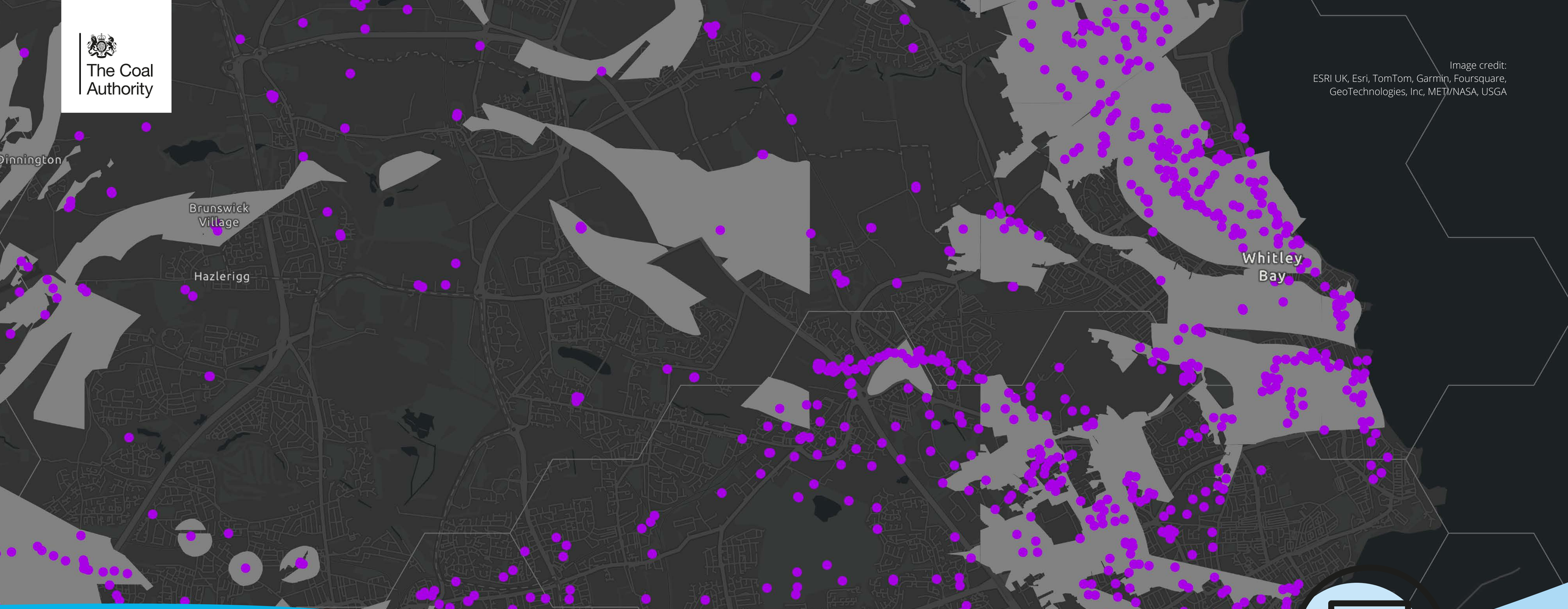
The Coal Authority



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ESRI UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGA

Data and Information Plan
2024 to 2027

Who we are

The Coal Authority exists to manage the legacy from Great Britain's coal mining past. So much of our 3 nations' history has been shaped by the natural minerals under our soil. None more than coal, which has provided heat, steam and power for hundreds and hundreds of years.

Coal was nationalised in 1947, which is why the UK Government own the majority of underground workings and remaining coal reserves under England, Scotland and Wales, along with the responsibility for many of the associated challenges and hazards.

As domestic coal mining has reduced, and humanity recognises the impacts of burning carbon on our climate, we are seeking alternative ways to maximise low carbon opportunities from closed and abandoned mines such as mine water heat networks. These can provide heat for homes and businesses, across communities whose identity was shaped by coal, while also supporting decarbonisation and levelling up outcomes for communities who could now benefit from low carbon, social and economic benefits from the warm water in the historic mining assets.

We work with partners, communities and customers to listen, learn and take practical action to support them to create safer, cleaner and greener communities.

