

# AUDIO\_RAMPION2\_ISH1\_SESSION7\_08022

## 4

Thu, Feb 08, 2024 1:33PM • 1:16:48

00:06

Okay, welcome back. I'll recommence the hearing. And also carry on with this item we were talking about the impacts of noise, particularly piling noise on fish. We've discussed blank seabream. And now we're looking to discuss herring. And so, for the herring, the marine management organisation MMO have stated in their relevant representation that they have major concerns with the effect of underwater noise on herring. Do you agree with MMO? That figure 810 of chapter eight indicates that that there is preferred habitable habitat suitability close to or within the order limits? I don't if it's possible for some of the applicant to bring up figure 810?

01:30

Just for reference, that is a pp 081. Thank you for that. So, yes, if you could something the applicant provide a response to this and maybe explain what we're looking at in terms of their plan and the coloured dots on there.

02:13

One moment, we just can't hold the finger on the screen here.

02:16

That's fine. Thank you.

02:28

Hi, I'm Tim Goulding on behalf of the applicant. What we have here is a series of seabed sediment assessments against some criteria for potentially suitable habitat for herring spawning. So we're looking at clean sands and gravels wherever they may be within the the general area it was informed by whatever points or scrub data etc There is. So following that process, you can highlight areas that in theory, could be suitable for herring spawning. So but all we've got to do there is to find seabed that comprises relatively low silt influenced sand or gravel substrates. So that's quite widely occurring in the seas around the UK. What this doesn't do is identify areas where there's known herring spawning. Ongoing Yes, and those data relate to the identification of herring spawning grounds in UK waters. And there are a couple of key documents that inform that which, which my colleague, Nick table will talk about shortly. So we do recognise that there are clean sands and gravels in the general area, but we don't accept that that means that there's a potential for effects to arise on herring spawning within this area, notwithstanding that we do assess the potential for effects on heavy spawning at the known and mops area spawning grounds in the wider area.

04:24

Thank you, that's very clear. Well, just for follow up, then, I think it might be figure 8.8. We could maybe just move to that. So it should be very close to the I think that yes, this plan. So it's obviously the English Channel. And it shows also herring larval densities, amalgamated into a heatmap for the years 2007 to 2020, which indicates that I, as I understand this is herring larval abundance within answer And and the rampion to array and suggest it could be as high as 2500 larvae per metre squared. Or be it it could be much lower than this figure. If the density was about the 2500. Mark, would it be? Would you consider this to be a significant level density potentially even at the array location?

05:24

Nic tag on behalf of the applicants, you can see that the black hatched areas are the identified herring spawning grounds, which the closest is 47 kilometres away from the fish and shellfish study zone. The in terms of the larvae that's based on the international herring larval surveys, and the red areas will be the highest densities. There is some interaction potentially of eggs and larvae on the very outer edges of the study zone. So there is potential for eggs and larvae to move into the study area.

06:09

And that could be larvae, potentially, I mean that the range is quite high, but 0.1 to 2500. I think that would be the that blue colour. So potentially as high as that, to me is good.

06:24

That's correct. Yes. Okay.

06:26

Well, following on from that MMO stated that, whilst the cool atoll 9098, which I think is what defined those the black hatch areas on on the plan there. While cool spawning maps are valuable for providing an indication of the location of herring spawning grounds based on historic data, it is more appropriate for the applicant to draw their conclusions from overlap with the areas of higher ihls larval abundance as this is more recent. And a direct measure of herring spawning intensity for the region is the larval abundance data shown on on this figure and I think also in figure a 20, a preferable and probably more accurate indication of the current or recent spawning ground for herring.

07:18

And the larvae and eggs will distribute within the current. So you can't make an assumption that the distribution of eggs and larvae are representative of the spawning grounds, because that they effectively will be passive objects that will move with the currents and will quickly disperse from the spawning grounds. So generally in fish biology, we wouldn't consider eggs and larvae to at that stage to, especially within the marine environment where there are strong currents to directly represent spawning grounds. And we would consider that wouldn't be an appropriate method and that the data on spawning grounds is more appropriate.

08:01

So there is a recognition though, that the the data use the 9099 data is, is there something more recent than that, because I noticed the MMO puts about the larval heat maps be more recent, is that

something that could be found, which would be more recent than that to show where the herring spawning area, the most concentrated area is? Currently,

08:32

there isn't any specific additional data that can be used in terms of spawning grounds. The only other potential is to look at the highest densities. So you can see that from the map on the screen, that the red sort of darker areas that denote the higher densities, which you can see are extremely close proximity to the spawning grounds. And you could consider that they represent the closest sort of proxy to the spawning grounds. But that wouldn't be the case for the lower densities, which would indicate that that's an aspect of dispersal of the larvae and exit rather than being where they originated from.

09:11

I mean, I'd note actually, if we could, I think it is figure 820. If we could just move along to that one is a bit more detail on that one. Thank you very much.

09:28

Yes, this one, thank you. So this one, the blue line shows the 135 decibel, which I believe is the threshold for behavioural effects on herring. Now that's looks to me like it goes pretty much right up to the boundary with the the hatched area which you've got downloads that area for heroin, the mains herring spawning area, but it's obviously very close. And as he was pointing out there that There is this quite significant level of buttons just to the west of there, which would come within that behavioural threshold area and noise threshold area. So is it possible therefore, that there will be this overlap between the behavioural noise threshold and the herring spawning areas within the channel.

