

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CLAIRVAUX LTD	Electric Propulsion Attachment for Vans EPAV	£55,214	£55,214

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Project description - provided by applicants

The Electric Propulsion Attachment for Vans (EPAV) will connect to the rear of the van through a multi-link towbar and effectively push the vehicle from behind using electric power. The solution is ideal for vehicles that are already side access only (such as certain supermarket home delivery vehicles) van-based minibuses and panel vans with both side and rear doors. Key objective of the project is to design an Electric Propulsion Attachment capable of connecting to a broad range of 3500kg vans; it will be easy to install; easy to connect to the driving controls (accelerator, brake, signals, lights); convenient to recharge; have a neutral impact on vehicle handling; it will be readily removed for fitting to another vehicle. Main areas of focus will be powertrain & battery installation and multi-link vehicle attachment. The powertrain needs to provide adequate performance within the urban environment. Battery pack needs to provide adequate range for the operations. Multi-link attachment needs to satisfy safety, durability and handling requirements. This latter point is important, as the traditional single pivot towbar cannot transmit the power in a stable manner from a rear axle. A powertrain controls model will also be developed so that the inputs from driver's controls on the base vehicle are interpreted correctly for use by the electric powertrain when it is active while still operating the diesel engine when needed. The EPAV brings a new dimension to fleet renewal with electric drive. EPAV can be fitted to a van of any age, removed at the end of the lease or ownership period and transferred to another vehicle. We believe this project helps to accelerate the shift to low carbon transport by allowing vehicle operators to switch to electric at any point in their vehicle life cycle and without needing to select which locations can operate BEV by retaining the original engine to provide stem mileage. Links to geofencing would be developed in Phase 2 to ensure the maximum benefit is taken from the zero emissions capability. These factors in turn will allow on-demand transport by minibus or van-derived taxi to benefit from Zero Emissions capability, therefore helping to decarbonise energy, business & industry and provide for a more sustainable public sector.

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FERNHAY LIMITED	15 minute 'City Hub' for sustainable parcel deliveries	£47,132	£47,132

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Project description - provided by applicants

This project enables the UK to build back better during Covid-19 recovery by responding in a sustainable way to the dramatic change in the way that people now shop and the huge increase in eCommerce. A key deliverable of the project is the City Hub. This will facilitate the bulk movement of goods into cities for distribution via a fleet of cycle and walking equipment direct to the customer door. By securing this mass shift to low carbon transport and away from vans, last mile deliveries will never be the same again.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ECOMAR PROPULSION LTD	Commercial vessels - conversion to clean propulsion - Feasibility Study	£57,926	£57,926

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Project description - provided by applicants

Ecomar Propulsion Ltd aim to assess the technical feasibility to develop UK manufactured green propulsion systems for rapid adoption by commercial ship operators and emergency services worldwide. The project aims to provide solutions to rapidly electrify and de-carbonise highly polluting marine engines and to deliver new opportunities for British innovation. By creating products that convert fossil fuelled engines to electric power, we aim to maximise the advantages of a change to a green economy and push towards a net zero carbon shipping industry. Defining the most productive and cost-effective use of British innovations and providing rapid routes to change, will stimulate growth in high value tourism, engineering and manufacturing jobs to replace those lost due to the Covid-19 pandemic. The project will help to develop the wider UK "Green" supply chain in an increasingly dynamic sector. Lessons learned from this study will have applications in tourism, automotive and industrial adoption of electric and non-polluting propulsion systems that will offset carbon pollution and job losses. It forms a critical change of emphasis from fossil fuelled economies to a green economy. Project outputs will lead to development of Phase 2 prototypes and manufacturing activity, based on the feasibility platforms for large fleet owners in collaboration with Ecomar. This project provides industry with robust metrics directing its emission reduction choices. We aim to utilise the results to develop intellectual property, new products and progress the TRL and MRL levels as quickly as possible in preparation for full-scale manufacture and commercialisation.

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VISTALWORKS LIMITED	Reducing the climate impact of black market HFC gases	£59,897	£59,897

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Project description - provided by applicants

****HFC greenhouse gases - the biggest black market you've never heard of**** The UK and Europe's climate goals are being undermined by a thriving black market for HFCs (hydrofluorocarbons), which enter the EU under the radar of the F-gas quota system. Our stakeholder's research from July 2020 suggests the illicit trade volume in HFCs could be as high as a third of the legal EU market (equivalent to at least ?850million) and accounting for 34 million tonnes of CO2 equivalent greenhouse gases. That is the CO2 equivalent to 8.7 coal fired power stations running for a year, 5,756,402 homes electricity use for a year, or 3,388,107 car trips around the entire circumference of the earth! On it's own, this black market would be the EU's 20th largest country in terms of CO2 impact - ahead of the entire national emissions of Estonia - if the global warming potential of illegal HFCs were measured alongside the EU's 27 member states. ****You're not the only one who's not aware of this problem**** Illicit trade is the biggest source of funding for organised criminal gangs, and is a cross-border, international challenge. Unfortunately, right now, enforcement of the regulations preventing illegal trade in HFCs are virtually non-existent. National law enforcement priorities are elsewhere, and it is hard to tell one green canister from another to the untrained eye. That makes this illegal HFC business very low risk, very profitable, and far more lucrative and attractive than drug dealing and human trafficking. Not only that, but because illicit HFCs can "unwittingly" find their way into buildings, air conditioning (building, cars and transport) systems, refrigeration systems and other light industry, efforts to switch to Clean Energy and meet Net Zero targets can be undermined and completely negated. ****Solution to detect, enforce and safely eliminate illegally traded HFCs**** Vistalworks is proposing a technology solution that automatically detects illegal sellers of HFCs, provides jurisdictionally appropriate leads to enforcement agencies, along with the necessary field kit to help ordinary officers detect illicit products when they find them, and collects and stores case data in a way that will support successful prosecutions. This solution delivers social good at a nationally and globally significant levels, potentially curbing the significant levels of climate-related emissions caused by illicit HFCs by 170,000 tonnes of CO2 a year.

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WESLEY TURBINES LIMITED	Wesley Turbine R&D	£56,400	£56,400

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Project description - provided by applicants

The project will establish the commercial and practical benefits of a new turbine for the recovery and conversion of low-grade waste heat and sustainably created steam into useable electricity. In this project, we are working to complete the improvements to our experimental prototype of a new steam turbine by refining its design in conjunction with the University of Durham's world-class engineering faculty in order to complete its preparation for initial commercialisation.