We are a 24/7 emergency response organisation, with staff across Great Britain ready to respond and take action to keep people safe and provide peace of mind.

Extensive coalfields exist across Great Britain and it is estimated that 25% of homes and businesses are located above former coal mines. The vast majority of people will never experience any problems from that, but for those who do we are here to provide support and expertise.

The Coal Authority is a non-departmental public body and partner organisation of the Department for Energy Security and Net Zero.

Click or scan to view our Business Plan

Aerial view of the Horden mine water treatment scheme

Foreword

Paul Frammingham
Chief Finance and Information Officer

Kate Denham
Non-Executive Director

We are delighted to share with you our Data and Information Plan which explains how we will continue to develop our data and information over the next 3 years and beyond. As a society we are living through a period of rapid technological change and innovation driven by exponential growth in computational power and the proliferation of data. We believe that data-driven innovation can transform how we and others succeed in making a better future for people and the environment in mining areas.

We hold a unique and extensive collection of data and information that details Britain's mining legacy and its impacts on the environment. This, combined with our people's deep understanding of the risks and opportunities that past mining presents, sits at the centre of everything we do.

Our authoritative data are used to identify hazards, respond to incidents and emergencies, and to design systems that help prevent mine water from polluting drinking water and rivers. Our data includes underground mine workings that sit beneath approximately 25% of properties in Great Britain. We support the property market on the coalfields by providing information that is used to produce 315,000 mining reports each year, enabling developers, homeowners, infrastructure providers and others to make informed decisions. We are working with partners to find new ways of accessing and using our data so that faster decisions can be made to enable property transactions on the coalfields.

We will continue to modernise our data and information to ensure that it remains authoritative, relevant and is used to enable wider outcomes for the environment and communities we serve. This includes providing new data that will enable the take up of mine water heat opportunities at scale providing stable, low carbon heat for homes and businesses.

We recognise that others use our data and information to make better, evidence-based decisions and will focus on activities that increase these opportunities. We will make more of the information we capture through our activities available online and actively support initiatives that encourage others to innovate with our data.

As a public body that holds nationally important geospatial data, we work with the Geospatial Commission to look at how, by working together with our government partners, we can help to find solutions to society's biggest challenges including climate change, energy security, economic growth and national security. The ambitions laid out here support the UK Geospatial Strategy 2030 and the National Data Strategy.

