

# A challenge shared is a problem halved...

News story

The Game Changers programme – which sets up challenges to businesses to solve our decommissioning problems – is expanding to include Scottish nuclear site, Dounreay.



One of the challenges is to seek improved technology for the removal of contaminated concrete from walls and floors of ponds.

Bringing in the Scottish site – which shares many of the challenges we face – means we can hold joint challenges – developing solutions which can be used across the sites and saving time and money.

Dounreay is Scotland's largest decommissioning project and is internationally recognised as one of the most complex nuclear site closure schemes.

Two new challenges mark the Game Changers partnership. One seeks improved technology for the removal of contaminated concrete from walls and floors of ponds. The other aims to improve organic residue detection in pipes and vessels.

The challenges are open to any organisation, of any size, from any sector that believes they may have technology that could prove useful.

Like us, Dounreay is part of the Nuclear Decommissioning Authority (NDA) estate and shares goals and common experiences. This will add up to economies of scale and value for money to the taxpayer through Game Changers.

Gordon Tait, Dounreay's Deputy Head of Fuel Cycle Area said:

Dounreay and Sellafield Ltd share similar decommissioning challenges, dating from their common historic origins. Joining forces to solve them makes perfect sense for the sites, the NDA and

the taxpayer.

Katherine Eilbeck, Sellafield Ltd's Head of Research and Development added:

It's fantastic to see the hard work from the technical teams of both sites pay-off in the publication of these joint challenge statements.

We always get a really good response from the supply chain from our Game Changers challenges and I'm looking forward to seeing the response we get to this call for innovation.

For further details on Game Changers, visit their website [here](#).

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## [CMA welcomes government response to digital advertising study](#)

Press release

The CMA has welcomed the UK Government's response to its online platforms and digital advertising market study.



The government has today accepted, in principle, the findings of the Competition and Markets Authority's (CMA) year-long study, committing to introducing a new pro-competition regulatory regime to tackle the market power of tech giants like Google and Facebook.

In its [response to the study](#), the government has also outlined that a Digital

Markets Unit (DMU) will be established within the CMA in 2021/22 to enable the CMA to begin work to put into operation key elements of the regime.

The CMA's Digital Markets Taskforce is due to advise government on the design of the new regulatory regime before the end of the year. It will then be for government to take action and bring forward legislation to establish the regime.

In the final report from its [online platforms and digital advertising market study](#), published in July this year, the CMA outlined a number of factors that undermine competition and entrench the market power of Google and Facebook.

The scale and nature of these issues led the CMA to conclude that a new pro-competition regulatory regime is needed so that people can continue to benefit from innovative new services; rival businesses can compete on a level playing field and publishers do not find their revenues unduly squeezed.

**CMA Chief Executive Andrea Coscelli said:**

We welcome the government's response to the findings of our digital advertising market study.

Only through a new pro-competition regulatory regime can we tackle the market power of tech giants like Facebook and Google and ensure that businesses and consumers are protected.

We will soon be providing advice to government on how this new regime should work, as requested earlier this year, and stand ready to support the setup of the Digital Markets Unit.

Alongside today's announcement, Her Majesty's Treasury announced in its Spending Review on 25 November that the CMA will receive additional budget to take on new responsibilities, including establishing the Digital Markets Unit from 1 April 2021.

**Notes to editors**

1. The CMA is the UK's primary competition and consumer authority. It is an independent non-ministerial government department with responsibility for carrying out investigations into mergers, markets and the regulated industries and enforcing competition and consumer law.
2. In March, the CMA was asked by government to lead a Digital Markets Taskforce, led by the CMA working closely with Ofcom and the Information Commissioner's Office to advise government on how a new pro-competition approach should be designed for digital markets. Find out more in the [Terms of Reference for this work](#).
3. As a result of its clear recommendation for a new regulatory regime, and the ongoing work of the Taskforce, the CMA is not currently recommending making a market investigation reference. However, after the work of the Taskforce has concluded, it will assess whether the actions being taken by the government are sufficient to address the full range of issues

identified by its market study, or whether direct action by the CMA is likely to be required.

