TEXT_ISH1_Session2_NetZeroTeesside_10052022

Okay, the time is now 350. And welcome back to this issues specific hearing one incident net zero T side project. Just been discussing, we still got quite a bit to get through. And we were hoping to finish by five o'clock today. But it's asked if anyone's got any objections if we continue to half past five, if needed. We have no objections to that. Okay. Thank you, Mr. Gleason.

Thank you so I think, Mr. Edwards, you're talking before the break abouts, the

the pools that we needed the offshore elements, could you just clarify the timescales for construction for both the onshore and offshore these done if that's notice your appropriate to insert? Microphones Nelson. Thank you, thank you.

There's always one. So I'll qualify the statements that I'm going to make just a little bit here. But in so much as the the execution contractor for the offshore construction phase has not yet been appointed, where probably a year away from the point where that contractor is appointed. So the dates that I will run through are the current best estimates, but probably reasonably accurate estimates, because in the North Sea, the nature of construction is very much driven by the seasons. So you can't construct offshore in the North Sea during the winter in the spring, because the sea is too rough, and the vessels don't have the stability in order to be able to construct offshore pipelines. So we can only work during essentially two and three Q in the North Sea. And those are what we call the weather windows for for construction. So we're looking at probably constructing the T side landfall in one Q 2025. Because that is less weather dependent. After that, we will start to build the shallow water pipelines for both tees and Humber in two M three q 2025. Again, that's in the weather window for the North Sea. The next aspect that will come in will be the drilling rig. And we're estimating at the moment that the drilling rig will drill the five injectors and the one monitoring well over about a year. And that will start in two q 2025. And then be complete for two q 2026. With all six wells completed. There are two manifolds to be installed at the insurance store. The manifolds connect to the end of the pipeline and manage the distribution of the gas to the wells. So those are expected to be installed in the weather window in the North Sea in two q 2026. The power and the control umbilical again in that same weather window to q 2026. And then the deep water and the pipeline's will be installed in two three q 2026. Again, in that 2026 weather window for the North Sea. The pipeline will be completed. And then we expect to hook up and commissioning of the system in three q 2026. We're startup towards the end of 2026.

Thank you and then the proposed developments. The onshore elements. What's the current timing for that?

For the construction,

the construction to the operation point.

I believe I might go back Have you got any information on construction on shore dates.

So again, to call for another speaker now this is Mr. Jack Bottomly, who's a Project Engineer at BP. Thank you

Good afternoon. I guess from an onshore timing perspective, I would only help the airlines to currently what we say in chapter five of the Yes, I don't have the reference here. A pp 088. So that the Indicative shedule is still aligned to that from a onshore perspective. Again, similar to Mr. Edwards comment earlier, this is still subject to contractor schedules on award in about a year's time.

So is that chapter five as originally submitted, there's been no slippage in spite of the delay to the examination, I used to looking at the same time table. And what were the key dates of that, please?

Yeah, so I've got it up on my screen here. So yeah, the main construction of the power plant and compression facilities on the teeth worksite would be starting at the beginning of 2024, running through to the middle of 2026. And then the gathering network is within that window, but a lot more of a compressed construction schedule due to the quantity of work.

So completion of the onshore elements would be 2026 and the completion of the offshore. Similarly 22 and six are coming together. Same time.

That's correct. Yes.

Thank you very much. Okay, so if we can move on now to other elements of timing, I suppose. So, the carbon capture readiness assessments, a PPO 74. However, four point 2.3 says the power station will be designed to operate for up to 25 years after which ongoing operation Mark markets, conditions will be reviewed. It's not appropriate to continue operating after that time. So if it's not appropriate to continue operating at that time, we will be decommissioned. So that's 25 year lifespan. On what basis has that been established? And is that's a typical lifespan for gas gas fired power station.

So again, to introduce now, Dr. Richard Lowe, who I referred to earlier, it was a director at AECOM, who will provide an answer to that question.

Thank you. Thank you, sir. So 25 years is a typical design life for a gas fired power station. Yes, sir.

Thank you. And then there's a statement in the in chapter 12 of the yes, that says decommissioning would be undertaken approximately 50 years after survey work, how would that relate to the 25 year lifespan for the generating station?

Sir Richard low representing the applicant. So the decommissioning phase there it will be the decommissioning of the generating station. Then there'll be the decommissioning of the gathering

network as appropriate. But the 50 year life I believe, is relating to the decommissioning of the store or the access into the store

three

the functioning of the infrastructure to inject into the store. Okay.

Mr. Lane might want in fact, Mr. Edwards case. And

so as part of the store permit process with the NSTA. We're putting together the monitoring, management and verification plan for the store. And that has quite a long term tail on it about demonstrating that the carbon has been captured permanently in the store. So we have to keep repeating, going back to the store to check that it is still whole and good. And it hasn't started to leak in any way. So that's part of our condition of the store permit is to be able to do that in order to be able to do that we have to have the equipment in place for that period of time. And that's the 50 year aspect to decommissioning is the equipment used to monitor the store?

So it's 50 is the co2 is in the store, but he's not being monitored, is that correct?

We, we are still finalising the MMV plan with an STA. But we will have to go back. I can't recall the frequency off the top of my head, but every so many years to survey the store to make sure that it is still in, in the status that we expect it to be. So essentially going back and shooting seismic surveys and things like that. Okay, thank you. And that's one of the wells is also a monitoring well. And we'll be able to go back and take measurements from the well as well. So that's part of the equipment that will stay there over the longer term.

Okay, thank you. And then the power generation carbon capture has the design life 25 years as we've said, The Gathering network has a design life of 40 years. So, that must be able to operate independently of the generating station

rigidly representing the applicant. So in terms of its operation, once everything is installed, and yes, the gathering network could continue to operate beyond the life of the generating station.

So that points then the generating station, this comes back into coincidence, talk to puzzles making about the operation of the generating station is not producing electricity, you're just collecting carbon dioxide from industrial emitters, and then compressing that and then sending that off to the store or correct.

When the generating station is not operating, then yes, the gathering network would still be collecting carbon dioxide from other emitters, as they are in existence at that time. Terms of the generating station, it's also important to note that the design life has 25 years but as we've seen with other power infrastructure that's currently operational in the UK, the operating life could be longer than 25 years. And it's probably also pertinent to raise that the dispatchable power agreement that will be in place for the generating station is unlikely to extend for 25 years anyway, I think that was likely to be a 15 year

contract. So whether that's extended will depend on the need for dispatchable low carbon electricity at that time.

