

[Dstl scientists develop pioneering bio-batteries](#)

Defence Science and Technology Laboratory (Dstl) scientists are working on bio-batteries powered by deoxyribonucleic acid (DNA) which could 'change the world and change the way we do things'.

The pioneering work is a collaborative project with Touchlight Genetics, the Office of Naval Research Global (ONRG) from the US Department of Defense, and the University of Utah.

Dstl's Synthetic Biology Lead Petra Oyston said:

One of things that is really clear is that power and batteries is a big need for defence, to have alternatives.

The current battery technology that our soldiers are using is containing a lot of energy in chemical format and if that battery gets shot for example it's going to explode and burst into flames.

Our bio-battery is made out of DNA, enzymes, lactate and water. If you shot it it would just go splat so there's a significant safety benefit.

She went on to say that this idea was scalable and could take the form of large batteries, batteries too small to see or a completely new format such as a coating.

[Bio-Batteries: The Power of DNA](#)

The concept behind the batteries is to use naturally occurring products such as lactate.

This is then degraded using enzymes, which release electrons, which are then captured and can be used as power.

ONRG Chief Scientist Patrick Rose said:

For defence our warfighters continue to carry more and more electronics that require the power and that means carrying batteries with them.

These batteries might provide a solution, a greener solution to generating power.

It feels absolutely fantastic to be involved in these types of projects. The impact for defence as well as for society at large will be multi-fold.

Touchlight Genetics Head of Platforms Tom Adie said:

It's really interesting to occasionally, step back and see where it's going to go.

It has applications in so many areas potentially that it's sort of exciting to think about.

He added that it could be "dried down" and reconstituted when needed.

You have an incredibly energy-dense battery that can be carried very portably. It's very light and you can reconstitute it anywhere: seawater, freshwater. So you can carry it on ships; you can carry it in disaster areas.

He added that Touchlight is unique in the scale, speed and quality of DNA it produces.

The project, which started in 2017, is being funded by Dstl and ONRG. Touchlight Genetics are undertaking the work to produce the DNA at scale while the University of Utah are working on the enzyme optimisation and cascade evolution.

Dstl Military Adviser Andrew said:

It's vital in this day and age that the army considers sustainability and its impact on the environment.

This is the type of project that offers the military amazing benefits. It will save lives. It is the sort of technology defence needs.

[RSH provides clarity on regulating for-profit providers](#)

Press release

The Regulator of social Housing has updated its Regulating the Standards information.



The Regulator of Social Housing has today (16 March 2022) published an update to 'Regulating the Standards' setting out its approach to grading for for-profit providers.

RSH expects all registered providers to meet the same standards, regardless of whether they have a for-profit or not-for-profit business model. All private registered providers should be well governed, financially viable, and provide safe and good quality homes for their tenants.

There are, however, differences between for-profit and not-for-profit providers which the regulator needs to take into account when assessing governance and financial viability. In particular, for-profit providers have different capital structures and cash flow dynamics and are often part of wider groups of connected companies rather than standalone organisations.

The updated edition of Regulating the Standards provides clarity to stakeholders on how the regulator will report its findings from In-Depth Assessments of for-profit providers. This will be applied when the regulator reports its first regulatory judgements of for-profit providers which own more than 1,000 homes. The updated guidance also includes a range of minor amendments to other areas of the document which are set out in the publication.

The approach aligns with the regulator's primary focus to promote a viable, efficient and well-governed social housing sector able to deliver and maintain homes of appropriate quality that meet a range of needs.

Fiona MacGregor, Chief Executive of RSH, said:

We are pleased to share our updated regulatory guidance with stakeholders, which sets out the way in which we will report our first in-depth assessments of for-profit providers.

All providers are custodians of people's homes and need to ensure those homes meet the needs of their tenants over the long term. It is vitally important that providers meet the standards that we, their tenants and stakeholders expect.

[Regulating the Standards 2022](#) is available on the RSH website.

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1. Regulating the Standards outlines the regulator's operational approach to assessing providers' compliance with economic and consumer standards. Those standards and the requirements they place upon registered providers are set out in separate documents available on the Regulator of Social Housing's pages on www.gov.uk.
2. Reflecting the regulator's risk-based proportionate approach, it regulates providers differently depending on their level of risk exposure. Providers which own fewer than 1,000 social homes are subject to a different level of regulatory engagement on the economic standards. The regulator's approach is detailed in Regulating the Standards.
3. The new version of Regulating the Standards updates the document published in March 2020.
4. For press office contact details, see our [media enquiries page](#). For general queries, please email enquiries@rsh.gov.uk or call 0300 124 5225.
5. The Regulator of Social Housing promotes a viable, efficient and well-governed social housing sector able to deliver and maintain homes of appropriate quality that meet a range of needs. It does this by undertaking robust economic regulation focusing on governance, financial viability and value for money that maintains lender confidence and protects the taxpayer. It also sets consumer standards and may take action if these standards are breached and there is a significant risk of serious detriment to tenants or potential tenants.

Published 16 March 2022

[Wallace & Gromit's Cracking Ideas workshops for primary schools](#)

News story

The Intellectual Property Office is offering a series of free Wallace & Gromit's Cracking Ideas workshops for primary schools.



The sessions will run across the UK to support imagination and creativity through Design & Technology for school ages 5 – 11.

To register for the sessions please email crackingideas@ipo.gov.uk with your preferred venue, school name, number of pupils and school year/age before 25 March 2022. Demand is limited, so those that contact us first will be given priority.