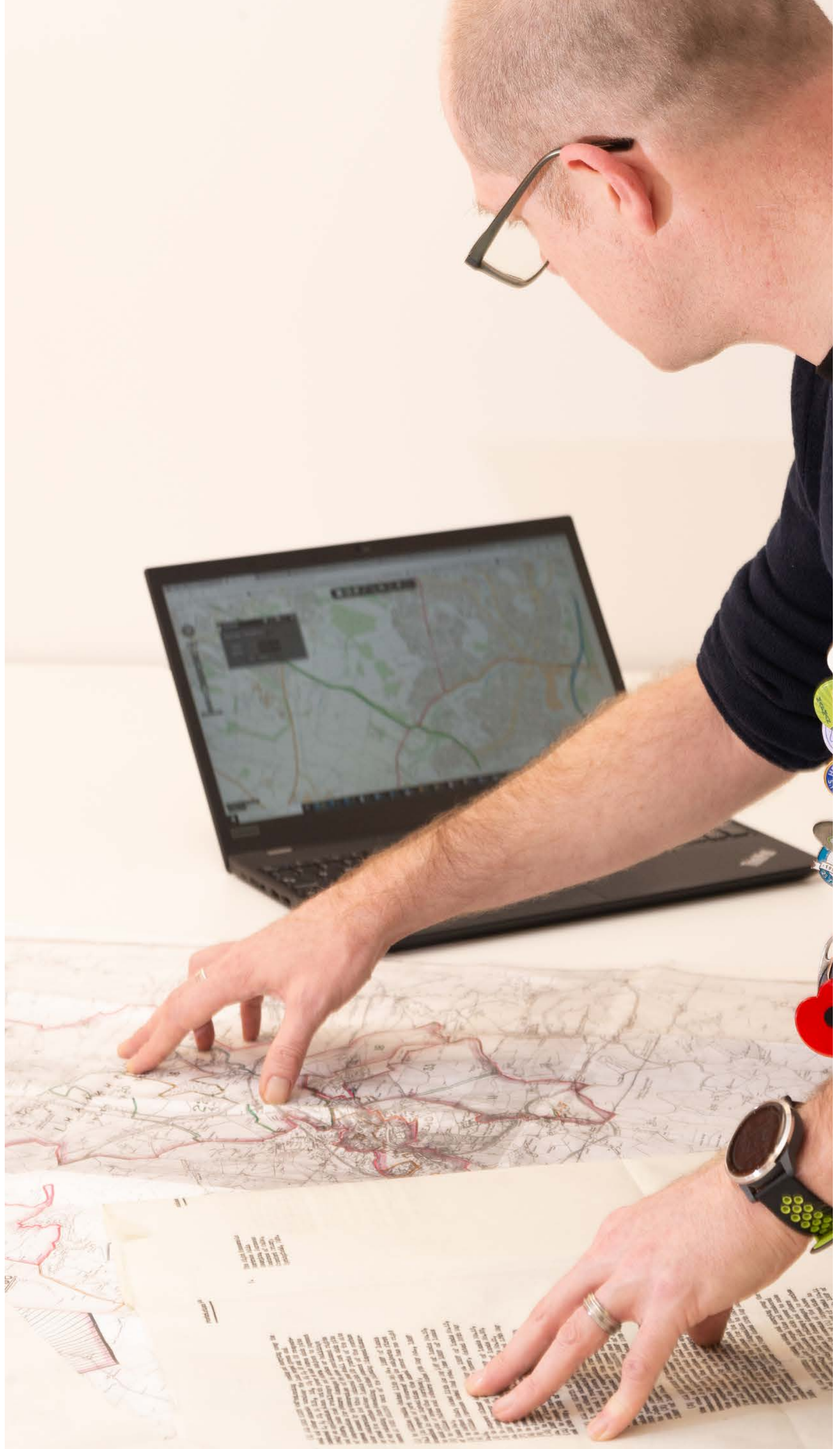
We are excited by the opportunities we have. We will achieve our mission by continuing to learn from what we do and by listening to others. We always welcome suggestions on what we may do differently or how you think we can do better.

Click or scan to view our Business Plan

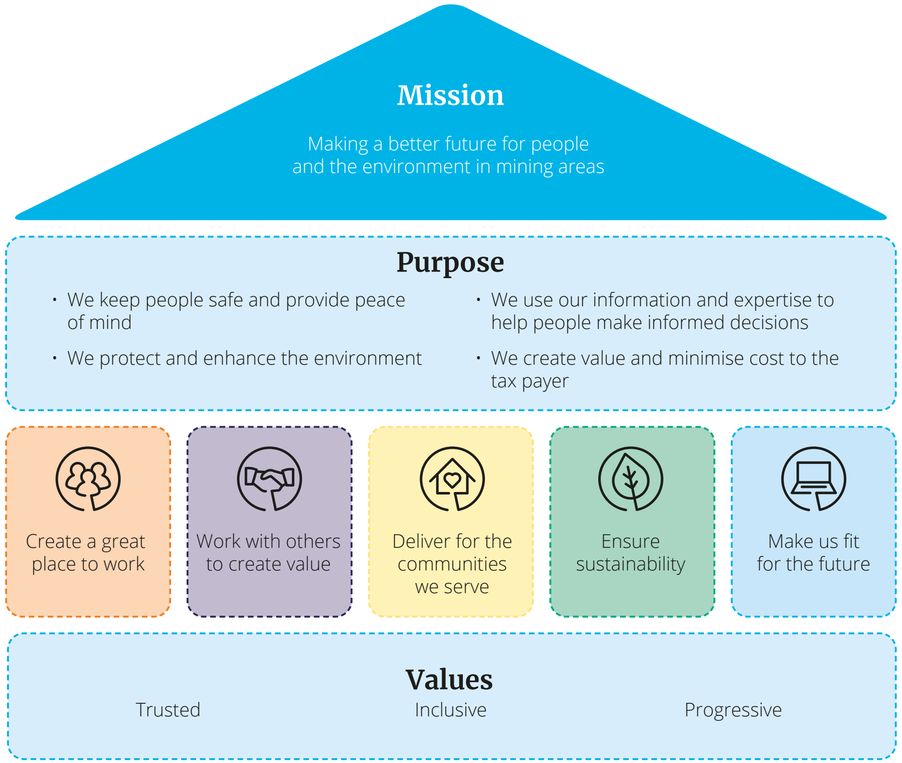
Click or scan to view our Sustainability Plan