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BRITISH LITHIUM LIMITED	Pilot Scale Production of Lithium from UK Granites; transitioning to an electric vehicle future post Covid-19	£59,354	£59,354

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Project description - provided by applicants

If implemented, our Project would create Europe's only domestic supply of lithium, placing the UK at the forefront of the integrated manufacture of lithium batteries and zero-emission vehicles, supporting the green-led recovery of the UK's automotive sector from the dramatic losses due to the Covid-19 pandemic. In the six months to 30 June 2020, UK diesel car sales fell 64.9%, petrol sales fell by 52.3%, whereas EV sales increased by 158.6%; June's largest selling car was the imported Tesla Model 3 and the second largest, the imported iPace. In 2019, cars were _already_ the UK's largest import by value. Carmakers co-locate with battery makers. Just one Gigafactory (large lithium-ion battery plant) is currently proposed in the UK, whereas many are under construction in Europe. To transform the whole UK car industry from internal combustion to EVs would require seven Gigafactories (_Faraday 2020 study_). The first EV designed in the UK (Jaguar's I-Pace) is made in Austria. Even the iconic Mini-Electric uses drive trains and batteries made in China. 45% of people surveyed by Venson said radical improvements in air pollution from reduced traffic during Covid-19 has made them consider purchasing an EV, and 62% want more done to expedite take-up of EVs, once the UK has recovered from the pandemic. European governments, including the UK's, have mandated the switch from hydrocarbons to electric mobility. Lithium-ion batteries are essential for this transition, yet no battery-grade lithium is produced in Europe. BLL has a substantial 112 Mt lithium-mica-granite deposit in Cornwall, but lithium has never been commercially extracted from mica. Previous, mostly academic work on processing granites, has proposed froth flotation and sulphuric acid leaching which would produce millions of tonnes of contaminated residues. BLL has developed proprietary technology for separating mica from the granite without using chemicals and extracting lithium from that mica, and have produced battery-grade lithium at laboratory scale. Our technology potentially offers the lowest environmental footprint of any world lithium producer. This Project will prove the technical feasibility of building and operating a pilot plant in the UK in 2021 to prove our technology, to prove its environmental suitability, to provide samples of the final product for tests by our proposed customer and to attract commercial development funding. We offer potential UK battery and EV makers a competitive advantage over Europe, with UK's only established lithium Resource and the potential to be Europe's first, battery-quality lithium chemical producer.

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ACTUATION LAB LTD	Flow Control for a Net Zero World	£48,944	£48,944

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Project description - provided by applicants

COVID-19 has shown how fragile our reliance on manual labour for operation and maintenance of industrial assets and infrastructure can be. As organisations recover from COVID-19 and look to improve resilience by automating more aspects of their operation, it's critical that the automation solutions they employ have a positive environmental impact. Across a host of different sectors, from water treatment to oil & gas, valves are used to regulate the flow of fluids in pipes, surprisingly, around 60% of valves are still manually operated. Although automated valves are an established technology, current solutions have three major issues that make them unsustainable for use in a net-zero world: 1. **High emissions:** The stems that connect actuators to valves are inherently susceptible to leaking, if the pipeline is carrying powerful greenhouse gases like natural gas (methane) then this is a major problem. These leaks contribute to fugitive emissions, it is thought such emissions from a range of sources could be equivalent to 5% of total global GHG emissions. Leaking valves are responsible for 60% of all fugitive GHG emissions from industrial processes. 2. **Poor flow efficiency:** Many valves, even when open, restrict the flow of fluid within them, adding greatly to the pumping requirements in water and waste treatment networks. It is reported that in the US alone, 30TWh of energy, equivalent to the entire electricity usage of Scotland, could be saved through the use of valves with more efficient flow paths. 3. **Poor operational efficiency:** On account of the high torque and speed demands, 60% of automated valves are forced to employ pneumatic or hydraulic actuators with just a quarter the operating efficiency of modern electric actuators. Actuation Lab has developed a design for an entirely new form of automated valve that addresses these deficiencies. Called the SL valve, it is designed to provide zero-resistance, full flow operation when open and exceptionally low operating torque requirements, enabling efficient electric motor driven actuation and stem-less torque transmission. A flow control solution for a net-zero future.

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UFONIA LIMITED	Autonomous Remote Cancer Triage	£59,239	£59,239

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Project description - provided by applicants

Ufonia are seeking the SBRI grant in order to develop their technology of Artificial Intelligence (AI) delivered telephone conversations with patients to referrals to St George's University NHS hospital's Head and Neck cancer department. Ufonia proposes the triage of urgent suspected head and neck cancer referrals with an autonomous AI delivered telephone conversation using a validated head and neck cancer risk calculator, thereby reducing the need for many face-to-face consultations. Head and neck cancer rates are increasing with an increasing number of suspected cancer referrals seen each year. Alongside this, the COVID-19 pandemic has demanded a re-rationalisation of healthcare services and required profound changes in the way we deliver care in order to protect patients and staff. Head and Neck (H&N) surgeons who traditionally triage these patients are uniquely vulnerable to the disease through their close interaction with virus reservoirs in the nose and throat. This innovation therefore has the potential to benefit patients, clinicians, NHS trusts and society as a whole, with a primary focus on COVID-19 recovery and sustainability. These are summarised below.

- _ COVID-19 recovery: _ * Facilitates non-contact interactions supporting social distancing measures, and therefore prevents disease spread protecting both patients and staff.
- * Rationalises healthcare resource allocation, freeing up clinician workforce capacity which has been impacted by redeployment, sickness and self-isolation.
- _ UK Government's Clean Growth Strategy and net zero ambition: _ * Reduced patient travel to hospital for in-person consultations reduces greenhouse gas emissions and air pollution. Reduced need for single use disposables and cleaning chemicals helping to reduce the carbon footprint of healthcare delivery.
- _ Wider patient benefits: _ * Timelier triage will allow patients to be seen and investigated sooner with an overall reduced time to cancer diagnosis and treatment. Patients can be triaged at home and at their own convenience with no need for time off work or childcare. The NHS is one of the UK's proudest assets and is uniquely placed to lead the way on the government's timely ambition to ensure growth in an environmentally sustainable way. During this project Ufonia will be partnering with the Centre for Sustainable Healthcare who will be providing expert analysis of the project's social, financial and environmental impacts, with a strong focus on patient empowerment and self-care. If proven efficacious this technology has the potential to expand to many patient groups beyond the scope of this feasibility project and provides an exciting area for future development.

