Planning Inspectorate
Arolygiaeth Gynllunio

Hearing Transcript

Project:	Norwich to Tilbury
Hearing:	Issue Specific Hearing 1 (ISH1) – Part 1
Date:	13 February 2026

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The video recording published on the Planning Inspectorate project page is the primary record of the hearing.

00:00:05:03 - 00:00:34:20
Good morning everybody. Can I just check that everybody could hear me clearly, please. Thank you. Okay. It's now 10:00, and I'd like to welcome you all to this first issue specific hearing into the application for development consent for the Norwich to Tilbury project made by National Grid Electricity Transmission, hereby referred to afterwards as the applicant. My name is John Hockley. I am a planning inspector and a chartered town planner. I'll now ask the other panel members to introduce themselves, who have all been appointed by the Secretary of State to examine this application.

00:00:35:28 - 00:00:45:15
Thank you. Good morning. My name is Susan Hunt. I'm a planning inspector and a chartered town planner, and I've been appointed as the lead member of the panel to examine this application.

00:00:47:02 - 00:00:52:05
Good morning. My name is Christopher Butler. I'm a chartered town planner and planning inspector.

00:00:52:28 - 00:00:53:13
Good morning.

00:00:53:15 - 00:00:57:14
My name is Matthew Sims. I'm a chartered civil engineer and a planning inspector.

00:00:58:22 - 00:01:03:13
Good morning. My name is Ken Stone and I'm a planning inspector and charter town planner.

00:01:04:04 - 00:01:40:06
Thank you. I can confirm that all members of the examining authority have made a formal declaration of interest. And there are no known conflicts of interest with regard to us examining this application. Together, we constitute the examining authority or the WSA for this application. There are other colleagues from the Planning Inspectorate who have joined us today, both here in Essex and online. Uh, our case managers are Sharon Evans and Lily Robbins, who are supported by Harrison Coles, Caroline Allen and Jessica Dunlop. It's a case team who you should contact regarding the application process and in general and today's arrangements, including any online connection issues.

00:01:40:22 - 00:02:12:21
Another colleague from the Planning Inspectorate, Rhianna Pankhurst, is also in the room and she is observing just for training purposes. In addition, there are technicians from CVS international in the room are attending solely for the purpose of managing the recording and the live streaming of the event. Today's hearing is being undertaken as a blended event, meaning some of you are present with us at the hearing venue and some of us are joining us virtually using Microsoft Teams. We will make sure that however you have decided to attend today, you will be given a fair opportunity to participate. You should also be aware that the meeting is being recorded.

00:02:13:21 - 00:02:22:14
I'll now just briefly deal with some housekeeping and preliminary matters for those attending in person. Uh, could everyone please set all their devices and phones to silent?

00:02:24:07 - 00:02:35:01
Um, there are no planned fire drills today. Um, so if the fire alarm goes off, it's a real thing. And you'll see exits at the rear of the room and to either side of the room as well.

00:02:38:03 - 00:03:18:21
Online participants should make sure their cameras are switched off and microphones muted unless they are speaking. No requests have be made for any special measures or arrangements to enable participation in this hearing, but if you do need assistance then please speak to the case team who I should mention over there in the corner. Thank you. If at any point during a hearing you can't hear us or wish to speak to the examining authority, please convert your attendees. Use a raise hand function on teams. There may sometimes be a delay before we can acknowledge this, and it has been explained to virtual participants what to do if you lose connection, there will be a short break around 90 minutes into the hearing, and if any breaks are required before this, you should alert the case team and also if you need any extra support during the hearing.

00:03:18:23 - 00:03:55:07
Again, contact the case team who will contact ourselves if necessary. The event is being live streamed and recorded. Our letter of 13th of January, which we will refer to as the rule six letter, explained that because we retain and publish a digital recording, they form a public record to which data protection data, sorry. General Data Protection Regulation GDPR applies. The Planning Inspectorate publishes and retains recordings for a period of five years from the Secretary of State's decision on the Development Consent Order. So if you participate in this meeting, it's important that you understand that you'll be recorded and that you consent to the retention and publication of the digital recording.

00:03:56:01 - 00:03:58:12
Does anyone else intend to film this meeting today?

00:04:01:12 - 00:04:45:07
Okay. Thank you. We'll only ever ask for information to be placed on the public record. That is important and relevant to the Secretary of State's decision to avoid the need to edit digital recordings, we would ask that you do not refer to private or confidential information in your submissions today, such as address details, financial circumstances, medical conditions, and so on. If you do feel the need to refer to something that's private or confidential, could you please discuss this with a case team first to explore whether this could be submitted in writing and then redacted? For those attending virtually, could I repeat the request made in the arrangements conference? That you stay muted with your camera turned off unless you are speaking? I would also ask that if you want to speak, you switch your camera on and as I mentioned before, use the raised hand function in Ms.

00:04:45:09 - 00:05:02:20
teams. For those people with us today watching the live stream, should we at any point adjourn proceedings, we will have to stop the live stream to give us clear recording files. And when we restart the meeting and the live stream, you'll need to refresh your browser page. We remind you of this again should we need to adjourn.

00:05:04:26 - 00:05:43:11

As was explained at the preliminary meeting, the majority of planning inspectors are members of Prospect Union and currently participating in a period of industrial action short of a strike. This essentially means we are not working over and above our contracted hours. This has been accounted for in our timetabling this week and for this reason, and also to allow participants to travel home and for wellbeing reasons. Today's hearing will be closed on time and not continue beyond 1 p.m.. Thank you for your understanding. We would therefore like to remind all participants in today's hearing to keep their responses as concise as possible and to keep to the advertised agendas and not straying to other matters which the SEC has not sought to ask questions on.

00:05:43:27 - 00:06:05:15
If any participant in a hearing is affecting the efficient running of the event or taking up too much time in their submissions, they will be invited to submit their comments in writing at the next deadline. And I will remind you in that context that written comments have no less weight than those made verbally. Does anyone have any questions about the technology or general housekeeping, or indeed any of the matters that I've just run through?

00:06:08:27 - 00:06:15:04
Not seeing any hands in the room or online. So we'll move on and I'll now pass on to Mr. Sims. Thank you.

00:06:24:02 - 00:07:00:09
So moving on to the purpose of today's hearing. Today's issue specific hearing is being held at our request, because we want to explore and discuss a number of matters relating to the scope of the development, alternatives and other infrastructure projects in the region. It's also to ensure that we have this information at an early stage in the examination. Today's hearing will cover some high level and more general issues rather than site specific matters. We are only at the start of the examination, and there are later hearings in the timetable which will we will allow to get us into more detail relating to environmental matters, the development consent order and matters specific to particular locations along the pilot route.

00:07:01:03 - 00:07:41:18
The agenda is broadly the same as published on the 30th of January. It can be found in the examination library at reference EB 2005. It would be helpful if you had this in front of you, because we won't be displaying it on the screen. The agenda is for guidance only and we may add other issues as we progress. Should the answers to some of our questions take longer than anticipated, it may be necessary to prioritise some of them and defer other matters to our written questions. Likewise, if you cannot answer the questions being asked or require time to get the information requested, then can you please indicate that you need to respond in writing? It's important that we get the right answers to the questions that we ask.

00:07:41:23 - 00:08:14:21
Please remember that the examination is a predominantly written process. If you cannot answer the questions being asked right now or require some more time, then we would rather you would tell us that you need to respond in writing than giving us an incomplete or incorrect answer. We can then defer the response either to an action point to be submitted a deadline one on the 26th of February, or to later written questions or another hearing. I would like to reassure you that while we may not ask a

question or follow up on something that has been said at the hearing, it doesn't necessarily mean that we believe this matter has been fully addressed.

00:08:14:23 - 00:08:51:15
It could be that we'll be examining it later or at a later hearing, or through written questions. A number of interested parties made submissions at this week's open floor hearings regarding the matters we are going to be discussing today. As such, we do not expect interested parties to repeat those comments today. Instead, most of today's contributions will be from the applicant in response to those submissions made verbally as well as in writing in the relevant representations. And indeed, these comments have also informed the TSA's questions to the applicant today, and we will continue to do so when we issue our written questions in March.

00:08:52:27 - 00:09:29:29
This is a public examination, though, so interested parties present will be given an opportunity to make comments on what the applicant has said at the end of each item of discussion. However, as I've already stated, time is restricted today and whilst we will give all parties the opportunity to comment at the appropriate points, these should be focused and should not repeat previous points made when in open floor hearings or in writing. We do have a lot to get through this morning, but because of this is a predominantly written process. If we do not have time to hear from everyone who wants to contribute, we would ask that you submit your comments in writing at deadline one on Thursday the 26th of February.

00:09:30:20 - 00:09:52:24
Finally, I would like to remind everyone that this is not a planning inquiry and unless specifically we request it, there will be no formal presentation of cases or cross-examination. This means that any questions that you have for other parties do need to be asked through us as the examining authority. So are there any questions at this stage about the procedural side of today's hearing?