10:28

And the very worst case, boundaries do overlap and with the higher love or density and come in close proximity to what we would denote as the spawning, say, if it were to extend further to the west, that is some potential, a very worse case and precautionary assessment that there could be some overlap.

10:49

And what could be the effect of that overlap if you could just sort of clarify that. So, if there was this overlap between because when you talk about the behavioural thresholds, what would be the behavioural impacts, likely on herring spawning?

11:07

So, again, the behaviour we impacts would be a short term startle response, there's no indication that that would actually stop their spawning activity. There's no indication that it would be a long term response, and it would encourage them to leave the area. So during the spawning activity, they may have increased physiological responses and be startled to the noise. But there's no indication that it would directly stop their spawning activity or impact the success of spawning in season. Okay.

11:39

I mean, on that basis, would it be worthwhile? Revisiting the the IES on this matter? Because at the moment, I think they're saying there's no overlap, and therefore, it's think it might even be negligible

impact. But if there was this, it does seem from what you're saying that there there might be this potential overlap potentially?

12:11

Would this be something worth looking at? To, as you were saying, it sounds like, even if there was this behavioural impact, it might not affect the actual fish too much. Hey, one in particular,

12:27

is Tim Golding on behalf of the applicant. I think there's a couple of things I'd say in response. The first is that the noise contours that we're looking at there that shows proximity to the spawning ground and a large overlap with the larval density, yes, is at 135 decibels. We don't consider that to be the appropriate disturbance threshold for hearing. And there's a thing that's in common with most applications to date, in contrast to the MMO as advised by see fasces view, and some of that discussion has been held already today in terms of the source of that threshold on sprat in a quiet sea lock. So but recognising that there is overlap there, there is the you know, theoretical risk of some sort of disturbance. But where we are indicating there, the overlap is with eggs and larvae, which is my colleague, Nick take has identified are at the whim of the currents at this point, so that they are just being moved on the currents and drifting away from the location of the spawning ground. So if we are assuming for argument's sake, right now that 135 is a disturbance area, we're not actually they're not actually being subjected to something that's relevant for drifting larvae and eggs. The disturbance threshold is relevant for spawning adults. And that's outside that area. As far as the data support, actually within the spawning ground, what we're showing there is an overlap with a with a non relevant level of noise for the receptors that we're considering that the relevant noise levels for drifting eggs and larvae would be injury criteria where we're actually damaging. Next, pigs, eggs and larvae from from planning noise, and that's much more restricted to the in much closer proximity to the location of the pilings being undertaken.

14:52

I think I understand that it's just obviously MMO was sort of suggesting that for Maya understanding of their comments that level of abundance might suggest that the 99 data that might not be completely accurate and therefore use no maybe because those contours are very close, that there could be some actual overlap with the actual spawning area, rather than just the drifted eggs and larval abundance. Yes,

15:27

I think, recognising that point, I think that's one of the reasons I identified at the 135 DB level isn't accepted as the disturbance threshold for my hearing. And also reiterate the point that what we're looking at there in terms of high density larvae is isn't the more recent data from the International hearing level surveys can be used to inform activity on spawning grounds. But it's very important on the timing of the collection of those data to inform that what we have here is drifting larvae away from the site of spawning, as we've identified already, towards the the the project area on the on the current.

16:20

Okay, thank you mean, it's good clarification on that. And I understand. I think it's important to put in a good response, their response to the MMO in there, obviously, because obviously, they've got a strong concern about this at the moment. And they are suggesting the month winter exclusion as well from piling as a result of this. So I think we'll, we'll wait and see what you come back with. And then what their response is following that. There is one more thing though the MMO has advised the applicant and in their relevant representation, I think it's point four 617 to produce a heat map for herring and sand hill actually, following the methodology of marine space 2013. I'm not quite sure they have provided some details of this, but what would be the applicants response to that request?

17:23

I think it was something that we would have to go away and look at and identify if that's something we could provide by one of the deadlines.

17:30

Okay. Okay. But an extra point for that and then just for response on that point. Has anyone else got any other questions do with herring and the potential impacts anyone online? Okay. Okay, thank you very much. I won't need the images anymore. Thank you for that. Okay, now on to the last of the species I want to talk about is the short snouted seahorses and the seahorses are sensitive species and a feature of the Beachy Head east and west marine conservation zone and of the Selsey bill in the hands. MCs Ed, Natural England have made it clear that they do not agree with the applicant's conclusion that there will be no significant risks risk of hindering the achievement of the conservation objectives of the MC said in relation to the seahorses due to the pilot noise effects. The ES illustrates that noise contours relating to temporary thresholds shift or TTS and behavioural effects overlap with the Beachy Head west MC Zed for example. Does the applicant agree with us so far? That there is this the TTS noise threshold does overlap with these MCs EDS which contain the seahorses.

19:01

There is some potential for overlap at worst case scenarios. Yes,

19:05

yeah. Okay, just wanted to get that clarified. The yes chapter eight sets out to the noise contours extend towards the near shore area of Beachy Head. The shallower waters would then act to reduce the noise effect. Could you explain that a bit more for me about how that would happen and why that would happen.