Click or scan to view our By-Products Framework

Click or scan to view our Customer Plan



Our mission, purpose and values



Our values

Trusted:

- we act with integrity
- we are open and transparent
- we deliver on our commitments

Inclusive:

- we promote a culture of mutual respect
- we recognise that our differences make us stronger
- we work with others to achieve our mission

Progressive:

- we are open minded and innovative
- we recognise that the past can help us shape the future
- we listen and learn

A FAIR system

Our data and information plan is one of the underpinning elements of the "Make us fit for the future" theme of our business plan which describes how we will develop modern, resilient systems and processes that are fit for the future, support our people and make it easier for our customers to do business with us. To achieve this we will continue to develop and update our data and information to meet the needs of our business and customers and ensure we make our data more FAIR: **Findable**, **Accessible** by an increasing number of users, **Interoperable** with other data and systems, and ensuring it can be **Re-used** by others in their own projects and services.

F indable

A ccessible by an increasing number of users

I nteroperable with other data and systems

R e-used by others in their own projects and services

Our data and information priorities

In an increasingly connected world, we recognise the important role that our data and information has in enabling us and others to make a better future for people and the environment in mining areas. We will focus on 5 priorities:

Managing our information

We hold the national collection of mining-related data and information. We will continue to invest in the management of these unique assets to ensure their long-term preservation for future generations, recognising that understanding our mining heritage is important in shaping our future.

Click for more information

Improving our data

We will continue to invest in our data to keep pace with the demands of our evolving organisation and the world around us. We will focus on data improvement and programmes that improve the accuracy and currency of our data alongside activities to ensure our information remains authoritative, trusted and relevant to the work that we do.

Click for more information

Sharing our information

We recognise that our information is not just important to us but is used by others to help their understanding and inform better decisions. To support others in their work, we will make more of our information available to those that need it.

Click for more information

Developing partnerships

We will work collaboratively with others to provide better and faster outcomes. We will continue to develop partnerships that help us to extend the reach of our information and support projects that generate new insights from our data.

Click for more information

Investing in our data architecture and skills

We will invest in our underpinning digital and data systems to ensure they remain accessible, efficient and resilient. We will continue to develop talent with expertise in data management, analysis, and interpretation, as well as building new capabilities in Earth Observation.

Click for more information

Back to our priorities

Managing our information

We hold the national collection of mine plans and records. These assets underpin much of our data and information and are key enablers to making a better future for people and the environment in mining areas.

Much of the knowledge we hold on Britain's mining past is held within our national collection of historical mine plans and records. It is an essential reference set that we and others use daily to help protect the environment, drinking water and the public as well as providing confidence to homebuyers, planners and developers on the coalfield.

Over the years, this information has been systematically scanned and captured into a comprehensive database of mining features which is also updated over time by the knowledge we gain from our ongoing operational activities. This database is used to underpin the advice provided in our mining report service and is supplied to third parties for their use in similar products. It is a core reference set we use when responding to incidents, helping us to understand the issues and plan our response. Information from the same resource is being used to support innovative solutions in addressing the risks of saline mine water as well as identifying areas with a mine water heat potential.

Taking a long-term view

It is important that we preserve the memory of Britain's mining past. Much of the information we hold represents a snapshot in time and describes an underground world that we are unable to access safely today. These are unique assets so we will continue to invest in the management of our data and Mining Heritage Centre to ensure the information we hold is preserved for long-term access and use.

Information governance

As a public sector body, we are responsible for managing our information on behalf of the taxpayer. We must keep it safe and secure, protect its intellectual property and comply with relevant legislation including the Data Protection Act, the Freedom of Information Act and the Environmental Information Regulations. We will continue to follow best practice in how we manage and share our information.