00:09:55:07 - 00:09:58:27
Thank you. Our now pastor, Mr. Stone, who will be taking us through our introductions.

00:10:00:26 - 00:10:21:00
Thank you very much. A recording of today's hearing will be made available on the Norwich Tilbury section of the National Infrastructure Planning website as soon as practicable after the hearing has finished. Therefore, please ensure that you speak clearly into a microphone stating your name and who you are representing each time before you speak.

00:10:22:22 - 00:10:40:02
The microphone has a on off button and if you press the button before you speak, it's got a. It will show red to show that it's live. If you're not on the table and you wish to speak, there will be a roving microphone. So please wait for this to come to you.

00:10:42:00 - 00:11:00:10
We've been provided with a list of representatives of the applicant and all interested parties who have expressed a wish to be heard at today's issue specific hearing. But firstly, can I ask the applicant to

introduce the members of the team, their team who will be speaking today, whether in person or online? Thank you.

00:11:01:02 - 00:11:31:09
Sir Russell Harris KC for the applicant, I'll be dealing with items 1 to 8 apart from item six, which will be dealt with by miss Heather. Sergeant. I'll be calling various officers. The ones I know are going to be, uh, speaking to our Josh Crawford overhead line lead, Paul Royston. Or you've already heard from Neil Carter. Christian Drage, who sits next to me, um, maybe asked to say something. Um, I think that's it for now.

00:11:31:11 - 00:11:32:06
Thank you.

00:11:33:26 - 00:11:44:07
Thank you very much. Now I can ask the local authorities and then parish councils to introduce themselves. Firstly, can I ask Essex County Council?

00:11:48:23 - 00:11:50:06
Good morning ma'am. Um,

00:11:51:23 - 00:11:55:01
I beg your pardon. I'll defer to, um, arborist, I think. Yeah.

00:11:56:21 - 00:12:06:12
Sorry. Good morning. Emma Dring, um, representing Essex County Council, but as you've seen, there are there are other members of the team, um, in the room and also online. Thank you.

00:12:07:09 - 00:12:12:07
Okay. Thank you very much. Next, could I ask Norfolk County Council?

00:12:16:02 - 00:12:25:07
Uh, good morning, Sir Richie. Parish council for Norfolk county council. I also have members of my team online, but, um, I don't think I need to introduce them at this point. Thank you.

00:12:25:26 - 00:12:26:29
Thank you very much.

00:12:28:15 - 00:12:31:29
And moving then to Suffolk County Council.

00:12:33:03 - 00:12:52:22
Thank you sir. My name is Michael Bedford, King's counsel, instructed by Suffolk County Council. We have officers both in the room and online, but we don't expect to contribute. And bearing in mind what you said, although we're very interested in items four, five and six, we expect that we'll be listening rather than making significant contributions today.

00:12:53:27 - 00:12:59:11
Thank you very much. Can I then turn to Babergh District Council?

00:13:02:05 - 00:13:22:11
Morning, sir. Thank you. Brian Curtis for Baber District Council and also Mid Suffolk district Council. Again, we're predominantly here to just listening to proceedings today. We are interested in agenda items 4.1, 5.1, 6.2 and depending on what information you hear from the applicant, I wish to just add something to point direction for our concerns.

00:13:23:29 - 00:13:31:27
Thank you. And next, can I turn to Colchester City Council?

00:13:32:28 - 00:13:34:03
James run Colchester.

00:13:34:05 - 00:13:34:20
Council.

00:13:34:22 - 00:13:39:16
Alongside the other opportunity to listen. That if anything needs to be said. Thank you. Thank you.

00:13:41:02 - 00:13:44:10
Moving along then. Daintree district Council.

00:13:47:12 - 00:13:59:22
Good morning sir. Good morning panel. Um, Matthew Wilde, principal planner, Braintree District Council. Um, like the others, understand the purpose of the meeting. So just just listening in, really, and having the right to respond if needs be. Thank you.

00:14:00:09 - 00:14:04:02
Thank you. Um, Chelmsford city council?

00:14:05:00 - 00:14:05:15
Yes.

00:14:05:17 - 00:14:06:18
Morning, sir. Ruth Mather.

00:14:06:21 - 00:14:12:10
Chelmsford City Council, and with the others. We're sitting here in a more of a listening capacity. Thank you.

00:14:14:03 - 00:14:17:09
And then Tendring District Council.

00:14:19:08 - 00:14:20:23
Good morning, chair members.

00:14:20:25 - 00:14:38:28
Um, my name is Jacob Ashmore, representing Tendring District Council. Uh, well, depending on the arguments set out by the applicants, we may choose to respond to or talk to item uh, 4 to 6. but in the main also to listen and to respond with any questions the examining authority may wish to have for us. Thank you.

00:14:39:22 - 00:14:47:21
Thank you. And could I turn to the parish councils now, and could I firstly ask for Ardleigh Parish Council?

00:14:49:01 - 00:15:14:08
Good morning, Sir Simon Bell Council, on behalf of Ardleigh Parish Council, and to save you time also Little Bromley Parish Council. Um, so we are here predominantly in listening mode today. You're aware that we've asked for an issue specific hearing on this. So today we are just going to listen and we will respond in writing if we need to by deadline one and most likely maintain our request for an issue specific hearing.

00:15:14:21 - 00:15:16:26
Thank you very much. And then.

00:15:19:28 - 00:15:21:22
Barnwell parish Council.

00:15:26:26 - 00:15:28:22
Is that Birstall parish Council?

00:15:31:29 - 00:15:34:25
But we have Bristol Parish Council. Yes.

00:15:35:13 - 00:15:35:28
Yes.

00:15:36:00 - 00:15:37:18
William Petersen, Bristol Parish Council.

00:15:37:20 - 00:15:38:20
Thanks very much.

00:15:39:08 - 00:15:44:15
Thank you. I'll just go back to that. Mister. Mister booty. Michael booty.

00:15:46:25 - 00:16:04:24
Not here. Sorry. Apologies for that. Okay. I then have some various interested parties who I will I'll turn to in terms of organizations. So can we ask Pylons East Anglia Limited to introduce themselves please.

00:16:05:00 - 00:16:18:12
Good morning sir. Charlie Balmer KC for Highlands East Anglia. I am with Rosie Pearson to my left and Marty Snook to her left. Um, I endorse what Mr. Bell has said and refer you without repeating to my comments on Tuesday.

00:16:19:09 - 00:16:23:19
Thank you very much. Uh, villages against pylons.

00:16:35:05 - 00:16:39:29
Do we have a representative from National Highways? Lower Thames crossing.

00:16:41:15 - 00:16:42:06
We do. Thank you.

00:16:42:08 - 00:16:42:23
Sir.

00:16:42:25 - 00:16:46:09
Good morning panel. My name is Tom Henderson. I'm a partner.

00:16:46:11 - 00:16:47:23
With the law firm TLT.

00:16:48:08 - 00:16:50:21
Appearing on behalf of National Highways in its capacity.

00:16:50:24 - 00:16:51:09
As.

00:16:51:18 - 00:16:52:14
A tour of the Lower Thames.

00:16:52:16 - 00:16:53:20
Crossing project.

00:16:54:03 - 00:16:55:14
I'm joined to my left by Mr..

00:16:55:16 - 00:16:56:20
Keith Howell, who.

00:16:56:22 - 00:16:58:13
Is the Lower Thames Crossing Programme.

00:16:58:15 - 00:16:59:19
Utilities lead.

00:17:00:09 - 00:17:04:24
We are interested in items four, five and six in particular, and noting.

00:17:04:26 - 00:17:05:11
The sort of.

00:17:05:13 - 00:17:11:15
Strategic and high level purpose of this hearing, we would welcome the opportunity to make some short submissions at an appropriate point.

00:17:11:25 - 00:17:12:18
Thank you.

00:17:13:08 - 00:17:22:23
Thank you very much. Um, do we have Julie Russell representing Bloor Homes and National Highways?

00:17:26:24 - 00:17:29:23
Good morning. So I've actually got Mrs.. Vickie Fowler I'm a.

00:17:29:25 - 00:17:51:10
Partner at Gowling w CLG and I'm here for Bloor Homes today. Um, National highways are just participating um, through Lower Thames Crossing. Um, I'm interested in items, uh, five and six. Um, but given the announcement earlier in the week regarding scenario A, I don't expect wholly to address you. Thank you.

00:17:52:09 - 00:17:59:23
Thank you very much. And finally, do we have a representative from Inova Renewables Limited?

00:18:02:27 - 00:18:35:11
Uh, yes. Good morning sir. My name is Steven Humphries. I'm a partner in the Planning and Infrastructure consenting team at Ashford LLP and also a solicitor. Um, I'm acting for Innova Renewables Limited. I'm interested in items 4 to 6, predominantly in terms of how the scheme interacts with two of my client's, uh, consented energy developments. One is a solar farm and the other is a very large battery storage system located just to the south of Norwich substation.