19:30

To most and for the applicant, one of the probably the most critical environmental factor in terms of sound propagation through the water in in waters of disorder of depth is depth itself. deeper water leads to more more rapid, more ready transmission, less attenuated, the shallow the water gets then the greater the attenuation What would occur and so when we start getting into the particularly shallow waters, say 1510 metres and below, then then the attenuation is rapid due to reflections of the seabed.

20:13

Okay. and stuff.

20:17

And so even though the contours of the map might include that coastal area within it's within the contour for TTS impacts, in effect, the shallower waters may mean that that the decibels on the planet would be actually less in those areas. Right? Yeah,

20:39

when when you are approaching this sort of environment, it becomes very complex. And the complexity actually helps to attenuate noise further with. With shallow waters like that it will, the noise will reduce very quickly. Another thing that's worth flagging up in the cellar waters is that the background noise level increases as anybody who has been to the beach and put their head under the water can hear all you can hear is the movement of the rocks, pebbles, sediments, and so not only is the noise attenuated rapidly, but also the background noise increases.

21:18

Okay, thank you. Apart from that is the avoidance of TTS and behavioural effects on seahorses mostly reliant on the new noise abatement mitigation. What would be the worst case scenario effects on seahorses if the noise abatement measures were ineffective for some reason, in providing sufficient mitigation, so there won't be that TTS effects on seahorses in that area.

21:47

The assessment concluded that there would be no significant impacts in relation to the piling

21:55

even without any mitigation, even without mitigation. So they TTS contra would get them they would get that level of noise, which could potentially result in that temporary threshold shift. But it wouldn't have any real adverse effect to them isn't.

22:16

This get the assessment concluded that would there would be no adverse impact from that injury mechanism

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is that because they're not particularly affected by that sort of noise impact

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and population level, they, you know, very patchy in their numbers, they any number that of individuals that would potentially be subject to it would be extremely small and considered negligible.

22:42

And so it took my son for the applicant, if I can just add a little bit on TTS, and indeed, Pts this permanent professional shifts and temporary threshold shifts. The thresholds are defined at the period of onset. So even with TTS, it's only the point at which you can to start to get this effect, potentially. And so right out on the edges, the risk of this is there's going to be small. Okay.

23:15

Naturally inland biased in the representation that and assessment of pine and noise effects and sea horses with and without mitigation should be provided. To present the worst case scenario. Obviously, we've talked about this just now about the potential noise abatement. And but is that something that the applicant will be able to provide an episode by when it was a request from Natural England in their relevant representation?

23:47

Thanks, Sir Tim Golding representing the applicant. I think we are responding in detail to that relevant representation. And we'll be providing that at a deadline one. Yes. I guess if there's anything else that's residual post review of that, then we can respond appropriately. Okay.

24:12

I think just obviously, that point, in particular, if I can make sure that is addressed directly, then that will be good. And that's all the questions I've got for seahorses as anyone got any other points they would wish to make either in the room or online. Yes, Miss mocha.

24:34

Hi there. I'm from little Hampton representing the little Hampton society. I didn't mention that earlier. But we've also spoken with the wife of our ex Harbormaster. And he said that there was a seahorses found in the air and river near the harbour mouth. And I think it leads to say that they're there probably more in more places than just the places mentioned. And

25:00

okay, does the EPA gonna respond to that?

25:06

The assessment is based on the available evidence, in relation to the NCAA said it'd be difficult to go off any sort of other information unless that could be provided on an evidence basis.

25:18

Okay. Okay, I can I can provide more evidence? If

25:23

you could, that'd be, that'd be great. Thank you very much.

25:26

Brilliant. Thank you. And I have one other question just regarding the other one, my husband here, his computer, his microphones not working. So I'm kind of speaking for him. But he's as seen as the figure of 135 decibels is given as a threshold, how will you be able to mitigate a reduction of 43 decibels this was for the pile driving of 240 decibels, which would be equivalent to about 178 underwater in air so

25:58

the the attenuation that that you're describing is provided by a combination of distance, the sound will attenuate significantly over over the distance there's that have been modelled class a some sort of noise abatement system.

26:23

What kind of noise abatement systems

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there have been a number of different potential systems that have been discussed in what I think the in principle mitigation plan at this stage, there's there's nothing confirmed, we still need to go through the the detail of determining precisely what will be installed where and how. But once that's confirmed, then the mitigation systems will also be confirmed. And

26:59

we'll be talking about the issue of noise abatement technologies shortly, actually.

27:04

Oh, perfect. Thank you very much. Okay.

27:08

Well, unfortunately, both naturally and MMO. Were not attending today. However, I think obviously, it's clear that there are concerns about noise impacts, particularly from piling on fish species that come to us from Natural England an MMO. And it's clear that you're looking to respond to those with the response to the relevant representations. And I think that's the best way forward. And we'll be looking at what comes out of those discussions and negotiations. Now, we've just got a few questions on a few questions on noise impacts to divers. So, in the outline, divers communication plan, it sets out there would be a two kilometre diver exclusion zone component locations, even with soft start piling, how confident are you that this would not significantly startle a diver or cause any other sort of adverse impacts if they were in the water at that time?

28:15

Tim Golding on behalf of the applicant. So, the controls comprise an exclusion area for protection of health. And but beyond that, there are other measures that have been detailed within the diver liaison communication plan, including aspects such as issuing of notices to mariners, yes. And also the specific consultation and dissemination of information in discussion with through the diver liaison officer with RCS to make sure that everybody is aware. well in advance, I think we've identified five days in advance of any activities being undertaken. That information will be sent through to dive operators and dive Stipe societies communicating in the sorry, running a similar system to that which was put into place for rampion. One, okay, to make sure that everybody is aware and nobody's going to be caught off guard underwater.

