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**Theddlethorpe
GDF Community
Partnership**

**THEDDLETHORPE
& MABLETHORPE**



Voice

Issue 6: Summer 2024

Supporting community engagement about a Geological Disposal Facility (GDF)



David Eastwell, from Nuclear Waste Services (NWS), with Partnership members Cllr Claire Arnold and Gareth Rowland, finding local samples in the core store at BGS

Three key questions

Inside, we answer three main questions to help you understand more about a Geological Disposal Facility (GDF) and why we need to deal with our country's higher activity radioactive waste:



What is a GDF?



Why is a GDF needed?



Is it safe?

Find out more

on Pages 3, 4, and 7

Introduction to geology for Partnership members

A GROUP of Partnership members visited the British Geological Survey (BGS) near Nottingham to learn about the studies being carried out to understand the rocks in our area.

They found out more about the work of 'national geoscience' – in other words, how we understand the geology of the UK.

BGS staff explained how they manage the National Geological Repository, which has the largest collection of geoscience samples from the UK. The team there helped our Partnership members to understand the important role of the BGS in the analysis of the rock and data.

“What a revelation to find out what rocks are below us and see how the BGS is putting all the data together in a format for us to understand.”

- Gareth Rowland

Our group was able to see a 3D model and seismic data of the local area, showing the rock layers deep underground and below the seabed. This was followed by a tour of the core store where the BGS keeps many of its rock samples.

The Partnership also had the opportunity to speak to experts and ask questions.

Part of the visit included the chance to see scientists at work testing and analysing samples in the rock analysis laboratories.

BGS works with and advises nuclear waste organisations around the world.

The team there provides impartial and independent geoscientific advice to other organisations, including industry, academia, governments and the public.

The time spent at the BGS was both informative and interesting and allowed the Partnership group to see and understand a bit more about what is deep underground.

Read our full story about how Nuclear Waste Services (NWS) is analysing the geology of your local area on Page 4

Community group's concerns about the GDF project – and NWS's reply

Bringing power to the site

By Ken Smith, Chair of GOTEC (Guardians of the East Coast)

THE GDF PROJECT represents major problems for the local infrastructure. Not least of these is the electricity supply.

The Gas Terminal had to have its own power station because the local grid didn't have enough capacity.

A GDF would require far more than the Gas Terminal ever did. Each piece of machinery below the surface would have to be electric. Tunnel boring machines, trains to transport the waste to its destination, hoists to lift it into place, all powered by electricity.

The demand for power is something most of us can barely imagine, so where will it come from?

The plans for the site include an emergency power supply capable of running all systems necessary to support life and evacuate the underground works. An on-site power station capable of supporting the

operation would be too large and require a lot of fuel to be brought to the site, so it would be necessary to give the site a direct connection to the National Grid.

“The demand for power is something most of us can barely imagine, so where will it come from?”

Grimsby West is the nearest substation that could handle the power, so we are faced with 30 miles of power transmission lines either overhead on pylons or underground.

Overhead supply would be cheapest and easiest;

it would also be the quickest way to get sufficient power to the site.

However, this would have a significant visual impact on all the communities between the Grimsby substation and the site at Theddlethorpe.

The visual impact and resulting opposition might make NWS opt for underground transmission lines. We already know the level of disruption caused by the Viking Link. With more than 30 miles of cables to run from Grimsby West, running the cables through farmers fields and under roads and drains is going to cause major disruption and inconvenience.

This is just one of the things people must think about when making their decision.



OPINION RESPONSE

NWS responds: plans on power for a GDF

NUCLEAR WASTE SERVICES will need to ensure there is a safe and secure power supply for a GDF to be constructed, operated, and closed safely and securely.

The GDF is a long term project which will need to be developed over many years during which options for power supply will be continuously evaluated. NWS is at the early stages of evaluating sites for a GDF and it is too early to definitively state how power supply will be managed. It is appropriate that options should reflect the energy supply

environment in place at the time we are applying for consents. There will be opportunities for anyone to have their say on the GDF through the development consent order planning process.

As we have seen over the last decade the supply of power to the UK has changed enormously and options for secure supply continue to be innovative and green. Consideration of the options for power supply for a GDF will continue to be considered through site evaluation activities.

Differing opinions, we want to hear yours

ON a large-scale project such as a Geological Disposal Facility (GDF), there will be differences of opinion and thoughts about how the UK deals with its nuclear waste and the proposed method of geological disposal.

The role of the Community Partnership is to be the key vehicle for dialogue between the community and NWS, allowing people to discuss the project and have their concerns heard and questions answered.