Okay, thank you. So, touching on that points baths, the operation of the generating station as well points 4.4 And five states that on commissioning the low carbon electricity generating station with operating base baseload node with continuous operation with carbon capture for several years. Continuously stable co2 Production export is preferable during this period to minimise changes to injection rates. So the offshore underground storage reservoir can someone just comment on that for me please? What is meant by what's the reference to the injection rates and also the wider picture? Notwithstanding mystical boy what you said about made the arguments of that the operation of the generating station starts off in this baseload mode. And then after a period of time is not needed because the co2 can be collected and exported without the power generation. What is the condition of the generating station in that intermediate periods? There's a reference to being needed to deal with the intermittency of renewable power. But this isn't needed beyond that, for the reasons

rigid low representing the applicant. What we've tried to assess in the environmental statement is worst case scenario in terms of environmental effects. What we expect is when the generating station is first commissioned, we are likely to want to be able to run that continuously while we establish its commissioning regime, understand how it will work and how the store will work and will want a relatively steady injection into the store initially, while other gas emitters come onto the network, because it will help understand how the store is accepting the governor oxide. The overall purpose of the generating station is to be a dispatchable flexible generating station in the UK currently, that is performed by excuse me unabated gas fired power stations largely around 50% of our electricity in typically on a parts of the day, supplied by unabated gas fired power stations. So we expect this generating station of being a higher efficiency being a new build generating station, as well as being low carbon to replace and displace some of that unabated CCGT in the system. So we do expect it to operate in its dispatchable mode, which usually means that it will be coming on when there's a shortfall of electricity from renewable generation, or when there's peak demand on the network, such as in an early morning peak or an early evening peak, where we can supplement and complement the renewables. So as a result, we expect it to predominantly operating in probably twice a day is a typical, based on the system based on the load based on a whole host of other factors. So while it might, during commissioning, an early stage needs to be operated stably, while we get everything established the long term operation of the generating station, it the whole point is it will be dispatchable and flexible. So it shouldn't be base loading all the time for his 25 year design life. But what we've got to assess in the environmental statement, as I'm sure you'll appreciate, is a worst case scenario that we are comfortable to understand that we can assess and appropriately report in the various assessments.

Thank you. So I think you've said that it's the co2 generated by industrial emitters between years 25 and 40 can be compressed and exported to storage. What would happen after year 40, which is the to sign life and sign life for the into the co2 network because we network.

Richard Lowe represented the applicant. Again, what we're looking at here is current understanding of a design life as opposed to what will actually be the operational life. So it will come down to a need case at the time in the next 40 years if there's a continuing need for the gathering network to operate.

And there are other stores that have been available to be developed alongside endurance if we're at or near capacity on the endurance field. And we've already outlined their significant additional potential in the wider area, then that could be a continuation beyond the 40 years in terms of its operational life. If there's a need case, well, we'd obviously have to appraise is the longevity of the infrastructure, we'd have to make sure that the preventative maintenance was sufficient and that the infrastructure was still fit for purpose. So it could be that the infrastructure is operated for a longer period, if there's a need, if there continuing to be emitters in the area. Likewise, there could be other power stations developed to connect into that gathering network in the future, depending on demand, depending on the need case. So the gathering network's purpose is to flexibly be able to support the decarbonisation of the of the area and how that evolves over the next 40 years. We're trying to make an assessment at this stage recognising that the need will obviously, potentially need to change as UK needs move forward in terms of the number of emitters the need for CCS after 40 years, the need for dispatchable power generation after 25 years or beyond. So, there may be the need for the overall project to evolve as the need case develops.

Okay, that's helpful. Thank you. So, Ken, question of decommissioning which I mentioned earlier, and the notes that decommissioning may proceed at different timescales, different parts of the site. With the gathering network, take in place after the PCC site is decommissioned. you've assessed the worst case scenario for these in the Yes, but you're essentially saying that there's a degree of flexibility as to how long you could continue with these different elements of infrastructure.

That's correct. Thank you. If I may say one more point, Richard Lowe representing the applicant. So, the other aspect relating to that is what we try to assess is the environmental effects within the environmental statement of decommissioning. Because the decommissioning is likely to take place at different times for different parts of the infrastructure, whereas construction effects are largely going to be coincident a similar timeline, we consider the construction effects all the worst case Hence, the the majority of the environmental effects of construction and decommissioning of focus on the construction affects a because they're more immediate be because they're likely to happen at a similar time.

This relates this next question relates back to something that was discussed earlier, but the CCR assessment at paragraph 5.3 point one refers to the volume of carbon dioxide anticipated to be captured during the lifetime of the house developments has been 50 point 7 million tonnes which is 2 million tonnes per year, or 25 year period the power station. So how does that relate to the capacity of the export pipeline, which is up to 10 million tonnes per annum. And the initial intentions capture 4 million tonnes per annum

Richard Lowe representing the applicant, the carbon capture readiness report is almost a curious report to include within the DCO application for a carbon capture scheme. It's an anomaly in the sense that it is required from the regulations and therefore has got to be prepared, and therefore has to follow the due process of that CCR requirements and the guidance and that guidance is indeed was developed originally 2009 2011. So a number of the requirements of that guidance, in fact, are are now being updated as we speak. Nevertheless, we have to set out in there that the carbon capture plant is deliverable that has sufficient space and then there is there for transport and storage network to support it. So we have to again look at a water per year potential worst case scenario in terms of the

CCR report in terms of the co2 generated, so that assumes that the generating station would operate baseload for 25 years. Whereas as we've previously outlined, the actual intention of the generating station is to be dispatchable. And therefore, the co2 volumes from it are expected to be lower than those presented in the CCR report, which therefore is a religion worst case. So therefore, looking at intermediate volumes of co2 generated from the operation of the generating station at full load that beats the capacity of the network is designed, as we've already outlined, so in terms of up to 10 million tonnes per year of capture across the Teesside area at most 2 million tonnes would come from the generating station that gives therefore a headroom of 8 million tonnes a year for industrial emitters to connect into the infrastructure. And as previously been outlined by my colleagues think initially, the the the network is expected to operate up to 4 million tonnes a year. So again, that allows for an additional 2 million tonnes of capacity beyond what the generating station would operate, even if it was operating at full load.