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ARMADILLO METAL COATINGS LTD	Anti-viral Metal Coatings	£59,925	£59,925

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Project description - provided by applicants

Copper has well known anti-viral properties and is also widely used as an electroplated coating for everyday items such as coins and door handles. However, it is susceptible to corrosion (tarnish) which requires high maintenance for aesthetic reasons or is lacquered obfuscating its use as an anti-viral surface. Armadillo, in co-operation with the Royal Mint, has developed and patented a high performance, anti-corrosion 'additive' technology to augment current metal plating processes. Proof of anti-tarnish and anti-corrosion has been achieved on copper, evidencing the possibility of using this technology to create practical, long-lived anti-viral surfaces on everyday metallic items. This project will prove the efficacy of the technology as an anti-viral surface, initially on test specimens but later on practical metallic objects such as coins and door handles. As part of Phase 2 the technology will be tested specifically for anti-CoronaVirus-19 properties, certified as such, and scaled up for widespread adoption. Project partners include The Royal Mint who not only have an interest in anti-viral coatings for coins but also have the electroplating facilities and expertise to electroplate at scale and UAP Ltd, a supplier of door furniture for clinical environments who again have an obvious interest in anti-viral coatings.

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SEAWATER SOLUTIONS LTD	Glasgow Wetland Carbon Credit Project (GWCCP)	£59,970	£59,970

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Project description - provided by applicants

The Glasgow Wetland Carbon Capture Project (GWCCP) will develop urban wetland sites to deliver a host of economic and environmental benefits to some of the most deprived and vulnerable sections of Glasgow. An exciting, Glasgow-based consortium has joined forces to deliver a shared vision of supporting Glasgow's post-Covid19 green recovery. It features: * a pioneering and award-winning agri-tech start-up (Seawater Solutions) * a world-leading international technological university specialising in climate change and sustainability (University of Strathclyde), * a cross-industry group devoted to promoting urban ag-tech as a solution for food and environmental crises (UKUAT). And with Glasgow City Council (GCC) as customer, we have one of the UK's most forward-thinking and ambitious local councils to steer the project to deliver the best outcome for its people, economy, and future security and sustainability. GWCCP's aims appear relatively simple - to turn degraded, redundant or vacant land into thriving urban wetlands. On the surface, GWCCP will deliver: * a natural defence from rising sea levels, flooding, and soil erosion that costs councils millions every year to tackle * increased biodiversity and green space access for local residents and visitors alike, improving residents' wellbeing and encouraging nature to return to urban settings * a Sustainable Start-up Village giving local residents the opportunity to work on the improved land, and utilise the crops being grown (including samphire for consumption and reeds fibres for textiles) * outreach and engagement opportunities for vulnerable communities and local schools and museums to raise awareness of the need to recover in a more sustainable manner. Dig below this beautified wetland surface and you find some extraordinary benefits relevant to the issues faced by Glasgow: * the world's most effective carbon sinks, with each hectare able to capture up to 250 tonnes of carbon and a potential £30,000 on the carbon credit market * a hugely effective soil and water cleaning process, that can transform contaminated soils and waters so that communities and businesses can return and utilise the area. This is all achievable in time for COP26, resulting in a showcase of Glasgow's innovative approach to a greener, fairer, more sustainable recovery, delivered entirely by the people and organisations of Glasgow. Finally, it will develop a model so that council's around the UK and internationally can adopt, helping urban communities to create green jobs and become more involved and passionate about their cities, while in the process helping councils to reach their own environmental, economic and social-cohesion targets.

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GURU SYSTEMS LIMITED	Guru Reside: using IoT and machine learning to combat poor health outcomes by improving the thermal efficiency and indoor air quality of dwellings	£58,627	£58,627

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Project description - provided by applicants

We know that cold houses [increase mortality and respiratory and cardiovascular morbidity][0], while poor Indoor Air Quality (IAQ) further affects the health outcomes of occupants, [particularly those related to Covid-19][1]. With the social and economic impacts of Covid-19 leading to changing patterns of domestic housing use, now more than ever the question of the quality of the UK's housing stock is one of inequality and social justice. Currently, there is little to no verification of the thermal efficiency or of the IAQ performance of dwellings as-built. Lax standards and poor inspection by contractors often mean real performance of new housing and deep energy efficiency retrofits is not what was promised, but no data on where the problems are means housing managers don't know where to focus attention. Guru Reside will solve these problems by providing landlords real-time visibility and intelligent risk alerting on the thermal and IAQ performance of their properties. This will enable them to take a preventative approach to the maintenance of their building stock, predicting issues such as mould formation before they occur, reducing maintenance costs, and ensuring any interventions deliver the results they promised, all the while improving the health outcomes of residents. The project will utilise Guru's new hardware, the Hub III Core, that enables the integration of third-party hardware and sensors into Guru's existing network and data infrastructure on residential sites. This in turn allows us to provide our clients with additional tools to monitor and manage their dwellings using this existing infrastructure reducing the investment needed. Leading the project, Guru Systems delivers market-leading hardware and data analytics platforms for heat networks, improving performance for developers, heat suppliers and customers. Guru is joined by Fairheat, who bring their expertise on heating systems, and The Monomoy Company providing expertise around IAQ analysis and sensor technology. Heat networks are of particular interest to the question of thermal efficiency and IAQ. As a fundamental part of the UK's strategy to meet the decarbonisation target, the proportion of UK heating delivered over heat networks is projected to rise from 2% to 20% by 2050\ . Guru Reside will improve the IAQ and thermal efficiency of dwellings by bringing together a team of experts to develop a low cost, data-driven solution to manage the performance of the dwellings under their management that leverages Guru's existing expertise, technology platform and client base. [0]: <https://www.ncbi.nlm.nih.gov/books/NBK535294/> [1]: <https://www.nytimes.com/2020/03/27/climate/climate-pollution-coronavirus-lungs.html>

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRITS ENERGY LIMITED	Sustainable Food Production System	£59,500	£59,500

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Project description - provided by applicants

