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START OF TRANSCRIPT

Nick Gardham: Good evening. Welcome, everyone, to this evening's webinar, hosted by the Copeland Working Group. This is the first of our webinars as we look to engage the local people in a conversation around the development of a geological disposal facility in the area, as we are looking to explore the possibilities around this.

So I'm Nick Gardham. I'm the independent facilitator for the working group, and today's session will be starting to explore some of the issues, some of the whats and the whys and the hows that we need to start to answer as we look through the engagement process. So I want to start by just giving us a bit of a background as to who I am. So my role is as of the independent facilitator, and I'm here to support the engagement of the working group as we start these conversations with local people.

This webinar is the first of a series of webinars that we're hoping to host to start to get some of the questions, arise some of the issues that people have and start to identify some of the perhaps opportunities that this could bring as well. So I'm going to start by giving us a quick overview of the housekeeping, just to be clear on that.

So this session is being recorded and will be transcribed, and what you can see is that throughout this session, you'll have the opportunity to ask questions. Those questions will be anonymised and will appear beneath the webcast window. We will look - we'll do our very best to answer all the questions, as we can. The earlier session today, we didn't get the chance to answer them all.

There was quite a lot of questions coming in. But don't worry. If we don't answer your question today, we will be answering it later on by providing a full question and answer sheet alongside the transcript.

If you choose to do so, you can add your name to the question, but it won't appear to everyone else - sorry, it will appear to everyone else. I do apologise. I've got that wrong. But don't worry, any transcript - you will have your name removed from any of the transcripts - any detail on the transcript. So if you wish to access the transcript of this event, you can visit the Copeland Working in Partnership website and the details of that are below.

I also want to add, if there is any issues, if anything does arise throughout this call that we need to end it for any reason, we'll immediately end it, and we will provide a full written response to all the questions as well, and also some of the slide deck. If needed, we will also rearrange the session. So I think that's enough from me, and I know we're tight on time, so I want to try and make sure we cram in as much as we can in this session, so I'm just going to give us a bit of an overview of the agenda for this session.

So I will start us off with a bit of a welcome, and then we're going to hear from four speakers. We're going to hear from Gillian. We're going to hear from Steve Reece. We're going to hear from Bruce Cairns and also Cherry Tweed, and then we're going to move into perhaps what everyone's here for, the most important bit, which is the question and answers, and hopefully we'll allocate as much time as we can to that part, and then lastly, we will close with what's going to happen next.

So I am going to hand straight over now to Gillian to try to keep us ahead of time, so that we can ask all those important questions later on, so, Gillian, over to you.

Gillian Johnston: Thanks, Nick. So good evening, everybody. So I am Gillian Johnston. I'm the Community Engagement Manager for RWM and the Copeland Working Group. I'm also a lifelong Copeland resident, and I have an enormous sense of pride in the place I call home. Next slide, please.

So before proceeding further, I'd like to introduce Mark Cullinan, Copeland Working Group Independent Chair. Mark will say a few words about himself and his role as Chair.

Mark Cullinan: Thanks, Gillian. I'm independent, as I've no links with the nuclear industry. Amongst other things, my current roles include being the Chair of Impact Housing, Cumbria, and also the Senior Independent Director of Blackpool Hospital Trust, which I think reinforces my credentials in respect of my independence.

In addition, as a former Lancaster Council Chief Executive, I do have many years' experience of dealing with economic, environmental and social policies, which I think are going to be useful for the tasks undertaken by the working group. Thank you.

Gillian Johnston: Thanks, Mark. Next slide, please. So some of you may know who the other - sorry, some of you may not know who the other Copeland Working Group members are, so I'd like to take you through this. So we've just heard from our Independent Facilitator, Nick, who is leading this session today. So Nick supports the community engagement process, ensuring the discussions progress in an informative and constructive manner. We then have our of course authority member, Councillor David Moore, who is supported by two borough council offices, and Copeland Borough Council is also an interested party, and an interested party is an organisation or individual who raised an interest in the siting process with RWM.

So our other interested parties are Dave Faulkner, a private resident, Gary Bullivant, representing Irton Hall, and Andy Ross and Mark Walker, representing Genr8 North. We also have Cumbria Association of Local Councils, or CALC, represented by Andy Pratt and Chris Shaw, and they represent all parish and town councils across Copeland. Then we also have support from RWM, covering siting, communications and community engagement.