00:18:35:13 - 00:18:49:23

The solar farm is near Rivendell. Um, conscious as well as others have said in terms of participation. But I am at your disposal here in terms of understanding the impacts and in terms of contributing as needed. Thank you.

00:18:50:24 - 00:19:29:16
Thank you very much. We now have a number of individuals, uh, IPS and non IPS, and I shall just read those names out. So listen for your name and then we shall move on. And if you contribute you can introduce yourselves at that point in time. We have Charles Tritton, William Doran, Carl Owen, Charles McLean, Jillian Parish, James Nimby, Lux Moore, Sean Keeler, Jenny McLean, Graeme Lucas and Anna McGee.

00:19:31:06 - 00:19:36:24
In terms of non IPS. We have Robin Upton and Hugh Miller.

00:19:38:27 - 00:19:44:19
And I confirm that that is everyone who has registered to participate in today's hearing.

00:19:49:25 - 00:19:50:13
Yes.

00:19:50:19 - 00:20:07:10
Apologies sir. We've no discourtesy to yourselves and the gentleman is sitting next to me. I admitted to introduce Councillor Whitfield, who is from Ardley Parish Council, and is sitting alongside me today. He too is in a similar position to me and you probably won't hear from him.

00:20:09:18 - 00:20:20:18
I'd taken that as hardly had introduced themselves. If if you do contribute and there are other parties here on behalf of them, that they would contribute at that point. Thank you.

00:20:24:24 - 00:20:30:24
Is there anybody else in the room who has not pre-registered or who would wish to contribute or online?

00:20:34:01 - 00:20:47:00
Not seeing any hands. Not seeing any hands. Thank you very much, everyone. We will now move on to the main discussion points and agenda item, for I shall pass over to Mrs. Hunt.

00:20:48:08 - 00:21:06:13
Okay, so firstly, I'd just like the applicant to explain for the benefit of those here today that might not have been present at the preliminary meeting. Um, how you'll be displaying plans today, um, in terms of your GIS mapping, and briefly explain its purpose for the hearings.

00:21:06:15 - 00:21:42:15
Yes, we will be, um, displaying plans and other items, all of which are already in the examination on these screens. We won't be using the interactive map today. We'll be using, uh, application drawings and drawings from uh extant uh reports such as the, uh, sober um, the individuals who are producing

those reports will explain where they come from. Each plan will have, uh, on it exactly where those that are looking to find it can find it in the reports.

00:21:42:21 - 00:22:11:27
Uh, but it'll be largely a high level, as you've asked us. Overview of the various components set out in question 41 for efficiency, speed and precision. I will lead the relevant, uh, witnesses. When I say lead, I'll introduce them. They will do the description in terms of the proposed transmission route, then the, uh, substations at Ardley and Tilbury North, etc., in exactly the form that you've set out in the question mark.

00:22:13:22 - 00:22:26:04
Okay. Great. Thank you. Um, yeah. So I'll just let you kick off then. But starting from from the northern end. Yes, that's right at Norwich main substation, finished in Tilbury and I think.

00:22:26:06 - 00:22:44:06
So Mr. Easton will deal with that. The question is the applicant is to provide a factual overview, including plans of the location of the proposed pylon transmission route, and we'll do them one at a time. So over to you, Mr. Easton. Thank you. And say just to note that GIS will very much use for.

00:22:44:08 - 00:22:44:23
More.

00:22:44:25 - 00:22:52:09
Localized um information at probably later um, information, um issues, specific hearings. Um, if we.

00:22:52:11 - 00:22:52:26
Have the.

00:22:52:28 - 00:22:54:02
First slide, please.

00:22:55:27 - 00:22:59:16
Um, this first slide gives an overview of the full route.

00:22:59:18 - 00:23:00:23
Of the project.

00:23:00:26 - 00:23:45:02
Um, the project's been developed to respond to robust need case and multiple needs. So proceed signals in accordance with our duties and relevant policy, including national policy statements in one and five, and will expand on some of that background in the response to later questions. Next image please will show images of the various sections of the route. And this first image, referred to as the. The RG route, is an approximately 70 kilometer long steel lattice pylon supported section of the connection between Norwich Main and Bradford substations, passes to the west of Flodden and crosses the Thames Valley to the west of Tiverton and Priory Fields continue southwards and crosses the Waveney valley as it passes the west side.

00:23:45:09 - 00:23:49:02
Sorry, just a moment. Can you just slow down and speak up a bit as well?

00:23:49:04 - 00:23:50:27
I will just move a.

00:23:50:29 - 00:23:51:14
Little.

00:23:51:21 - 00:23:52:11
Bit closer.

00:23:52:13 - 00:23:52:28
Okay.

00:23:53:04 - 00:24:24:08
Um, yeah. So it continues southwards and crosses the Waveney Valley as it passes the west side of diss. It then passes between Mellis and Gillingham and between Stowmarket and Needham Market. The route through to the substation passes to the east of Wattisham Flying Station, before connecting at Bramford substation and a number of places in this alignment. We use the the route of an existing 132 kilovolt lattice pylon connection, that being replaced as underground underground cable.

00:24:25:07 - 00:24:26:22
Next image please.

00:24:28:14 - 00:25:11:12
This is the central section referred as the JC route, which also shows the East Anglia connection at the bottom of the image there. So southwards from Bradford substation, part of the 25km section of the connection crosses the Dedham Vale National Landscape, something we'll touch on in later section. And the connection commences, therefore, as overhead line from Bradford, partly on the alignment of some existing 132 kV lattice pylons, which are again to be replaced by underground cable passes to the south of Chesham and around at 1.5km north of Little Wenham, before it transitions to an underground cable at the northern edge of Reading airfield.

00:25:11:16 - 00:25:21:23
Continuous cable through to the East Anglia connection node east of Ardleigh. And so we'll come to that detail a little later on. Can I have a next image please?

00:25:23:20 - 00:26:01:29
The third section of the route, referred to as the TB route and continues southwards from the connection and substation for approximately 80km through to Tilbury, again predominantly steel lattice pylons. The route passes Ardley and crosses Ardley Reservoir, crossing the A12 as it continues to the north of Colchester, continues to the southwest, crossing the Coal Valley, then passing the east of Fordham, Ford Street and Oldham before before turning to the south west, passing between

Coggeshall and Kelvedon and south of Silver End, where it crosses an existing 400 kilovolt overhead line.

00:26:02:25 - 00:26:37:00
Connection turns southwards at this point, passing the north side and then west of Chelmsford. Between Great and Little Little Waltham, where the first of two sections of low height lattice pylon are included. Continue southwards as standard lattice pylons crossing the width valley, then passing to the east of Ingatestone and between Brentwood and Billericay. In part following the route of a gas pipeline through the Dunton Hills Garden Village development, crossing into Thurrock, a second section of low height lattice pylon is included to allow continued flying activity at Thurrock airfield.

00:26:37:09 - 00:26:46:25
The route then continues southwards, crossing Orsett Golf Course to Tilbury North substation. That's the end of that particular section. Mr. Harris.

00:26:47:00 - 00:26:47:15
Hugh.

00:26:49:00 - 00:26:52:22
Russell Harris KC for the applicant. The next subheading.

00:26:53:00 - 00:26:54:01
Was the.

00:26:54:03 - 00:26:54:21
Siting of.

00:26:54:23 - 00:26:55:08
New.

00:26:55:10 - 00:26:55:25
Substations.

00:26:55:27 - 00:26:56:12
At.

00:26:56:14 - 00:26:56:29
Ardley.

00:26:57:01 - 00:26:57:16
Or.

00:26:57:18 - 00:27:28:14
ECN, as it's known in the application and Tilbury North. Could you help us with that please? Yes. Paul Royston for the applicant. Um, can I have the next image, please? And I should say that the

detailed explanation of the sighting of both the East Anglia connection node at east of Otley and Tilbury North substations, and the preference for those sites over alternatives, is set out in the Design Development Report app one two, two. So I won't go into the detail too much here.

00:27:28:21 - 00:27:30:10
Sorry. Can you repeat that reference?

00:27:30:12 - 00:27:30:27
Yeah.

00:27:30:29 - 00:27:56:16
AP 122 Design Development report. The connection node location to the east of Ardsley has been selected over a number of other locations. Taking into consideration the effects both from the substations, the 400 kilovolt connections to and from it, and the infrastructure of the customers, and taking account of the presence of a wide range of constraints and other environmental features.

00:27:58:06 - 00:27:59:20
Next image please.

00:28:02:22 - 00:28:04:28
Uh. That one. Thank you.