The United Kingdom aims to reach carbon neutral target by 2050, and all sectors have started planning and implementing strategies to achieve this goal. The food production industry is responsible for approximately 26% of global Green House Gas (GHG) emissions, of which 27% result from crop production. To achieve the industry's net-zero emission target for agriculture by 2040, a transformation is required in both the farming and energy production sectors, and especially in their interaction and collaboration. However, global pandemic, natural disasters and human conflicts put the food production at risk. A report published by London School of Economics outlines the COVID-19 pandemic shows how deeply the UK's food security is dependent on the EU, while more than 80% of farmers said they expected profits to fall in 2020. The farming sector is focused on increasing the productivity of food production processes by integrating automation and digitisation into operations and using indoor farming. This will enable farmers to have more granular visibility and control over the operation in real-time and harvest crops year-round as it is not weather or season dependant process. However, this requires more energy to support the operation effectively and hence, increases the operations energy cost. By 2025, it is anticipated that the agricultural technology sector will be worth more than £136 billion globally. This includes over £129 billion in the Autonomous Farm Equipment Market and over £7 billion in the Precision Farming Market. The Sustainable Food Production System (SFPS) project aims to promote indoor farming using Total Controlled Environment Agriculture (TCEA) system and develop an energy system which integrates into food production operations to deliver zero-carbon products. The technology ensures the required power is supplied from renewable resources at an affordable price in order to reduce OpEx and provide products with competitive price to become a mainstream supplier to the consumer market. Such an energy management system has the potential to be installed in sites around the world as a key part of an innovative transformation of food production, with positive consequences in feeding the world's population in a way that also addresses challenges associated with climate change.

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SATURN BIOPONICS LTD	Soil-less technology for enhancing productivity, efficiency and sustainability in baby-leaf salad and field vegetable production	£59,734	£59,734

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Project description - provided by applicants

In the project, Saturn Bioponics will develop an innovative soil-less crop production technology solution that increases UK domestic production of various field and greenhouse crops in a cost-effective, practical, sustainable and profitable way. The primary theme this proposal addresses is "Improving business and industry efficiency" and the secondary theme is "climate change adaptation and mitigation". The COVID pandemic has highlighted the vulnerability of the food supply chain, which is particularly dangerous for fresh produce such as salads and green vegetables which have a short shelf-life. The novel technology delivered through this competition helps to reduce the dependency on imports, potentially doubling the domestic output for the relevant crops over the year. It will also help to reduce the negative impact of agriculture on the environment and increase the productivity and profitability of the relevant crop production areas. Further, it helps to mitigate the risk associated with production of these crops that comes from climate change, disease and microbiological hazards.

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BLUETOOTH MESH SOLUTIONS LIMITED	Better Management of Tourist/Day-Visitors during COVID-19 using Innovation and Technology	£49,215	£49,215

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Project description - provided by applicants

We have created a very easy to use App -- based on Google Maps to identify vacant **Parking Spaces in Real Time.** We combine our parking sensors with real-time data that allow drivers to reserve/find/pay for parking efficiently. Currently, when a driver needs to park their vehicle, they often blindly hunt for a space, causing stress and wasting time. When they find one, they are met by parking meters, pay-and-display machines and/or pay-by-phone/-application systems wherein they need to estimate their required length of stay on arrival; thus, overpaying and fines are common. We have introduced a 'COVID-19' alert feature to our app so that when users park their vehicles, they receive a notification to show the **COVID19** status of the area. In collaboration with Torridge County Council we would propose to test our parking solution in designated areas and car parks. The data can then be used by the Council to modify and adjust conditions to ease traffic congestion, minimalise pollution in areas where needed and assist in the control of COVID-19. Small businesses/independents that provide retail/service sector are often located around High Streets and Shopping Arcades. These areas have a high turnover of visitors, often in vehicles. As the visitor pays for parking they receive a small, very local marketing notification. The parking event triggers the marketing event. This promotes businesses within 500m of the parking location, again using Geo-Fencing, and making the marketing very relevant. This smart parking solution will reduce carbon emissions, improve traffic congestion, inform about COVID-19 status, whilst helping local businesses recover from the impact of Covid-19.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CAMBRIDGE CARBON CAPTURE LIMITED	Feasibility of using carbon capture and mineralisation technology to decarbonise the UK ceramics industry	£59,869	£59,869

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The overall project (Phase 1&2) will be to deploy a pilot plant capturing the CO₂ and NO_x emissions from a kiln used to fire roof tiles at Dreadnought Tiles production site using Cambridge Carbon Capture Ltd's novel CO₂LOC technology. CO₂LOC technology captures and converts the emissions to a commercially useful magnesium carbonate by-product. In this project the magnesium carbonate output of the pilot plant will be transferred to a nearby concrete block manufacturing plant owned by Tarmac UK where it will be used to develop construction material concepts which will be tested and used in a demonstration building. Phase 1 of the project will be a feasibility study to validate the viability of the phase 2 project in terms of cost, benefit and environmental and social impacts and will form the justification and basis of the phase 2 project, which will be to deliver the pilot plant and develop a market for the captured CO₂. A successful pilot of CO₂LOC technology will encourage further support for the development and scale up of a technology which would offer an economically viable Zero Emissions solution across many industrial sectors. This will be especially important for industrial facilities located a distance away from proposed carbon capture and storage infrastructure, ensuring they meet Zero Emissions targets allowing continuation of these plants past 2050.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ETHOS VO LIMITED	A city led recovery through Total Impact visibility	£59,629	£59,629

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The coronavirus pandemic will have long-term consequences for the way in which society perceives value. Whilst the financial impacts may be clear, COVID-19 has also highlighted the dependency that we share on value created by less tangible aspects of our lives - community cohesion, the environment, education, and -- most pertinently -- health. To 'build back better', government must show how initiatives deliver value in financial terms whilst ensuring natural and social capital are protected and enhanced. Throughout the government's 'Clean Growth Strategy', the importance of natural capital and the role of local government in driving sustainable growth are clearly stated. However, local authorities lack the skills and data required to plan and act in a way that balances economic, environmental and social needs. For many, this is a new concept of growth and behavioural change will need to be supported with tools. We will contribute to the innovation for a more sustainable public sector theme by enabling constant visibility of the economic, social and environmental impacts of policy. placemaker.tech is our vision for a technology platform that incorporates a range of applications. Initial development focuses upon two elements: kwantify.tech, a concept for data capture through computer vision technology. It is innovative in hardware design for the IoT and it is also commercially disruptive as it will be offered on a product-as-a-service basis and so provide a circular economy business model for technology assets. sea-green.tech, a SaaS tool that will enable local authorities to capture data through kwantify.tech, internal operational sources and public data sources in order to use a Total Impact framework to inform decision makers and the public. In phase 1 of the project, we will test the feasibility of our chosen technologies and gather user requirements to present a programme for product development and commercial launch in phase 2\.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARCHIPELAGO TECHNOLOGY GROUP LTD	Decarbonising coating in manufacturing	£58,873	£58,873