So next slide, please? So I'd like to talk a little bit about the Working with Communities policies and what the working group are doing that aligns to this. So 6.18 is the early part of the process, fact finding, gathering and providing information to the

community. Engaging during a global pandemic isn't easy. However, despite this, since formation in November, we've launched a virtual exhibition that's had over 0.5 million views. We've launched the Copeland GDF Working Group Website, where you can access information and documents such as working group minutes and the initial valuation reports.

We've issued five newsletters and launched three social media channels, as well as a number of articles in the local press, including a series of print adverts. So moving to point 6.25, as it identifies the search area, the working group will start to work to understand the local area and any issues or questions the community within it might have. So what have we been doing in relation to this?

So the working group has three workstreams within the working group which look at engaging with the community, identifying a search area or areas and identifying members for a community partnership, which is a larger group of people reflective of the community that would take over from the working group and consider the possibilities of hosting a GDF locally in more detail. As a search area or areas are identified, we will work to start to understand the local issues and questions, which will aid initial conversations to be explored by the community partnership.

So with this in mind, over the coming months, we have a further three webinars planned, and hopefully in July, when the COVID restrictions are lifted, a walkthrough exhibition road show. So the road shows will be located a week at a time in North Meade and South Copeland. So community investment funding, so 6.68 in policy relates to this, and if the working group regresses to a community partnership, this is where the funding of up to £1 million per year will become available, and this is something that we can go into more detail about in a future webinar.

I'd now like to hand over to my colleague Bruce Cairns.

Bruce Cairns: Hi, thank you, Gillian. Ah, there we go. We've got my older picture up there with the pre-lockdown hairstyle. I've got about 10 minutes, I think, to do some of the basic high-level introduction on

why we're having a geological disposal programme in the UK and what this is about, and I'll hand over then to Cherry, who's going to talk a bit more about the what and the how a geological disposal operates.

So if we go straight into the first slide, we'll see if we can steal a little bit of time back for the questions, as Nick was saying. I'll try and keep it high level. So some of this is not going to be a great surprise, particularly to people in the Copeland area. So the UK has had industrial scale nuclear technologies in a number of fields for over 60 years now - electricity generation, other industrial applications, defence, research and development, et cetera. Like any other industrial scale activity, that has generated waste.

So even if we never built another nuclear facility in the UK, we would already have 60 years' worth of radioactive waste that we have to manage both for the short term but also for the long term, as well, and that's why we're looking at disposal activities and making disposal routes available for these wastes. If we go on to the next slide, please?

Again, this is maybe people in Copeland are more familiar with some of this. About 90 per cent of that radioactive waste is already - already has disposal routes available, and a lot of people in this area will be familiar with the Low Level Waste Repository facility, which is near Drigg on the coast. That's been opening - that's been operating for a long, long time, a number of years, dealing with primarily low level waste and very low level waste. There are other surface facilities around the country that also deal with similar types of waste, as well. That's about 90 per cent by volume of all of that waste, already has a means of disposal available to it.

So what we are concerned with primarily is the remaining 10 per cent that in the UK doesn't yet have a disposal route available for it. That's the higher activity waste. Cherry maybe talk later on about intermediate level waste, it's quite a broad category, but also the high level waste that comes from reprocessing activities,

another area of industry familiar to a lot of people in West Cumbria. Should we go on to the next slide, please?

There we go. So currently, the higher activity waste that we have is in temporary facilities in storage at the surface at licenced nuclear sites around the country, and this map shows if not all of them, most of them. There's quite a diversity there. There's power stations, research sites, some industrial sites and some defence sites spread around the country there, and all of these things are in - all this waste is in storage now, or it's still in facilities that are operating and will be decommissioned, which will then generate more waste, of course.

Those facilities are kept safe and secure by the people who operate those plants, and they're designed to protect against severe weather and things like that. They can be kept safe for many decades, of course, but they will require continuous protection, renovation, repackaging of materials and updating to keep them safe for the future. So these are an interim step, but they're not the long-term solution. They're not a permanent disposal route for the waste that have arisen.

So as we can see from the map, these sites are all over the country. At Sellafield, the one that's probably most relevant here in this part of the world, is by far and away the biggest site in the UK, which means that it will also have by far and away the largest volume of waste arising there as well.

I think if we go onto the next slide, we then start to talk about the long-term part of the equation, so we've got stores that are there now, but what are we going to do for the long term, and this is something that's been discussed for a long time in the UK and elsewhere. You can go back to the 1970s and the Royal Commission then, 1976, recommending that there needs to be a safe, sustainable long-term solution in place for waste arising from the nuclear industry. Then there were programmes of work in the 1980s and in the 1990s, looking at particular categories of waste and looking at different designs and options for facilities, near-surface facilities, geological facilities, test drilling, things like that.