29:30



So do kilometres, use it, as mentioned for health reasons. Outside of that two kilometres, it's even if there was a diver in the water at that point, it wouldn't, even though it might be a bit of a shock to them, it's not going to affect their health. Is that what you're sort of suggesting?

29:49

Yes, that is correct. If we were considered the threshold that we use there for for startle. It's in excess of what we would consider to be loud, but still some way below what would actually cause a physical effect if you like on the the hearing of any individual nearby. It's also worth flagging the divers around they're really snorkelers, and so there is will be protected as well. And plus the the mitigation that we're going to be discussing later on the calculations that have been used in this all very worst case scenario, and highly unlikely to be getting anywhere near to a level that would cause genuine fiscal harm.

30:42

Hi, Tim golden on behalf of the applicant just like to add as well, that as part of the proposals for installing foundations with using piling progressive piling is also a commitment to utilise at least one noise abatement technique throughout the planning activities. And on the basis of the least well performing techniques that we have considered to date. That reduces that potential area from three kilometres down to 1.3 kilometres. So with that, that also mitigates quite substantially, that area close to the sort of the surface of the piling.

31:29

Understand? Yes. Just on the communication side of things, if you're communicating with the different diving businesses or groups, would you be advising them not to dive in the wider area or just to stay outside of the two kilometre exclusion zone? Would you just leave it up to them?

31:53

Hi, Tim golden on behalf the applicant, there's there will be a policed exclusion area. But beyond that, it will be a case of notifying so that people are aware that there's noise producing activities ongoing. And then it's as long as they're outside an area where there's potential for physical harm, then it is up to an individual as to whether they continue with their activity or not.

32:29

So ultimately, would you expect divers to wait, if they were given the information at this point in the undertaken? Would you expect divers to still go into the water, even if it's outside that two kilometre exclusion zone over you in, in reality, expect them to just sort of stay clear at that, at that time? This is just something because this has kind of been raised by some of the irrelevant representations from some of the businesses saying, you know, they just won't if they think in Scotland and people just won't dive in at that time. Just wondering what your thoughts are on.

33:07

Tim going off the applicant, I think it's very difficult to preempt what an individual might do. I think it will vary in terms of distance from where the pilot is being undertaken. So if you're five kilometres or 20 kilometres, is likely to be quite different. I think the jet the the general area is benefits from a lot of

excellent dive locations. So there are alternative opportunities for people. But I don't think we can really preempt what an individual decision and individual might make in relation to this.

33:51

I understand.

33:54

To most of the applicant. It's only anecdotal. But I have been on dive support vessels with professional divers. We detected piling nearby. And these divers, they said yes, they could hear it. So you know it was there was a little bit annoying. But they were able to carry on. I can't tell you exactly how far away we were from that information. We didn't know where the piling was going on. But it's it's going to be entirely subjective. Yeah. useful to know. Thank

34:23

you. I have the applicant been in touch with any of the because it seems to be some businesses involved in this probably taken people out to die brown direct and things like that, of you as as the applicant been in touch with these businesses. And if the businesses are adversely affected during the construction time, which I would imagine the pilot and most likely to be undertaken over the more sort of spring and summer months, which might well be when divers are locked to go as well. Is this Is there some sort of potential compensation if it does have a quite significant adverse impact on the business.

35:07

I think much like the fisheries response earlier, so we'll take that one away. We'll confirm in writing the extent to which there's there's been consultation and liaison with those organisations. Thank

35:18

you. I think there is some relevant representations around it. So it'd be good to get a response on that.

35:23

Yeah, sorry. Tim Golding on behalf of the applicant. There has been consultation through the process of coming to this point. With the development consent order application. There's definitely also been lots of engagement with relevant diving parties through the rampion one project and the establishment of the diver communication liaison plan there. So as a company, our web will have had contact with these groups. So it has the scene as well set for engaging with relevant people, parties, businesses, etc. For the purposes of rampion to Okay, it's good to know, okay.

36:17

Unless there's anyone who's got any other questions to do with effect on divers, online on here, then I'll move on to start talking about underwater noise abatement technology. I got a couple of questions. And then I'll pass on to business below who will look talk about this from a mammals perspective. But maybe my question is a bit more general to do with these noise abatement technologies. Natural England state that they have advised that they advise that the applicant give due consideration to uncertainties that exist regarding the level of abatement that such measures might reach in the environmental conditions at the rampion to sites specifically, such as the strength that currents depths,

etc. Is it possible that the noise abatement technologies such as the bubble curtain would not provide the anticipated level of noise reduction when used at this particular site? And does the technology to be used first need to be tested scientifically at the rampion? To cite an episode? Will that information be submitted with the examination

37:31

to my son for the applicant? First, I think it's worth reiterating that no specific noise mitigation system has been finalised at this stage. So in principle, the concerns they're talking about depends on the particular type of noise mitigation, in terms of bubble curtains, yes, they are certainly affected by different environmental conditions, depth, current, etc, they have been used widely in many different circumstances for many years now. And so, the designers of the systems and the suppliers of these systems will, will be looking very carefully at the conditions rampion to and so any system that would be deployed would be designed specifically for those conditions, to ensure that they had they had maximum efficacy. The the indication that I have so far on in terms of the the noise mitigation system that would be likely to be used all year would be one of the low noise hammers, these are provided by IQ AIP with their whole system, and make me and CK with their mn IU system. These are just two examples. And these are systems that are installed within the hammer itself. That reduces the noise output from that, and they are entirely environmental independent environment independence. And so it's literally putting less noise at source. And so it doesn't matter what the what the depth of the water, the current is that will always provide equivalent noise reduction. Okay.

