

Space data helping Earth adapt to challenges of climate change

Satellite data will be used to monitor and map heat in locations at greatest risk from climate change in one of two new projects being backed by the UK Space Agency.

The first project is a collaboration between the National Centre for Earth Observation (NCEO) and Ordnance Survey (OS), which will provide meaningful insights for policy-makers to manage the impacts of climate change in hot spots across the UK and beyond.

Using NCEO land surface temperature data derived from thermal infra-red sensors in space, OS will then help customers understand and identify how the data can be applied effectively.

The UK Space Agency is also supporting a prototype Climate Risk Index tool that delivers risk assessments based on satellite and climate data to help the insurance sector provide vital financial products to those at risk from droughts and wildfires.

Both schemes have been unveiled ahead of British ESA astronaut Tim Peake's attendance at COP26, the United Nations climate change conference being hosted by the UK in Glasgow. Tim will be visiting the Space4Climate stand where he will answer questions from young people and talk about how space is helping to monitor and tackle climate change.

Beth Greenaway, Head of Earth Observation and Climate at the UK Space Agency, said:

The UK is leading the way in using space to monitor, understand and tackle climate change.

Both of these new projects will provide decision-makers with vital information to help deal with the effects of climate change and improve lives around the world.

The latest UK climate projections show a hot summer like 2018 is likely to occur every other year by 2050, by which time the number of heat-related deaths could more than triple from today's level in the absence of additional adaptation; from around 2,000 per year to around 7,000.

As many as 1.2 billion people around the world could face heat stress conditions by 2100 if current levels of global warming continue.

The Earth observation data used in the pilot will indicate extreme events and

locations that may show greater risk to human health, such as cities where heat stress is a particular concern. By providing easier and better access to insightful evidence through the pilot and through working with the Office for National Statistics, the UK public sector will be able to tackle climate change more effectively with accurate data from space.

Donna Lyndsay, Innovation Lead, Ordnance Survey, said:

By working collaboratively with the UK Space Agency and leading scientists, OS will use its mapping capabilities to identify areas at greatest risk from global warming using satellite data. The outcome will be to share the learnings from accessing the Earth observation data so that governments and businesses in the UK and globally, have the meaningful insights and evidence to support resilience and adaptation plans in relation to the climate crisis.

Geospatial data is already supporting how we respond to climate change and contributing towards achieving net-zero. This project demonstrates how collaboration can deliver innovative and actionable solutions to help tackle the climate crisis and ensure we meet our sustainability goals.

Satellite image showing London land surface temperature. Credit: NCEO and University of Leicester

Dr Darren Ghent, a National Centre for Earth Observation scientist at the University of Leicester, said:

Satellite observations of land surface temperatures, and their change, are increasingly recognised as being able to provide unique and detailed knowledge to better facilitate the understanding of climate change and thus to inform planning and 'climate-adaptive' policies to deal with extreme events, such as heatwaves.

The second project will see Telespazio UK, in collaboration with Assimila, developing a pilot of a Climate Risk Index tool, known as CRISP. Using climate data from an ensemble of climate project models, historical reanalysis and Earth Observation data the prototype will focus on two examples – agricultural drought and wildfires – to show insurance companies how to use the data in their own assessments to benefit the finance sector.

The government's new National Space Strategy pledged to work closely with the financial sector, including identifying the risk of climate change impacts and the UK space sector is keen to lead the way in climate related risk disclosures that impact the financial sector.

Geoff Busswell, Head of Marketing and Sales at Telespazio UK, said:

With the UK set to enforce mandatory reporting on climate-related financial disclosures from April 2022, we need to be prepared and able to deliver clear, reliable, and comprehensive information on the understanding of risk and impacts of climate.

Telespazio in collaboration with Assimila are at the forefront of harnessing the power of Earth Observation data to improve reporting in the financial sector and subsequently enable better informed, climate aware decision-making.

CRISP builds on work by the Space4Climate (S4C) Climate Risk Disclosure task group. The S4C work provides the underlying technical capability to determine climate indices – based on consistent identification of extreme climate events and changes in sea level derived from different long-term data records of Earth Observation and climate re-analysis datasets.