But those projects had come to nought by the end of the 1990s, and we get to about 2001, there's a reset there, and government has consultation in 2001 that's not on where should we put this waste, or even what type of facility should we put this in? It was consultation on how should we decide what to do for the way forward for this waste, and that led to the creation of a committee called CoRWM, the Committee on Radioactive Waste Management, to give an independent assessment of all of the available options for the long-term management of these types of waste.

That was established in 2003, and in total, they spent about three years engaging widely with the public and with expert stakeholders from various fields, from industry, from academia, from NGO communities and internationally as well, and they considered everything. They had a long list of options that included firing waste into space to disposing of waste on the edge of tectonic plates, subduction zones and various combinations of storage and geological disposal as alternatives.

They got to a short list of focussing on the geological disposal and storage options as the most realistic ones, and their ultimate conclusion in the end was that the best available option for the long-term management of these wastes is geological disposal, with an emphasis on the importance of having robust interim storage in the meantime. So need to keep doing that as well, and on-going research and development to support the delivery of long-term solutions.

That's in line with the consensus internationally, as well, so international bodies like the Nuclear Energy Agency, the International Atomic Energy Agency and all the major programmes around the world, the countries where there are major nuclear programmes around the world, they're all - they've all recognised the need for some type of geological disposal facility for some types of waste, and they're all pursuing these.

So we can go to the United States, Canada, France, Switzerland, Belgium, Sweden, Finland - we carry on around Europe, the Czech

Republic, Russia. We get right around to the other side of the world, to China, Japan. They're all running geological disposal programmes, and some of them are further ahead than we are, which gives us the opportunity to learn from them as well, and I think Cherry might say a little bit more about that as we move on.

So I think the next slide's my last one, and I'm going to use it as a bit of a segue into Cherry's section. I'm not going to get into the detail about what a GDF is and how it works, but I'm just going to start off those thoughts and hand over to Cherry. So why did that committee make that recommendation? Why have others reached the same conclusions as well?

The fundamental elements are about taking this material away from the surface environment, and isolating it deep underground. So radioactivity is something that will decay naturally. Levels of radiation will reduce over time, and they're at a constant rate that's well understood. But in human timescales, some of the timescales for this are quite long, so in some cases, we're talking about tens of thousands of years, hundreds of thousands of years for the radioactivity to naturally reduce.

So at the surface, there's an awful lot of things can happen in 10,000 years at the surface, or 100,000 years. There's a lot of things that can happen in 10 years at the surface. So the opportunity here is to take advantage of the natural barrier of the geological environment, where we know the processes that go on in the geological environment can be studied and understood, and they operate in some cases over very long timescales.

So we have the opportunity here to use engineering but also that natural geological barrier as well, to work together with that, to protect this material for long enough that the radioactive hazard naturally declines. That's at the really high level why are we pursuing this and why are others pursuing it as well? To get into a bit more detail of the what and the how, I'm going to hand over now to Cherry Tweed.

Cherry Tweed: Thank you, Bruce. I'm Cherry Tweed. I'm RWM's Chief Scientific Adviser, and I'm just going to pick up from where Bruce left off and

tell you a little bit more about what is a geological disposal facility, or GDF, and if we move onto the next slide, then you can see a little bit more about how do we go about isolating and containing the radioactive waste.

We do this with a series of protective barriers. The first of these barriers is the solid form of the waste itself. Any waste that isn't solid will be made solid. Perhaps it might be mixed into a solid glass in a process called vitrification, and some of you may have had the opportunity to visit the vit plant at Sellafield. It may possibly be grouted in cement, but the first step is to have a solid, stable waste form.

That waste form is placed inside the next barrier, a durable container. That container might be made of long-lasting metal, perhaps stainless steel or copper, or it might be concrete. Around that container deep underground, we'll place a protective backfill, perhaps made of cement or of clay, and then the final barrier is the hundreds of meters of solid rock between the GDF deep underground and the surface environment.

We call that combination of engineered and natural barriers the multibarrier system. The choice of materials for the engineered barriers, the form of the waste, the container, the buffer or backfill, is tailored to the properties of the waste on the inside and the rock on the outside.

Now, if we move onto the next slide, you can see a schematic of a GDF itself. Essentially, it has two parts, a surface part and an underground part, and obviously, of course, a way to get between them. That might be a shaft, a long lift, or it might be an inclined tunnel, which we call a drift. If you look in the diagram, then you can see the underground facilities are placed directly under the service facility. That doesn't need to be the case. They can be offset by several kilometres.