39:24

And you've said about noise bubble curtains being used elsewhere. Is there maybe a have they been used in similar sorts of circumstances not specifically for the rampion to site but similar in terms of current and depth and things like that, which maybe could give some evidence to its efficacy in that particular scenario?

39:49

To most of the applicant? It's a very complicated scenario, the combination of all the different elements to the environment make it very difficult to say that this particular location is exactly the same as this other particular location. I know that bubble curtains have been installed in depths of up to 70 metres, possibly more, I couldn't say. And they still provide some degree of performance and effectiveness in terms of noise reduction. And it's important to note that even with the more more extreme conditions that they could be put in, it doesn't mean that there is no effect many more, they will still provide a benefit, but the more extreme conditions, so reduction in that, as

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opposed to thinking in the ies, you've got, sort of this will provide maybe a 25 decibel reduction, something along those lines. And I suppose my next question would be, then therefore, how confident are you with the figures that you've given? Given that seems quite a complex situation?

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To most of the applicant? Yes, certainly it is complex, I will flag that you mentioned 25 decibels, we do not expect 25 decibels from a from a bubble curtain. Our estimate was around about 16, this spells and

this is from a double bubble can double big bubble curtain. And we looked at that in as close as possible to the conditions of the depth particularly obviously said the deeper the water then the the less effective they become, but they are still effective, just not quite as effective. But that is our estimate so far, based on the conditions as close as possible that we have that we have data for.

41:44

Okay. Well, I mean, Natural England obviously still have to be convinced of the how effective that these are going to be. I mean, if there's any more data information that you can provide towards Natural England and for ourselves as the examining authority, I think that would be a good next step.

42:05

To Mason for the applicant. I believe that there are there are always more studies coming out. This noise and noise abatement systems and noise mitigation is an active area of study is of great interest to many. And so where there is more information available, then we'll provide that.

42:28

I think as well, it's looking at that sort of worst case scenario. So if we what we really need to see is, at its, at the least, if it was least effective, you say still be affected, to a certain extent least effective. Would the modelling with thresholds still work? Because there is obviously for species like the seahorses, it talks about the noise abatement being important for that. So I think, looking at that those potentiate it's least effective noise abatement, that would be a good place to sort of start really,

43:08

yes, absolutely. It's worth flagging, when we're talking about worst case scenarios, which has certainly been applied on across across the board when it comes to calculators, assessments method methodologies in this. The worst case assessment has assumed that there is a short sword Soft Start, which is always applied in the in the piling, it assumes that there is going to be a very long period at maximum energy, which is highly unlikely to happen in practice. In fact, the pilot probably be destroyed if there was actually driven that hard for that long. Yeah. The noise mitigation we've assumed the minimum realistic. Attenuation is particularly for the data that's available for the low noise handlers. And what we're talking about is a series of layers and layers and layers upon worst case upon worst case, which is likely to lead to a situation where it's very unlikely to occur in practice. And so certainly, it does answer your question. Yes, we will always look at the minimum realistic figure that we would expect from from each particular system. Okay,

44:23

that sounds good because I think that's what we're looking for. And I think that's what's Natural England are looking for as well. What we'll do now then it is pass on to miss below to prefer the questions and noise abatement measures, but more specifically to do with marine mammals. And pretty much

44:42

Thank you, Mr. Ronnie. I just have one. One question you really following on from this? Could the applicant state its approach to determining appropriate acoustic deterrent device duration for some simultaneous piling

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The sorry to Mason for the applicant when it comes to simultaneous piling, it can really be thought of as a as to separate rigs. And so any mitigation that will be applied to one will be applied to the other. If we're talking about I think said acoustic deterrent devices there there would be a system that will be present at at both piling source positions. And so that would certainly be be present irrespective of one two or 50 different rigs they would always have this, this system in place

45:54

that's clear. Okay, I'm now going to move on to some underwater noise questions in relation specifically in relation to marine mammals before I move on to the Marine Mammal item on the agenda, specifically. So regarding soft start piling mitigation technique, the joint Nature Conservation Committee guidelines for piling mitigation stated the stuff start should be a minimum 20 minute, the applicants draft piling marine mammal mitigation protocol a PP. 236 proposes a stuffs Soft Start of 7.5 minutes, could the applicant explain why the proposed Soft Start duration is less than that proposed in the joint Nature Conservation Committee guidelines

46:44

to Mason for the applicant? My understanding is that the JCC guidelines state that effectively anything less than the maximum is part of the combined Soft Start and ramp up process. The minimum energy as used in the in the planning protocol that that was used in the underwater noise assessment had the minimum energy, I think we use 20% of the of the maximum for 15 minutes, I would have apologies, I'd have to check the precise numbers to see that but that's a shorter period. But this is only in terms of the estimation that we used for, for the worst case calculations, when it comes to the final determination of the Marine Mammal mitigation protocol, I guess. A new, fully compliant softstyle ramp up would be would be applied for the calculation the final assessment once that once we know precisely what is going to be installed. So the short periods were part of a worst case scenario calculation.