4. Media queries should be directed to: [press@cma.gov.uk](mailto:press@cma.gov.uk) or 020 3738 6460.

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## [The Philippines and the UK Agree Partnership on Climate and Environment](#)

Climate change concerns in the Philippines continue to have more focused attention as bilateral cooperation and agreements with the UK are forged.

On 27 November 2020, the Philippines, represented by the DENR Secretary, Roy Cimatu, as Chairperson of the Cabinet Cluster on Climate Change Adaptation, Mitigation and Disaster Risk Reduction (CCAM DRR), signed a “Partnership Statement” with British Ambassador to the Philippines, Daniel Pruce, during the first Climate Change and Environment Dialogue (CCE-D). Ambassador Pruce co-chaired the virtual Dialogue with Ken O’ Flaherty, UK COP26 Regional Ambassador, and Undersecretaries Jonas Leones and Analiza Teh of the DENR.

As the two countries share and agree with each other’s climate priorities, including energy transition and nature-based solutions, Secretary Cimatu is optimistic that the partnership will benefit the Philippines as it prepares for the implementation of its nationally determined contributions to reduce greenhouse gas emissions.

Secretary Cimatu added:

We are definitely pleased to enter into a declaration of statement of partnership on key environmental concerns and we look forward to it with great optimism that this will serve as a platform for an inclusive, green, and resilient economic recovery from the COVID-19 pandemic.

Her Majesty’s Ambassador Daniel Pruce said:

The United Kingdom is delighted to mark another partnership with Philippine Government to tackle an important issue that threatens both our island nations and the world. In our COP26 Presidency, the UK is committed to working with the Philippines to realise sustainability and clean growth through the full potential of the Paris Agreement and in a way that is responsive to post-pandemic needs.

Ambassador O' Flaherty also added that:

More widely, as a long-standing partner of ASEAN, in particular on low carbon growth, sustainability and climate change, our application to be ASEAN's dialogue partner offers an opportunity to strengthen collaboration on climate and green issues in coming years, building on existing UK cooperation with the region.

The Dialogue is an important element of the 'Enhanced Partnership', which the UK and the Philippines agreed to work towards at the annual bilateral 'High Level Political Talks' in November 2019. Under this new partnership for the future, both countries agreed to establish and convene an annual UK-Philippines Dialogue dedicated to discuss issues that are of common interest to both countries such as climate and the environment, including priorities for the 26th Conference of Parties (COP26).

The identified priority areas for cooperation will be supported through technical and policy assistance, as well as market development mechanisms under on-going UK programmes including the ASEAN Low Carbon Energy Programme, Newton Agham Programme and Darwin Initiative Fund. The Dialogue will also provide a platform to facilitate the sharing of experiences and best practices in the areas of energy transition, adaptation and resilience, nature-based solutions, sustainable transport, and green finance.

The Dialogue is another milestone as we prepare for the 75th celebration of diplomatic ties between the UK and the Philippines in 2021.

Other highlights of the event were the virtual signing of the Memorandum of Understanding with Secretary Alfonso Cusi of the Department of Energy for the 2050 Calculator, a tool to plan the Philippines' low-carbon transition, and ASEAN Low Carbon Energy Programme focusing on Green Finance (renewable energy voluntary market) and Energy Efficiency, and the launching of the UK's 'Greening the Philippines' COVID-19 Recovery and Resilience Strategies' Project, which will be implemented by the United Nations Development Programme (UNDP), through Resident Representative, Dr. Selvakumaran Ramachandran.

Senior officials from the DENR, Bangko Sentral ng Pilipinas, Climate Change Commission, Department of Finance, Department of Energy, Department of Transportation, and National Economic and Development Authority, and UK Government representatives were present during the dialogue.