So to move from 4 million tonnes to 10 million tonnes is that due to increases in emitters rather than any change to the operation of the station to that station will be reducing anyway over that period. So you're building more emitters? That's correct, sir. Okay, so I think that covers the first points of item for the second point was to do with hydrogen and I think that's some degree has already been answered. But I just like to clarify A couple of points here. So hydrogen, is a potential add on the not part of the current TCO. Is that correct?

So I'm going to ask Mr. Lane to deal with this matter. Thank you.

Thank you, essentially. That's correct. Yes. So hydrogen is an important part of the two sides story, but not part of this particular DCO application. And I'm happy to explain how hydrogen fits in the broader story, if that's of interest.

That may be but I suppose my starting point is that, particularly the government's statements, posts, the application submission. So for instance, the British energy security strategy and other documents very much pushing hydrogen as a way forward. And within the documentation, you've provided you talk about the potential to generates hydrogen as a fuel. I suppose my concern not so not concerned. My question here is related to the DCO, essentially, and whether or not this words require new developments to accommodate the hydrogen elements. But if you if you're not concluding as part of the proposal, then that's probably not a relevant question isn't.

Maybe if I just outlined a little bit, hopefully, we'll be able to get your questions as okay. So, two sides, a very concentrated chemical cluster and their existing hydrogen customers, and transportation networks for hydrogen today. For example, BOC on T side currently supplies unabated or so called grey hydrogen, where, which is made by the reforming of natural gas and co2 is produced in that process and emitted to were currently the installation of the co2 gathering and transport system by the applicant. So this is the co2 transport and storage system element that we've talked to enables BOC for instance, to build co2 capture equipment, onto their facilities to capture their co2 and inject it into the transport and storage system for nap to take it and store it offshore. That thereby changes their grey hydrogen does a colour change and turns into blue hydrogen and low low carbon hydrogen. So the applicants co2 transportation and storage system is enabling the decarbonisation of existing hydrogen

production in the region, typically by by BOC. But it also provides the same service to enable new low hydrogen facilities to be created in the region as well enabled by this co2 transportation system. In fact, BP has a project known as HTT side, which is a blue hydrogen project. And there's one more being proposed in the area that are currently being evaluated by beis as part of their Phase Two process. And they would generate an order in the order of two gigawatts worth of hydrogen. And you refer to the energy security strategy that now aspires to a UK wide target of 10 gigawatts of hydrogen bite before 2030. So be careful on the timing. So. So the applicants proposal serves to both decarbonize existing hydrogen production in the region, thereby allowing local industries to have a lower carbon feedstock, but also to stimulate the development of blue hydrogen and the what's called the hydrogen economy in Government speak. And in fact, this particular region here in red car is being proposed as what's called a hydrogen village, an experimental area where hydrogen can be blended into the pipeline gas system, so that local houses and in fact, actually this college, potentially convert to burning hydrogen as an a sort of an experimental development of the hydrogen economy. So T side is a really important part of the government's hydrogen transition agenda, all of which is eventually enabled by the transportation of the co2 and the storage of the co2 that is a byproduct of making this hydrogen offshore.

Thank you. Are there any further comments anyone wishes to make in relation to item five? Yes.

Thank you, sir. Scott McCallum for your state currency project for limited. A few additional points on this agenda item, sir, for me. First of all, just for context, it's worth noting that error interest in this application arises from the potentially very serious adverse consequences delivery of the proposed carbon capture and storage scheme as a whole could potentially have on horm C. Project for offshore wind farm, which is the sale for nationally significant infrastructure project just under three months into its DCO examination. Despite the facts are that the main IDI identified for the offshore storage of carbon generated from from this CCS scheme, the German store, which we've been talking about, materially overlaps with EDI proposed for Hornsey for and over with Chauncey for hold an agreement for a lease and from the CONUS state. And also despite the fact that it has been argued on behalf of the carbon capture and storage scheme with a non si for examination, a that new offshore wind infrastructure could be allowed to come forward within that overlap area. So faithfully arguing for total sterilisation. It is a little surprising that this application has next to no information currently on the potentially very serious impacts that that could have on the delivery of Horam. See project for so sorry, in the context of this agenda item. My points are this, that whilst the applicant has, as we've heard to say stop compartmentalised their consent applications, it remains important in our submission to identify within this DCO process, first of all, the impact of all necessary scheme components when assessing the acceptability of the project. Secondly, the likelihood of other necessary consents being forthcoming in the context of those impacts. And thirdly, whether mitigations are possible and necessary in order to make the scheme as a whole acceptable. So, there is in our submission and need to identify full project impacts and implications including on Hornsey for in order to ensure that all material considerations are being weighed as part of this decision. As a secondary point, sir, we also think that there is a specific environmental impact assessment regulations requirements to consider these particular impacts. The applicant has submitted an environmental statement in support of the DCO application, which does have a chapter or an appendix dealing with combined effects. So, that is application reference EPP F 24 C, or sorry, ebp 346. And a paragraph 24 point 8.4 of that document and applicant acknowledges that in terms of the principles of UAE, there is a need to consider the project as a whole. However,

when reporting on the impacts of the offshore elements of the scheme, it does not mention the impacts on Hornsey for offshore wind farm, which we submit as is a deficiency in the environmental statement that should should be remedied. But in any case, under EIA, or more generally, sir, we consider that the information before this examination should be updated to properly reflect the effects of the carbon capture and storage project as a whole on Hornsey project for me, it's worth noting, sir, that discussions on coexistence between the two projects have been ongoing for a number of years. And we would of course, be very happy to seek to agree a statement of common ground with the applicant and which may be helpful in highlighting the current differences in view on the extent to which the benefits of both nationally significant infrastructure projects can be realised the potential mechanisms for achieving that and also which could set out the information which is relevant to decision making in this particular application.

Thank you sir. Thank you. Once all the all the codes you also obtain HPLC from your relevant representation, it says that you're negotiating pursuant to the terms of a commercial agreement between the parties. Is there any update on that, please?