Connecting people to their mining history

We know that information can play an important role in better connecting people to their mining history and the environment in which they live and work. We will make more of our historic data assets available online so they can be easily viewed and accessed by everyone.

Click or scan to find out more about our Mining Heritage Centre

By 2027 we will

- Help to connect people to their mining history by making available online our historic data assets, including our plans and photographs.
- Work towards The National Archives 'Archive Services' accreditation, following good practice and applying the agreed standards for archive services.

Back to our priorities

Data improvement

Our authoritative data are used to identify hazards, respond to incidents and emergencies, and to design schemes that help prevent mine water from polluting drinking water and rivers. Our data support 25% of Great Britain's property market, enabling developers, homeowners, infrastructure providers and others to make informed decisions. We will continue to modernise our data so that they can be used in new ways and achieve wider outcomes for the environment and communities we serve.

Continuously improving our data

As the needs of our organisation and society evolve it is essential we invest in our data collections so that they remain authoritative, trusted and relevant and are able to be used in new ways by our customers. We will continue to invest in a rolling data improvement programme and we will seek opportunities to capture more information from our operational activities to update and enhance our data sets.

Building new data models

Using the latest technologies available to us, we will explore and build cases for new integrated underground models in targeted areas of Britain, where we will combine existing mining data with new information streamed from our sites. The models will represent a step change in our data capabilities and progress our understanding in areas like mine water heat recovery and climate change impacts to support our wider sustainability and value creation objectives.

Using Artificial Intelligence

We are already benefiting from Artificial Intelligence techniques that are extracting knowledge and insight from our databases. We will continue to build on this, exploring how we might thoughtfully apply AI to our existing data and archives to streamline our processes and cost effectively enhance our data collections.

By 2027 we will

- Continue to systematically review and update our mining data under a rolling data improvement programme.
- Look for opportunities to formally capture more data from our operational activities to update our information.
- Explore and build cases for targeted underground models of the coalfield that support understanding of mine water heat potential and the impacts of climate change.
- Invest in projects that utilise Artificial Intelligence to extract further knowledge and insight from our data and information.

Click or scan to find out more about the use of Artificial Intelligence at Wheal Jane

Above: Laser scan survey of a mine shaft below Kilbowie Road in Clydebank

Sharing our information

Back to our priorities

We recognise that our information, as well as supporting our operational activities, is used and valued by others. We will make it easier for people to find, access and use the information we hold to help them make decisions that benefit people and the environment in mining areas.

Updating online data services

We will update our offering of online data, proactively releasing more of our information in accessible and inclusive formats to maximise their use.

Making our data easy to find

We will continue to publish catalogues describing what information we hold so that others can easily find and use it. Information we hold will be shared under a fair and transparent licensing framework that encourages onward use, innovation and competition.

Sharing data on the environment

Alongside the extensive information we hold relating to mining activity, we collect data describing the condition of the environment in and around coal mines. This information can play a pivotal role in our understanding of the environment in mining areas and will enable us and others to make positive interventions on issues such as environmental protection, climate change and biodiversity. We will invest in services that provide better access to this data for others.

Supporting the public sector

We recognise the important role of the public sector in funding and delivering projects that support infrastructure and services as well as projects that protect our environment and contribute to Net Zero. We will remove commercial data licensing fees for public sector organisations such as health and emergency services, town, parish and community councils, and central government departments.

Fairly charging for our data

We will continue to operate a business model that allows us to invest in our data without imposing an unfair burden to the taxpayer. Understanding where the value lies in our data, whether that be financial, environmental and social, will allow us to offer both open and commercial routes and so underpin a sustainable programme of data maintenance and delivery. Where we charge, our prices will be reviewed to ensure they are fair and reflect the value of the data.

By 2027 we will

- Make more of our data available to view online.
- Maintain detailed metadata on data.gov.uk describing all our published datasets.
- Proactively release the environmental data and information collected from our monitoring sites.
- Supply our data to the public sector under zero cost licences.
- Provide guidance on our data-sharing framework, publishing our data licences and prices online.