48:14

If I may yet, building on behalf of the applicant, yes, just to reiterate what Tim Mason has said there, the seven and a half minute period that's identified within the triple MP is the commencement of soft start and not the duration of soft start. So it's just the initial phase of that soft start ramp up process. And that soft start ramp up will be in line with the jncc guidance when we've done the detailed design. But for all of the modelling and the assumptions used in the assessments, it is indeed 20 minutes or more.

49:02

Thank you. That's very clear. So you can can you confirm that the guidelines are being adhered to?

49:07

Yes, we can confirm that that will be the case.

49:10

Thank you.

49:14

Josephine brown responding on behalf of the app. Can I just like to confirm that the states in the Gen Z see guidance is the operational time that's considered and in our ramp up in our scenario, it's 30 minutes. So it is exceeding that 20 minute.

49:30

Thank you guidance

49:43

So could the applicant explain how the soft start to ramp up profile commitment is secured in a DCO

50:10

I would anticipate to be through the do marine licence in the relevant in the relevant condition mount that I'll just look that up and confirm which one which one it is.

50:20

Perhaps I can assist. Karen looking for the applicant. There's a condition in the the marine licence condition 11 secures a number of submission of reports prior to commencement. And one of those is a sensitive, sensitive features mitigation plan, which has got to be in accordance with the in principle document that's been submitted with the application. Thank you.

50:52

So I'd now like to discuss the Marine Mammal quantitative underwater noise assessment, specifically, the MMO states in its relative representation as it believes the predictions in the Marine Mammal constitutive underwater noise impact assessment volume for appendix 11.2, which is a PP 148 are not sufficiently precautionary, particularly in relation to fleeing animals who may not swim directly and consistently away from the source of noise. And Natural England state that the worst case spatial extent of the noise impact, particularly for disturbance requires review and revise that the worst case scenario noise impact spatial extent is reviewed for marine mammals. How do you respond to these points?

51:45

Rachel Sinclair for the applicant. In the underwater noise modelling, when we use flying animals, they for example, harbour parkways, we assume a swimming speed of 1.5 metres per second. This is significantly slower than animals have been recorded to flee from noise sources. So there are studies that show that animals can sustain for periods of 30 minute wind speeds up to seven metres per second, the values that we're using sort of take into consideration the fact that yes, animals won't flee in a straight line, but by using that lower flee feed in the model that takes account of that.

52:31

Okay, that's clear. Thank you.

52:39

So, that concludes questions on agenda item 10. Underwater noise there before I move on to the Marine Mammal section specifically, should we go through the action points? And item 10? Yes, Mr. Male, if you could read out your list.

53:03

Yes,

53:03

thank you, sir. I think there were a number of things again, which were largely requests to address matters in responses to relevant representations, but I, I shall run through them. There was a request that in relation to the worst case scenario presented in chapter 11 of the IES the production of figures and the justification as to why the 65 larger wind turbine typology was the worst case. There was an action to cover off in the response to natural England's relevant rep, information around the increase in noise levels and the difference between UX over a five to five kilogramme device versus a 750.

54:07

Again, I think this was in response to the MMOs. Relevant rep. We were going to provide details of the discussion that we had around the potential impacts on herring spawning ground. I think that'll involve evidence around the the appropriate the appropriate threshold and potential impacts arising from that and we will give consideration to the MMOs requests for a heat map in relation to herring and sandeel.

54:54

The response to natural England and this was on the issue of seahorses As the response to natural England's relevant rep would consider their request for an assessment to be undertaken both with and without mitigation. And that response will confirm the applicants position on that. And then in relation to divers, the applicant will confirm the extent to which discussion with divers and diving businesses has been undertaken. And then in relation to noise abatement technologies, again, in the in the response, I think to natural England's relevant rep, the applicant will provide further information on an effectively always determined the least effective scenario for those those noise abatement, those noise abatement measures. That's what I had, sir. Yes. And I think Miss Perona was going to provide some information on seahorse habitats and locations. I think that was correct. It was, I believe, some response that she gave around the potential presence of seahorse Littlehampton, I can see Yeah, yes, Miss brewery, we've

56:19

got Uganda.

56:26

Hello, Miss Verona, you've got your hand up, but I think you're on mute. So sorry. I just with a response with the question about fleeing animals in the last point. See horses, they don't really flee, they don't have much mobility. And so I just wondered, Is there a recorded speed at which the horses can move?

56:53

To most and for the applicants, when it comes to see horses, these are fish rather than marine mammals, I think. And so, we consider them to be stationary. Whereas we can assume that a marine mammal will swim away from a high noise source. Any fish or related species we assume worst case scenario again, which is that they do not move from the highest noise position in the water, which again is another factor in the worst case scenario assessments.

57:26

Okay, thank you. Okay, so yeah,

57:29

I think that completes the actions. Thank you, sir. Now moving on to item 11 on the agenda, other aspects of marine mammals and we're going to start with the vessel collision risk disturbance and the vessel management plan. So I'd like to start by discussing a concern regarding seal haulout sites, and the potential for seals to be flushed into the water as a result of vessel traffic. Ismail could the applicant explain whether the vessel management plan would include best practice measures to reduce the risk of seals flushing due to vessel disturbance and how this will be secured in the DCO.