Yes, sir. Negotiations are continuing discussions are continuing to try and establish whether or not there can be coexistence within the overlap area, as the position of Hornsey for that coexistence as possible. And it's the position of the storage project that as I mentioned, fill exclusion is required. As part of an agency for examination. Sir, there has been discussion about a tripartite agreement that is currently in place between the storage operator and Hornsey for and the current state, which seeks to deal with coexistence. That document remains in place. And it has been argued by the storage operator within the agency for examination, that the Hornsey for DCO should be used to effectively extinguish or remove that that agreement from the equation. But that's a matter. They're currently under discussion and with different representations within that Juanzi for examination.

Thank you. Mr. Philpott since response,

yes, and I'll try and do this briefly and proportionately, in part, because the moment we have a no criticism here, a brief, relevant representation. And in terms of understanding the way in which Orsted is going to suggest that this overlap is relevant to the determination of this DCO application, we obviously will wait to see what is said how it's expressed. And we'll have an opportunity to respond to that. So I won't try and do that. Now. I would simply say this. The examination which has taken place into the Hornsey for proposal is has been indicated, considering a great deal of technical information and legal argument about the overlap area. And broadly as has been outlined, the competing positions as to whether or not coexistence is possible. And if it's not possible, what provisions should be made in order to address that that is an ongoing matter. And clearly not something which is sensible to try and re litigate in this process, bearing in mind that the recommendation which is made by the examining authority in that case, which will consider the competing technical arguments, and the competing legal arguments, will ultimately go before the same decision maker before that decision maker receives a recommendation in respect of this examination in this application, and I don't understand it to be suggested, that it would be appropriate to rerun all of that here. And for various reasons, as I've indicated, that will be inappropriate. However, insofar as there are concerns raised by Ofsted, as to whether or not the consequences of potential decisions in that case, are adequately dealt with in the

material, we'll look at those, and we'll consider them and we'll respond. And it may also be appropriate to consider whether there's anything that arises in relation to this DCO in any provision that needs to be made in this DCO as a result of that analysis, and again, very happy for that to be considered. So what I don't want to do is to hijack today's agenda by going into that in more detail. But I hope that's helpful in terms of how we anticipate dealing with it, and also what we say properly falls within the remit of this examination, and what can properly be left to the other examination to determine which will then have consequences for how the Secretary State deals with the application will then come before him. Thank you.

Yes. Thank you, sir. Sorry, just just a brief follow up. I can completely understand sir the desire not to relitigate the same issues and to concurrent examinations. And it may well be that this matter can be dealt with appropriately by provisions within the DCO that in some way, link the outcomes and ensure that there's a reciprocal and obligation on applicant within this process to the ones that that are ultimately decided to be appropriate within the agency for examination. So very happy to discuss with applicant further what provisions within DCO may give comfort, immediate concern that we're sorry, if agreement can't be reached on that kind of mechanism within the DCO is, first of all a timing issue, as Mr. Phillpotts set out, and there is an ongoing examination for harm C four, which is just under three months in the Hornsey for examination will not therefore have reported and be available to, or at least a decision by the Secretary of State will not be available to this examining authority within the time skills, and then it has to report to the Secretary of State. And if there is any delay in the currency for examination, it may well be that there is no decision on the Hornsey for DCO at a point in time when this application lands with the Secretary of State. So there is a potential mismatch there, sir, which which does cause concern. Secondly, as I noted previously, we consider it important that this examining authority and the Secretary of State understand the potential impacts on honesty for when taking a decision on this DCO application. So wealth information presented nonSI for examination can be submitted and replicated within this examination that we will be, sir, that given the technical nature of that information, to make a decision and the recommendation yourself, you may need to have technical evidence before you and and potentially be able to question that technical evidence. So without agreement on a mechanism within the DCO, I can't immediately see how this issue can be overcome without some elements of duplication of, of technical evidence on impacts, and importantly, on potential mitigations. But certainly a matter that we're very happy to to continue to discuss with applicants and see if we can find find a more efficient way through

Thank you. I think the clearly the it will be in both your party's interest to continue talking. And also dads, you still have the opportunity to submit a relevant representation, which then the applicants can respond to, there's still quite a long way to go in this examination. And perhaps can help in terms of how you see the scope of this examination because the DCO this DCO application doesn't cover the offshore elements. That seems to be the difference, as I understand it, whereas the Han see, the sights are the same, or there's overlap as we've identified. So can you explain how you think we should be looking at those matters?

Certainly, sir. Yes. So Scott McCallum for St. Anzhi project for me, sir. My point here, it's an issue of deliverability of this project. It's an issue of acceptability of this project. And indeed, a consideration of whether mitigations are required to make this project acceptable. And I think it is accepted that you key

component of this project involves storage within the engine store. So whilst that consent isn't being sought for, for the reasons outlined by the applicant within this DCU application, it is a consequence of the implementation of this project as a whole. And that Hornsey for me will be affected. So in that way, sir, I think it is a material consideration within this application. And within this, your consideration of this application as to whether this project can be delivered in a way in a manner, which does not have unacceptable consequences. So I think it's important to be able to weigh up the impact on both nationally significant infrastructure projects that would fall from a the delivery of the food chain involved in this in this scheme.

So I'll deal with this. Briefly, I think in terms of the way that this examination can look at the consequences of potential outcomes of the Hornsey for examination, provided that sufficient information is given to you and you'll hear both sides and will take up the suggestion of a statement of common ground. I'm sure there's no difficulty in keeping you abreast of things. The the central position will be that either the Secretary said he will refuse on the form in which case, we'll look at the implications of that, or will approve it without our protective provisions, but with some form of protective provisions either in the form, followed by the applicant in that examination or some modified form for will allow the application but with our protective provisions, that the consequences of those can be set out for your benefit. So you can understand what might come out of that even if you don't have the final decision, there will be sufficient information to enable you to understand broadly what is an issue and therefore, how the costs might fall. And depending on what comes out of that process, it's going to be interesting to see quite how these issues are articulated when they're set out in writing, because at the moment, there's reference, for example, to mitigation or deliverability. issues, and how to respond to that without knowing quite what lies behind it, what sort of mitigation might be appropriate for DCO, that doesn't cover the offshore elements, whereas as you've found may say, so correctly, put your finger on a key distinction. The DCO for the offshore Hornsey for wind farm seeks direct authorization of development in the overlap area, which on my clients case, if approved and put in place would serve to prevent the storage of carbon in that part of the aquifer. So there is a very direct relationship between the authorization that the Secretary of State is being asked to give and the consequences for the other project that doesn't arise in the same way here. The DCA won't allow my clients to do anything offshore reasons we've explored earlier, but had no difficulty at all with Ofsted seeking to identify any material considerations which might arise out of that process. For the merits of this case, if there are points, they ought to be articulated. So they can be taken into account and we'll consider them. But I'm wary of going much further now. Because we otherwise risk not having time for the other items. And

I understand that. That's okay, we can now sort of Thank you. Thank you. On that basis, let's move on to item six, which is alternatives.