Join the conversation

Conversations with the community will take place alongside the work required to explore the area to determine its potential suitability to host a GDF.

We welcome feedback and would like to share your thoughts in future issues of this newspaper.

Space for your voice here

We are happy to promote your voice on this page. Do you have a story or something you wish to raise and share about geological disposal and the process?

Fill in the form on the 'Contact Us' page of our website (address below) and a member of our team will be in touch.

Are you a member of a local group?



We would like to come and chat to your group, listen to your thoughts, answer your questions and provide information to help you understand more about what a GDF is and could mean for this area. Get in touch via the number or email below.

If you would like us to attend one of your future meetings and answer questions, please get in touch:

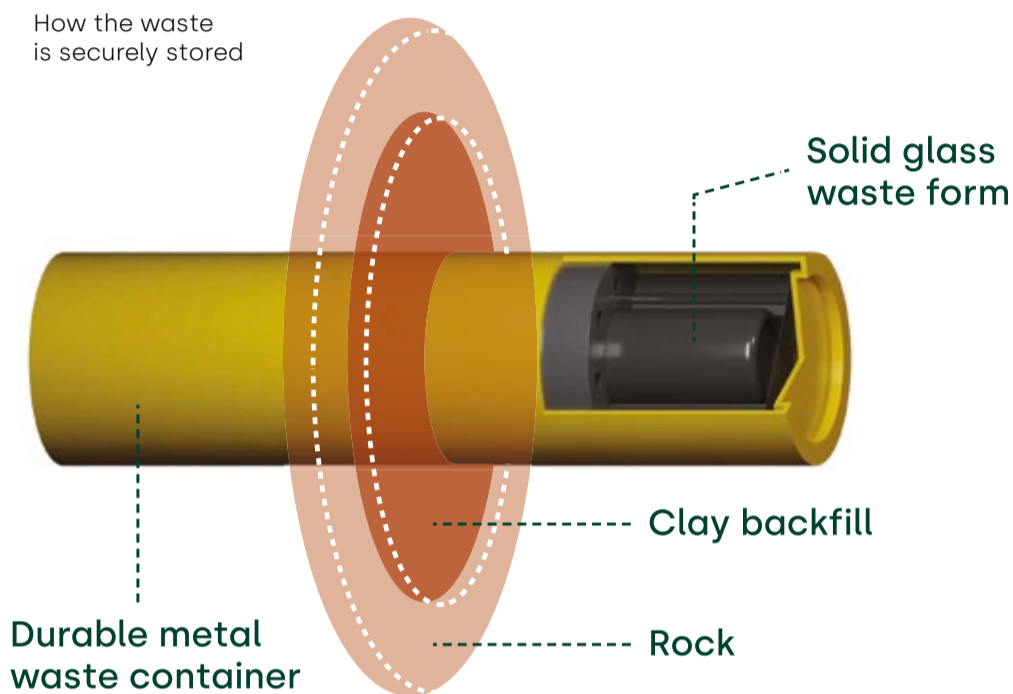
Call the NWS Helpdesk on: **0300 369 0000** or email us at **GDFinfo-Theddlethorpenuclearwasteservices.uk**
You can also use the form on our website, **theddlethorpe.workinginpartnership.org.uk/contact-us/**
Those with hearing and speech impairments should please call via **Relay UK** on **18001** (all calls are charged at local rate).

Theddlethorpe
GDF Community
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Digging below the surface

What exactly is a Geological Disposal Facility?

How the waste is securely stored



YOU might have heard the term 'GDF' being talked about. This stands for 'Geological Disposal Facility'. But what is a GDF, exactly? And what is it for?

The facility is designed to permanently and safely dispose of nuclear waste. Most of a GDF is built deep below the surface. We're talking up to 1,000 metres underground. That's three times the height of Britain's tallest building (the Shard in London).

Multiple barriers keep people and the environment safe."

Packaged waste would arrive by rail at the GDF surface facility, to be disposed of deep underground via specially engineered tunnels.

With a GDF, a combination of natural and man-made barriers are put between people and the waste. These barriers:

- Isolate the radioactive waste in sealed underground spaces between 200m and 1000m below the surface.

- Contain the radioactivity while it decays naturally over time.
- Prevent radioactivity from ever reaching the surface in levels that could cause harm. A GDF will isolate and protect the waste from all activities above ground, including climate change.

IT WON'T NEED ANY ONGOING MAINTENANCE

Once the GDF is full, the facility will be permanently closed. Unlike the surface facilities used today, which need continuous maintenance to keep them secure and in good condition, a GDF will not need any further maintenance.