Click or scan to find out more about Project Groundwater Northumbria

Developing partnerships

Back to our priorities

Partnerships allow us to focus on our strengths and benefit from the skills and experience of a wide network, leading to better and faster outcomes for all. We will continue to develop partnerships that create value and amplify the impact of the work that we do.

Aligning with the future digital property market

We will continue to engage with lending institutions, surveyors, solicitors and the wider PropTech* sector to ensure our data can be integrated into their current and future services. We will develop dynamic API† data and interpretation services to give confidence to those involved with buying and selling homes, land and property in coalfield areas.

Supporting research and development

We understand that impact is not just measured in financial terms, and we continue to look for ways to encourage the academic and research sectors to use our data and information. We will do this by making our data available to this sector at no cost, support third party suppliers who provide services into this area, and look to develop partnerships with research programmes that complement our own ambitions.

Delivering a positive customer experience

We have an established network of data customers who provide our data in their own reports and services to conveyancers, homebuyers and environmental consultants. These are valuable channels that extend the reach of our data, providing information and confidence on the coalfield. We will continue to work with these data customers, listening to their needs so we can make improvements in areas that make the biggest difference.

Working in partnership across government

Our close working relationships with our sponsor department and other public sector bodies are critical to our success. We will continue to work together to tackle society's biggest challenges, to build resilience and work towards a more sustainable future. As a partner body of the Geospatial Commission, we will continue to collaborate on activities that support the UK Geospatial Strategy 2030.

* Short for Property Technology and encompasses a wide range of digital tools and solutions to support the property market

† API: Application Programming Interface – software that defines how two applications communicate with each other

By 2027 we will

- Engage with industry partners to design data services for the PropTech sector.
- Seek out opportunities with partners to generate insight from our data.
- Have agreements with third party data providers to supply our data to different users and markets.
- Invest in cross-government knowledge sharing

Click or scan to find out more about Mine Water Heat

Back to our priorities

Investing in our data architecture and skills

Technology is evolving at a rate never experienced before. Cloud computing*, artificial intelligence† and augmented reality‡ are opening up new ways to store, process and analyse data. To successfully deliver our data and information ambitions we will evolve our underpinning data architecture§ so that we are fit for the future. We will continue to invest in our people to benefit from these technologies as they evolve and become established.

Ensuring data services that are fit for the future

We are already moving our digital infrastructure into the cloud and will look at ways to further benefit from the increased accessibility, efficiencies and resilience that this brings. This will include the development and deployment of online data services to extract and share information through APIs and the adoption of data standards to ensure our data is interoperable and able to be easily linked and used with other data.

Building capability in earth observation

We will look to capitalise on the Geospatial Commission's investment in remote sensing and earth observation and build our own capability in house. We will investigate how we can use these technologies to identify mining features and monitor hazards in mining areas.

Investing in our people

We will focus on growing our talent, designing tailored training and succession plans for our geospatial and data colleagues and continuing to develop talent in data management, analysis, and interpretation. This will extend to secondments and knowledge exchange partnerships with other organisations.

* Cloud computing: the delivery of different services through the internet, including data storage, servers, databases, networking and software

† Artificial intelligence: the simulation of human intelligence in machines that are programmed to "think" like humans

‡ Augmented reality: an interactive experience that combines the real world and computer generated content.

§ Data architecture: a framework that manages data and its flow through the organisation to meet the organisational objectives

By 2027 we will

- Release some of our data as 'API' data services.
- Implement relevant data standards to ensure our data can be embedded into today's systems and is fit for tomorrow's technologies.
- Build Earth Observation capabilities.
- Design tailored development plans for our geospatial and data teams.

Click or scan to find out more about our public safety and subsidence team

Lidar image courtesy of Environment Agency

Our journey so far

Our information assets date back centuries. Over the years we have invested in and transformed our archive of mining records, combined it with data captured from our operational sites, to create an authoritative, relevant and essential collection of data and models that are fit for the future.

You can see an animation of our data and information work through history by clicking the QR code. Our latest update is that from 1 April 2024 we will be providing our data free to public sector bodies to support them in their work.

2024

Watch an animation to learn more about our data and information journey

Public sector bodies provided data for free to support them in their work

The Coal Authority

Making a better future for people and the environment in mining areas