So again, as set out in the bullet points under this heading the agenda, the examining authority would like the applicants to provide no review of the alternative technologies considered and how the proposed way forward was identified with reference to Section 6.3 of the ies. And in addressing that, please, Mr. Phillips, could you comment on whether the choice of the PCC sights was the policy lead or locationally? Driven? I'll come on some further comments. I've got the belts the process as well.

Yes, I'm going to turn to Dr. Lowe, again to deal with this matter. He'll take the lead if there are any questions that he can't answer them, we'll turn to the other speakers as soon as we have before.

Thank you, Richard low representing the applicant. So the Alternatives Analysis covers quite a large number of different aspects. So I'll try and briefly go through those in turn. The original premise for the project was to develop a carbon capture project because that was identified at the time of commencing the works. And still all history today that carbon capture. And storage is a key part of the government strategy, as has previously been outlined. And I won't go back over the points raised there, there was also identified a need to decarbonize industry, and this is one measure and a cost effective way of achieving that, and likewise to decarbonize dispatchable power generation. So the premise for the project then started in terms of that context, other alternatives beyond the scope of CCS then would would discounted at that point given this is a CCS project. So in terms of then the next stage is the need for a gathering network. And I've already alluded to that and the the benefits of the gathering network as part of the project. And that's why we sought through the section 35 direction to wrap the gathering network into DCO excuse me, because we recognise that that would allow the CCS project as a whole, to be seen as a whole project rather than the gathering network being considered separately. So we agreed with B's, and Secretary of State through the section 35 direction that that was appropriate. Because obviously, the the nationally significant element of the project from a DCO perspective is the generating station itself. We've already touched on the generating station and the choice of fuel. So I won't go through that unless you have any further questions on those. So then we look at the choice of technology. There are different CCS technologies are being developed all the time, there's innovation in the sector, as that moves forward. But at the time, we first started this in terms of the most technologically deployable CCS technology that we have the most available and ready from a technology perspective is post combustion, carbon capture on the generating station, looking at the scale, and looking at the alternatives that were available at the time. We still are pleased that as the project continues, but that definitely post combustion capture is still the the technology of choice would still be the choice that we make today. Nothing has changed to deviate us from that position. While we appreciate there are other technologies going forward, and other innovations, in terms of pre combustion Hall, oxy firing, those are being developed by others that have the stages, but again, from the perspective that we identified at the deed, that that technology still stands, and that was the one we we move forward with. But where we weren't able to fully reconcile the actual final design because of the early stage of the project, just the selection of a licence or because there are a number of different licences available. So because of the investment gradually moving forward with the project and the design and the engineering works moving forward, we use the Rockstar lava loop approach to allow us to select that later on in the project, as of when it was appropriate to do so based on commercial discussions based on investment based on the design of the project to devolves. So while we've selected post combustion carbon capture, we haven't selected the exact configuration, the exact licence or the exact dimensions. So we've used the actual envelope to assess a worst case. Apart from that, then we look at the site itself. The project actually, I've worked on this project back since 2016, ultimately, and the project has evolved. But essentially we initially started with a national site selection for where to deploy a carbon capture enabled Generating Station looking at industrial capture as well. So we looked at UK sites and shortlisted two distinct areas, Teesside and herbicide. And then we went through a site selection appraisal within Teesside to identify a number of shortlisted sites within that. And from that point, there were a number of criteria all the way through that site selection process that

we were taking into account. The preference was very much to develop a brownfield site. The preference was to develop a site close to the coast on the East Coast, because we wanted to connect to the endurance store, which had been characterised by national grid and the British Geological Society. Some years previously,

we wanted to get any high pressure co2 infrastructure as close to the coast as we could. So that's allows us to get that high pressure system away from areas of habitation and other sensitive receptors. We wanted a site that was ideally located in an industrial area that could then pick up industrial emissions. So there are a number of factors there that identified as, as well as that we needed connections for gas supply, for water for the filter, discharge, cooling water, ABD, obviously to run the co2 gathering network. So while there were a number of sites identified that potentially fulfilled those criteria, the site that we preferred was the site that we've identified within the tes works or at the time SDDC site. Within that site, we then appraised a number of different alternatives working with SDDC to consider different alternative locations for the PCC site. And we identify the one that we've put forward as developed as part of this application. So a number of alternatives were considered all the way through that process to get to the point where we got to for the application. And as I say, we still have reappraise the alternatives. We still feel that the location remains appropriate terms of the PCC site. In terms of the generating station. What we did do is we down selected from three units down to won't unit CCGT. And you'll have perhaps see that through the evolution of the documentation through the stages of consultation. But that site still there very much represents a good location from the generating station. And then also the looking at the gathering network and the export pipeline. What we need to do is minimise disturbance on the habitat site off the coast. And so that was another key consideration as part of that.

Go. Thank you. That's helpful. So you said you started with a site selection process nationally looking UK sites? So essentially, there was a strategic level study? Where is that evidenced in the documentation.

So that predates the applicant's involvement in the project in actual fact, so that was done. And there were as initial work was done before was called the Energy Technologies Institute. And they published several reports relating to the deployment of CCS. And so as part of that information that's in the public domain on the ETI, that includes site selection, and what was called the generic study for deployment of a CCS project.

Okay, so then moving on. So, section 6.4 and 6.5 of the as described location, and site selection process, to identify the good location for the proposed developments. And then the specific sites within tees works sites, and environmental reasons are given for selections. The focus of this appears to be on the reasons for selection, rather than presenting a comparison of the environmental effects between the selected location insights and the identified alternatives. Is that a fair characterization?

So in terms of theory to say, could you repeat

that? So effectively, you have, it seems that you've presented reasons for choosing the sites rather than presenting us with a shedule, which compares the different attributes if you'd like a matrix.