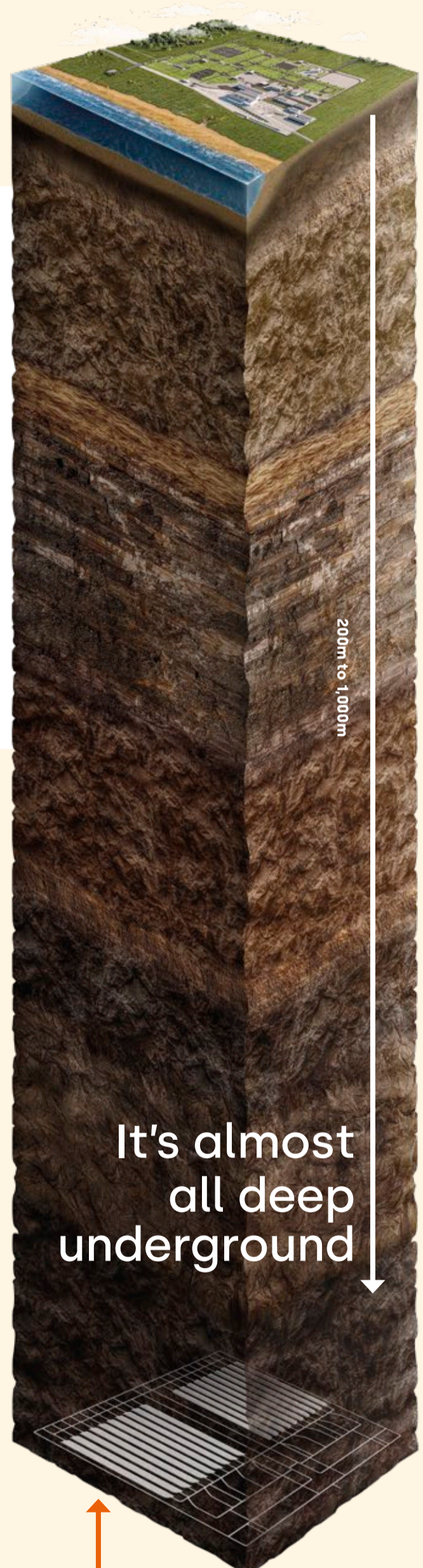
IT IS THE AGREED APPROACH INTERNATIONALLY

Sweden, France, Canada and Switzerland are some of the other countries that are also developing GDFs and Finland's GDF should begin receiving waste this year.

Find out more about why the UK needs a GDF on page 4. Learn about GDF projects in other countries on page 5.

Waste would be disposed of up to 22km from the coast, in the rock under the seabed