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**[£20 million boost for world class AI](#)**

# research could transform cancer treatment and save lives

- New Turing AI Fellowships are part of the government's ambition to maintain the UK's position as a world leader in AI and support ground-breaking innovations
- artificial intelligence (AI) that identifies cancer early is among 15 innovative and diverse projects backed by £20 million UK government cash injection
- other projects include assisting those who have experienced a serious illness or injury to communicate and processing data at lightning speed while lowering energy consumption

Discovering if people have cancer before it fully forms in the body so that they can be treated earlier is among the pioneering artificial intelligence (AI) research given a £20 million government cash boost today (Friday 27 November).

The prestigious Turing AI Acceleration Fellowships will give 15 of the UK's top AI innovators the resources to drive forward their ground-breaking research from speeding up medical diagnosis to increasing workplace productivity. These pioneering projects could enable the UK to meet some of today's most pressing challenges, such as reducing carbon emissions, while helping to transform industries across the UK economy, including healthcare, energy and transport.

Among the AI fellows being backed today is Professor Christopher Yau at The University of Manchester, who aims to use AI technology to predict the development of cancer before it has fully formed in the body and therefore improving on current methods. If successful, this ground-breaking technology will enable clinicians to track cancer more accurately and help them decide at an earlier stage what treatments patients require. This would increase the chances of saving lives as treatment is usually more successful when given earlier.

A range of other ground-breaking AI projects are set to benefit from this new support, including research into energy efficient data processing – which would support key sectors such as energy, healthcare and finance at a time when demand for data is growing exponentially. Additionally, the development of an "AI clinical colleague" could further support doctors by recommending the most effective drug prescriptions and doses for patients – and helping them decide the best course of action for recovery.

Science Minister, Amanda Solloway said:

The UK is the birthplace of artificial intelligence and we have a duty to equip the next generation of Alan Turings with the tools that will keep the UK at the forefront of this remarkable

technological innovation.

The inspirational fellows we are backing today will use AI to tackle some of our greatest challenges head on, transforming how people live, work and communicate, cementing the UK's status as a world leader in AI and data.

Digital Minister, Caroline Dinenage, said:

The UK is a nation of innovators and this government investment will help our talented academics use cutting-edge technology to improve people's daily lives – from delivering better disease diagnosis to managing our energy needs.

The fellowships forms part of a major government investment in AI skills and research, including 16 Centres for Doctoral Training in AI and conversion courses to train the next generation of AI experts, announced by the Prime Minister Boris Johnson in October 2019.

Named after British AI pioneer Alan Turing, the £20 million fellowship scheme will be delivered by Engineering and Physical Sciences Research Council (EPSRC), part of UK Research and Innovation (UKRI), in partnership with the Alan Turing Institute and Office for Artificial intelligence.

It follows the publication of the government's ambitious [research and development roadmap](#) in June this year, which committed to investing in ground breaking research and supporting the UK's risk takers to scale up their innovations.

EPSRC Executive Chair Professor Dame Lynn Gladden said:

The Turing AI Acceleration Fellowships will support some of our leading researchers to progress their careers and develop ground-breaking AI technologies with societal impact.

By enhancing collaboration between academia and industry and accelerating these transformative technologies they will help to maintain and build on the UK's position as a world leader in AI.

## **Notes to editors**

Some of the Turing AI Acceleration Fellows receiving investment today are listed below.

### **Dr Antonio Hurtado, University of Strathclyde**

Dr Hurtado aims to meet the growing demand across the UK economy to process

large volumes of data fast and efficiently, while minimising the energy required to do so. His AI technology will use laser light, similar to those used in supermarket checkouts, to perform complex tasks at ultrafast speed – from weather forecasting to processing images for medical diagnostics. Being able to perform these tasks at lightning speed, with minimal energy consumption, could help to transform industries such as energy, healthcare and finance, improving efficiency, while helping the UK to meet its net zero ambitions by 2050.