So we haven't presented a matrix as you've outlined in terms of comparing other sites that was done outside of the development of that chapter. So effectively, the chapter is summarising work that's been done, if that makes sense.

Yes, that makes sense as an answer, but is is it necessary then to do that, for to present our further work to the examination? Bearing in mind alternatives is an issue that's has been of interest in and CIP projects recently? I mean, we have since the Philippines.

There's a if I may say so there are two separate issues here. And it's important to have them clearly distinguish one is what is necessary in order to comply with the EIA regulations. And the EIA regulations obviously have a very specific requirement to describe the alternatives that were considered. And to indicate the main reasons for the option chosen, taking into account the effects of the development on the environment. If there's a suggestion that that requirements, specifically requirement has not been met, then we'll consider and respond to it. But then there is a separate question about the extent to which alternatives might be relevant more generally. And that is, in part a question of law in part a question of planning and judgement. There are certain legal requirements, where alternatives have to be considered in addition to era. So as habitats regulations, there are also certain specific policy requirements, flood risk, sequential tests and so on. Beyond that, the MPLS, for example, does not require alternatives to be considered. And it doesn't require an establishment of whether or not the proposed development represents the best option. Yes, outside those specific circumstances, alternatives are only likely to be important and relevant considerations in exceptional circumstances. And those helpful summary of the guiding principles by a Mr. Justice Holgate in the Save Stonehenge World Heritage Site challenge, and we'll put in a copy of that As an appendix to the summary of the oral submissions, and three points, which are just briefly derived from that case, land may be developed in any way, which is acceptable for planning purposes. The fact that other land exists on which the development proposed would be yet more acceptable such purposes would not justify the refusal of permission for that proposal. familiar concept. Secondly, in the absence of conflict with policy or other planning harm, the relative advantages of alternative uses of the application site are the same use on alternative sites and normally irrelevant. Thirdly, and in those exceptional circumstances, so were exceptionally alternatives might be relevant, vague or incorrect schemes are which have no real possibility of coming about rather irrelevant, or were irrelevant should be given little or no weight

will provide the judgement so you can see all of those comments in context. And the approach that is summarised, reflects the fact that if there's no specific legal or policy obligation to consider alternatives, the key question for any proposed development is whether it's acceptable on its own merits applying relevant policy. If it is, the fact that it's possible to identify another form of development or a location for the same development that might be even better, doesn't provide a reason for refusal. And I'm conscious that this issue is topical at the moment, because of the Aqualand decision. And in terms of the way that that decision is, is treated, that is a decision which of course, is subject to legal challenge. And obviously, part of that legal challenge is that the approach to alternatives was unlawful. And so if if aqua and and the approach that that takes is going to be brought in also helpful to see the criticism of that context. But in any event, in any event, bearing in mind that we're not here to second guess the

outcome of that challenge reasons I pointed to earlier, in that decision, the second state acknowledged in terms, that alternatives are material in exceptional circumstances only. And that's paragraph 420 of the decision letter. And it's also a case where the alternative was said to be relevant, given the combination of adverse impacts. So setting aside the criticisms that are made in the legal challenge, that means that it is a highly fact specific exercise judgement in that case, as to why that the particular alternative considered was thought to be important, is not a precedent about approach to be applied more generally. And the question that will then be for the court is whether the way the Secretary of State went about that is legally defensible or not. But the essential principles that I've just outlined and just drawn from it, it can be applied consistently, here with the approach in the Stonehenge decision. And if it's considered exceptionally, that an alternative might be relevant because of a legal obligation or a planning judgement, that it is relevant, that then brings into play the principles in MPSC, and one that guide decision making in those circumstances. And they're intended to ensure that where alternatives do come into play, that a proportional proportionate approach is taken to their consideration. And I don't think it's I don't think it's unfair to characterise the nature of those principles, as making it less likely that urgently needed energy infrastructure will be blocked, because of arguments about alternatives. That's clearly part of the purpose of that guidance. And reflected in for example, the requirements consider the timing implications of any alternative, and whether it would result effectively in the urgently needed infrastructure being delayed. I give that by way of an example of the point. So I would urge caution about seeking to treat Aqua wind as meaning that the bar has been lowered for alternatives. That's not I would submit the right approach to it. Even if that decision survives the challenge, obviously, if it doesn't, even worse, but even if it does survive the challenge, I submit that will be the wrong lesson to draw from it.

Thank you. Come back to the points about how the alternatives have been considered. Through the AI versus which was your first point. And whether or not it's sufficient information has been presented so far. As Dr. Lowe Said's, some of the work was done before the project was established. And I just wonder whether that might be appropriate. See how that site's evolved through that, that exercise of looking at alternatives

was so we can, we can take that away and see what there is. But as I indicated, what the requirements stipulates is not a full account of the environmental impacts and the relative environmental merits of alternatives. It's describing the alternatives that were considered the point of fact that it has to describe those. And then the word is indicate the main reasons for the option chosen, taking into account the effects of the development on the environment. So it's not it's not a requirement for a comprehensive side by side examination. We believe what we have done is appropriate, but we've we hear what you say we'll take it away and consider if there's anything more that might help Lee supplement it.

That'd be helpful thank you. Does anyone else have any comments on alternatives? No, thank you. So let's move on then to item seven, which is the extent of the co2 gathering network.

Sorry, sir. Oh, yes.

Mr. Hanson? Yes.

Just noting the second bullet point under alternatives. In terms of connection routing and corridors.

Second bullet points to examine without Alaska, please provide no review of the alternative collection. Routine in corridors. That one?

Yes. Okay, I just if you're moving on to seven.

Phillpotts, you want to comment on that generally?

Well, that would be not too low. Again, I got to those happy to comment generally on that in order to assist those who wish to harriton including, obviously, in particular, the examining authority.

And I mean, maybe before you do that, talk to low. Mr. Hanson, was there anything specific you wanted? Addressing under that?

I'm conscious that this hearing is not intended to get into the details of specific relevant representations. And we've obviously set out our views. Yes, in great detail in our in our rep. It was merely to acknowledge at this juncture that notwithstanding the changes that have come forward, we are in this get this goes to the heart of our relevant rep. And we remain of the view that reasonable alternatives exist which are not accommodated in the application and that we are impressing on the applicant that we still require further changes to address those beyond representations beyond the changes that were preamble, which is okay, thank you. So we have we're urging the applicant to to give consideration to further changes. So it's really just to acknowledge that point, which we can obviously go into more detail. Yes, Mara, is compulsory acquisition hearing. She Okay,

that's fine. Mr. Hill Park needs to talk to those who want to come back on that, given that context.