00:28:06:27 - 00:28:34:06
Making the electrical connection to Tilbury substation utilizes existing overhead lines connected to a new Tilbury North substation, which is located to the south of Orsett Golf Course. Again, connecting to Tilbury itself was ruled out due to the interaction with other infrastructure and other developments, and again is set out in detail in that app. One. Two. Two. Design development report. That's the end of that section.

00:28:35:25 - 00:28:39:00
Russell Harris KC on behalf of the applicant.

00:28:39:02 - 00:28:40:01
That's the.

00:28:40:03 - 00:28:40:28
Substations.

00:28:41:00 - 00:28:47:24
The next heading in the question is the cable ceiling ends. I think there are seven of those. Could you explain those please.

00:28:48:15 - 00:29:28:06
Pull in for the applicant. Um yes there are seven. Um, a combination of N5 and various technical requirements leads to there being four locations where underground cable is used. The transition between overhead line and cable is made at cable ceiling end compounds. And whilst there are four

sections of cable, there are only several seven cable ceiling ends because at one of the sections the termination is actually made at the ECN. So there is there are seven cases, and they've been carefully cited to reduce effects and relevant to their particular locations.

00:29:29:17 - 00:30:04:18
Next image please got to call this up. It shows an image of the typical gantry that cable sealing and compounds. The longest section of cable is approximately 16km through the Dedham Vale National Landscape, and from the end that starts at the CSI compound located to the north of Braydon Airfield. Cable route passes Halton. Saint Mary, crosses the River Stour and passes Langham, where it leaves the national landscape. As I mentioned, continues as underground cable passed before reaching the connection at substation.

00:30:05:15 - 00:30:27:21
A further approximately four kilometer section of cable is included between two CSCS near great Hawksley. That that is in response to its proximity to the Dedham Vale national landscape. But again, the CSCS are sited so the defects do not compromise the special qualities using landform and existing vegetation to provide screening.

00:30:29:12 - 00:31:06:21
South of Braintree, there is a short section of underground cable required, for technical reasons, to the route across an existing 400 kilovolt overhead line. The CSCS are being positioned in that case closely to either side of that existing line. Finally, the fourth section of cable connects southwards from Tilbury North substation, where we've now proposed to use underground cable for the connection to pass under the Lower Thames Crossing route and connecting to CSCS that have been a part of a modified arrangement to an existing overhead line, and that was communicated earlier in the week.

00:31:07:00 - 00:31:11:18
In line with the material in app one, two, two.

00:31:13:22 - 00:31:15:17
Scenario being Mr. Harris. Yes.

00:31:21:25 - 00:31:30:09
The next heading is Russell Harris KC for the applicant. The next heading is the main construction compounds along the route.

00:31:31:27 - 00:32:05:22
Full eastern for the applicant. Um. Yes. Supporting construction are a number of compounds. And if we'd have the next image please. And these are located at various sites. Um, again, that we've pulled the sketch together from the material in the submissions. And the arrows are not particularly distinct, but we'll point you in the central part. We have a compound at the eastern. There's another compound at the Tilbury North substation at the very southern part. You can see part way about approximately a quarter of the way up and a quarter of the way down the route.

00:32:05:24 - 00:32:37:18

There's some red arrows. Those are main construction components for the overhead line, with intermediate compound satellite compounds that are referred to as the blue arrows. Additional compounds are at the arrows in green at various underground sections, and various um um cable sealing and crossing compounds. Thank you for that. Um, um, sorry. I'll continue with many narrow roads to present the, um, approach to construction.

00:32:37:20 - 00:33:08:04
Access throughout the route uses the whole road between appropriate access points from highways that are able to support two way HGV traffic. Construction. Access to the connection and substation is provided by a whole road shared with the customers, which connects to a wide and Bentley road and onto the A120. There is also a new private permanent air access to the south of Little Bromley, currently the subject of one of the change requests and that is being consulted on.

00:33:09:22 - 00:33:30:27
And finally, there are also other compounds used for various supporting works for highways and for that initial road, some initial road widening to facilitate that construction access and for the distribution network operators and modification work. That's the end of section 4.1.

00:33:32:04 - 00:34:01:08
Thank you ma'am. You've asked us to signpost the relevant documents. The detail of this is contained in app 130, which is a description of the project. It's presented in the environmental statement. Figure 4.1 app 133. That's our high level overview as requested of those components of the transmission material in the rest of the project.

00:34:03:19 - 00:34:27:08
Thank you. Yeah, that was maybe a little bit too high level. Um, what I would like to see is you showed on the overview plan, which is fine, but it's obviously the scale of it is so much that for even for ourselves that know the route very well now, but IPPs and members of the public, it's, it's very difficult to to work out where things are the.

00:34:28:25 - 00:34:43:08
Yeah the substations I think we're well aware of where they are and what's going on there. I think the, the, the smaller elements, the cable ceiling ends and the compounds. Is there any way you could show the, the the actual location of those please?

00:34:43:14 - 00:35:14:23
Yes, of course, of course we will do that. Uh, Russell Harris, Casey, on behalf of the applicant, um, as the as the presentation was going on, um, it struck me that you might also be helped if the areas in which those components sit, and the names that Mr. Easton was very familiar with, it was, was, was just spouting forth because he's so familiar with it. We're also added to the maps.

00:35:14:25 - 00:35:17:05
Might that be of assistance, can I ask?

00:35:18:10 - 00:35:21:17
Yeah, yeah. Anything like that will be of assistance. Thank you.

00:35:28:11 - 00:35:43:12
And I'm told and I think I've already said this, Russell Harris, Casey, on behalf of the applicant that those closer details are to be found, but we will provide them separately as part of our package in chapter four of the of the Is.

00:35:44:11 - 00:36:14:29
Yeah, yeah, we're well aware of that. And we've seen and read the. Yes obviously, but it's for the purposes of today and to set the scene for the examination and to explain to to people in the room and online and people that are watching that just wants to understand the project and the yeah, there's the broad overview, but it is a very long route. The, the locations of the, say, the, the main permanent and not so permanent in terms of the compounds, pieces of kit.

00:36:15:03 - 00:36:52:26
We the I know the pile on route itself is obviously we couldn't we couldn't possibly go through all that because it would take us all day if we showed every single, every single map of that. But what you've just gone through, particularly the cable ceiling ends, the compounds and the substations again, probably Audley and um, Tilbury North again, just just a little bit more explanation of where they are, what's going on around them. Um, what's going in and out of them doesn't have to be long, but just that little bit more detail.

00:36:52:28 - 00:36:55:28
We do have time for that. Thank you.

00:36:56:10 - 00:37:19:12
And, um, would you wish us to do that? Uh, now or, um, maybe later in, uh, item four, because the team have heard what you've said, and we can do that. Uh, clearly. Um, but I think it might be more efficient if you give us a little more time so that we can answer that question today. Uh, after a little more thought, having regard to what you've just said.

00:37:19:21 - 00:37:35:10
Yeah, that's absolutely fine. If you go through the limits of deviation and, and, um, yeah, the existing transmission lines, what's going on with those? The existing transmission and distribution lines do that first and then come back to it.

00:37:35:12 - 00:37:51:14
That's absolutely my team of, uh, what you've said. Um, can we then turn to the approach to limits of deviation? I've indicated Josh Crawford, who's the overhead line lead, Will take you through these.

00:37:53:12 - 00:37:54:14
Josh Crawford, on behalf.

00:37:54:16 - 00:37:55:14
Of the applicant.

00:37:55:27 - 00:38:32:16

Um, so the applicant has applied limits of deviation in line with the guidance and advice. And now in the Rochdale envelope, please see app 130 the iOS chapter four Product Description paragraphs 4.6. 1 to 4 .6.5, which details how the Rochdale envelope and limits of deviation has been assessed within the Is sensitivity testing and flexibility and design approach. Limits of deviation of a normal feature of development and represent the allowed maximum deviation for permanent features such as the overhead line, pylons, cable ceiling and compounds, underground cables and new substations.

00:38:33:08 - 00:38:55:25
This allows for the adjustment to final positioning and height of project features, to avoid localised constraints or unknown or unforeseeable issues that may arise. Table 4.3 of app 130 outlines the details of the alleged assault by the project infrastructure types and therefore what is assessed within the Is. Could you get the first image please?

00:38:59:11 - 00:39:30:15
An example as shown on AP of 42, is the limit of deviation that's applied to the proposed 400 kV overhead lines. This allows for 50m lateral either side of the center line, giving you a total 100m wave. Generally speaking, in practice this means that the pylons could individually move by up to around about 30m laterally, when you also factor in the need for the swing of the conductors to remain within within the LD and the odd limits.

00:39:30:17 - 00:39:47:13
So what I'm saying there is the pylon can't go all the way to the edge of the odd limit. It needs to remain within because you've got the conductor swing. On top of that, there is also then a vertical limit of the limit of deviation applied, which doesn't exceed six metres upwards applied to the pylons.