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Everything we buy is coated or painted. Cars, furniture, flooring, soft drink cans are all coated. Usually with many layers of paint and usually using a paint sprayer. Paint spraying is surprisingly wasteful. Typically only half the paint sprayed lands on the intended target. The other half goes into the air. Industrial coatings companies normally collect this waste paint in filters and burn them. When you add up all the waste it is huge. Some 3 million tonnes of coating are wasted world-wide every year. This results in over 30 million tonnes of CO2 generation per year, when the paint-laden filters are incinerated. That's about 9% of the UK's entire annual CO2 output. Archipelago's Powerdrop technology solves this problem. It puts down paint so that every drop lands where it is meant to and stays there. Because there is no waste, only half the paint is needed. Its cheaper for the coating industry and much better for the environment. Archipelago has made fully operational demonstrators that prove the technology at pilot scale. In this two-phase project, we plan to scale up and begin to roll out the technology to industries both in the UK and internationally.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SAGETECH MEDICAL EQUIPMENT LIMITED	Hospital Recovery Room Waste Anaesthetic Gas Scavenging Project	£57,007	£57,007

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

SageTech Medical is developing technology to stop the existing release of anaesthetic gases from hospital operating theatres into the environment. Release of volatile anaesthetic agents is environmentally highly damaging and financial wasteful.

The waste anaesthetic is collected into reusable canisters in the operating theatre and a SageTech machine located in a plant room in the hospital combines the gas collected from each theatre to be sent for purification in one bulk shipment.

SageTech has identified that a significant amount of anaesthetic is also breathed out by a patient when they have left the operating theatre and are in the Recovery Suite. Not only will these waste gases find their way into the atmosphere where they are very damaging to the environment, leading to climate change, but clinical staff will be vulnerable to long-term exposure to these waste anaesthetic gases.

Once the waste gases have been captured, SageTech is developing a way to recycle them ready for re-use by the NHS, saving money and the environment.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
AFRICA POWER LTD	Net Zero carbon in the Dairy Supply Chain - Innovative Productive Use of Energy Products	£59,986	£59,986

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Reaching net-zero-carbon emissions is a world-wide imperative and the UK Government is taking the lead by setting ambitious targets and funding the development of new technologies, products and services to export this capability worldwide, enhancing our economy, jobs and exports. This project will develop off-grid solar refrigeration capability without batteries, for the milk industries in developing countries where spoilage, wastage, inefficient, unreliable diesel generators are the norm. Solar panel prices are falling rapidly, but inverter and battery costs are static accounting for >50% of the costs in some solar projects. Replacing batteries with cold storage through improved insulation and (phase-change) materials, reduces costs. DC compressors improve efficiencies and eliminate inverters. Solar is scalable, making small small-holder chillers and insulated (phase-change) milk churns viable reducing milk wastage and improving quality whilst increasing the radius of milk collection. This will, in turn, increase the number of farmers and volume of milk feeding into the higher value milk processing chain, which will drive economies of scale and provide increased nutrition in countries where 23% of under 5's are malnourished and stunted. Milk products in Tanzania and Uganda are an important export, doubling in 2016-2018 to \$130m per annum.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
INGENZA LIMITED	HydroGreen Biofuel: Reducing the carbon footprint of highly efficient bioethanol production	£59,766	£59,766

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project will have a disruptive impact on the sustainability and cost effectiveness of ethanol production for the renewable fuels sector, while improving the environmental footprint and climate-change impact of the entire ethanol industry. It will address multiple economic, social, environmental and political needs. It will achieve this through innovative synthetic biology based, carbon-abatement that significantly reduces the normal concomitant emission of carbon dioxide (CO₂) as a by-product of ethanol biosynthesis from crop feedstocks. To achieve this aim we will engineer *Saccharomyces cerevisiae* (Brewer's yeast) to consume 'green hydrogen' as an energy source in order to allow feedstock carbon (that would normally be emitted as CO₂) to instead be redirected to ethanol biosynthesis. The primary goal is a truly net zero ethanol fermentation that emits no CO₂. Global yeast-based bioethanol production in 2019 of 28.6 billion gallons (BioFuel Digest 2020) emitted 77.6 million tonnes of CO₂ GHG into the environment. By redirecting carbon from CO₂ to ethanol we will lower emissions and crop feedstock requirement per unit ethanol produced, freeing up agricultural land for food and feed production. This will underpin political ambitions to increase bioethanol use in transportation fuels, addressing environmental and economic challenges and supporting UK government legislation to increase fuel-ethanol content from E5 to E10 and beyond. The resulting reduction in crop feedstock requirements (up to 33%) will provide market-leading competitiveness. The efficiency and sustainability gains of the resulting engineered yeast will be applicable to further bio-based products and the project aligns fully with the government's Clean Growth Strategy and net zero emissions targets. This project leverages the expertise and end-user relationships of an established and successful UK industrial biotechnology company to implement a disruptive technology that would establish industry-leading product competitiveness alongside potential annual carbon abatement of 77 million tons to establish a leading position in the provision of industrial yeast to the 30 billion gallons/£29 billion global markets for fuel ethanol.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
WashR	Dedicated On-Demand Cup Cleaning Station to Enable Reusable Use	£59,969	£59,969

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Cup waste a priority item for the UK Government in tackling avoidable waste. 2.5 billion single-use cups are disposed of each year in the UK with 99% sent to landfill. 90% of the cost in managing this waste is burdened on the government and taxpayers. In recent years there has been a concerted effort to shift consumer behaviours towards reuse, with initiatives such as a 25p latte levy and reusable cup discounts of up to 50p. Despite this reusable cup use only accounts for 5% of coffee sales. The Scottish Government recognise that the convenience of reusable cups must be improved in order for a cultural change to occur. Independent and WashR research over the last two years consistently found the main barrier to reusable cup use is cleaning the cup between uses. A lack of convenient places for cup cleaning on the go is preventing a change in behaviour towards reuse. In addition, heightened concerns over hygiene due to COVID-19 has resulted in organisations including Starbucks and Costa, reverting to single-use, potentially undoing any progress towards reuse. The proposed solution being developed for this project is WashR. WashR will remove the barriers to habitual use of reusable cups by developing an on-demand, hygienic cup cleaning solution, enabling users to develop a circular approach to drinking on the go.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
London South Bank University	H2-BusAC: Low Carbon Hydrogen Bus Air Conditioning System with Compact Hydrogen Storage and Hydrogen Fuel Cell	£58,055	£58,055