For a community like Copeland, which is a coastal community, whilst the surface part of the GDF must be on land, there is a possibility of siting the underground area immediately off the coast, what we call the inshore. What you can see from that diagram is

that most of the GDF is underground, deep underground, between 200 and about 1000 metres below the surface.

For reference, and I know for many of it's actually probably quite some time since we've left our homes and travelled any distance, but thinking back to the days when we used to travel and perhaps visit London from time to time, the deepest part of the London Underground is only about 60 metres below the surface. So if we talk about a GDF, we really are talking deep underground.

As you can see from the diagram, the underground part is split into two distinct parts. The part not the right, the part closest to you, is a series of vaults, where we will stack the IRW, or what we call the low heat generating waste. The part on the left, which actually forms the larger part of the underground, is a series of tunnels to take the most highly radioactive waste. This is waste that is so radioactive it generates significant heat, and we need to manage that heat in disposal by spreading it out.

If we move onto the next slide, we can start to home in the various parts. Starting with the surface facility, the surface facility for GDF is not very remarkable. It looks something like a secure industrial estate. Perhaps the closest analogy is to think of it as something like the Channel Tunnel terminal, and that's essentially what it is. It's a place where materials are received, and then they are transferred underground, be these construction materials, be they actual radioactive waste. Again, an opportunity for having a surface facility near the coast is that all but the last few hundred metres of the journey can be carried out by sea.

The overall surface area is somewhere around a square kilometre, and the layout and the style of the buildings can be tailored to fit with the local environment. If you look at that diagram, it appears that it's a greenfield site. You might ask the question, does it have to be a greenfield site? The answer is no. It could be a reuse of an industrial facility that's repurposed as a surface facility for GDF. It doesn't need to have a lot of space around it. If you look on the websites of our sister organisation in Switzerland, who are further

on in their siting process, you can see specific plans for their surface sites, and here are buildings right up to the fence.

Now let's move on into the underground environment. This is the part of the facility where we will stack ILW waste containers in vaults. If any of you've had the opportunities to visit any of the stores on the Sellafield site, you'll have seen the facilities that look very much like this, except that in a GDF, the walls around the facility are made up of the solid rock. When the waste has been emplaced, the space around these containers will be filled with cement to lock that waste away permanently.

On the next slide, you'll see a schematic of the high heat part of the facility. This is where we will place the most hazardous material. Immediately, you can see that there are containers with very thick walls. We're looking at walls which are several centimetres thick. There are several materials we might use, perhaps a copper, as you can see in the left-hand diagram, or maybe a cast iron. We will choose that material depending on the environment.

In both cases, you can see that the containers will be protected by a type of clay, a type of clay that we call bentonite, which when it contacts water will swell and seal the container in. Actually, the tunnels for these high heat wastes may be vertical tunnels or horizontal. If we move on to the final slide, just want to reinforce the point that the UK is not alone in planning for this type of disposal facility. Countries all around the world are planning similar facilities for their wastes, and the UK is not in the lead.

Finland, Sweden, France, Switzerland and Canada are all ahead of us in their implementation plans, and we really value the collaboration we have with our sister organisations and that sharing of knowledge, so we can learn from their experiences. Just as I close, I'd like to let you know that all of these countries have excellent websites, where you can find out more about their plants and actually see a GDF come into reality. With that, I'm going to pass over to Steve, who's going to say a little bit more about the siting process.

Steve Reece: Thank you, Cherry. Good evening, everybody. Steve Reece, I'm Head of Siting at RWM. I suspect, although I can't see everybody tonight, I will have met a number of you along the way. If we haven't met, I'm a mining engineer by background. I spend a lot of time in the UK mining industry, coal mining and salt mining, but over the last 15, 20 years or so, I've specialised in geological repositories. I was involved in the [inaudible] talk about an important task that Gillian mentioned at the start of the webinar, task of the working group of identifying a search area for a GDF.

So if we could just go to the next slide, please, and before I get into - I've only got a couple of slides after this, but before I get into this, I just wanted to show this image. Gillian gave a couple of specific quotations from the Working with Communities policy that governs the siting process. It's the overarching policy, and this image actually comes from that document, and if you haven't had a chance to access it, I would commend it to you. It's a good read, and it really sets out the overall journey, but I just wanted to tease out a couple of things, because we often do get asked what's different this time around from previous siting processes.

