Yeah, that's fine. Thank you. Thank you for that. And can I check if there's anything that Alison Andrews wants to add?

1:08:40

Yes, please. Thank you. Thank you very much. Authorities support what Paul person said because he has said there is some evidence of sediment conductivity. I was slightly surprised to hear from Dr. Dolphin that there is no evidence of sediment connectivity, and that the impacts are well contained

within greater size will be you've already heard earlier this morning, that everyone that it is hoped that the size will banks will continue to say a reasonable size. This and that is because this extra stuff. It's coming from beniker and Eastern balance. But the reason what that is going to keep it going that it must be diminishing as well, in order for people to be hoping that it's coming from the north. So I think that rather makes the case that this is a very long and connected coastline. And the quantities may vary over time how much there is depending on storms and how much cliffs fall down. But there's definite connectivity further down the coast. And it seems to me and reasonable in a precautionary approach. It doesn't have to be monitoring every year because these things do not work every year. But there should Be a regular check every now and then as to what is happening to the coastal drift further south? Because there must be conductivity on sediments because it's been happening for 1000s, if not millions of years. Thank you. Thank you, Mr. Parker.

1:10:20

Yes, thank you. Yeah, I just concur with what Allison has just said, to my mind, one of the biggest challenges we have in working in coastal management and on near shore is data. And actually, unless we have that data, and we're learn from it and can interrogate it, then it's very difficult, you can't do it afterwards, as it were. So I would say that there ought to be an obligation on EDF, to ensure that the Suffolk coastline is monitored in a way which enables a clear understanding picture to be built of how this coastline is changing. The other thing is that the net drift is largely north to south that isn't necessarily something that will always perpetuate. So I think that as coastal processes change, that having that data from both the north and the south, will enable us to be able to enable future generations to be able to clear understanding of what's happening, and then make sure that any mitigating actions are appropriate, and built on science, rather than being not having the data. And this is the time now is to build that rather than later date. Thank you. Thank you.

1:11:43

Can I check if there's any other into progress? Did party search want to add anything on this item? Oh, colleagues?

1:11:56

Yeah, I think we should have gone through this assessment issue. And the idea that we should monitor what's going on, lower down in thorpeness, at all bruh and up to the north. But in some respects, if you don't have some level of assessment of what the expected changes are going to be on the courses, even with monitoring, you're going to you're going to be at a point where nobody really understands what it is that's actually going to be causing those effects. So I think the two are linked, monitoring and assessment have to be done. And they have to be done. Now rather than later. It's no point in attempting to do this on the fly, after a storm has suddenly made huge impacts on some part of the coast and everybody's going home. Why is that? And what is it? What's causing it? It's too late at that point. And if we were left with a situation where only the zone The only zone of influence is a three kilometre stretch, interactive size, well, the rest of the communities can be severely impacted without really any recourse and I think that's not a good situation to be in. Thank you.

1:13:08

Thank you. Thank you. Right, I don't see any more hands up. Just before I asked the applicant to respond, but just mentioned that the National Trust in its written submission in lieu of attendance, made the point that the baseline and monitoring proposal should include its frontage, it doesn't achieve. So if they could, if you could pick that up as well, please specific pot service to fill pots.

1:13:47

Thank you, madam. And before I call on Dr. Dolphin, I should just mention that your picture is heavily pixelated and halting on my screen. And I don't know whether you are having any difficulty with your connection. But if at any stage, that does become a problem. I might ask Dr. Dolphin to stop to make sure that you have the opportunity to listen to his answer. That's

1:14:11

it for my end, it looks fine and it's working well. So we'll see how we get on.

1:14:19

I'll keep my fingers crossed also started off and thank you turn it off and on behalf of the applicant.

1:14:30

The impacts of this development are ones that are minor in that they cause the movement of sediment on the coast to be deflected and altered and very local sense. And the the monitoring and consideration of the extents is really about tracking the impacts, understanding if our predicted impacts are correct. And there For everything is within scope, having an adaptive monitoring plan that is able to respond if it proves that the modelling is incorrect. So these effects on sediment transport begin at the development site. And if they were persistent, they would radiate out from that point. In general in a southerly direction concordant with the net sediment transport, although there would be a small degree of potential impact going northward under individual storms. We've conducted long term sediment transport modelling and storm sediment transport modelling and the tracer study that I mentioned earlier. And these show that there is a sub cell between minsmere sluice and thorpeness. Now, I think what we need to keep our mind focused on here is the transmission of impacts, not the transmission of sediment. So before perhaps I wasn't as clear as I could have been, any effect on sand transport, to the south would be seen and well contained within within the monitoring. And as there's no sediment removed from the system, it restores itself over a relatively short distance scale. And some of the literature does show that Sam material goes round around the thorpeness headland, but by the time it has reached that location, there's no effect from from size Well, from size horses development, that's not the case for the pebbles for the cost of material in the in the beach, the work that we've done there shows that because the head land, because the crab causes the shoreline of the thorpeness headlamp to bend out the transport rate decrease for the pebbles. And effectively, I wouldn't say there's no transport around that headlamp. But it's it's very small. And again, the effect of pedals is even more local than for sand. Because of its low. It's low mobility. So the reason we have a disagreement with East Suffolk, they're about the monitoring of the around the thorpeness. Village is that we haven't seen any evidence with respect to the pebbles that we would at the station would have an impact anywhere near close to that location. And yeah, just to reiterate that the monitoring plan is designed to capture any movement and in both directions, it's a long way away from the concern sites. And if the predicted impacts proved to be incorrect, then the the monitoring would spin up over a wider area. And also to

note, of course, that the whole region is monitored by the East Anglian monitoring programme. So there is a long an excellent record that could be drawn upon if if the predicted impacts were much, much larger than we've anticipated. We have applied very wide buffers around these impacts. So we're not expecting that they will, they will go outside of those extents. But if they do, as I said the monitoring would be adjusted accordingly. Thank you. Thank you, Madam that, that that, in a sense, brings one back to the point that I made earlier about the nature of requirements seven A, which includes the area to be monitored as something to be agreed, and therefore, and we'll come on to discuss it in more detail, but that is something that can as Dr. Dolphin it's been be adapted over time, if the monitoring reveals that the area needs to be a standard.

1:19:14

Thank you, Mr. Phil pot. Right, that brings us to the end of that particular agenda item. It's now nearly five to one. So I'll probably take a lunch break at this stage and return at if we return at quarter to two. Just again to remind everybody who's watching on live stream to refresh your browsers in order to watch the restarted live stream. When we resume and when we return we'll be dealing with sub item E. That's the potential impacts Upon the minsmere frontage and the role of the minsmere sluice, so the hearing is adjourned