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Globally, the development of hydrogen fuel cell (H2FC) vehicles has attracted more and more attention to replacing the conventional gasoline fuel vehicles. These are attributed to a number of important advantages from the H2FC ones including low carbon emissions, no air pollution and sufficient energy resources. They are more suitable for transports in populated areas such as buses in cities, where less transport air pollution and limited carbon emissions are strictly demanded. Conventionally, an H2FC bus utilises high pressure (about 350 bar) tanks to store hydrogen on board. This leads to safety concerns for the passengers on board and takes relatively larger space. In addition, to fill the high pressure hydrogen tanks on board, even higher hydrogen pressure (about 500 bar) is needed at a specially designed hydrogen fuelling station which can consume excessive power. On the other hand, an air conditioning system in an H2FC bus is necessarily installed to maintain the comfortable condition of the passenger compartment. Normally, the air conditioning system uses a vapour compression cycle and is driven by electricity. The power consumption in the air conditioning system requires extra electricity from the fuel cell (FC) power generation and thus reduces significantly the maximum bus driving range. Subsequently, a H2FC bus with compact and secured hydrogen storage and a highly efficient air conditioning system is immediately desired. In this feasibility study, a novel hydrogen storage and air conditioning system for the H2FC bus (H2-BusAC) will be designed, simulated, optimised and specified for prototype development in the next stage. Instead of using high pressure tanks to store hydrogen on board, a specially designed hydrogen reactor heat exchanger will be developed to store the hydrogen with moderate pressure. This can diminish the safety concerns for the high pressure hydrogen storage on board. Meanwhile, the charging pressure of hydrogen at a hydrogen fuelling station and corresponding compression pressure and power are therefore significantly reduced. On the road, the hydrogen from the reactor heat exchanger releases to a fuel cell on board to generate power and drive the bus. In the meantime, the reactor absorbs heat from the passenger compartment to produce cooling during the summer period when cooling is demanded. During the winter period, space heating is satisfied by the waste heat from the fuel cell power generation process. Some essential design and operating conditions for conventional hydrogen FC buses will be obtained from industrial partners.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
NATURBEADS LTD	Cellulose microbeads for biocatalysis applications	£47,230	£47,230

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Enzymes are widely used as biocatalysts because they offer high yields and purity, shorter synthetic production pathways, environmentally friendly products and reduced waste and co-products.

In order to reduce costs of downstream processing, improve separation and stability towards different organic solvents in a wide range of temperatures, enzymes are often immobilized on carriers. These carriers are mostly based on acrylates and styrene polymers in form of spherical, porous microparticles (200<d<1000?m).

Due to the enormous environmental impact of polymeric microparticles (microplastics), the European Chemical Agency is now considering banning plastic smaller than 5mm in all applications.

For this reason, industry players are actively looking for more environmentally friendly replacements to plastic microparticles.

Naturbeads, a spin-off of the University of Bath, is scaling up an innovative process to produce cellulose, usually available in fibre form, in spherical form to be used as a direct replacement for spherical plastic microparticles. Cellulose is natural, it is what trees are made of, it is renewable because every year the earth produces millions of tons of cellulose and it is 100% biodegradable. The Naturbeads team has also the know-how to tailor the surface, mechanical and optical properties of the cellulose beads to mimic the properties of different polymers.

In this feasibility study Naturbeads will work with Prof. Karen Edler of the University of Bath and customer (and no cost partner for this project) ChiralVision in the Netherlands to validate the performance of cellulose beads as enzyme carriers. The process combines the expertise of the Naturbeads team in cellulose beads production and customization with the expertise of Prof. Edler in enzyme immobilization on cellulose beads. ChiralVision's will validate the outcome of the process by testing selected enzyme/carrier combinations in small scale industrial processes. The immobilized enzymes will be tested for their activity, selectivity and stability in standard tests like hydrolytic test and esterification, as well as their leaching behaviour to evaluate their recyclability. Upon successful completion of this feasibility study Naturbeads and ChiralVision will proceed with the optimization of the cellulose beads properties (e.g. increase of porosity to increase the surface area available to the enzymes) to increase the enzyme activity towards commercialization of a green solution for the biocatalysis industry.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
EXAGENICA RESEARCH LIMITED	HYDRA SBRI Phase 1	£59,716	£59,716

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Currently merchant vessels are strictly limited to carrying cargoes like crude oil on a singular outbound journey, returning with empty holds. The proposed Exagenica Research HYDRA project seeks to test the conceptual viability of a novel maritime engineering solution which, if proven, would enable bulk carriers, crude oil, product and chemical tankers to be multi-purposed in terms of the type of cargoes they can carry. This would facilitate transportation on inbound journeys, potentially transforming shipping economics and its socio-environmental impact.

The HYDRA solution consists of an innovative, pre-fabricated conversion system designed by Exagenica Research. When implemented across the respective hold areas of a tanker, the HYDRA system will extend the ship's capability to carry more varied cargoes without the need to undergo expensive or lengthy cleaning.

In addition to dramatically improving transportation versatility, the HYDRA conversion has also been designed to improve the structural integrity of hold areas, minimising the potential environmental damage caused by a hull breach while transporting liquid cargoes such as crude oil.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ARC MARINE LTD	Development of Reef Cubes for biodiversity enhancement of rock placement and carbon sequestration	£59,434	£59,434

