

Everything must happen everywhere to tackle climate change

The Natural Environment Research Council (NERC) and the British Geological Survey (BGS) want to create two observatories to further understanding of the underground environment. One in Cheshire, the other in Glasgow. The BGS has been engaging with people about why we need to know more about what's beneath our feet and why Cheshire and Glasgow are great places for geological research. This year, Business Matters has published a series of interviews



with the UK's leading Earth scientists to explain why geology is vital part of tackling climate change. In this issue, we find out more about the current energy debate.

Cristina Chapman, UK Geoenergy Observatories engagement manager at the BGS and Energy Leadership Platform Advisory Board Member at the Chartered Institute of Public Relations (CIPR)

“Over the years, I’ve sat in many conversations about how we continue to meet rising demand for energy, while tackling climate change and managing environmental impact. I’ve heard from bosses getting energy into the heart of people’s homes, people facing the prospect of energy being extracted from beneath them, analysts working out how we get renewables to power the future, and many more besides.

The role of a professional communicator is not to participate in these conversations but to facilitate them. Our most important skill is listening: to what people want and need to know; who they want to talk to; what they have to say; and how they say it. Only by listening can we bring the right people together to improve the discussions to find better solutions.

As we spend most of our time absorbing what other people have to say, our insight is shaped by many perspectives. We learn a lot and we develop a comprehensive overview. Every now and then, we are asked to share it.



Last month was one such occasion. I was invited to speak at the UK launch of the International Energy Agency’s (IEA) 2018 World Energy Outlook about what it meant for engaging with people outside the energy industry. The IEA crunches the world’s energy data and each year explains what’s driving demand, how we’re meeting it, what markets are emerging and how we’re performing against carbon emission targets.

On the face of it the World Energy Outlook is bleak. Upward population growth. Upward demand across the world. Upward CO2 emissions. Slow renewables growth.

On that drizzly November morning in London as Britain's population of 69 million buzzed about their daily routines, just 80 people heard the CEO of The Committee on Climate Change Chris Stark call for 'everything to happen everywhere across everything'.

Against this outlook, I was asked to share my insight into how we develop sensible, clear and concise fact-based narratives about where we are and where we are going.

As I looked out across the crowd of the usual suspects in that safe London lecture theatre, I took a deep breath and told them they were asking the wrong question. Fact-based narratives are not lacking. Nor is the ability to explain them in a concise, clear and sensible way. What's missing is the appetite to bring together people unlike one other into a single conversation.

That morning, I championed the value of every community member, business, scientist and public official taking part in the energy conversation. Those against all activity in the underground environment. Those against the pursuit of fossil fuels. Those who look to the sun for the answer. Those who look to technology. Those who know we can't do without oil and gas. Those who know we need the underground to scale up renewables. Those who know that everything we depend upon either comes out of the ground or grows in it. Each narrative is clear and concise. Each perspective borne from knowledge and experience. Every position a valid part of the discussion and solution.

If everything must happen everywhere across everything to solve climate change, then everyone, everywhere must take part in the conversation to make the solutions work.

Our single biggest learning from engaging with people on our proposal – *which is simply that we need to understand more about the subsurface because it underpins every aspect of our lives* – is that so few forums exist in which the conversation about our resources reflects the complexity of the problem. Where they exist, none are inclusive.

It was late in our engagement programme that this penny dropped. We were one of the few, perhaps only, organisations providing an open forum in which anyone who wanted to contribute to the energy and climate change debate could do so.

Understandably people were frustrated. They had an important contribution and no way to make it heard. Conversation was, therefore, drowning in a good versus evil rhetoric. Discussion was short-circuiting in adversarial dialogue.



Then we showed up, in standard-issue BGS blue t-shirts with tea, biscuits and graphics. We showed up again. And again. And again. We met a diverse crowd. With diverse views. We saw the challenge from every angle. The economic bodies vested with sustainable growth. The innovators solving tomorrow's problems. The educators making the next generation work-ready. The industry drivers keeping the wheels turning. The community representatives taking care of life today.

The conversation people wanted to have moved way beyond the science of managing the subsurface through to politics, economics, ethics, morals and values. We stayed on the right side of the line. We are experts in geoscience and have a statutory duty to provide

independent evidence to everyone – whether you're in government, industry, academia or the public. So, we explained the boundaries of our expertise, facilitated debate, provided input on the science wherever appropriate, and signposted people to researchers, regulators, decision-makers, policy-makers or industry where questions were not ours to answer.

So very many geoscientists are excited by the UK Geoenergy Observatories as an opportunity for people to learn about the underground environment: Understanding that it feeds us, clothes us, cures us and keeps us warm, safe and dry. It's hard to dismiss the rationale that because we demand so much from it, we must take much better care of it. They hold great optimism that here is a chance to demystify the underground, shifting perception from the stuff of ancient myths and legends to images created by great data, scale and state-of-the-art modelling. Their enthusiasm for the potential knowledge gained is infectious: from how reservoirs affect the rocks to how quickly aquifers replenish.

As is so often the case when you open a conversation to impart what you know, what you discover is so much more valuable.

We've created many opportunities for people to find out about the importance of utilizing geoscience, data gathering, information and knowledge to meet our energy needs, tackle energy poverty, address climate change and improve environmental management. In doing so, we've begun to understand how to change the energy conversation.