58:13

Josephine brown responding on behalf of the applicant. So, the project has committed to the vessel vessel management plan in the post consent phase in condition 11 F of schedule 11 and 12 of the draft DCO. And within this vessel management plan codes of conduct for vessel operators will be detailed and included and regarding the points raised by a Natural England on CL haulout flushing one of the main codes of conduct is to maintain a minimum distance of 100 metres from haulout sights and additionally on a disturbance point to minimise engine over revving and reduce noise disturbance. So this will be detailed in the better management plan and the associated documents submitted.

59:02

Thank you that's clear. Can I ask if the vessel management plan addresses this issue through all stages of the project construction operation and decommissioning

59:13

you yes vessel assessment throughout all phases relies on mitigation stipulated in the plan.

59:24

Thank you. I'd like to just ask why a draft vessel management plan has not been submitted it within the application to date.

59:39

Josephine brown responding on behalf of the applicant. So as stated the project has committed to a vessel management plan in the post consent phase and condition 11 F. And within the Marine Mammal chapter, it detailed the mitigation in the text and the paragraphs in that assessment that would go into that and also the advice of the wide scheme marine mammal wildlife watching code and guide to best practice for marine wildlife. So therefore, the assessment is based on that mitigation. And therefore, the codes of conduct stated in the chapter can be relied upon, as he secured within the provision in the



DCO. And the draft DML. That requires the provision of the vessel management plan and adheres to those wildlife watching codes is secured in condition 11. So the applicant will be taking the advice on board about the outline VMP and is going to be providing a working in proximity to wildlife protocol document at deadline one, which will detail about mitigation listed in the chapter that is relied upon for the conclusions. And the objective of this working in proximity to wildlife document will be to minimise that risk and disturbance in the assessment. And then this working in proximity to wildlife protocol will form a component of the vessel management plan that will be worked on at a later stage.

1:01:09

Hey, thank you death is clear. Can I mean? Can I ask you? Would you are you intending to submit a draft copy of the restoration plan into the examination? At all? That's something that you could consider

1:01:27

by Tim Golding on behalf of the applicant. Thank you for that. As my colleague said, I get well I guess, going going back to your question previous, we didn't, we thought there was already already sufficient measures secured and detail provided rather than needing to actually submit an outline or draft plan with the application. However, given the comments that we've received, through relevant representations, etc, we will be providing a draft plan along the lines of what my colleague has just described. So, working in proximity to wildlife protocol that will form a component of the vessel management plan which is secured through the relevant de marine licence conditions under the draft DCO. Szeged use 11 and 12. So you're

1:02:27

confirming that you will probably get into the examination. Yes, we will. Okay. When which deadline will you be able to provide that deadline one?

1:02:40

We will aim to do that deadline one. Thank you

1:02:49

could I confirm if the applicant will explain the impact of the potential new harbour facility? Will this be incorporated in the draft vessel management plan?

1:03:07

This can be included it's not currently in any of the assessments provided to

1:03:15

us it would be I think it would be helpful if it if it could be

1:03:17

noted. Thank you

1:03:27

so, could the applicant now state the maximum design scenario for vessel movements for each receptor covering marine mammals fishing divers? is the maximum design scenario the same for each of these receptors or does it differ and is it worst case?

1:03:54

The applicant confirms it is the same across all receptors. And it is the maximum design scenario presented in the project description chapters and in all of the chapters. So it will be the same for marine mammals, fish and divers. Thank you

1:04:19

Okay, we're moving on to 11.2 of the agenda, which is harbour porpoise cumulative effects assessment. So Natural England to raise the concern that or not all relevant projects have been included in the cumulative effects assessment for harbour porpoise disturbance. And they state that table 1137 In a PP 052 presents less than half of the projects listed in table 1135. Could the applicant confirm if all the relevant projects taken forward to the curative effects assessment for harbour poor points are included and that the impact presented in terms of percentage The m u affected is correct.

1:05:05

So the applicant confirms that this was an error made in the Marine Mammal chapter, and that some of the non UK projects and Scottish projects in the cumulative effect long list that are located in the North Sea management unit for harbour porpoises were accidentally omitted in the cumulative effect assessment for that species when the cumulative effect assessment was updated prior to application. Having reviewed this comment, the project's missing from the harbour porpoise cumulative effect assessment are eight Scottish projects one Belgian project three French projects, six Dutch projects, two Norwegian projects, two Danish projects and seven German projects. The applicant confirms that these projects are listed in table 1135 and 1136 of the ES assessment in chapter 11, Volume Two ap 052. And that these were correctly assessed in the cumulative effect assessment for common dolphin and Minkee. Well as they are also located in the Celtic and greater North Sea management units on the North Sea Side for those species. So, having assessed these the having looked into this, the majority of projects identified as being emitted in the harbour porpoise cumulative effect assessment for the North Sea management unit, are due to construct prior to the planned construction timeline for rampion. Two. Additionally, several other projects that were omitted in the assessment are of a higher tier, so there is a lack of uncertainty in their timeframes and the potential overlap with the construction of rampion, too. So that uncertainty is built into the assessment through the tearing system provided by the statutory nature conservation bodies. So the applicant would like to confirm that while there could potentially be an increase in the number of animals disturbed through the include inclusion of omitted projects

1:07:11

that the

1:07:14

sorry, apologies that while there'll be an increase in potential increase in the number of individuals disturbed hoped the temporary changes in individual behaviour and or distribution of individuals would not occur at a scale likely enough to affect the population trajectory, which is how the EIA assessment

is based on population. And therefore there's no change to the magnitude that's already been presented in the assessment. And the effects from my remains minor adverse significance, which is not significant in EIA terms, and the applicant will commit to updating the calculations for the missing projects and present a revised cumulative effect assessment for harbour porpoise in the North Sea Management Unit at deadline one.