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project is a development of ARC Marine's Reef Cubes and their cement-free, low-carbon concrete. Reef Cubes enhance the marine ecosystem whilst developing offshore renewable energy sites. Our concrete design is an innovative sustainable mixture made of 95% recycled materials, with 10% the carbon footprint of standard concrete. Vast amounts of materials are added to the seafloor during offshore construction to stabilise structures from the effects of current scour, to protect cables from anchors and fishing gear, and to act as moorings for vessels or floating platforms. Our current work is focussed on promoting the use of Reef Cubes as additions or alternatives, to enhance the biodiversity around offshore renewable developments, whilst also meeting the strict technical performance requirements of offshore renewable engineers. Unlike other protection structures, Reef Cubes have a nature-inclusive 3D shape with internal spaces. Deploying Reef Cubes at offshore renewable sites has the benefit of enhancing the surrounding habitat and thus the natural value of biodiversity around renewable developments. The product helps developers to meet their biodiversity licensing requirements and governments to meet UN sustainable development goal 14 of life below water. Reef Cubes are to be deployed in the pioneering Rich North Sea project in the Dutch North Sea later this year. There is a problem with the current use of technology though. Deployment requires the hire of a separate vessel, incurring a significant extra cost to the funders. The additional carbon emissions also balance-out the positive effects of the Reef Cubes on the environment. To overcome this we suggest expanding the capability of Reef Cubes, to be deployable with rock armour by fall pipe vessels. Our aim is to ensure the strength of Reef Cubes is sufficient to survive deployment with rock armour protection by fall pipe vessels, test the innovative low-carbon concrete to ensure compliance with maritime standards and include carbon-storing materials to reach the point of net carbon sequestration. If successful, our product will rapidly convert large offshore renewable energy seabed sites into thriving and healthy marine habitats for the long term benefit of mankind and the planet; while reducing the overall project's carbon footprint! ARC Marine's mission is to create the largest, most comprehensive accelerated reef network in the world and reverse the damage that has been done over centuries of offshore construction and fishing whilst improving renewable energy productivity and aquaculture site efficiency.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
IS-INSTRUMENTS LIMITED	Hydrogen fuel gas Detection with novel Raman Analyser (HYDRA)	£59,878	£59,878

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Approximately 37% of CO2 emissions in the UK come from heating across residential and industrial settings, with 8 out of 10 homes using natural gas as the energy source. Hydrogen has been identified as a potential zero carbon or low carbon energy carrier, which could help the UK reach its goal of becoming a net zero carbon economy. High profile projects such as HyDeploy, have shown the potential of blending hydrogen with the current natural gas supply, thus allowing hydrogen to be used in domestic heating. In this project we propose to examine the feasibility of using a new Raman-based instrument, exploiting the properties of microstructured optical fibres, to measure blends of natural gas and hydrogen, enabling hydrogen to be introduced as a low carbon energy carrier into the UK national gas grid. This technology is being developed by the UK team of IS-Instruments Ltd, Optical Research Centre at the University of Southampton and Jacobs Clean Energy. This game changing technology is expected enable hydrogen to be implemented within the gas network, as well providing direct commercial gains the wider UK economy.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
BUILD SOLAR LTD	Smart Solar Walls For Sustainable Transport	£59,224	£59,224

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Solar-Smart-Walls will construct highly customisable robust semi-transparent wall sections that generate solar energy utilising vertical spaces with a very small land area footprint and provide flexible smart technology hosting through an innovative "plug and play" module within each panel. The robust nature of the materials and modular design solves the problem of existing products being too fragile and offering a limited range of architectural flexibility and adaptability to serve rapidly changing technologies for them to be deployed in transport settings. By offering services from our Smart-Solar-Walls such as electric-vehicle charging, docking for micro-mobility and hosting internet-of-things and information-communication-technology across transport assets, walls will be transformed to provide long term value through a digital services revenue model, increasing affordability and driving sustainability. With 20,000 miles of narrow linear rail corridors, 2,000 stations and 8,200 commercial properties, deploying Smart-Solar-Walls across UK rail networks has the potential to make a significant contribution to delivering a shift to low-carbon transport. Whether that be through charging electric-vehicles within car-parks, providing power and infrastructure for electrified micro-mobility or generating power at scale along track boundaries. **We estimate there is 18GWp of renewable energy potential across the UK rail network that Smart-Solar-Walls could unlock equating to 1/3 of the UK's current peak electricity demand.** This could be realised without the need to build on any green field site. Private and public sector stakeholders responsible for the delivery of low-carbon, electrified mobility systems require new sources of affordable renewable-energy and efficiently deployed smart infrastructure to manage, dock and charge new sustainable modes of transport as well as increased electrification of traditional modes. With limited space available in towns, cities and along our narrow linear transport routes, harvesting clean energy from vertical walls whilst providing structure, securing boundaries and creating noise barriers across our railways offers a cost effective and resource efficient solution to power and service an electric mobility revolution within the rail sector. This project will engage closely with Network Rail and HS2 as potential future customers to study the technical, commercial, and environmental feasibility of - 1\ Robust, modular, Smart-Solar-Walls to provide new sources of renewable-energy required for low-carbon transport. 2\ A solution that can be readily integrated within Network Rail and HS2 stations, car-parks and track boundaries. 3\ An innovative services business model that generates new revenue streams via charging and docking micro-mobility, electric-vehicles and hosting Internet-of-Things and Information-Communication-Technology across Network Rail and HS2 assets.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
PASSIVSYSTEMS LIMITED	LAEP Forward	£59,846	£59,846

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The LAEP Forward project addresses the Government's Clean Growth Strategy objective of rolling out appropriate low-carbon heating solutions in homes by using recent advances in energy-efficiency modelling to create home-specific recommendations and benefits cases for decarbonisation investments. The project implements recommendations made in the draft report Local Area Energy Planning (LAEP): The Method commissioned by Ofgem to create energy performance simulations of homes using sensor and smart-meter data with advanced machine learning. Outputs will be shared with households and stakeholders via a local authority administered gateway to support the evaluation of measures to reduce carbon emissions and dynamic local area energy planning. Bridgend County Borough Council (BCBC) in collaboration with Energy-Systems-Catapult, Welsh Government, energy networks and other stakeholders has produced a strategic LAEP. The LAEP Forward project will enable PassivSystems to develop a new service for BCBC to progress the programs identified in their LAEP from conceptual strategy to design and build. LAEP Forward will achieve this through: 1. Area-based deployment of low-cost wireless sensor equipment in homes 2. Digital-twin modelling of anticipated load profiles for a range of low-carbon technology combinations and control strategies 3. Testing digital-twin modelling assumptions against trial show homes 4. A council administered portal to offer private homeowners and landlords data-driven evidence for technological solutions and suitable services that incorporate domestic flexibility 5. Field trial of the gateway in a target area. There are significant differences between conventional domestic energy-assessment models such as SAP models and measured operational performance. These static models also cannot account for improved multi-vector control strategies, real-time fluctuations in grid-carbon intensity or network constraints. Operational modelling is an emerging field of research with activity focused on technologies that use smart-meter and sensor data to accurately simulate the performance of buildings. PassivSystems has recently prototyped new advanced machine-learning capabilities for characterising the operational performance of domestic buildings using low-cost IoT monitoring devices combined with smart-meter data. Independent field results have demonstrated high confidence in our approach when compared to benchmark co-heating tests. LAEP Forward builds on these technology innovations by linking them to existing LAEP planning, turning strategic intent into practical delivery. The project will fund the creation of the toolset to deliver household guidance, outcome monitoring and future energy planning. The urgent imperative on regional authorities and landlords to plan and deliver domestic decarbonisation will create a significant market for the toolset, which will accelerate societal decarbonisation and green jobs growth.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
XAMPLA LTD	Valorisation of plant-based waste agricultural biomass to produce circular biodegradable materials including seed coatings	£59,988	£59,988