[£250 million in NHS technology to modernise diagnostics](#)

- Government injects nearly £250 million to digitise diagnostics care across the NHS using the latest technology
- Funding will allow hospital labs to share patient results, tests and scans more easily and quickly between different hospitals and doctors, reducing the time it takes to diagnose a health problem
- It aims to drive up efficiency by saving staff time, and comes as part of the government's ambition to tackle waiting lists and speed up routine treatment for patients

The NHS will receive £248 million over the next year to invest in technology that will deliver more diagnostic tests, checks and scans to help provide faster diagnosis of a health condition, earlier treatment and reduce waiting lists.

The investment will reduce the administrative burden on NHS staff so they can analyse more tests, checks and scans while also reducing the turnaround time from a patient taking a test to receiving a diagnosis and then starting treatment.

Diagnostics services across the NHS will be digitalised using the latest technology to improve the way tests, images and results can be shared across computer systems in hospitals, labs and GP surgeries. It means the nurses,

doctors and other clinicians caring for a patient can access these results more quickly and easily, even if they are working from different settings.

The new technology will allow imaging specialists – the experts analysing a scan or x-ray and providing a diagnosis – to review high-res images remotely without needing to be in an imaging lab, 24 hours a day.

The funding will also provide a new tool to help GPs and other clinicians choose the most suitable scan for their patient based on the patient's symptoms and medical history. This will cut inappropriate requests made to radiology departments, saving radiologists' time and ensuring patients get the right scans at the right time.

It follows the recommendations from Professor Sir Mike Richards' independent review of NHS diagnostics capacity showing improving digitisation should be prioritised to drive efficiency and deliver seamless care.

Health and Social Care Secretary Sajid Javid said:

Today's multi-million pound investment will play a big role in levelling up diagnostics services across the country so patients can get faster results and healthcare professionals can get their job done more easily, reducing unnecessary administrative burden and making every taxpayer's pound count.

Getting a faster diagnosis for a health condition is the first step to getting more people the treatment they need and earlier on, and our funding will help ensure our NHS has access to the latest digital technology to drive up efficiency.

Professor Stephen Powis, NHS medical director, said:

The NHS is facing a winter like no other with rising cases of COVID and flu as well as record demand for emergency services, all while we continue to deliver the biggest vaccination programme in health service history, including rolling out booster jabs for the most vulnerable.

However, NHS staff are making efficient use of additional funding and following the recent rollout of new diagnostic centres, the number of patients waiting for a diagnostic test is falling for the first time in a year, meaning more people are getting the checks they need and if required, are able to begin treatment sooner.

Diagnostic tests are used to confirm or rule out health conditions and disease and over 1.5 billion diagnostic tests are carried out in England every year. They are crucial to providing early diagnosis, screening and monitoring of long-term conditions and are often the first step to understanding the right care and treatment for a patient. Recovering

diagnostics services is vital to recovering the overall NHS backlog and reducing waiting times for cancer services and other treatments.

Today's announcement follows the £2.3 billion investment announced at the latest Spending Review over the next three years to transform diagnostic services with at least 100 community diagnostic centres across England – helping millions of patients access earlier diagnostic tests closer to home.

GPs can refer patients to these new one-stop-shops for patients to access life-saving checks, scans and tests more quickly, leading to faster diagnosis and treatment. The centres will be staffed by a multi-disciplinary team of staff including nurses and radiographers and are open seven days a week.

The government has provided record funding this year, and will continue to do so over the next three years through the health and care levy.

To go further faster and increase efficiency government has set out its ambition for the NHS to find innovate ways of working which make every taxpayer's penny count through new technology which speeds up diagnosis, or surgical robots to help deliver more complex surgery with faster recovery times.

[PM call with Prime Minister of Iraq: 7 November 2021](#)

Press release

Prime Minister Boris Johnson spoke to the Prime Minister of Iraq, Mustafa Al-Kadhimi.



The Prime Minister spoke to the Prime Minister of Iraq, Mustafa Al-Kadhimi, this afternoon.

He strongly condemned the attack on the Prime Minister's home in Baghdad and

offered his sympathies to those injured.

He made clear that the UK stands by the Iraqi people and supports Prime Minister Khadimi's efforts to form a government following elections, which is vital for the long term stability of Iraq.

The leaders also discussed COP26 and welcomed opportunities to work together on tackling climate change.