1:08:06

Okay, thank you. Let's clear.

1:08:18

Okay, thank you. So before we move on to 11.3, are there any questions on either 11.1 or 11.2? From anybody in the room online? No. Okay. I don't see any hands up. Thank you. So we're now going to move to Agenda Item 11.3, which is the bottlenose dolphins densities and the coastal West channel management unit. Natural England have noted that updated management unit boundaries were published in March 2023. Can the applicant confirm if the assessment reflects the updated eastward extension of the coastal West channel marine unit boundary for bottlenose dolphin, with which the proposed development now overlaps.

1:09:08

Rachel Sinclair for the applicant, and so the Marine Mammal baseline chapter and that document AVP 147 was drafted in 2021 and the applicant recognises that this document was outdated at the time of the application. The key change being as Natural England have highlighted the enlargement of one of the bottlenose dolphin management unit, though at the time of writing the baseline for rampion to ramp into was entirely located in the offshore channel and southwest England management unit. Now, the interagency marine mammal Working Group in 2023, revised the boundary for the coastal West channel management unit that now rampion to is currently located partly within two management unit. Because of that, the assessment should be assessed on both impacts to both management unit. So to put it into context of the the number of dolphins in that sort of reference population. From the coast or west channel management unit, there are 40 dolphins that are now being added into the assessment compared to the 10,653 dolphins that are in the offshore channel and southwest England management unit, though in total if we were to combine those two management units as one reference population, that would give us a total of 10,693 bottlenose dolphin, which is almost identical to the value that we used in the ES assessment which was 10,497 dolphin. The addition of the extra 40 Dolphins from the coastal West channel management unit doesn't significantly change the population size that was assessed in the assessment, there would be no change in the magnitude of any impact pathway and no change in any physical solutions of bottlenose dolphin.

1:11:14

Thank you have you discussed this with Natural England since these changes occurred?

1:11:24

Not yet. No. Okay.

1:11:25

Okay. I will run your great Naturally these comments on those as well. Thank you. So, again naturally then noted that density estimates presented in Table four three of the Marine Mammal baseline technical report a PP. 147 do not reflect the latest picture of bottlenose dolphin abundance in this region. Could the applicant explain the source and age of the data used.

1:11:57

Rachel Sinclair on behalf of the applicant the lack of density estimate for bottlenose dolphins in this coastal West channel management unit. And one of the options that has been used in previous assessments in the lack of any specific density estimates on site is to assume a uniform distribution of animals within the management unit. If we were to do that, then we would be spreading the 40 bottlenose dolphins within the coastal West channel management unit across the entire management unit area, which gives us the density of 0.002 Dolphins per kilometre squared that tangibly lower than the density that we used in the impact assessment for marine mammals, which was 0.037 Dolphins per kilometre squared. Therefore, we consider that the density estimate used for bottlenose dolphins is both precautionary and appropriate.

1:13:00

Okay, thank you. That's clear. Okay, I'm finally Natural England advise that the applicant present bottlenose dolphin density in the coastal West channel management using it assuming a uniform distribution. How do you respond to this request?

1:13:27

And so we can update the baseline for marine mammals to take that into consideration. And I believe we discussed that potentially being available by deadline to

1:13:42

thank you. That concludes my questions on marine mammals. So that concludes item 11. Go to the actions then please. Mr. Male?

1:13:55

Yes, thank you, sir. I'll start off with with what I think is probably a clarification to clear up Mr. Goldings commitment to what was being submitted during the process. I think the applicants commitment is to submit a working in proximity win with wildlife protocol, which will take the mitigation measures that are set out in the EIS and which will then in due course be incorporated within the vessel management plan as as opposed to actually submitting an outline of the vessel management plan itself. But maybe Mr. Golding will clarify

1:14:45

three tymberee. Yeah, that's correct. I thought that's what I had said. So apologies if I didn't say that.

1:14:54

I wasn't quite it wasn't quite clever. And certainly that was the that was the intention. I think And we can explain, I think, when we submit that, how then the other things that will be in the vessel management plan, and and why that's not something that we believe we could submit in full outline stage at this

moment in time, but, but the point is that we will provide a reference pathway to secure the mitigation measures that are set out in the estimate this will then be incorporated in that plan in due course. The only other point that I had arising then sorry, two points then arising from this agenda item will firstly to update the cumulative effects assessment for harbour porpoise to include those projects which were acknowledged and accidentally been missed out. And then as we just discussed the updated baseline to the the bottlenose dolphin assessment to take into account the the management units which will be provided by deadline to

1:16:04

you have to complete the actions. Thank you.

1:16:09

Could I just ask if there were any other comments on marine mammals from anybody in the room or anybody online? Okay, thank you.

1:16:22

That might be a suitable point for us to pause for lunch. I know it's just before one but it seems the suitable moment so let's resume this hearing at quarter to two where we will go on to talk about the offshore physical processes. So quarter to two place