It's almost all deep underground



Understanding the rock below ground

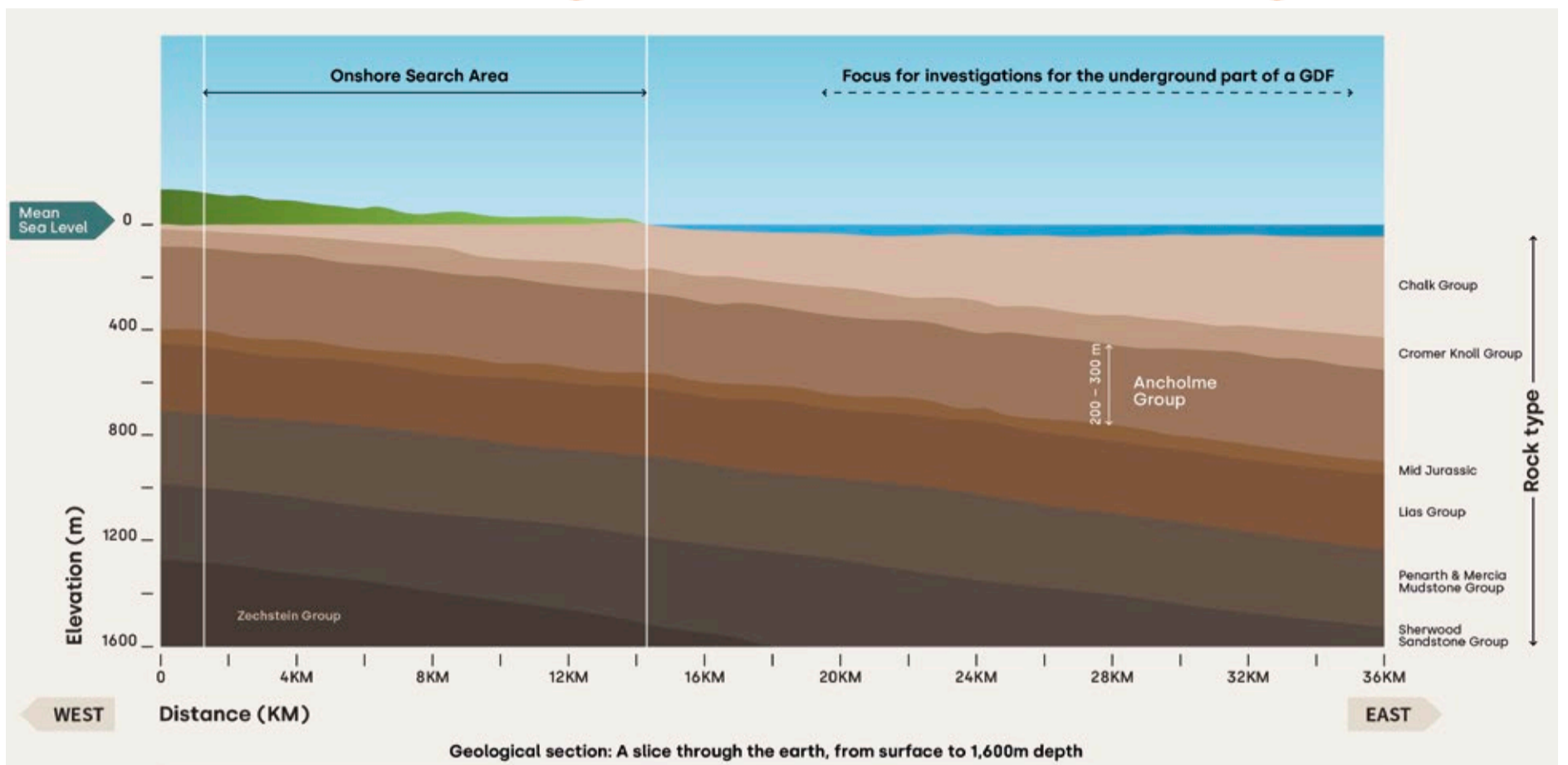


Illustration 1

Why does the UK need a Geological Disposal Facility?

NUCLEAR technology generates around 15 per cent of the UK's electricity. It powers our homes and is used for medicine, industry, defence and research.

This creates waste materials which need to be disposed of safely, securely and responsibly for the long term.

WHAT HAPPENS NOW

Existing waste generated over the past 70 years is currently safely stored above ground at more than 20 sites across the UK. These stores need to be monitored, refurbished and regularly replaced to keep the waste secure.

DELIVERING A SAFER FUTURE

Today, we are faced with the challenge of cleaning up the existing waste in a safe and permanent way.

Many other countries face this same challenge and there is agreement around the world that a Geological Disposal Facility (GDF), deep underground, is the solution. NWS, the GDF developer, is looking for a suitable site and a willing community.

NWS has been carrying out studies to understand the Theddlethorpe area's geology, to see whether it is suitable to host a Geological Disposal Facility (GDF).

ROCK FORMED MORE THAN 150 MILLION YEARS AGO

The rock of interest is called the Ancholme Group, which is Upper Jurassic and formed more than 150 million years ago. It was formed from sediments that have been deeply buried for a long time, under great pressure, turning them into rock.

WHY THE ROCK MIGHT BE SUITABLE

This type of rock has several key features which make it potentially suitable for hosting a GDF. They have very low permeability, which means they can act as

a highly effective natural barrier to the flow of liquid. The Ancholme Group is very similar to the rock formations being considered to host GDFs in France and Switzerland.

LARGE DATA-GATHERING EXERCISE

In the UK, geological data has been collected over many decades to support industries including oil, gas and mineral exploration, construction, tunnelling and mining.

Data from these past activities – including seismic surveys and boreholes – are stored in archives such as the National Data Repository, the UK Onshore Geophysical Library and the National Geological Repository.

Over the past two years, NWS has undertaken a large data-gathering activity and

has obtained the following information:

- More than 200 historical borehole records
- Over 4,000 line kilometres of 2D seismic data
- Approximately 350 square kilometres of 3D seismic data.

Each of these has been carefully checked for quality before being included into the NWS geological database.

Much of this data has required additional work to be undertaken to bring them up to a suitable standard and quality.

NWS has used the data to develop an understanding of the subsurface and they are being used to support initial engineering and safety case feasibility studies.