00:39:49:10 - 00:39:58:24
This allows variation in pylon positions whilst maintaining electrical clearance requirements, and this vertical load is not unusual for these types of developments.

00:40:00:12 - 00:40:31:01
Uh, the DCO enables unrestricted longitudinal movement, so that is up and down the center line. And for the number of pylons to increase or decrease, the extent to which pylons can be moved is restricted by technical requirements on a span by span basis. With regards to the potential blowout of the conductor that I've mentioned, the electrical clearance requirements and the relevant vertical limits of deviation. There are also a number of pylons where this potential is curtailed to restrict particular effects, which is captured within commitment commitments, which I'll come to shortly.

00:40:33:12 - 00:40:34:24
Can I get the next image, please?

00:40:36:21 - 00:41:08:11
Um, the Lod are secured by the DCL, AP 056 as well as the lines and situations are shown on the works plans. Apr one seven to April 24th. Just what the example we've got on screen now just gives an example where you've got the overhead lines and limits of deviation, which are shown on the worst plans by the orange dash. So the south of the cable seen in compound there you have the underground cables shown on the limited deviation shown on the works plans as a light blue dash.

00:41:08:13 - 00:41:36:03
So going from kind of left to right west to east on that example there. And then you've got nonlinear works such as substations or in this particular example, the great Hawksley Tilbury side cable seeing in compound by the pink dash. So it's a kind of squarish shaped box that is the allowed for the cable seeing compound there. All of these details can be found in app 007, the guide to the plans section 6.4.

00:41:37:26 - 00:41:38:17
Um,

00:41:40:09 - 00:42:18:14
yes, that's that one. Sorry. Follow my flow in some locations. And next image please. In some locations that limit the limits of deviation have been restricted due to known constraints or extended due to scenarios. Works plan section D, sheet seven shows an example at TB file on TB 55, where the applicant has already reduced the typical width of the limit of deviation to avoid encroachment and any impact on the adjacent Alden Hall world Ancient Woodland, which falls just outside of the LD and thus the OD limits to the right hand side of TB 55 to TB 66.

00:42:18:16 - 00:42:48:21
In that span there, you can just about make out on that image that the OD limit cuts in a little bit and doesn't maintain the maximum 50m. Um, there is also some site specific prescriptive limits of deviation commitments that can be found in app 300. The outline code of Construction practice, notably Commitment Reference GG 34, which details 21 locations where there is prescriptive detail regarding moving or not moving pylons in certain directions due to known sensitive receptors.

00:42:49:28 - 00:42:52:04
I've got to get the final image, please. One more.

00:42:53:26 - 00:42:54:14
Um.

00:42:56:25 - 00:43:41:11
One last bringing up. Um, all extensions to the typical LD applied for R with reference to design scenarios which are described in table 4.4 of the ES. Um, one example being design scenario item six, the proposed low res mineral site that was raised in the open floor hearing yesterday. Um, located to the west of Lyons Hall aud in this location, the LD has been extended significantly further than 100m to the east to enable an overhead line route that reduces the impact on the mineral extraction site and by deviation to the east, the overhead line can be positioned such that pylons are situated towards the edges of that proposed mineral site, thus reducing the amount of impact on it, and I'm just going to pass over to me.

00:43:41:19 - 00:43:52:06
Just before you do. Can you can you describe in words or maybe even point to the extension of the limits of deviation, so that members of the public can see exactly what you're talking about there? Please.

00:43:52:08 - 00:44:23:08
Yeah. So the design has proposed on the screen there is the blue line and blue dots, which is the proposed pylon route. You can see there's the gray shade in there and the orange dash. So where it comes to the edge of the. Yep. Exactly the one that the orange dash is where the Lod has been extended to enable that overhead line to kind of from the top of the screen, come more directly south alongside the edge of the woodland and the edge of the mineral site, and then cut back across to the angle pylon at the southern end of the screen there.

00:44:23:24 - 00:44:31:19
But which means we can. Yeah. Instead of going through the mineral of valuable mineral site, we can route the whole red line to the to the sides of it and to the edges of it.

00:44:31:23 - 00:44:48:19
So so you've explained circumstances in which the limits of deviation are drawn in the standard, and this is an example of where limited deviation are set back. Is that right? That's correct. Yes. Thank you, Mr. Easton, I think.

00:44:48:29 - 00:45:28:24
Yeah. Just to sort of, I guess, touch on some of the engagement that does happen. So in this particular circumstance and we have, um, engaged with the, um, landowner and the developer of the site to try and identify appropriate, uh, routing. We have shared an alignment, had some feedback on that, and are seeking to, um, adjust that further to reduce that interaction. Um, and those discussions are ongoing to try and seek a statement of common ground, but appreciating that, um, the landowner may still prefer other alternatives, but we are seeking to develop something that reduces that interaction.

00:45:31:16 - 00:45:48:05
Can I just ask what if you're able to reduce the limits of deviation in certain places. What changes in terms of your, um, construction process or what you're constructing in terms of a temporary asset that allows you to do that in certain locations and not others?

00:45:51:28 - 00:45:52:21
Josh Crawford.

00:45:52:23 - 00:46:15:05
I'm sorry, I was just going to mention, um, just a point of order. Um, a point of note. Um, the use of abbreviation sometimes is really useful, but also sometimes it's really confusing as well. So if we can kind of choose when we use abbreviations and also nothing personal, but you're talking really quickly and we're, we're struggling to keep up. So, um, if you could slow down a tiny bit, that would be really helpful for all of us.

00:46:17:22 - 00:46:53:03
Thank you Sarah. And point knotted at first time. Um, with regards to the limits of deviation. So yeah, they've been developed in line with kind of previous previous projects. So similar to what was being proposed on the, on the off screen and DCL and the LTC. DCL in terms of the vertical and the kind of space requirements. Um, we have the 50m either side that allows within it the enough room for the

temporary works to move with it. So you might have a working area, a pylon that could be positioned more to one side, more to the other side, or centred on the pylon.

00:46:53:05 - 00:47:19:19
Um, so yeah, the justification for the, for the LLD is kind of its that flexibility with 500 or more spans across the route. And there is, as per this scenario here, examples where the um, we don't we don't quite know where it's going to end up because of third party development, which obviously is on the agenda for later today as well. So it gives us that. Yeah, that that flexibility when it gets to detailed design and construction.

00:47:20:08 - 00:47:34:26
Yeah I think we understand about the flexibility you need. I don't think you've answered my question about about what change what has allowed you in certain areas already to change the limits of deviation to narrow them. And not elsewhere.

00:47:37:05 - 00:47:56:02
Josh. Josh Crawford, on behalf of the applicant, I think I'll take that one away in writing, but it's, I guess, where there's non-statutory designations, like, for instance, like the example I've shown where there's an ancient woodland and we know where we're going to do our utmost, we already have done our utmost to make sure we can design and build the line, not not impacting on that woodland.

00:47:56:15 - 00:48:13:12
Yeah. I think if you if you need to take that away and a little bit more clarification, I think just to confirm, you've said that you can do it in certain places already and, and why that's not available to be done in other places. It would be useful to understand how that that is done in some places than others. Thank you.

00:48:13:24 - 00:48:45:19
We will deal with that in writing. My understanding is that where there is a specific constraint, such as a listed building or an ancient woodland, then the ordinary limit of deviation that has been forged over the um, periods of the consideration can be um, uh, shortened. But there needs then to be a bespoke consideration of access, health and safety, uh, availability of space for temporary, um, rights, etc.

00:48:45:21 - 00:49:23:10
and that's done on a case by case basis. But we'll we'll set that out. It, it would be, um, disproportionate to do a, if you like, a limit of deviation, uh, bespoke assessment for every single part of the line. But where there is a very important, uh, constraint that needs to be satisfied, then a bespoke, uh, Kemp and a bespoke, uh, there's me using an acronym, sorry, a bespoke, um, um, attempt to ensure that the limits of deviation which safeguard the constraint are put in place.

00:49:23:12 - 00:49:28:22
Yep. No, I totally understand that. Just look a bit more clarity on on, uh, what has been done and how. Thank you.

00:49:34:12 - 00:49:41:03
Russell. Harris. Casey for the applicant. Um, the next question is, um, ma'am 43.

00:49:41:09 - 00:50:01:05
Sorry, I've just got one more question. I'm sorry. Um. Limits. Deviation. So we've got article five in draft consent order, and it's just. Can you just explain, um, just summarize the process for refining those limits of deviation, both vertical and horizontal post consent.

00:50:03:13 - 00:50:36:14
Um. Morning. Christian Drage, the applicant. Um, thank you, ma'am. I think the easiest way to describe that is through the requirements and commitments register. Um, so there'll be many things that would potentially go in there, such as environmental constraints. Um, as and when the detailed design is complete and as and when, um, the engagement with the local authorities has crystallized, whatever the particular commitment might be that will then find its way into the commitments register and through the article it links through to the the Code of Construction Practice, which has that commitments register in it.