Venues	Date
Glasgow Science Centre, Scotland	21 April 2022
W5 Belfast, Northern Ireland	25 April 2022
Techniquet, Cardiff, Wales	28 April 2022
Winchester Science Centre England	29 April 2022

The interactive session will immerse the class in Wallace & Gromit's workshop. Led by our inventor they will learn about existing inventions with a twist before exploring how imagination and creativity can change the future through invention.

The group will be challenged to invent, or improve an existing mode of transport for Wallace & Gromit to tour the UK. All entries will all be entered into our national competition to win an Aardman model making session for their class.

There may be an opportunity to attend the science centre to expand your visit. Please flag in your email if you would like to explore this.

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[CMA finds NortonLifeLock purchase of Avast could reduce competition](#)

Press release

The CMA has found that NortonLifeLock's approximately £6bn purchase of Avast raises competition concerns and may now be referred for an in-depth investigation.



NortonLifeLock and Avast both offer cyber safety software to consumers under a variety of different brands. Products include antivirus software (also known as endpoint security software), privacy software (such as VPNs) and identity protection software.

As the companies are close competitors, with few other significant rivals, the Competition and Markets Authority (CMA) is concerned that if completed the proposed deal could lead to a reduction in competition in the UK market. This could lead to UK consumers getting a worse deal when looking for cyber safety software in the future.

David Stewart, CMA Executive Director, said:

We are living more of our lives online and it is vital that people have access to competitive cyber safety software when seeking to protect themselves and their families.

NortonLifeLock's proposed purchase of Avast could lead to a reduction in competition in the UK and ultimately a worse deal for consumers when looking for cyber safety software.

Unless the companies can offer a clear-cut solution to address our concerns, we intend to carry out an in-depth phase 2 investigation.

NortonLifeLock and Avast now have 5 working days to submit proposals to address the CMA's competition concerns. The CMA then has a further 5 working days to consider whether to accept any offer instead of referring the case for an in-depth phase 2 investigation.

1. Any questions about how the CMA's decision affects the timeline for the deal should be directed to NortonLifeLock and Avast.
2. For more information, visit the [NortonLifeLock/Avast](#) case page.
3. All media enquiries should be directed to the CMA press office by email on press@cma.gov.uk, or by phone on 020 3738 6460.

PM to warn of 'far reaching consequences' of Russian invasion on Gulf visit

- Prime Minister to travel to the United Arab Emirates and Saudi Arabia today
- One-day visit is part of UK efforts to ensure coordinated international action on Russia's illegal invasion of Ukraine
- PM will also discuss energy security in the region, as Saudi alfanar group confirms £1bn investment in Teesside green aviation fuel project

The Prime Minister will meet leaders in Abu Dhabi and Riyadh today [Wednesday 16th] for talks on energy, regional security and humanitarian relief, as he galvanises global action on the crisis in Ukraine.

He will meet Crown Prince Mohammed bin Zayed in the United Arab Emirates before travelling to Saudi Arabia to meet Crown Prince Mohammed bin Salman. The Prime Minister will discuss the importance of allies working together to increase the diplomatic and economic pressure on President Putin's regime and minimise the global fallout from the conflict.

The leaders are expected to discuss efforts to improve energy security and reduce volatility in energy and food prices, which is affecting businesses and consumers in the UK as well as regional stability in the Middle East. In addition to potential further measures to increase oil production, the Prime Minister is focused on diversifying the UK's energy supply and working with international partners to ramp up renewables.

Saudi Arabia, for example, is the third largest supplier of diesel to the UK, but the Kingdom also committed to net zero by 2060 ahead of COP26 and is investing heavily in green technology at home and in the UK.

As part of today's visit, Saudi Arabia's alfanar group will confirm a new £1 billion investment in the Lighthouse Green Fuels Project in Teesside, aiming to be the first company to produce sustainable aviation fuel from waste at scale in the UK. The project is expected to create more than 700 jobs during construction starting next year and around 240 full-time jobs once it is fully operational. Aviation fuel generated by the plant has the potential to produce 80 percent less greenhouse gas than its fossil fuel equivalent.

Prime Minister Boris Johnson said:

The brutal and unprovoked assault President Putin has unleashed on Ukraine will have far-reaching consequences for the world, well beyond Europe's borders.

The UK is building an international coalition to deal with the new reality we face. The world must wean itself off Russian hydrocarbons and starve Putin's addiction to oil and gas.

Saudi Arabia and the United Arab Emirates are key international partners in that effort. We will work with them to ensure regional security, support the humanitarian relief effort and stabilise global energy markets for the longer term.

Today's funding announcement follows a commitment last year by Saudi firm SABIC to invest up to an additional £850 million to reopen their hydrocarbons 'cracker' at Wilton and decarbonise their operations in the north-east of England. The Prime Minister is expected to visit SABIC's innovation centre in Riyadh and meet representatives from the alfanar group. Through our Sovereign Investment Partnership, since 2021 the UAE has already invested in excess of £3bn across life sciences, technology, infrastructure in the UK – as well as a multi-billion pound investment from BP and ADNOC in clean hydrogen hubs.

The Prime Minister will also discuss shared strategic priorities with the leaders of the UAE and Saudi Arabia, including the situation in Iran and Yemen, increased security cooperation, trade and investment and supporting human rights and civil society.

The UAE and Saudi Arabia are the UK's two largest economic partners in the Middle East, with bilateral trade worth £12.2bn and £10.4bn in 2020 respectively. The UK is preparing for negotiations on a trade deal with the wider Gulf Cooperation Council, which will boost our trade and investment with the whole region.