Learn more at theddlethorpe.workinginpartnership.org.uk/finding-a-suitable-site

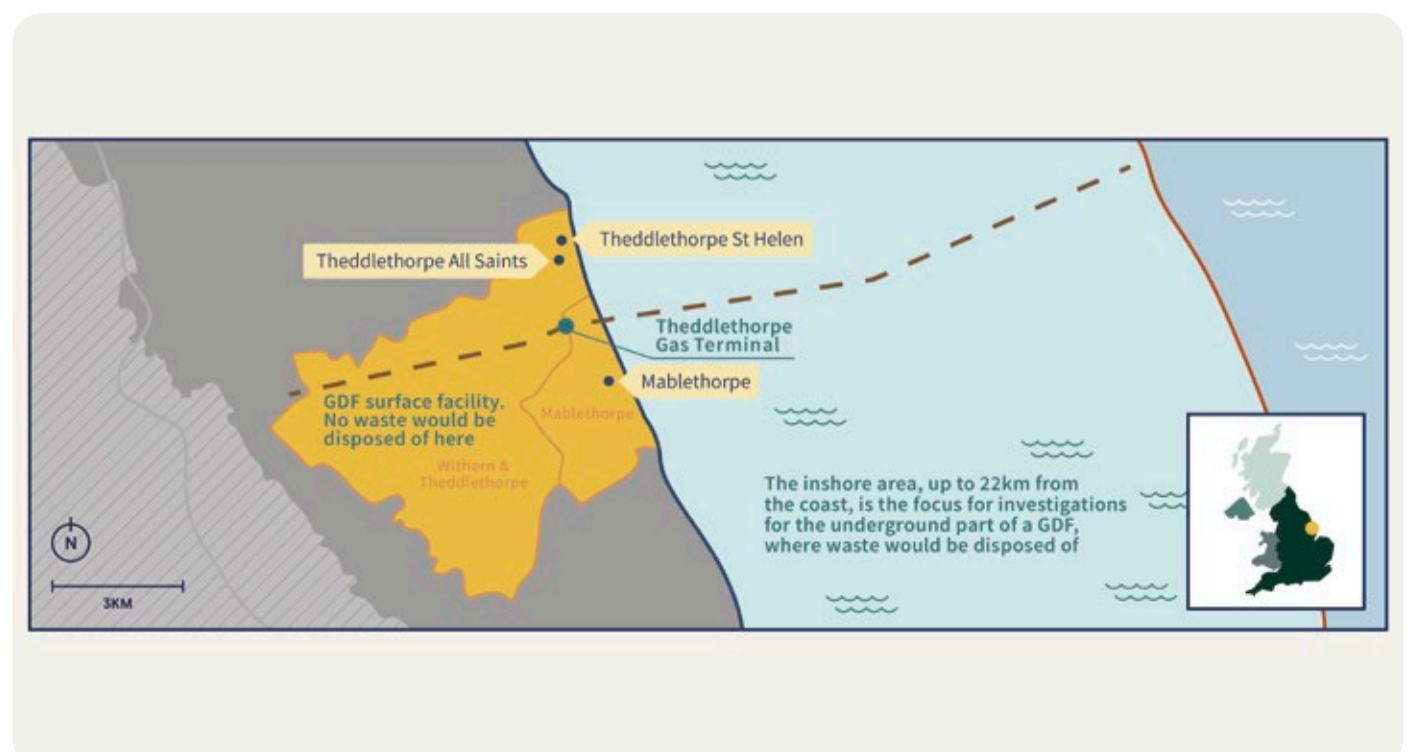


Illustration 2: Map showing location of geological cross section (dashed line) from illustration 1

Which other countries are considering a GDF?



1. Argentina	5. France	9. Netherlands	13. Lithuania	17. Bulgaria	21. India
2. USA	6. Switzerland	10. Germany	14. Czech Republic	18. Hungary	22. China
3. Canada	7. UK	11. Sweden	15. Slovakia	19. Slovenia	23. South Korea
4. Spain	8. Belgium	12. Finland	16. Romania	20. Russia	24. Japan

We all benefit from nuclear technology, around our homes, in medicine, defence and many other ways – and we have done for decades. But what to do with the higher activity waste is a huge challenge.

A WORLDWIDE SOLUTION

When it came to solving this challenge, scientists and engineers around the world took inspiration from geology and fossils to design a safe and long-lasting solution.

There is international agreement that the solution is geological disposal. It is the safest, permanent way to protect people and the environment.

As we continue to talk about a potential Geological Disposal Facility (GDF) and whether it's right for our area or not, a number of countries, including Sweden, Finland, France, Canada and Switzerland, have already started plans for their own GDFs.

- In **Canada**, developers Nuclear Waste Management Organization (NWMO) began the process of selecting a site in 2010. Twenty-two

communities expressed an interest in learning more and exploring their potential to host the project.