00:50:36:16 - 00:50:45:16
So basically the Lod limit can only extend to the lines on the drawings. And then as reduced by the commitments register.

00:50:47:10 - 00:51:03:12
There are I think as referenced earlier, some specific references already in there to certain pylons and the parameters on the heights. And there is a separate table in the order that deals with those as well, which I can take you through if that was helpful, but they're quite specific locational points.

00:51:03:16 - 00:51:09:21
No that's fine. It was just that overview. And can you provide the document reference for the Code of construction practice, please?

00:51:09:24 - 00:51:13:21
Um, we'll get that to you. I haven't got it to hand. We'll get that to you, I suppose.

00:51:13:23 - 00:51:16:29
More for the benefit of the of the audience. Yeah. Thank you.

00:51:20:28 - 00:51:22:15
Okay. Next question.

00:51:23:24 - 00:51:29:00
Question 4.3 is to do with existing pylons, and I'll pass over to Mr. Easton.

00:51:29:25 - 00:51:40:19
Thank you, Paul Easton, for the applicant. We've got this broken into three sections. Reconfiguration of the existing network we'll deal with first. And if I could have the first image please.

00:51:44:18 - 00:52:17:19

So the reconfiguration is associated with the challenge of connecting at the existing Tilbury substation, which because of other infrastructure and transportation, um, and development, we couldn't find an appropriate and acceptable route through. And we did identify an alternative means of achieving that electrical connection, um, which involved modifying the existing overhead line. If we could have the next image, it shows the transition from the connection to the south to the next image, please.

00:52:17:21 - 00:52:25:18
One. Thank you. So this is concentrated the, um, infrastructure further north. So, um.

00:52:27:20 - 00:53:02:25
They modified the existing UI, uh, overhead line on that image just for orientation. We have two green overhead lines that go from the sort of mid top left, um, across the image and then down to the, uh, the bottom right. Um, that connects both of those connect down to Tilbury, um, the rather than the um, purple alignment continuing down to the Tilbury substation. We identified that by making that connection into one of those overhead lines, and it happens to be the one that's, um, to the southeast.

00:53:02:27 - 00:53:36:16
We can achieve that electrical electrical connection and avoid those constraints down at Tilbury. Um, what's shown on the screen is, um, the scenario, a arrangement which is a connection by overhead line. Um, but as you'll be aware from earlier in the week, we are, um, taking forward the scenario, be the arrangement which still connects into that same overhead line. But does that by underground cable? Um, the line is, um, diverted temporarily to the south to allow cable ceiling end compounds to be put on it.

00:53:36:18 - 00:54:11:21
And then that connection of underground cable is made across, and that's the reconfiguration of that existing network. In terms of modifications to the existing transmission network. And we're already at the very outset of the project. And that was included in various briefing material at events and as in the CPRS document app 356. And we already notified that we were upgrading the existing network to maximise its capacity before considering then further reinforcement.

00:54:11:23 - 00:54:48:08
And that included and various upgrading of conductors and various other work at substations to maximise the flows. We've also then proposing modifications to the existing distribution network, where we've carefully considered the 132 kilovolt network, and which presents combinations of opportunities and challenges. In some locations, we're replacing the existing 132 kV overhead lattice line with an underground cable, which creates space for the 400 kilovolt infrastructure to reduce the magnitude of change.

00:54:48:10 - 00:55:24:18
In other locations, we're undergrounding to ensure the electrical clearances where we're crossing that infrastructure. And if we go to the next image, please. Um, there's a couple of examples that we've got. This is at Havering Grove, um, where the existing 132 kilovolt line has been under grounded for a section from the sort of top left of the map to the bottom right with the, uh, allowing the 400 kilovolt purple alignment to be moved further from properties and to avoid both pylon lines being present.

00:55:24:22 - 00:55:54:28
And if we go to the second image. This is at Dunton Hills Garden Village. And again the crossing of the 132 line occurs. But again, by just undergrounding that and diverting it. Um, we also reduce the, um, interference with the housing development that is alongside. These plans are all in the environmental statement material and will provide references when we, uh, with the transcript. Um, and finally other infrastructure.

00:55:55:00 - 00:56:18:00
Um, we've also assessed and made necessary and proposed necessary modifications to various other third party infrastructure and wood pole mounted telecoms and similar sort of, um, infrastructure, which again, typically diverting by undergrounding to maintain services whilst achieving necessary safety clearances. That's the end of the section, Mr. Howard.

00:56:22:12 - 00:56:53:10
Could you just zoom in on some of those plans that you just showed? It's very difficult for us to see them on the screen and just explain in more detail about. It doesn't have to be a lot of the site, but just zoom in on particular parts of it where there's lots going on and just explain a bit more slowly what's going on, what's being on the grounded? Yeah, where there's a lot of lines and there's a lot of grayed out existing pylons.

00:56:53:12 - 00:57:02:06
And what what are those existing lines? What's going underground just in a bit more detail plays.

00:57:06:12 - 00:57:38:13
You Paul read them for the applicant. Yes. I'll try to explain this. I do appreciate with the the absence of legend, it can be a little busy on the slides. Um, if we could just, um, push the pull the map slightly to the south so we can see a little bit to the north. Thank you. Um, so just to orientate on some of the colors of the purple is the, um, proposed 400 kilovolt alignment, with the purple dots being the proposed pylon positions from the very top left.

00:57:38:15 - 00:58:20:03
There is an existing 132 kilovolt lattice. Thank you. With the cursor there where those circles and the red line indicates that those are being the working area for the removal of that section of 132. That removal starts at that very top circle and diverts to a sort of terminal tower at the next, just slightly to the south. And then if we if you can follow the, there's a cable alignment for that where that's replaced by underground cable that continues southwards just underneath the 400 kilovolt line, then deviates left of their place with the cursor.

00:58:20:19 - 00:58:27:05
It follows to the left of that left slightly. It follows the corridor to the extreme left.

00:58:32:15 - 00:58:38:01
That's right. I'll just go and help my colleague. Point just one second.

00:58:51:18 - 00:59:21:03

The. Sorry. The cable corridor for the 132 kilovolt undergrounding is off to the left hand side there, which eventually then comes down to another 132 tower, where it then reconnects with the overhead line. So that allows the existing lattice pylons on the one, three, two going from the northwards from there to be removed, so that that creates the space for the 400 kilovolt alignment. And

00:59:22:26 - 00:59:33:23
if we want to go to the to the next image, we can just again a different image to talk through. It's a slightly different situation. Zoom in again there please. On the 132.

00:59:38:22 - 01:00:16:12
So in this particular case again the 400 kilovolt infrastructure is the purple line that comes from the the top through to the bottom of the image. It follows closely alongside the double dashed line which is a high pressure gas pipeline. We've got 2132 kilovolt lattice lines that, um, one comes from the top right, goes to the center and then diverts to the, um, towards the southeast. and it's that one that we cross twice with the 400 kilovolt line, once in the center of the screen and once off the screen to the south.

01:00:16:20 - 01:00:35:09
And what we're proposing is to underground that and remove all of those pylons that have got the circles on that. Undergrounding starts at the right hand side there. And the cable corridor, you can see from that, um, pylon to the right. Please. One more.

01:00:37:18 - 01:01:05:29
Go back to the pylon on the right there. We have that from that one there. The cable corridor is the the one that sort of follows outside buildings downfield edges alongside Lower Duncan Road, crosses under the railway into the existing substation that is there. So that means the the pylons with the circles then are all removed, um, to allow that 400 kilovolt positioning. And that has benefit for the housing proposals.

01:01:06:03 - 01:01:14:02
Then can you just clarify the the existing 132 kilovolt line? What type of pylons are they? Smaller.

01:01:14:09 - 01:01:28:26
There's a lattice, the lattice pylons. But there are different heights. There's different clearances. Those are would typically be 25 to 30m. We can probably find the exact height of those, but those are typically 25 to 30m.

01:01:29:01 - 01:01:34:05
Is that typical for all the 132 kilovolt the the lower voltage lines?

01:01:36:09 - 01:01:38:17
I'll just defer to my colleague Josh Crawford.

01:01:39:24 - 01:01:52:09

Uh, Josh Crawford, Josh Crawford on behalf of the applicant. So yes, that would be typical for the one three 132 kilovolt lattice, um, distribution network operator assets. And then across the route, I think what you might have been.

01:01:52:19 - 01:01:54:14
That'd be about 20, 25m.

01:01:54:16 - 01:01:55:01
25.

01:01:55:03 - 01:01:55:21
To smaller.

01:01:55:26 - 01:01:56:11
Than.

01:01:56:13 - 01:01:56:28
What's.

01:01:57:00 - 01:01:57:15
Proposed.

01:01:57:17 - 01:01:58:02
Yeah.

01:01:58:04 - 01:01:58:19
Yeah. Right. Okay.