### **Professor Aldo Faisal, Imperial College London**

Professor Faisal aims to relieve the pressures and workload on doctors and clinicians by developing an 'AI clinical colleague', which will be able to recommend medical interventions such as prescribing drugs or changing doses in a way that is understandable to decision makers, such as doctors, helping to them to make the best final decision on a course of action for a patient. This technology will use 'reinforcement learning', a form of machine learning that trains AI to make decisions, and could be used in other regulated sectors such as aerospace or energy, where there is a need for decision-making support.

### **Professor Damien Coyle, Ulster University**

Professor Coyle aims to develop AI technology that will play a crucial role in new forms of wearable neurotechnologies – devices which measure signals from the brain and enable their wearer to interact with technology without movement. By enabling communication between the brain and computers that do not rely on movement, this technology could help those who are unable to communicate following a serious injury or illness.

### **Dr Jeff Dalton, University of Glasgow**

Dr Dalton aims to improve the capabilities and performance of virtual personal assistants. Currently, virtual assistants on the market are only capable of limited conversations, and their development is expensive. Dr Dalton will build advanced information assistants that can work with users more effectively, including asking questions back and forth, explaining their reasoning more clearly, and helping to solve complex information tasks, for example explaining the causes of climate change.

## **Additional quotes**

Dr Jeff Dalton, University of Glasgow said:

Being awarded the Turing AI Acceleration fellowship is an incredible honour and we are very excited by the opportunity to accelerate progress on the next generation of virtual assistants that will transform our economy and society.

This award is key in building a world-leading research group in Scotland with state-of-the-art deep-learning hardware for



conversational AI that will enable us to perform large-scale experiments on real-world datasets to maximize impact.

Professor Christopher Yau, University of Manchester said:

I am very excited to have been awarded this Fellowship which will enable me to conduct ground-breaking research at the intersection of genomics and artificial intelligence. Genomics will yield unprecedented amounts of data which necessitate the use of AI for their interpretation.

I will be developing novel clinical information systems to provide cancer patients and clinicians with the very best genomics-guided personalised care to improve treatment effectiveness and survival rates. I am especially pleased to be working with a range of project partners, including Ovarian Cancer Action, to ensure that my research is conducted in partnership with patients.

The new Fellows will join a cohort of five Turing AI Fellows that have previously been awarded and the Turing AI World-Leading Researcher Fellowships due to be awarded in 2021. These fellowships are part of a major government investment in AI skills and research which also includes 16 UKRI Centres for Doctoral Training in AI announced by Prime Minister Boris Johnson.

The Turing AI Acceleration Fellowships are part of the government's AI sector deal investment in Turing AI fellowships, recommended by the independent [2017 UK AI Review](#), whose report 'Growing the artificial intelligence industry in the UK,' was co-authored by Regius Professor of Computer Science at Southampton, Dame Wendy Hall, and Jérôme Pesenti, now Vice President of AI at Facebook.

Applications were sought from a diverse pool of researchers to reflect the breadth of the AI ecosystem and a broad range of backgrounds and fields. Universities were required to use an inclusive approach in shortlisting their fellowship candidates and fellows will be required to do likewise in recruiting their research teams.

The Turing AI Acceleration Fellows are:

- Professor Damien Coyle, University of Ulster – AI for Intelligent Neurotechnology and Human-Machine Symbiosis
- Dr Jeff Dalton, University of Glasgow – Neural Conversational Information Seeking Assistant
- Dr Theo Damoulas, University of Warwick – Machine Learning Foundations of Digital Twins
- Professor Aldo Faisal, Imperial College – Reinforcement Learning for Healthcare