- Two areas now remain – in Ignace in northwest Ontario and South Bruce in southern Ontario. The NWMO is planning to choose a site this year. It is continuing to engage with the communities and is looking for new ways to share knowledge in the potential host areas.
- In **Sweden**, the government has approved the building of a GDF in Forsmark, Östhammar Municipality.
- In **Switzerland**, Nagra (the National Cooperative for the Disposal of Radioactive Waste) has proposed Nördlich Lägern in the north of the country as the safest site for a GDF.
- And in **Finland**, Posiva Oy is the first nuclear waste management organisation

in the world to start final disposal of spent nuclear fuel by 2024. Its deep geological repository, named Onkalo, should be operational within the next year.

Posiva received the construction licence from the Finnish government in 2015. The repository will be constructed to a depth of 400–430m. Approximately 10km of tunnels have been excavated in the hard solid rock beneath the surface in Olkiluoto. During the final disposal operations, 40km of new tunnels will be created.

WHY DO WE NEED TO THINK LONG TERM?

Neil Hyatt, Chief Scientific Advisor to Nuclear Waste Services (NWS), said: "Technically, it is feasible to repackage the waste every few decades and build

new stores. However, this is effectively kicking the can down a never-ending road.

"It would be leaving the cost, risk and responsibility of managing and safely disposing of waste to future generations who did not benefit from the energy generation."



What do you think?
Get in touch with us by scanning the QR code



Funding for the community continues

New ovens provide hot food and support for local venue

SOMETIMES, even a small grant from Community Investment Funding (CIF) can make a really big difference. Mablethorpe OAP Association had cooked up a long-term plan to cater for future events but needed two new ovens.

The group applied for funding and we were pleased to award £650 to buy and install these ovens at their premises on Waterloo Road.

The Association can now provide hot food to people attending their events. The working kitchen also makes the venue a much more attractive place to hire out, which will help raise vital future income from bookings.

The Association had previously struggled to access funding for the ovens and approached the Theddlethorpe CIF team in May 2023.

The team worked together closely with the Association to develop the idea and offered support throughout the application process.

Mablethorpe OAP Association has about 50 members and welcomes



The Association's Vera
Jean Cheetham and
Anthony Cheetham

anyone over the age of 50 to join. The group holds events, which are open to the public, including weekly coffee mornings and monthly social events.

And now that this valuable community service has a fully working kitchen, the hall can be hired out by other groups and for private events.

"We're so pleased to have been able to support Mablethorpe OAP Association with their project and work with them to help make both their group and hall sustainable for years to come," explained NWS' Grants Manager.

"With a dedicated team and available funding, our aim is to help others in the community."

Last year, the GDF Theddlethorpe Community Investment Funding provided a vital lifeline for our group to buy and install new cookers, which mean that we can now provide hot meals for our members at our weekly coffee mornings."

— Kathleen Broadhurst,
Mablethorpe OAP Association

A COMMUNITY Investment Panel (CIP) has been established to award up to £1 million of grants per year from the Theddlethorpe Community Investment Funding (CIF). This funding is for the benefit of residents in the electoral wards of Withern & Theddlethorpe and Mablethorpe.

The panel has nine members:

- Four from the Community Partnership
- Three co-opted from the community – providing local knowledge and experience
- Two from NWS, holding the positions of fund holder and grant administrator.

The panel members will:

- Consider the needs of residents and the Search Area
- Meet regularly to consider the funding applications
- Make decisions to award the grants.

Another £1 million awarded

Our second year of funding finished at the end of June. We are delighted to say the panel awarded a share of £1 million to 16 projects in the area. More information on these in the next issue. The Partnership have another £1 million available from 1 July. We encourage people to submit applications if you have a funding need.

Grants from the CIF may be awarded for projects and schemes that do the following:

- Conserve or enhance the natural and built environment
- Provide economic development opportunities
- Improve community wellbeing.

Who can apply for funding?

Anyone can apply – we are open to applications from community groups, public sector organisations and businesses that want to do something

to benefit the community. If you're not sure where to start, the NWS grants team can help.

We're keen to hear from you!

To have a chat about your project or idea, the funding needed and how we can help you with your application, phone us on **0300 369 0000** or email **communityinvestment-theddlethorpe@nuclearwasteservices.uk**. More information is available on our website at **theddlethorpe.workinginpartnership.org.uk/community-investment-funding**

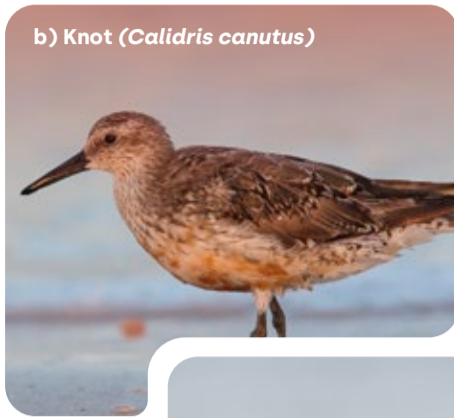
Funding feedback

Twenty four projects received funding during the last two years and are making good use of the money awarded to them. We will report on their progress in future issues.