So this journey, and Gillian mentioned interested parties and the fact that we've now formed a working group, so that's the stage that we're at, the second segment along from the left-hand side. Two or three things that to me are different this time around. You'll see in the brownish geology-coloured block at the bottom of the diagram in quite small text something called the right if withdrawal and the test of public support. These are a couple of fundamental differences.

The overall premise of this process is that it should be a gradual journey where people can find out more about geological disposal, the siting process, what it means for individual communities, but nobody's forcing anybody to make premature decisions. There is a right of withdrawal that runs through the process, so people can walk away, step away, and a GDF would not be constructed anywhere without a test of public support. We're going to cover this in a little bit more detail in subsequent webinars, but there are

very important differences that have been vested in the process this time.

So I'm going to move forward and talk a little bit more about - so if you take it to the next slide, please. I'm going to talk specifically about the search area identification, because it's a fairly near-term task for the working group, and it's a significant early milestone, allows the conversation to move forward. So where are we starting, and if you've accessed the website, you will have seen this image, this map, so our starting point or the area for consideration is really the whole of Copeland. But another very significant difference this time around is that it excludes the Lake District National Park.

That was a decision that was taken at the outset, so Lake District National Park is not in play for consideration, and the small yellow area to the south of Copeland indicates the proposed extension to the Lake District National Park. If that is adopted, the park boundary is extended, equally so that area will be excluded from any consideration.

Cherry and others have mentioned already the inshore area and the potential to consider for the subsurface elements of GDF areas deep under the seabed, and this is a big difference to last time, because the whole of the inshore area, out to just over 22 kilometres from the coast, is now in play. That's a big difference, because it brings a lot of geology that hasn't truly been considered before into consideration this time, so it's a very significant change for me.

I think as we've said, significant task for the working group, or a task for the working group, is to identify search area or search areas not constrained just to one search area. There'll be a couple of little technical points on the slide on the start, but they are important points for us all to understand. What is the search area? Well, it's basically the area that the working group is going to define, and say to Radioactive Waste Management, RWM, that this is the area where you can look to identify potentially suitable sites for a GDF. So it's the starting point for RWM.

But it's not a once and for all exercise. It's not that we will draw - the working group will draw lines on a map once and for all. This is something that will evolve over time and the defining the boundaries is really just a starting point to identify the appropriate members of the community partnership. I think I say on the next slide that you can then - one of the things the community partnership can do is then modify those boundaries.

So if I go to the next slide, please, and as I said, the search area or areas are going to be derived from that starting point, that area for consideration. Now, they will be defined, and the policy asks us to do this - the way we will draw the lines on the map is using the electoral ward boundaries, the Copeland Borough electoral ward boundaries. That's how search areas are defined, and as I said previously, they'll encompass all the areas where we can consider potential sites.

Now, an important little point, but it is important, is that the search area only defines the area on land, just the area that's on land, rather than the area under the seabed. But clearly, if we are going to consider the geology deep under the seabed, we will do that and then link it back to areas on land. As I said previously, the boundaries of the search area can be refined over time by community partnerships, so as we get into these more detailed conversations in the community partnership, which are really the enduring conversations, that's where we can start to consider and refine the search area over time.

What's the working group going to use? It's going to use existing information. It's not necessarily going to go out and seek new information at this stage, and one very important source, which I would draw your attention to, is the National Geological Screening that was carried out by British Geological Survey, and this contains good baseline information on the geology of the area and will be a good starting point for those conversations about defining the search area.

So my final point, before I hand back to Nick, is just to say that feedback that the working group has received so far and continues

to receive and will continue to receive is very valuable to us, very valuable to the working group, and is going to help us understand some of the issues, some of the thoughts that people are having and will help us as we move forward and identify the search areas, which I say, is very much a starting point for what should be a long conversation that can then move forward into the community partnerships.

So I think with that, Nick, I'll draw a halt and hand back to you. You're on mute, Nick.

Nick Gardham: Thanks, Steve, for that and thank you for not only keeping us on time, but ahead of time, so that's great, gives us more time for those questions. So I'm going to introduce now some additional panellists who you've not heard from yet, who will be joining us as well. So we'll be joined by Candida Lean and Peter Howden. Candida's from the Environment Agency and Peter from the Office for Nuclear Regulation, and also, we're going to be joined by Andy Parks, who is Head of Site Characterisation, and I believe is going to answer some questions on geology, if any emerge.

So just be clear then, so prior to this webinar, we've had some conversation - or I had some conversations with people who put themselves forward for a - to have a short, brief chat about the webinar and potentially put forward some questions. So I've collated those questions. Actually, I'm going to put forth to the panellists, but I can also see some questions coming in on the chat thing, as well, in front of me. So I'm going to try and bring both the questions that we've got - that we heard and the conversation we had prior to but also some of these questions that are coming through right now.