Well, so far has any particular representations made about alternatives in the context of compulsory acquisition, I suggest that we wait to hear that the way they're put and we can respond. If you would find it helpful to have Dr. Lowe's overview of the consideration of these connection routing and corridors issues, we can provide that now. It's entirely a matter of you, it's your examination, if you would find it helpful, we'll provide it. If you'd rather have it in writing, we'll put it in writing but you have, as you've indicated with the agenda. That information is in the EAS, I suspect that what Dr. They will be doing will be summarising what you already have in writing. So I'm entirely in your hands as to what you find myself.

And I think given the time as well, and the fact that in some ways, this leads on to the next item about the gathering network. And I'd like to move on to that we'll cover it, some of it I'm sure will come out in that the Discussion anyway. So okay for humans Tenzin, we notice your, your ongoing concerns anyway, and we will address those.

That's fine. Thank you.

Thank you. Okay. Good. Thank you. So item seven then summarises the applicants will be asked to provide no view by the reach of the co2 gathering network potential for expansion. So specifically, we're talking about the co2 gathering network rather than the the other elements. It's just been highlighted, but I think, to some degree, this might might cover both. So references made again to the capacity. Maybe we've covered this, let me just check whether it needs this further.

So yeah, so can the points about initially transporting up to 4 million tonnes of co2 through the export pipeline and then accommodating up to 10 million tonnes per annum alone for future expansion? What's the timescale for reaching the form of interns? Is that a staged approach as well.

I'm going to pass this on to Mr. Lane, who will deal with these matters.

So you're right to identify a staged approach to build up so that the applicants plan would be to establish infrastructure capable of transporting up to 10 million tonnes of co2 from the two side area and then offshore to the store, as we've described, we believe the initial volumes will be more in the in the 4 million tonne region that you that you described, linked to a view of who the earliest emitters that will be connected to the system are and as I'll outline in a minute that that's in the hands of basis decision makers as to exactly who or which of those emitters are the initial connect ease, but the expectation would be for 4 million tonne initial phase, but the capacity that will be established will be up to 10. Basically, the pipeline

is big enough to 10. But you start with four. Okay, that's fine. And then yes, you said you mentioned it earlier as well, that it was a base decision to decide on the emitters. That wasn't something that I picked up from documentation. And they really this is the heart of this agenda item. How have those emitters will have any been identified so far, simply some have in the general sense, because you've identified a network. And then the documentation talks about the individual emitters securing their own consents for linking in with that network. Has any progress been made on that France with individual emitters? Or is that something that bass is involved in as well? And what capacity is there in the future for other emitters to come forward who may not may not immediately fit into the network you provide it? Do you need to increase the network? Or or will individual limiters then simply build longer linkages to that network? So perhaps an overview would be helpful of how this whole network has been established and how it's potentially moves forward?

Yep, good question that I'll try and deal with as many of them as I can in one go. And I think some of them may come back to something we'll follow up on writing in more details by this process, because I recognise that's challenging to, to explain. But physically, the gathering Network is an aboveground pipeline, but extends from Billingham on the north bank of the T's runs through the existing managed pipeline corridors, of which there are a number in this area, passes through the seal sands area, and then crosses the river T's where it's proposed to instal the above ground pipeline to get on the south side of the river. A lot running in parallel to the DAP hole and gut, then turning north to entities worksite. So in a nutshell, above, above ground pipeline, but under the river, what was proposed to base in the cluster process that the East Coast Custer was eventually selected through was the development of a backbone system that creates a Route corridor for the majority of the major emitters that can be extended in future if other emitters are identified to join the co2 collection system. The backbone has

been proposed, studied and surveyed since 2015, initially by the tees Valley Combined Authority and then further refined by the applicant in its application. Its routings been based on anticipated emitters and the two side area identified at the time that the VCOs submission, however, there is ample space in the existing managed corridors to accommodate additional pipelines. initial surveys have identified potential pipeline locations across the entire Teays Valley area, including the Grange town and Wilton areas of Southbank. And it's proposed that the co2 gathering network can be extended by the installation of additional spur lines as and when required. Any anticipated extensions will be developed on a case by case basis, since the emitter selection is part of the BS phase two process, which we're going to explain in a little bit more detail by writing and that will only be revealed in a progressive and stage wise manner. The applicants therefore taking a considered view to the extent and the maturity, the various JMeter schemes and is proposing the initial gathering network based on that. In January 22. January of this year, individual emitter projects submitted bids to the collective east coast as submitted bids to base for what's called the phase two process of the of the cluster competition. In March 22, a total of 25 individual decarbonisation projects within the East Coast cluster area, so that includes Teesside and Humberside were shortlisted 14 of which were in the Teesside area. Having met the government's eligibility criteria, these shortlisted projects are now being evaluated by government and will be eligible or as a selected subset of those will be eligible for government business model support and further investment if selected to connect to the NDP transport and storage system. So I've described an aboveground pipeline backbone system, which can be expanded to connect to other emitters in the area, but it's designed around what we believe to be the core and most mature emitters in the two side area. The decision as to which of those emitters, is supported by government and therefore has a need to be connected is in the hands of government right now. We hope to see some of those decisions being evidenced by government in the next couple of months. Although I expect over time that that will occur in future phases, and we won't have complete transparency on one day as to the eventual shape of the emitters.

Okay, thank you. That's very helpful overview. So the network infrastructure would be content provide potential, it's got 10 million tonnes

that isn't specified in the DCO. Is it's Mr. Philippon doesn't need to be.

I'll check on that, rather than give you an off the cuff.

Thank you. And then potential changes that gathering network to accommodate the emitters later emitters, perhaps? What's? Well, I suppose world emitters, what's how, what consensus they need to be able to join the network is to build pot swell. So the moments, the DCO, the order limits finish, Beyonds they don't reach the emitters property, presumably. So there is a need to get additional consent from the emitter to the network, under what legislation pull approval processes that to be achieved.