01:01:58:24 - 01:01:59:09
Sorry.

01:01:59:11 - 01:02:05:06
Could I just also understand where the order limits are in relation to what you've just said.

01:02:16:02 - 01:02:34:24
Sir Christian Drage for the applicant. The specific reference is to the work plans. I'll give you the references now. Their app dash 0172. App dash 024. So the works plans have on them the order limits.

01:02:37:19 - 01:03:02:04
There are also, as I mentioned earlier, vertical limits of deviation and just for the members of the public. So this is to allow flexibility of the heights of of the infrastructure. Um, and instead of a plan they set out in a table, um, with reference to the work plans. Um, and I need to give you the reference to the page number of the DCO, but that's where they are there as well. So that's where you'll find the details are.

01:03:07:28 - 01:03:16:27
Just another question for me and perhaps another idiot's question, but can you explain the difference between distribution and transmission lines?

01:03:20:25 - 01:03:23:13
All written for the applicant. Um,

01:03:25:07 - 01:04:07:02
sir, I'm not an electrical engineer, but it's been explained to me that the transmission infrastructure sort of moves the the power in bulk around the country and distributes it to the distribution network operator substations. That's what then feeds out through the low voltage network, 132,000V, 33,000V, 11,000V. And that's what connects to our homes and businesses. So the distribution network is sort of that, um, sort of smaller wiring system and the the bulk transporter from the generator around the countries by the transmission system.

01:04:07:26 - 01:04:10:03
So do the wires look different

01:04:11:27 - 01:04:12:22
visually?

01:04:15:21 - 01:04:18:26
Neil Carter, on behalf of the applicant. Um, so.

01:04:19:16 - 01:04:20:02
The.

01:04:21:23 - 01:04:22:08
Way.

01:04:22:10 - 01:04:58:27
That, um, the electricity systems are set up, 400,000V is the voltage. You need bigger clearances between those voltage levels. So the way the conductors are separated to present to prevent something called flashover, where the electricity tries to go between one conductor and another. So when you're at lower voltages on 32 kV, for example, those conductors can be much closer together. And when you get down to 11 kV or the 66 kV, or even go into people's homes on wooden poles.

01:04:58:29 - 01:05:30:21
They're obviously much more smaller and much more compact because of that reasoning. The difference? The reason why we had those different levels, as Mr. Easton indicated. When you're transferring power at high levels. The higher the voltage, the more power you can transmit. So they're much more like the motorways in that effect. If you took the road structure as a comparison, and transmission is delivering bulk energy like bulks of cars coming down a motorway.

01:05:30:24 - 01:05:40:09

Distribution companies like going on to the side roads and then finally going into your local road for your houses to deliver, deliver the energy to the customers.

01:05:48:03 - 01:05:54:02
I just. Sorry. Can I ask a quick question? You mentioned the limits of deviation and.

01:05:54:07 - 01:05:54:22
Um.

01:05:54:24 - 01:05:55:25
Vertically.

01:05:55:27 - 01:05:56:12
The limits.

01:05:56:14 - 01:06:06:00
Of deviation are a significant number of the relevant reps and procedural decision responses that we received. We're talking about the shorter but.

01:06:06:02 - 01:06:06:17
Wider.

01:06:06:19 - 01:06:08:18
Pylons, and that.

01:06:08:20 - 01:06:09:05
Being.

01:06:09:07 - 01:06:40:15
Done to reduce visual impact on specific landscape features, etc. and so on. Um, but their concern was they with the limits of deviation, they were going to end up with pylons of the same height anyway, but just, but just wider, um, with those pylons that are subject to those shorter and wider arms. Uh, then be in your list, uh, in the code of construction practice for exclusion from that limited deviation.

01:06:41:26 - 01:06:59:28
Russell Harris KC yes, that's the intention. That's. Um, and for example, um, in negotiation with Historic England, where it was thought appropriate to have those shorter, um, pylons, then that that is capable of being secured and will be secured in the way that you suggest.

01:07:01:28 - 01:07:02:21
Thank you.

01:07:37:22 - 01:08:11:10
Yeah. Just just another question on, um, the existing pylons and it's this is more related to landscape visual effects. When we've been looking at some of the visuals from the viewpoints. There are

existing pylons and lines in the same view, and some of them it wasn't quite clear whether those were being removed on that visual or or whether we would see two lines in the same view.

01:08:12:02 - 01:08:23:20
I don't have the exact ones in front of me, but some of them just confused us when we were looking at them on site and said, oh, there's some existing pylons in the view, and there would be other ones in front or behind them,

01:08:25:10 - 01:08:30:10
which would obviously affect the landscape, visual and heritage visuals as well.

01:08:30:26 - 01:09:00:08
Um, can we take that point away? Uh, to, to answer it absolutely accurately. Um, uh, the immediate reaction, which I think is, is a correct one, is that if if the visualization is showing the new conductors and the old conductors, then I, the presumption is that they are both to stay. But we will go through each of the visualizations and check that that's an accurate representation. If I if I please assume we'll do that.

01:09:00:10 - 01:09:09:21
Yeah. And just just to make sure they're labeled appropriately so existing or whether they're going or not. Yeah that will be good. Thank you. And Mr. Sims has got a question.

01:09:09:23 - 01:09:41:03
Yeah. Sorry. Just to come back, you explained very eloquently about the overhead cable, um, clearances and requirements, um, at different voltages. You've mentioned obviously a number of times about some of the existing overhead cables being underground in terms of the different requirements for undergrounding. What is different between undergrounding of 400 kV as opposed to a 132 kV in terms of space ability, different um, uh, cables, uh, space, etc.

01:09:41:15 - 01:09:45:05
and and limits of the deviation for the undergrounding, please.

01:09:45:28 - 01:10:30:10
So Neil Carter the applicant um The difference, again, is the amount of energy that's being transported within those cables is much lower at distribution than at transmission levels, and therefore the cabling used by the distribution companies is much smaller in terms of its, um, diameter because it doesn't need to have as much insulation, and also depending on how much energy they need to transport within that cable, um, some cables can be combined into smaller bundles and ultimately can fit into much smaller, um, areas of deviation.

01:10:30:12 - 01:10:38:03
I don't have the exact, um, sizes today, but we can get back to you in writing with the exact differences between distribution.

01:10:38:05 - 01:11:08:00

And yeah, I think because, you know, some of this, we will stray into alternatives as well. So forgive that. But I think it's important for us to understand. And it might just be a matter of fact, how you can fit an underground cabling and much such a small area of limits of deviation of the proposed project, as opposed to undergrounding the 400 kV, which is taking a significant amount of space. So the difference is, um, kind of need to understand.

01:11:08:06 - 01:11:17:02
And I've just been given details are in app. 130 table 4.3. Thank you. Well there'll be some provision of that information.

01:11:17:09 - 01:11:45:17
Just when I've got the microphone on in terms of understanding the plans. Personally I found that the proposed project design drawing app one, three, three is actually a little bit more helpful than the one you're showing. I'm not saying that I want you to to change it, but if if whilst you're thinking about what you need to show you think the same, it may be that app 133 might just be a little bit more helpful in explaining what's there. Not saying you have to, but as a thought for.

01:11:45:19 - 01:12:17:03
You Russell Harris KC. I've done a lot of electricity cases, but I'm bound to say that these, um, these plans, which are meat and drink to Mr. Easton, are actually not not so easy for the public and members of um, uh, decision makers to, to to look at, which is why we suggested, uh, for the more detailed, uh, uh, dive to, to to to use the other ones and AP app one, three, three is much more close to those interactive maps.

01:12:17:05 - 01:12:48:12
And we'll be using those, uh, for the, uh, for the, for the detailed considerations as we come to site specific matters. Um, and so while I've got the microphone on, um, on the 400 kV, the, the differences that you ask for are set out in that document, but they are, in short, the width and depth of the trend trench and the cooling requirements around the high voltage and costs. The three main differences which you asked about.

01:12:52:05 - 01:13:32:06
I thank you. If we move on to 4.4 and the underground cabling and, um, again, we've heard in the open floor hearings this week and read in relevant representations, it's not only the pylons and the overhead lines that are of concern. It is also the, the, the undergrounding through the dead end veil and, um, the choice of cable types or Mr. Sims has just mentioned about the area of land that's needed in order to to bury those. Um, so can you just provide an overview of, of those cable types, methods of installation? Um, just a brief summary and signpost to documents, please.

01:13:32:08 - 01:13:34:05
I'll ask Mr. Harrison to do that. Thank you.

01:13:35:10 - 01:14:09:02
All written for the applicant. Um, again, this May with some of the images will show in a moment. May answer some of the previous question as well. Um, so the first part is, um, the selection of alternating current or high voltage direct current, um, where the projects are being taken forwards as

underground cable. The distance of the connection becomes an important factor in making that decision. And that's because the for the DC HVDC, there's a need for a large converter station at the end of each two gigawatt connection.