It sets a challenge for us all – for every public body, academic institution, industry player and community member. Solutions can only be found when we include everyone who wants to be part of the conversation. It enables us to begin to understand one other. To develop trust. To hold an honest, two-way dialogue.



This means that, however incongruous and difficult it seems, the suits, scientists, number-crunchers, and policy-makers must stand alongside the nannies, farmers, engineers, teachers, landowners, industry executives and campaigners who want to be heard. Not just once but as the norm. Trust is only gained by putting yourself forward time and again. It's not easy. It's not quick. It's not cheap. But urgent action from 'everyone, everywhere, and across everything' to tackle climate change requires new

solutions. To turn our energy options from black and white to shades of green, we must put long-term gain ahead of short-term cost.

As our friends at the IEA reminded us last month, the solution to climate change must start in the developed world. Perhaps, the very resource, skill and ingenuity that turned Britain into the birthplace of the industrial revolution is the same alchemy that can put the UK at the forefront of the environmental revolution. To do so, global action on climate change starts at home with a better fireside chat about how we keep the embers glowing and the trees growing.

If the UK Geoenergy Observatories is the first log to feed the fire, it will deliver far beyond its investment goals of providing better data on the underground environment to put the UK first in the world for geoscience.”



Dr Alwyn Hart, lead scientist and research manager for air, land and water research evidence at the Environment Agency says: “We live in a world where we use an

awful lot of energy. The UK geology and landscape is such that we’ve always been able to source our energy on home turf. We can continue to do so as long as we invest in the science required to: find the energy sources that will power our future; evaluate the risks; and equip a generation of people with the right skills to utilize that potential.

The UK Geoenergy Observatories is a unique opportunity to look at how the world works, to gain a better grasp of the subsurface, to find out what’s living down there and to achieve better public perception of the underground and understanding of risk.

Everything we do as a species comes at a risk, so of course we find ways to manage that risk. Even when risks are well managed and well understood, we still keep looking to better understand ever better ways to control the risk.

The Cheshire site will equip us to understand so much more about how groundwater flows, to know more about what we understand subsurface risks to be, to understand why they are risks, to quantify them and to know what to worry about and what not to worry about, and to know how to manage them.

The UK Geoenergy Observatories is the vital step in building the bridge to a renewable future. It has the potential to create a mass of people who know about the potential, risk and physical properties of the underground in a way we haven’t before. Those people will take that knowledge with them into industry, regulation, government, academia and the media: improving the way we make decisions over our natural resources and environment.

Dr Susan Hovorka at the Bureau of Economic Geology at the University of Texas says:

The United Kingdom has long been a leader in geoscience across many different fields: from days of yore to modern times. The BGS has always had a strong leadership role in the UK science community – delivering landmark science and platforms that have set standards for everyone, everywhere across the world. From geological modelling, to being the first out of the box with carbon capture and storage (CCS).



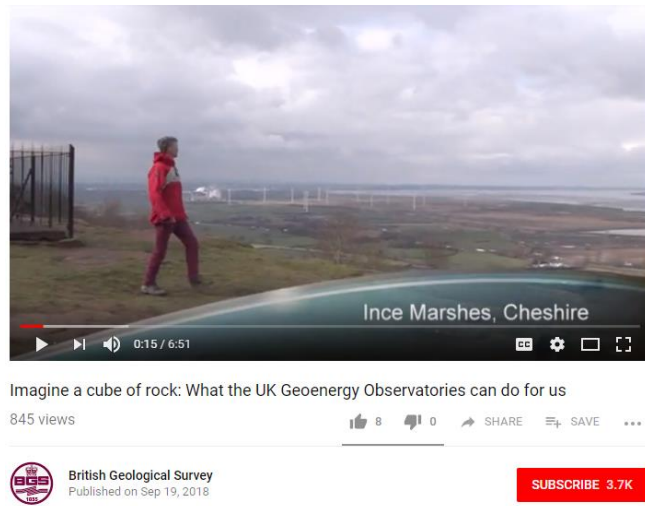
With the UK Geoenergy Observatories, researchers are once again at the frontier of bringing interesting questions to the world, keeping the UK as the leading force in geoscience.

The world has the technology to decarbonize the global energy system. But excellent projects, like the £1bn CCS Goldeneye scheme, have failed to progress. People have to want the technology if we are to transform the world’s ability to tackle climate change.

Geoscience uses ‘exotic’ language that allows imaginations to run all over the place. Fear and anxiety often get in the way of good solutions. It’s only when people see things for their own eyes that the concepts become ordinary and normalised.

The UK Geoenergy Observatories is an opportunity for people to see if new techniques can be done on home ground. Regulation is localized, so home-grown knowledge about decarbonisation techniques in UK geology is vital.

The UK Geoenergy Observatories could provide the information to unlock potentially transformational investments for the UK energy landscape. Not least because it will enable people to understand the role and possibilities of the subsurface in meeting climate change targets.



The BGS is submitting the planning application for the UK Geoenergy Observatory in Cheshire this month. The BGS began drilling the first UK Geoenergy Observatory borehole in Glasgow last month. You will be able to view and comment on the Cheshire application in full on the CWACC planning portal. Visit the BGS YouTube channel to view the film Imagine a Cube of Rock. <https://www.youtube.com/watch?v=kjpObPtgRHk>