So my understanding I'll be corrected, if I'm wrong, is that because of the short length of those likely pipelines, that they would fall into the Town and Country Planning legislation rather than the Planning Act? They wouldn't be in sips in their own right. So they would need to obtain planning permission. Okay. Yeah. I think Dr. Mo has a further point to add to that.

Originally representing the applicant just to clarify on the 10 million terms that isn't specified in the draft DCO the maximum diameter of the pipe is specified

which effectively is a proxy for effectively Yeah, okay,

that's in what the description of work number six Yes.

Okay, let me just go through my list. I think maybe some of these, maybe most of the answers are given I suppose the general question is, why would these industrial emitters individually decides to join this scheme? And the fundamental is there. Apart from we all need to reduce our carbon footprint, is there any other particular reason that it's being sold to them?

Well, that is a broad question. In my experience talking to the emitters within the East Coast, so there's a range of reasons many of the emitters are part of large corporates that have environmental targets set at a corporate level, and ambitions to reduce their carbon footprint at a corporate level. And therefore, it's an individual site specific level, individual sites need to find a way of reducing their carbon footprint. Others see a business opportunity in the creation of low carbon product lines that they believe they will be able to sell at some form of premium price and for there to be a kind of an economic driver in terms of increasing the attractiveness of the product that they make by by being able to market it as a low carbon product. And others of the emitters are typically greenfield projects, see, particularly the hydrogen space or some of the chemical space see government support for energy transition and the journey towards net zero as being a business opportunity to to build a low carbon, particularly low carbon hydrogen business. And this area being a particularly attractive place, as we discussed earlier to to embark on that. So there are a range of different motivations. All of them, like my business, one reason or another financial. And in a world where I'm not sure today, what the current carbon price has traded ETS carbon prices, but it's been at plus bureaus recently, in a number of these industries are paying particularly significant cost penalties associated with their carbon emissions, that this connected to this system allows them to avoid those taxes. So there are there are a mixture of those different drivers, and many of our emitters have multiple, multiple reasons within that suite of justifications.

Then the other point that I would add is that the proof of all that is the success of the process in attracting visitors and attracting people who plainly do for whatever combination of those factors regarded as in this their business interests to invest time and money in that process.

Thank you. Okay, just a couple more questions for me. So, the project needs statements ASR 15 A paragraph eight point 1.3 says Teesside industries accounted for 5.6% of industrial emissions in the UK, and the area is home to five of the top 25 carbon dioxide emitters. Are those five emitters likely to join the projects? Or if it's too commercial? sensitive issue? Tell me but just getting a feel for are you looking at the biggest emitters in the area?

So they answer the question, yes, we'll look into all the biggest emitters in the area, they are the ones with the largest drivers. I can't for a fact remember, we can probably revert to you who the top five out of the 25 are but we've talked and evidence from the number of submissions to the government

process, which by the way, they government shortlisted 25, they had well over 30 applicants across two sites. And besides that they did narrow so you can see a significant appetite for local industry to participate with government and decarbonisation. And pretty much all of the major players in the Teesside area have been part of that process. And therefore, I would assume that it picks up the majority of the of the biggest five particularly.

Okay, thank you. This was related to that. And project leads statement talks about together the Teesside industries constitutes approximately 3 million tonnes per annum of recorded industrial emissions. So if they're only producing 3 million tonnes and the current plans aims to capture and export 4 million tonnes, where does the additional come from?

3 million tonnes. I believe is the existing emissions from existing heavy industry in the area, the applicants proposal for the new power station will add 32 million times if it's running on as the doctorate explained if that was running on baseload, which of course isn't the plan. And there are a number of other new industries that are part of that 14 interested in which is in the area. So it's a mixture of existing industrial emissions and new emissions that are created by inward investment,

who Thank you. And then future expansions also mentioned that potential to connect to and make local biomass and energy from waste power generation net negative. So again, that's something you'll be looking at in the future but doesn't form part of the current proposal, thus, presumably further emitters in the future.

So Bayes is running a separate process to identify greenhouse gas reduction technology, GG RS, which include the biomass plants that you've mentioned, that is running along in parallel, those emitters aren't included in that number 14, that I mentioned to you before. But that process is actually running along in parallel. And we would expect government to be making decisions on that type of emitter relatively shortly as well. And certainly they've been engaged in the process along the way.

Thank you. Are there any other comments or questions in relation to item seven? When those wish to comment? No. No one virtually either. So I think that concludes that question I can hand over then to Miss Davis, who are teammates.

Item eight is review of the issues and actions arising, I thought five with the possible six to one through. The first is the applicants, I'm afraid most of them are for the applicants to provide an overview of the base cluster sequencing process, including the track one and stage two processes. Action to to consider whether the geographical overlap with Hornsey four should be further considered in this environmental statement. Action three is for Ofsted and the applicants. And that's to produce a statement of common ground action for outline of the options for the Secretary of State on Hornsey for and the implications for the deliverability of this project. Action five also for the applicants a copy of justice whole gates judgement on stone henge regarding alternatives. And as part of that possible intention to address the Aqualand case.

Yes, if you I think it might be helpful just for the sake of completeness, if we can obtain a copy of the pleadings in that case and put that in alongside it. What I don't know is whether there has been a

decision on the application for permission, not aware of what hadn't been made. But obviously, if that comes out, we'll supply that as well.

Thank you. And as part of that action, whether or not more needs to be added to the environmental statement in regard to alternatives. And then actually six, which I think we might have completed is to check if the DCO is specific about accommodating 10 million tonnes per annum. Are we satisfied that diameter is a proxy? Okay, so there isn't a single action. That's everything I've got.

Thank you. That's very helpful.

Okay, are there any other matters that anybody wants to raise the relevance of this hearing? We haven't been notified of anything, but now's your chance. Okay, if there are no other relevant matters, may I remind you that the draft timetable for this examination will require the parties provide any post hearing documents on or before Thursday 26th of May, which is deadline one, and a recording of this hearing will be placed on the inspectorates websites as soon as possible. And thank you all very much for attending today and your participation. It's all been very helpful and interesting. We will consider all of your responses carefully and they will inform our written questions, which will be issued next week and or further hearings on these matters. Because the next hearing for this project will be issues specific hearing to which is the draft development consent order, which is due to commence here at 10am tomorrow. And once again, thank you everybody, the time is now 20 past five and this issue specific hearing on the scope of the proposed development is now closed. Thank you.