So - and this search area process, it was a hot topic. It was something people were interested in talking about, but also there was this sense of, well, we've been here before. We've heard this before. What's different this time? First, Bruce, I'm going to come to you around this community partnership stage. So the question is, how will a community partnership be formed, and how can a

self-selected group of people speak on behalf of a whole community?

Bruce Cairns: Thanks, Nick. I'll just come off mute. Also, I don't know if we've got another slide to come up here that's got images for those people that we've just joined as well. There we go. Spot on. I thought there was one. I remembered it from Wednesday.

So how will partnership be formed - how can a self-selected group of people speak on behalf of a community? I think that's the gist of the I there. So the working group can form a community partnership by appointing the initial membership of it, can get a partnership up and running, but that partnership's going to continue to evolve. It's going to add more people and organisations to it as it goes along. It can recruit members of the public. It can have all sorts of bodies on it.

The bare minimum, though, is set out in policy to get it started involving at least one of the principal authorities, the relevant principal authorities for that area, and RWM, and it can bring other people in as it goes along. It can bring in people from the working group, as well, if it wanted to. Some people will remember the old MRWS partnership, which was a different beast. It was a different process, set up by the local authorities, though, and it had quite a broad [church] of organisations on it and quite a broad spectrum. That's one example.

But I think Steve made the important point that all the working group is doing is establishing the starting point, so neither the working group nor the community partnership are making decisions on behalf of the community, so the working group's establishing the starting point for the partnership. The partnership's going to take that conversation forward. The elected principal local authorities, they're the ones who will hold that decision or right of withdrawal from the process, and they are democratically elected to represent people in the area.

But even they can't make the decision on a community support facility at the end of the day. That has to be direct test of public

support of the community in the area around the facility, if one is ultimately proposed.

Nick Gardham: Thanks, Bruce. On that point, and you talk about the principal local authority, this question came earlier and we didn't get around to addressing it - it came through on the chat, and it's come through again. We're aware that there are some potential changes afoot in Cumbria, which could impact on Copeland. What is the potential impact of the move to a single tier authority on current proposals?

Bruce Cairns: Yeah, so that's a live question at the moment in Cumbria and a few other places in the country. I think two or three places are going to have live consultations coming up soon on potential change and structure. The government's policy on this siting process envisages the potential for changes in local government structure, and it says, at the time if structures change from what they are to something different, there will still need to be at least one relevant principal local authority that is on the partnership and taking part.

Now, at the moment, in Copeland, it's a two tier area, so there's districts and counties - districts and a county. If it goes to unitary, and I know that there are at least three different proposals for the shape of those unitaries, but if it goes to a unitary structure, there will be only one principal local authority in any place on the map in Cumbria, and it would be that principal local authority who would have to be prepared to take part in the partnership.

Whether that was North Cumbria, South Cumbria, whole of Cumbria, whichever one was relevant for an area that was involved, would still need to be prepared to take part.

Nick Gardham: Thanks, Bruce. There's questions coming through, and I'm going to move to Gillian next, because we've talked a lot about what's different this time and this kind of really important about engaging, starting a conversation, really having conversations with people in Copeland. There are a number of people, there are a number of groups, and that need's been gauged in this process, but how are

we deciding and where do we decide and who we engage with? How is that happening?

Gillian Johnston: Thanks, Nick. So, currently, the working group has a comms and engagement strategy that covers the whole of Copeland. If we progressed to a community partnership, this would then be a larger group of people, and the engagement would be more specific.

Nick Gardham: Thanks, Gillian. One of the questions that came through here in the chat was around saying that actually at the minute, it feels like it's an information - it's about information, information, information. It's not about meaningful engagement, and I think we can say that actually, we're hoping that these webinars as well might start to address that - subsequent webinars, future webinars will be built on the back of these conversations that we're having. But a point is made, and I'm going to move to Mark next, who's our independent chair, around the fact that the process doesn't feel as transparent, given the huge amount of community interest - they're talking about transparency.

So how are we encouraging transparency, Mark, in this process from your perspective?

Mark Cullinan: Thank you for that question, Nick. I think I'd refer back to what Steve was saying about this being a gradual journey and only going at the pace that local people are ready for. Gillian has said that our focus is very much on engagement and that's where transparency comes from. It isn't just about communicating. It is genuine engagement, so I think webinars that we're involved in today are a good example of that.