- Professor Yulan He, University of Warwick – Event-Centric Framework for Natural Language Understanding
  - Dr Jose Miguel Hernandez Lobato, University of Cambridge – Machine Learning for Molecular Design
  - Dr Antonio Hurtado, University of Strathclyde – PHOTONics for Ultrafast Artificial Intelligence
  - Dr Per Lehre, University of Birmingham – Rigorous Time-Complexity Analysis of Co-evolutionary Algorithms
  - Professor Giovanni Montana, University of Warwick – Advancing Multi-Agent Deep Reinforcement Learning for Sequential Decision Making in Real-World Applications
  - Dr Christopher Nemeth, Lancaster University: Probabilistic Algorithms for Scalable and Computable Approaches to Learning (PASCAL)
  - Dr Raul Santos-Rodriguez, University of Bristol – Interactive Annotations in AI
  - Dr Sebastian Stein, University of Southampton – Citizen-Centric AI Systems
  - Dr Ivan Tyukin, University of Leicester – Adaptive, Robust and Resilient AI Systems for the Future
  - Dr Adrian Weller, University of Cambridge – Trustworthy Machine Learning
  - Professor Christopher Yau, The University of Manchester – clinAIcan – Developing Clinical Applications of Artificial Intelligence for Cancer
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## **New competition regime for tech giants to give consumers more choice and control over their data, and ensure businesses are fairly treated**

- Government to set up Digital Markets Unit to oversee a pro-competition regime for platforms including those funded by digital advertising, such as Google and Facebook
- new statutory code of conduct will mean consumers will be given more choice and control over how their data is used, and small businesses will be able to better promote their products online
- code will support the sustainability of the news publishing industry, helping to rebalance the relationship between publishers and online platforms

Tech giants will be subject to a new regime to give consumers more choice and control over their data, help small businesses thrive, and ensure news outlets are not forced out by their bigger rivals.

A dedicated Digital Markets Unit, which will be set up within the Competition

and Markets Authority (CMA), will work closely with regulators including Ofcom and the Information Commissioner's Office to introduce and enforce a new code to govern the behaviour of platforms that currently dominate the market, such as Google and Facebook, to ensure consumers and small businesses aren't disadvantaged.

Online platforms bring huge benefits for businesses and society. Their services are making work easier and quicker and help people stay in touch with one another. Millions of people share creative content or advertise their small business' goods online.

But there is growing consensus in the UK and abroad that the concentration of power amongst a small number of tech companies is curtailing growth in the tech sector, reducing innovation, and potentially having negative impacts on the people and businesses that rely on them.

The new code will set clear expectations for platforms that have considerable market power – known as strategic market status – over what represents acceptable behaviour when interacting with competitors and users.

Under the new code, platforms including those funded by digital advertising could be required to be more transparent about the services they provide and how they are using consumers' data, give consumers a choice over whether to receive personalised advertising, and prevented from placing restrictions on their customers that make it hard for them to use rival platforms.

The new unit, which will begin work in April, could be given powers to suspend, block and reverse decisions of tech giants, order them to take certain actions to achieve compliance with the code, and impose financial penalties for non-compliance.

Business Secretary Alok Sharma said:

Digital platforms like Google and Facebook make a significant contribution to our economy and play a massive role in our day-to-day lives – whether it's helping us stay in touch with our loved ones, share creative content or access the latest news.

But the dominance of just a few big tech companies is leading to less innovation, higher advertising prices and less choice and control for consumers.

Our new, pro-competition regime for digital markets will ensure consumers have choice, and mean smaller firms aren't pushed out.

Digital Secretary Oliver Dowden said:

I'm unashamedly pro-tech and the services of digital platforms are positively transforming the economy – bringing huge benefits to businesses, consumers and society.

But there is growing consensus in the UK and abroad that the concentration of power among a small number of tech companies is curtailing growth of the sector, reducing innovation and having negative impacts on the people and businesses that rely on them. It's time to address that and unleash a new age of tech growth.

Today's proposals could also help give small businesses fair access to platform services including digital advertising, allowing them to grow their business' online presence. The code could be used to ensure platforms are not applying unfair terms, conditions or policies to certain business customers, including news publishers.

Currently, dominant online platforms can impose terms on news publishers that limit their ability to monetise their content – severely impacting their ability to thrive.

The new code will govern commercial arrangements between publishers and platforms to help keep publishers in business – helping enhance the sustainability of high-quality online journalism and news publishing in the UK.