Published 7 November 2021

Over 10 million people in the UK receive COVID-19 top-up vaccines

- More than 10 million people have received a COVID-19 booster or third jab
- Eligible people can now book a booster appointment a month in advance to speed up vaccination programme
- People are urged to get their booster to top up their protection during the winter

More than 10 million people have now received their COVID-19 booster or third jabs, the latest figures show, ensuring the vital protection they have secured from their first two doses is maintained over the winter months.

A total of 10,062,704 people have received their booster and third jabs in the UK. 45,836,791 people have received two doses (79.7%) and 50,234,416 people have received one dose (87.4%). Seven in 10 over 80s in England are already vaccinated with top-up jabs.

The National Booking Service will be updated tomorrow (Monday 8 November) to allow those eligible for a booster vaccine – people over 50 and those most at risk of COVID-19 – to pre-book their jab five months after their second dose.

People will still receive their vaccine six months after their second dose, but the change will speed up the vaccination programme by allowing people to receive a jab the day they become eligible, rather than waiting for a convenient appointment.

People will also be able to book by calling 119 and can get vaccinated at hundreds of walk-in sites across the country six months after their second dose without an appointment. Those eligible can use the NHS online walk-in finder to locate the most convenient site.

More than one million people in London, Midlands, North East and Yorkshire, North West and South East have received the top-up jabs. Elsewhere:

East of England – 996,164 Midlands – 1,552,387 North East and Yorkshire – 1,388,202 North West – 1,126,027 South East – 1,392,592 South West – 956,896 London -1,026,423

COVID-19 booster vaccines have been delivered or booked in at every older adult care home in England where safe to do so, with almost nine in 10 care homes already visited.

Health and Social Care Secretary Sajid Javid said:

More than 10 million people across the UK now have the vital protection boosters provide, further building our wall of defence against this awful virus.

This a phenomenal achievement and I want to thank everyone working on the rollout and everyone who has come forward for their jab.

We know immunity begins to wane after six months, and booster jabs will ensure our most vulnerable are protected over the winter.

Please do not delay – get your vaccines as soon as you can to protect yourself and your loved ones this winter so we can keep the virus at bay.

The colder weather traditionally leads to increased transmission of viruses and will be challenging for the NHS.

Vaccines give high levels of protection but immunity reduces over time, particularly for older adults and at-risk groups, so it is vital that vulnerable people come forward to get their COVID-19 booster vaccine to top-up their defences and protect themselves this winter.

The latest evidence from SAGE shows that protection against symptomatic disease falls from 65%, up to three months after the second dose, to 45% six months after the second dose for the Oxford/AstraZeneca vaccine, and from 90% to 65% for the Pfizer/BioNTech vaccine. Protection against hospitalisation falls from 95% to 75% for Oxford/AstraZeneca and 99% to 90% for Pfizer/BioNTech.

Although the vaccine effectiveness against severe disease remains high, a small change can generate a major shift in hospital admissions. For example, a change from 95% to 90% protection against hospitalisation would lead to doubling of admissions in those vaccinated.

The booster programme is designed to top up this waning immunity. Early results from Pfizer show that a booster following a primary schedule of the same vaccine restores protection back up to 95.6% against symptomatic infection.

Vaccines Minister Maggie Throup said:

We are making brilliant progress with the COVID-19 booster programme and that's testament to the tireless dedication of the NHS, and GPs, pharmacies and their teams.

Booster vaccines will ensure those with increased risk of complications from COVID-19 maintain strong immunity during the winter and I urge everybody to take up the offer as soon as you become eligible.

Last month, clinical guidance was updated to enable boosters to be given slightly earlier to those at highest risk, where this makes operational sense to do so. This includes care home residents who may have received their second doses at different times to be vaccinated in the same session, as long as it has been five months since their second dose. It may also help with other vulnerable groups, such as housebound patients, so that they can have their flu and COVID-19 vaccines at the same time.

Vaccine confidence is high with data from the Office for National Statistics showing nearly all (94%) of those aged 50 to 69 say they would be likely to get their COVID-19 booster if offered, with the figure rising to 98% for those over 70.

Flu is another winter virus that can be serious. To give people the best protection over winter, those eligible for a free flu vaccine should come forward and book an appointment at either their GP practice or their local pharmacy, or take it up when offered by their employer or other healthcare provider.

Dr Nikki Kanani, NHS deputy vaccination programme lead and GP said:

Over ten million lifesaving top-up vaccinations is a fantastic achievement in just seven weeks by the NHS vaccination programme thanks to our staff.