So is the virtual exhibition that we have, which not only provides information, which is important in terms of transparency, but it also encourages people into discussions about that, which through those discussions we'll tease out more questions and more answers. We provide regular newsletters and, personally, I'm very happy to meet people and talk to them face to face or by email if that's something that they would prefer.

Nick Gardham: Thanks, Mark, and certainly, that's some of the engagement work that I've been doing, prior to this session, is meeting and talking to people. In those conversations, and I'm going to move to Andy Parks now - because one of the things that came up, Andy, was the hot topic of geology. We say that, well, it's different this time. Well, that also relates to the geology question, people saying, well, it was deemed unsuitable last time, so geology takes hundreds of thousands of years to change, how can it be suitable this time around? Andy, how can it be suitable?

Andy Parks: Right, thanks, Mark. Obviously, I think you alluded to earlier, there's going to be a full webinar that's focussed on geology, so I'll give a fairly brief answer at this point. One of the key things is that the previous surveys haven't deemed the geology of the whole of Copeland to be unsuitable, so the investigations conducted by Nirex back in the early 1990s focussed on just one rock type in one specific location.

In the Managing Radioactive Waste Safely process, where the British Geological Survey applied a high-level initial screening criteria, that did exclude some parts of Copeland due to the presence of known resources like coal and also some volumes of rock which contained aquifers. But that process only considered the inshore area up to approximately five kilometres from the coast.

So this time around, the National Geological Screening exercise undertaken by the British Geological Survey as part of this process has also considered the adjacent inshore out to the limit of UK territorial waters, which Steve alluded to, which is 10 nautical miles, or 22.2 kilometres from the coast. The exercise has identified potentially suitable host rocks under Copeland and the adjacent inshore.

So it's worth considering Copeland, because essentially the previous surveys only ruled out certain parts of Copeland, and the current process has also included quite large parts of the inshore not previously considered.

Nick Gardham: Thanks, Andy. I want to move to the panellists who've joined, as it's [Candy] and Peter. You're both from the Environment Agency and from the Office for Nuclear Regulation. What is your role as regulators? What's your role in relation to this process?

Candida Lean: Thanks, Nick. First up, the Environment Agency is the environmental regulator for England. Together with the Office for Nuclear Regulation, we will jointly regulate any geological disposal facility for radioactive waste in England, and we're working together to make sure that any facility will [make] our requirements for protecting people and the environment when it's being developed, while it's operating and after it has closed.

We will only grant a permit or a licence if the developer's proposals meet our high standards. We've offered to support Copeland GDF Working Group by explaining how our regulatory roles and processes will help ensure protection of people and the environment now and in the future. However, we do not regulate the site selection process. Regulators aren't members of the Copeland GDF Working Group, and we will not be involved in its decision making or in decisions to select sites for further consideration.

Links to further information on our regulatory roles are included in the Copeland GDF Working Group newsletter of 18 March, and members of the public can raise any queries they have relating to regulation using the contact details in the newsletter. Okay.

Nick Gardham: Thanks, Candy. On that point about now and in the future, I'm going to move to Cherry, because in the conversation I was having prior to, there was a really interesting question that was brought to our attention around the science around geological disposal. What the suggestion was actually, the science is unproven. The timeframes take too long, and actually, the statement was geological disposal is an unproven hypothesis and needs to be viewed as an experiment. How can we be sure that this is the right thing to do?

Cherry Tweed: Thank you, Nick. The way in which we will be sure in the geological disposal facility is by building up our evidence from a

number of sources. We need to understand the processes that might go on in a GDF, not just now, but in the future. So the first way in which we start to build up knowledge is that we do experiments in the lab. Obviously, in the lab, we can reproduce the kind of experiment, the kind of conditions, that we'd expect underground, and we can look at processes in great detail, and that gives us a fundamental understanding of the processes that are important.

But that's small scale, and so one of the things that we then need to do is to take that understanding from the lab and apply it at a much larger scale. For something that's underground like a GDF, we do this by working in what are called underground research labs. We have collaborations with organisations around the world who are running those labs for our sister programmes, so we've got some work on-going in Switzerland, in a URL in clay. We've got some work on-going in Sweden in a URL in granite.

So by doing that, we're looking at a whole range of materials. So then we've looked small scale and made sure it scales up. But then there's that other axis of time, and we can't run experiments at any times that are actually meaningful for a GDF. But nature has existed for a lot longer than a GDF, and so the third pillar that we use to build our evidence is actually by looking at systems in nature that have some of the characteristics of a GDF, looking how they've evolved over timescales of thousands and millions of years.