Aerial surveys to continue



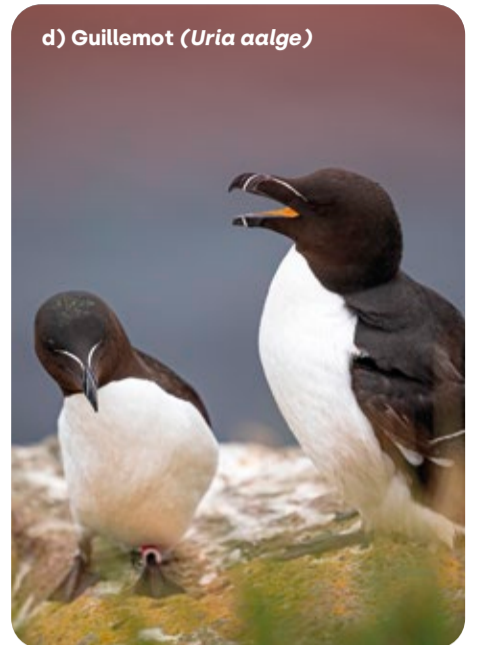
a) Dunlin (*Calidris alpina*)



b) Knot (*Calidris canutus*)



c) Oystercatcher (*Haematopus ostralegus*)



d) Guillemot (*Uria aalge*)

NUCLEAR WASTE SERVICES (NWS) has carried out six marine aerial surveys off the coast of East Lindsey, once every month since since October 2023. This research has provided information on the birds and marine wildlife in the inshore area.

Two planes flew during daylight hours, and they used high resolution video cameras to take pictures of the different species in the air or on/in the water. These images were looked at by computer software and trained ecologists.

BIRDS AND WILDLIFE SPOTTED

The most common birds that have been seen are:

- a) Dunlin
- b) Knot
- c) Oystercatcher
- d) Guillemot.

Also spotted during the surveys were:

- e) Grey seal
- f) Harbour porpoise
- g) Harbour seal

The surveys were initially carried out for six months, during the autumn and winter months. Data to cover all the seasons is required and the surveys will continue.



e) Grey seal (*Halichoerus grypus*)



f) Harbour porpoise (*Phocoena phocoena*)



g) Harbour seal (*Phoca vitulina*)

SPRING AND SUMMER SURVEYS

A second phase of these environmental baseline surveys began in April. These will run until October to capture data from the spring and summer season.

The surveys will be dependent on the weather in terms of visibility, cloud height and sea conditions. Flight dates can therefore change at short notice. Please check the Partnership website

for up-to-date information on survey flight dates. Similar surveys are being carried out in Mid and South Copeland in Cumberland, off the west coast.

The data from our surveys and other environmental baseline data will help us to understand whether an area is suitable for a GDF.

Find out more at theddlethorpe.workinginpartnership.org.uk/finding-a-suitable-site

Safety first

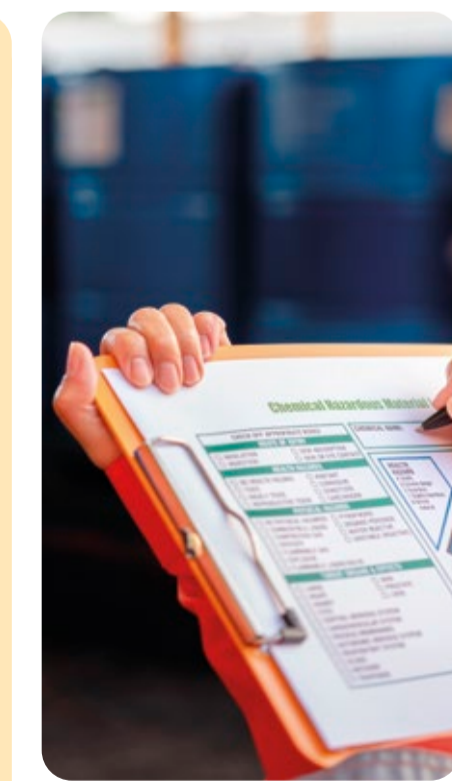
'How safe is geological disposal?' We are asked this question a lot by members of the community – and it's not surprising this is at the forefront of people's minds. Here's what NWS has to say...