It will form a major part of the government's work to support the sustainability of the UK's world leading news publishing sector and make sure, as news moves ever more online, publishers get a fair deal from the platforms on which they rely.

The government has set out its plans to take forward the development of the new unit and code of conduct in its response to the market study it asked the CMA to produce on online platforms and digital marketing.

The Unit will be informed by the work of the Digital Markets Taskforce, which was set up earlier this year to provide advice to the government on the potential design and implementation of pro-competitive measures – including the methodology which will determine what companies should be designated as having strategic market status, and how a regime would work in practice.

The digital sector contributed nearly £150 billion to the UK economy in 2018 – driving opportunity, productivity and creativity in every corner of the UK.

Through its study, the CMA found that, among other things, a lack of competition in digital markets prevents the development of new, valuable services for consumers, and results in higher prices for businesses using the platforms – which are then passed on to consumers.

The CMA's market study was commissioned by the government as part of a series of steps to promote competition in this area. In 2018, the government commissioned the Digital Competition Expert Panel, chaired by Professor Jason Furman, which proposed a new pro-competition regime for digital platform markets in its final report, the Furman Review. The Government accepted the Furman Review's six strategic recommendations, including the establishment of a new Digital Markets Unit (DMU), earlier this year.

The government will consult on the form and function of the Digital Markets Unit in early 2021 and legislate as soon as parliamentary time allows.

- building on the work of the Furman Review, the government established the Digital Markets Taskforce in March. The Taskforce is due to report later this year
- the Digital Markets Unit will build on the work of the Taskforce and begin to operationalise the key elements of the regime
- measures to promote competition in digital markets will form part of wider work to reform the UK's approach to competition policy, which will be consulted on in 2021
- the proposed approach to the regulation of digital markets complements the objectives of wider digital policy and regulatory interventions, including the National Data Strategy and the Online Harms Bill
- the CMA market study says Google has significant market power in the general search market and in search advertising, and Facebook has significant market power in the social media market and in display advertising
- around £14 billion was spent on digital advertising in the UK in 2019, around 80% of which was spent on Google and Facebook, and the CMA notes the number of adverts that consumers are exposed to on digital platforms is increasing, with adverts seen per hour on Facebook rising from 40-50 in 2016 to 50-60 in 2019. Its average revenue per user is now more than ten times higher than competitors
- In 2016, Google increased the maximum number of adverts displayed following a search query and moved these to the centre of the page above organic results. In the UK its prices for advertising on desktop and mobile are also 30 to 40 per cent higher than Bing's, its main competitor

The CMA also provides evidence that a lack of competition in these markets leads to harms to consumers and businesses through:

1. Reduced innovation. The report argues that a lack of competitive pressure on Google and Facebook results in reduced innovation and inhibits the development of new, valuable services for consumers.
2. Higher prices for goods and services. The report provides evidence that businesses are facing higher prices on the dominant platforms (which are passed through to consumers). CMA analysis shows that in the UK both Google and Facebook are consistently earning profits well above what is required to reward investors with a fair return. Google earned £1.7 billion more profit in 2018 than the benchmark level of profits. For Facebook, the comparable figure for 2018 was £650 million.
3. Reduced quality. The number of adverts that consumers are exposed to on digital platforms is increasing. Adverts seen per hour on Facebook rose from 40-50 in 2016 to 50-60 in 2019. In 2016, Google increased the maximum number of adverts displayed following a search query and moved these to the centre of the page above organic results.
4. Lack of consumer control. The report argues that consumers would have more control over the collection and use of their data if there was more competition in digital advertising markets. The CMA highlights that

search and social media markets are characterised by “take it or leave it” terms that mean consumers have to share their data with platforms to use services. In a competitive market, one would expect services to compete to offer better terms to consumers who prefer not to share their data.

5. Broader social harm. The CMA also set out evidence of broader harms due to weak competition, such as the negative impact on the quality of journalism, in line with the findings of the Cairncross Review.