01:14:09:04 - 01:14:54:08
That means that for the six gigawatts connection that we need for Norwich to Tilbury, there need to be three of those large converter stations at each connection point. So therefore that's 12 in total. Um, for the capacity and connectivity of the project being sought, um, the balance of cost therefore favors um, because of the cost of those conversations. The balance of cost favours a a c schemes, alternating current schemes for those under about 50km with the transmission benefits of HVDC only becoming effective for schemes longer than this, and therefore for the four sections of underground cable that we're proposing on Norwich to Tilbury, the longest of which is 16km.

01:14:54:12 - 01:15:01:16
The appropriate basis for that cable and choice is the use of AC cable rather than HVDC.

01:15:03:04 - 01:15:36:10
I'll move on to installation techniques and if we can have the first image, please. Um, I think this may, um, help with just to the previous point, if I just, um, diverge on that one. Um, what we see on this image, on the top image is a typical cross section of the underground cable installation. Um, this is an open cut installation. Um, the amount of cables, it's 18 cables to transmit the power requires six K, six trenches with three cables in each trench.

01:15:36:12 - 01:16:21:14
And I think more typically, the detail of the bottom shows a sort of typical trench. I think the the 132 distribution network arrangement, it sort of is almost akin to, if you imagine it's one of those trenches, that's what all the cables will fit in, whereas we need multiple trenches because of the cables. So that's part of the reason why that lower voltage undergrounding is much narrower than is required for the the larger scheme. And I think you can also see on that image, um, there's the typically a central hall road with a number of trenches to either side, but space is needed to either side for the removal of topsoil and it's storage separate from the subsoil and, and it's storage.

01:16:21:16 - 01:16:53:06
So hence we have the, the the cable cables within a sort of a 55 60 meter type of width. But the cable, the construction side being being relatively wider. Um, there are two techniques. This is open cut installation. Um, and so we have these 18 cables in the six trenches of three. We'll go to the next image. There is an alternative which is a trench crossing technique. Um, this particular image shows something called horizontal directional drilling.

01:16:53:08 - 01:17:27:12
And the central image shows the, the effectively um, the cable initially buried by open cut, is then pushed relatively deeper to go under a particular feature. And we'll touch on, on some of the reasons for that in a moment. Um, the consequence of that which Mr. Carter was talking about is when it goes deeper, you actually need more widths because of the heat dispersal requirements. So that typically for this type of installation, rather than a 120 meter, um, construction, which way? It's approximately double that that you need.

01:17:27:14 - 01:17:58:06
So there's a preference therefore for open cut, except where, um, the HDD is required. Um. The trenches technique does allow the cables, though, to be installed without disturbance to a feature above them, but does require launch and reception pits and and various equipment to install them. Um, um, there are the one that which got shown is horizontal directional drilling, but there are other techniques that that are potentially available.

01:17:58:14 - 01:18:30:17
Um, the default technique is open cut trenching because that is preferred due to the speed of installation, the speed of restoration, and lower cost. We have, however, identified four locations where the alternative trenches technique is preferred, responding to certain environmental and technical considerations. And those locations are, um, three of them high um road, the River Stour and the A12 crossing are where the cable is through the uh National Denver National Landscape.

01:18:30:19 - 01:19:24:03
And just to the south of that landscape and the other location is where that cable continues on and is to pass under the railway to the east of Ardley. And the transverse technique at Higham Road is to avoid disturbance to archaeological features, and the River Stour is crossing under a large and navigable main river watercourse, the A12, a dual carriageway, am not considered considered realistic to close to install through open cuts and similarly with the railway impractical to consider open cut due to the required closure period and sensitivity to ground movement, and we have considered treacherous techniques elsewhere, such as black Brook just to the south of the River Stour, but there is insufficient space between adjacent homes for that technique to be used, and so given, as the image shows, the much wider space requirement.

01:19:24:20 - 01:19:35:11
Um, and more generally, the selection of the installation technique at specific location locations will continue to be refined through our detailed design. That's the end. Mr. Harris.

01:19:36:08 - 01:19:43:06
Could you just mention the examination library references of those documents? If you have them for hand.

01:19:43:08 - 01:19:47:07
I've had them in my brain. I would do, but we'll we'll confirm them.

01:19:47:12 - 01:19:51:14
We can do it at the end. That's fine. Yeah. Okay.

01:19:53:23 - 01:19:58:06
Can I ask you to put the first image back up again of the open cut trenches?

01:20:05:11 - 01:20:25:00
Can you focus in on the top image? The three? Sorry, the six trenches, just so I can see the figures there. I know these have been submitted already and I can go and look at them online, but I just want

to see them on the screen so that people in the audience can see the figures in the screen as well. Can you zoom in any more than that? It's perfect. Thank you.

01:20:27:05 - 01:20:35:22
So you've got 11 meter Hall Road in the center. At each one's 4.8 in width with a 2.2. Is it gap between?

01:20:39:16 - 01:20:41:00
That's it. Perfect. Thank you.

01:20:45:25 - 01:20:53:10
Okay, I understand that image. Um, can I get you to go to the second image, the one of the HDD? I've just got a quick question about HDD.

01:20:55:07 - 01:21:06:19
Um, just can you confirm that when you're undertaking HDD? Um, my understanding of that, it has to be a continuous operation. Is that correct? So once you start, you have to go until you've finished.

01:21:12:01 - 01:21:19:05
All reasoning for the applicant. I think we'll come back to you with that question. It's not my area of expertise, but we'll come back to you. But, um, okay. On that.

01:21:19:07 - 01:21:22:03
Thank you. I mean, I think I know the answer to it, but, um.

01:21:22:05 - 01:21:23:28
If you could just confirm.

01:21:32:22 - 01:21:36:22
Would you mind just nipping back to that original, the previous image again please?

01:21:36:24 - 01:21:41:27
Just quickly one with the open cut. And it's just a quick.

01:21:41:29 - 01:21:42:14
General.

01:21:42:16 - 01:21:43:01
Question.

01:21:43:03 - 01:21:43:18
Of.

01:21:43:20 - 01:21:44:05
If.

01:21:44:07 - 01:21:44:22
You've.

01:21:44:24 - 01:21:45:09
Got.

01:21:45:11 - 01:21:47:11
Six trenches there in terms of reinstatement.

01:21:48:05 - 01:21:49:21
What restrictions are.

01:21:49:23 - 01:21:51:25
There in terms of what you can.

01:21:51:27 - 01:21:53:21
Plant, if you like, on top of those trenches?

01:21:53:23 - 01:21:54:29
Want to fill in again?

01:21:57:16 - 01:22:35:26
Full reasoning for the applicant. Um, again, I think it's something we'll, we'll confirm, um, with the, with colleagues. But my understanding is that normal agricultural practice, cropping, grazing, that sort of thing can occur without any restriction. Um, hedgerows will be replanted. Um, we would say that, um, we wouldn't want the planting of trees. Um, anything that sort of, woody species, as it were, would be constrained, and we would be restricting sort of any further sort of development on there.

01:22:37:29 - 01:22:48:10
But say we'll, I'll, we'll check that with um, specialist colleagues and just confirm the, that detail. There will be something probably in one of the in the chapter four. I would imagine so.

01:22:48:12 - 01:22:49:12
Okay. Thank you.

01:22:52:04 - 01:22:57:05
Okay. Thank you. Um, are the plans ready for the presentation again?

01:22:59:15 - 01:23:30:01
I'm I'm I'm noting that it's nearly 90 minutes. Maybe if you could take the adjournment five minutes early, and then we could have a discussion about how best, swiftly and most efficiently to show the plans in relation to. Can I check you're particularly interested in the cable ceiling ends and the main construction compounds, um, which might sensibly mean, uh, having a look at the overview, uh, again, maybe a little slower, um, of the entire route.

01:23:30:03 - 01:23:34:24
Yeah. I think it's more, uh, zoomed in to show exactly where those.

01:23:34:26 - 01:23:35:22
Yes, I'm sure we.

01:23:35:24 - 01:23:37:27
Structures are, like, going to be located.

01:23:37:29 - 01:23:39:26
Yes, I will do that.

01:23:39:28 - 01:23:48:08
Um, yeah. It doesn't have to be in a huge amount of detail. It's more for our orientation. Yes. Um, so we can see exactly where they're going.

01:23:48:10 - 01:23:57:13
Well, um, I think if you can just give us the the the the, uh, adjournment, um, we will do that very swiftly in the first session after the adjournment.

01:23:57:28 - 01:24:04:25
And then we need to move on to item five. Uh, straight away after that. So it's 1124.

01:24:07:13 - 01:24:09:03
Uh, if we say.

01:24:11:09 - 01:24:20:12
1140 16 minutes. That an off? Okay. Well, we'll adjourn and we'll come back at 1140. Thank you.