THE protection of people and the environment is our absolute priority. We must demonstrate to regulators that a GDF will be safe. In other words, if it can't be shown to be safe, it can't be built.

- There is international agreement that geological disposal is the safest permanent solution to dealing with radioactive waste (see page 5).
- The environmental and nuclear regulators will ensure that a GDF will meet the rigorous standards required for

environmental protection, safety and security at all stages of its lifecycle. Our regulators are the Environment Agency (EA) and the Office for Nuclear Regulation (ONR). "A GDF cannot be built and operated unless it can be robustly demonstrated to the regulators that it will be safe," said Liam Payne, NWS Research Manager

- Multi barriers will keep the waste safe and stop the radiation from ever reaching the surface, to protect people and the environment (see page 3).



- We will present safety arguments for all aspects of a GDF – from transporting waste to its design, construction and operation in the long term following closure.

Selecting a site that's right

NWS is looking at six key areas, or 'siting factors', as it searches for a site. All the work and studies carried out will focus on key issues, including:

SAFETY AND SECURITY
– is the rock suitable?

COMMUNITY
– what would be the impact and opportunities locally?

ENVIRONMENT
– is the area suitable?

TRANSPORT
– what are local transport links like?

ENGINEERING FEASIBILITY
– is construction possible?

VALUE FOR MONEY
– is it value for money for taxpayers?



Join the conversation



WHEN the time comes for the community to decide on whether a Geological Disposal Facility (GDF) is right for the area, our aim is to ensure that:

- Everyone has shared their thoughts and been part of the conversations.
- They have been able to see the information and results from the work by developer Nuclear Waste Services (NWS), as it becomes available.
- People have the chance to be involved and share

their vision for the area.

- Community Investment Funding has been used to benefit residents and improve facilities and opportunities for people. We intend to offer a range of activities and ways of providing information as it becomes available – details will be provided in future issues.

Look out for these activities and please get involved. We want to hear from you!



Understanding your concerns

By Jon Collins, Interim Chair of the Partnership

THE Partnership has been busy planning communications and engagement activity, and managing the second year of Community Investment Funding (CIF).

You'll be seeing the NWS engagement team out and about, talking to people and answering questions or concerns people may have.

SAFE

In this issue of the *GDF Voice*, we are addressing

key questions to explain why a Geological Disposal Facility (GDF) is needed, why this is safe and what other countries are doing to address similar nuclear waste challenges.

We have started work to create a 'Vision' for the Search Area, in preparation for engagement with local people and businesses.

This asks the question, 'what do we want for our community and what needs to change to make that happen?'

Finally, it is time to move on from an Interim Chairperson and appoint someone to the role.

Look out for an update in the next issue of *The Voice*.

To learn more about the role of the Community Partnership and a GDF, visit our website at theddlethorpe.workinginpartnership.org.uk or please email us at GDFinfo-Theddlethorpe@nuclearwasteservices.uk or follow us on social media (details below).



Who we are...

Meet the members of your Community Partnership

In this issue, we would like to introduce local businesswoman **Helen Fisher**

participate even in a small way in shaping the world around us and applying to the Partnership seemed like an interesting opportunity.

What do you bring to the Partnership?

My main aim is to help in ensuring the community has the chance to be informed and involved throughout the process. We should explore ways to provide clear information, allow people to voice their concerns and questions, and invite them to take part in the 'Visioning' process. This development can bring opportunities in the short and longer term and I'd like to assist people in being

well informed so they can make the most of that.

What do you look forward to doing as a member?

This process is unique and unprecedented and it's going to be interesting to see how it unfolds. I enjoy the idea that it could become a reason for us to connect more closely together as a community. I'm looking forward to exploring the 'Visioning' aspect and we can learn a lot from one another if the community chooses to become engaged. If you would like to know more about geological disposal and get involved, then please look at the website and follow the Community Partnership on social media.

What made you apply to be a member of the Community Partnership?

The words 'nuclear waste' are scary and I was anxious about the long-term impacts this might have on the local ecosystems. I learnt there were other locations in the UK being considered and the community would need to show support for the project for it to go ahead and decided that I'd like to get involved. I feel it's important that we take a role where we can, to

GDF talks coming soon!

NWS events providing information for you.

Sessions planned on geology, safety, transport and more.

Ask questions and chat to teams of specialists in these subjects.

Dates, times, and venues to be confirmed.


Event details will be provided on our website events page when they are available.


Find out more by scanning the QR code or visit theddlethorpe.workinginpartnership.org.uk/get-involved





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