By drawing together all of those sources of evidence, we can be confident that a GDF is not an unproven concept but is actually supported by a lot of scientific information.

Nick Gardham: Thanks, Cherry. That very comprehensive answer, way beyond my scientific knowledge, but thank you for that. On that point, there was somebody who raised a point prior about their science GCSE, which I think they believe they studied in Copeland, and they talked about actually this - I'm going to move to Gillian. They talked about in their science GCSE, Gillian, they said it was mentioned it was around the corner. We're going to build this

GDF. It's going to happen. It's going to be sometime soon, but it's taken a long, long time, so why so many attempts? People just aren't interested in a process that takes so long, so what are we going to do to get people interested?

Gillian Johnston: Thanks, Nick. Great question. So yeah, a GDF obviously is a very large infrastructure project, and there are years of work involved in order for these to be done properly. Every GDF around the world has taken decades, with it not being uncommon for them to stop and review their approach, which is exactly what we've done. So in terms of getting people interested, this will be a multi-billion-pound project, potentially running for over 100 years. So there's a real opportunity for communities to be involved in a long-time, sustainable vision for their community.

Nick Gardham: Thanks, Gillian, and let's hope these webinars do attract future involvement, and we'll continue to advocate and push for the engagement of people, as well. But I'm going to come back to Steve. Steve, you talked about search area, and I'm just going to pull up the question that's come through here. It says here, clarity is needed. At what stage the national park extension will be excluded, and you did that on your little map there. People have been told that the extension is excluded now, and not only if it's adopted.

Is that - is it included, is it in, is it out?

Steve Reece: Yes, so I suppose when the working group starts its exercise to identify the search area or search areas in Copeland, I don't want to speak totally on behalf of the working group, but I think it would be very pragmatic and is sensible - well, I know that the working group is already well aware of the proposed extension.

So I don't want to prejudge the discussions of the working group, but I think pragmatically, assuming that the park is going to - extension is going to take place, then it makes sense to steer clear of that area I think is what I'm saying in practical terms, Nick.

Nick Gardham: Thanks, Steve. I just wanted to ask it. It was coming through there. I thought it…

Steve Reece: No, it's a fair question. It is in a slightly grey area at the moment, but I think pragmatically, if one assumes that the park boundary is going to be extended, it would not be sensible to be trying to do things in that area.

Nick Gardham: That's great. Well, I'm conscious it's five to eight now, and we said we'd wrap this session up at 7:59, so people can do the second mark of respect today, which is I believe shine a yellow light on their doorstep. So I'm going to close off the questions for now and just start to go through what's going to happen next. So a big thank you all the panellists, a big thank you to everyone for answering the questions, and sometimes it's not easy when you're just put on the spot there, so thank you for providing your answers as clearly and as concise as you can.

What we will do, though, is we recognise that we haven't always been able to provide a full answer, and we'll look to provide a full answer in the follow up with the question and answers that have been submitted, so people will receive that. We've also had, as in the previous session, reference to the slides, and we'll make - don't worry. If anyone's lost Internet connectivity throughout this session or whatever, we'll make sure you have a copy of the session and you haven't missed anything.

So we're just going to close with a couple of questions for people. Some live polling questions should be appearing on your screen. They happened last time around, so I can't see it, so hopefully it's all there. We're going to ask the first question of you, which is do you feel more informed about GDF and the Copeland Working Group after this session? So if you could just pop that up on the screen, that would be great.

Of course, when you've answered that, when you've submitted that, one of the things I mentioned is that this is the first of a number of subscript conversations that we're going to be having, and through those engagements that we're having, through various different means, via social media or whatever that would be, and hopefully in person will be great when we can get to that stage, when the measures are lifted. But we're going to start

having these conversations. What comes out of them will inform what happens next.

Geology of the Copeland area, GDF and the environment, tourism, the economic benefits, the economic impact, all of this stuff is being on the table. So we're going to ask you what do you want to see discussed in these future webinars? The last thing I want to make a point is we want you to indicate. Please indicate if you wish to go on our mailing list to receive our e-newsletters, because we'd love to keep you informed. You've taken the time out to join us this evening, and we'd love to be able to keep you informed and keep this conversation going so that when we talk about meaningful engagement, we mean it, and actually it is about having a genuine conversation with the people in Copeland.

I'm going to say a big thank you to everyone for joining us. It's 19:58 on my clock, so that should give us all time now to move to our doors, so a big thank you and goodnight, everyone.

END OF TRANSCRIPT