A record 371,000 boosters and third doses were chalked up in England alone yesterday, taking the total delivered to almost 8.5 million, as hundreds and thousands of people come forward every day to maximise their protection.

With winter fast approaching I urge anyone who has not yet had a booster – or indeed a first or second dose – to not delay any further in protecting themselves and their loved ones against this deadly virus.

People can now walk-in without an appointment to get their top-up vaccination and from tomorrow can book in an appointment a month in advance of becoming eligible – so there is no excuse to not get the lifesaving vaccine and people should do so as soon as they can.

The government has launched a nationwide advertising campaign, encouraging

people eligible to get their booster and flu jabs to protect themselves and their loved ones and help reduce pressures on the NHS. This includes outdoor billboards, broadcast and community radio and TV.

The offer of a first and second COVID-19 vaccine remains open to anyone who is eligible. Vaccines are available free of charge and from thousands of vaccine centres, GP practices and pharmacies. Around 98% of people live within 10 miles of a vaccination centre in England and vaccinations are taking place at sites including mosques, community centres and football stadiums.

There are more than 500 extra vaccination sites now compared to April this year, with 1,697 vaccination centres in operation in April 2021, and over 2,200 vaccination centres in operation now.

Vaccines are also available for those aged 12-15 to offer the best possible protection this winter in schools, as well as more than 200 vaccine centres.

Prime Minister urges countries to make bold compromises and ambitious commitments in final week of COP26

Prime Minister Boris Johnson is urging countries to keep up the momentum on the fight against climate change in the week ahead at the COP26 summit.

The first week of COP26 comes to a close today (Sunday 7 November), which saw around 120 leaders gather for the World Leaders Summit as well as negotiators, officials and ministers come together to make progress on the shared goal of limiting global temperatures to 1.5 degrees.

Good progress has been made so far, including:

- New commitments to net zero by middle of the century means 90% of the world economy is covered, triple the figure when the UK took on the COP Presidency.
- More than 120 countries, covering 88% of the world's forests, have agreed to end and reverse deforestation. Countries representing more than 70% of the world's economy are committed to delivering clean and affordable technology everywhere by 2030 in the most polluting sectors.
- Over 100 countries have agreed to cut their emissions of methane by 30% by 2030.

- New commitments to increase finance to support developing countries to deal with the impacts of climate change and implement ambitious emissions-reductions plans.
- More than 20 countries have made commitments for the first time to phase out coal power, including five of the world's top 20 coal power-using countries, and at least 25 countries and public finance institutions commit to ending international public support for the unabated fossil fuel energy sector by the end of 2022.
- 45 nations have pledged urgent action and investment to protect nature and shift to more sustainable ways of farming, as well as over 100 countries now signed up to protect at least 30% of the global ocean by 2030.
- The views of over 40,000 young climate leaders have been presented to ministers, negotiators and officials.

Marking this halfway point in the summit, Prime Minister Boris Johnson said:

There is one week left for COP26 to deliver for the world, and we must all pull together and drive for the line.

We have seen nations bring ambition and action to help limit rising temperatures, with new pledges to cut carbon and methane emissions, end deforestation, phase out coal and provide more finance to countries most vulnerable to climate change.

But we cannot underestimate the task at hand to keep 1.5C alive. Countries must come back to the table this week ready to make the bold compromises and ambitious commitments needed.

Attention turns to negotiations this coming week. These negotiations are incredibly complicated, and notoriously hard. Teams from the UK and 195 other countries plus the EU will work to reach collective agreement on more than 200 pages of text.

They will be negotiating the issues left open by the Paris Agreement in 2015, like the process for tracking how all countries are keeping their climate commitments and how we create a fairer global system so no nation is disadvantaged by being more ambitious on cutting emissions. Everyone has to agree, or nothing is agreed. But the progress in the first week of COP has put us in a strong position.

The UK's COP26 Presidency programme continues this coming week, with the spotlight put on transport, adaptation, gender, science, and cities and regions.

The UK has been leading the way and setting a high bar for other countries to follow – including being the first major economy to commit in law to net zero, setting one of the most ambitious targets to cut emissions by 68% by 2030, phasing out coal power by 2024, ending the sale of petrol and diesel vehicles by 2030, halting deforestation by 2030, and providing £11.6bn in finance – with an extra £1bn if the economy grows as forecast – to countries on the frontline of climate change.