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Globally, agriculture generates 140 billion tonnes/year of biomass waste, equivalent in terms of energy and raw materials to c50 billion tonnes of crude oil (UNEP\ 2009). Crop residues comprise inedible parts of biomass, such as empty pods, leaves, and stems. Large amounts of crop residues are left on the field after crop harvest and ploughed back into the soil to increase the organic matter content, acting as a natural fertiliser. Leguminous crop residue waste not needed to fertilise the soil may also be used as animal feed or (last resort) disposed of as waste (via incineration or landfill). However, interest is growing in the potential to valorise leguminous crop residues not needed to fertilise the soil, by extracting nutrients such as proteins (Tassoni\ et\ al\ 2020). The UK legume market is dominated by faba (broad) beans (mainly for animal feed) and field peas (mainly for human consumption), with respective crop production volumes (2017) of c780,000 tonnes and c160,000 tonnes (LegValue\ 2019). Beans and peas are typically harvested and deshelled in the field. Since bean crop residues account for c45% of the total crop biomass (Amalfitano\ et\ al\ 2018), we estimate that UK faba bean production currently creates over 638,000 tonnes/year of crop residues. The protein contents of faba bean and pea crop residues have been estimated at c13% (Karlsson\ et\ al\ 2015) and c18% (Tassoni\ et\ al\ 2020), respectively; therefore, we estimate that valorisation of UK faba bean and pea crop residues could theoretically provide 100,000+ tonnes/year of plant protein. Across Europe, it is estimated that 3 million tonnes of legume waste are produced each year (LEGUVAL\ 2016), potentially providing c450,000 tonnes/year of plant protein. Xampla's ambition is to valorise this plant protein to produce a new and innovative class of high-performance materials, Supramolecular Engineered Protein (SEP), which can be used as a bio-based/biodegradable material replacement for microplastics and single-use plastics. As a demonstrator, we will develop bio-based/biodegradable SEP seed coatings as a replacement for conventional non-biodegradable fossil fuel-based seed coatings. Seed coatings are a small-volume but high-value market; however, they make an ideal primary market, since agrochemical suppliers are actively looking for sustainable biodegradable solutions to meet the proposed EU ban (by 2026) on intentionally added microplastics including seed coatings (ECHA\ 2020). Secondary markets include replacing conventional plastics in existing global markets such as food-packaging films/coatings, while also creating new market opportunities, including the use of SEP material as an edible coating for fresh produce to extend shelf-life and reduce post-farm gate food waste. Helping UK farmers and the agricultural sector recover sustainably from COVID-19; delivering on Clean Growth and net zero.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENERGIESPRONG UK LIMITED	Build-up for Net Zero (BUNZ)	£59,994	£59,994

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The ****BUNZ (Build-Up Net-Zero)**** concept creates a new sustainable model for creating desirable net-zero performance-guaranteed new homes, whilst retrofitting existing homes to net zero. Energiesprong UK (ESUK) was set up to drive forward the market for desirable, performance guaranteed, net-zero homes, and support innovation to deliver them. We work between social housing providers and the supply chain to help create whole-house solutions which improve quality and which can be rapidly scaled to meet the UK's climate challenge. To date three pilot projects have been completed across five landlords, with further projects underway. In 2019 ESUK identified an opportunity for a build-up model, where new apartments are built on top of existing blocks, which are retrofitted to net-zero standards at the same time. BUNZ addresses many of the challenges set out in the Construction Sector Deal. It supports the target for 1.5m new homes by 2022, it uses digital design and offsite manufacturing. It drives collaboration between client and supply chain. It uses whole-life asset value, and it exceeds the target for halving the energy consumption in new and existing buildings by 2030, instead ensuring homes are retrofitted and built to 2050 standards - net zero. The offsite manufacturing approach driven by the Energiesprong standard drives improved quality and performance, reducing site times. This is even more important post-C19, when reduced access to homes, and limited site working practices are driving up construction delivery period and costs. Residents can also remain in situ. Exeter City Council has identified a pipeline of apartments and this funding will allow the development of the procurement approach to overcome the short-term stop-start typical approach to construction projects. Focusing the procurement on the whole-life performance and cost also changes the relationship between client and supplier. Energiesprong will work with the DEEP-ER consortium (led by Prewett Bizley and KIN) to deliver the project. BUNZ allows the creation of affordable new homes without encroaching on green spaces, providing an opportunity to reduce overcrowding associated with worse COVID outcomes. Our solution will use new homes as an opportunity to improve the business case for retrofitting to achieve UK net-zero goals.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
BIOME TECHNOLOGIES PLC	Novel Biodegradable Tree Guards - BioTGuard	£58,843	£58,843

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The BioTGuard project will develop a novel bio-based, biodegradable tree guard that will reduce (and eventually eliminate) the environmental burden of the current / conventional plastic (polypropylene based) design. The established, tried and tested tree guard design will support the tree saplings without compromising their growth whilst the controlled degradation will make sure that the shelters will degrade within 5-7 years after the trees have reached suitable maturity. The project will be delivered in collaboration with established UK based manufacturing and testing organisations. Crucial advice will be sought from leading UK forestry management and non-profit organisations, who will be involved in the planned Phase 2 prototype deployment (and field monitoring) at various UK locations. In addition, as part of Phase2, further manufacturing expansion and field testing outside the UK will be explored.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Greenskill Environmental Technology Limited	Negative Emission Sewage Treatment (NEST)	£44,712	£44,712

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

****NEGATIVE EMISSION SEWAGE TREATMENT (NEST)**** Water quality and availability is a global challenge. Recovering the valuable resources embedded in wastewater is a key, global opportunity, and goal. 80% of all wastewater is discharged into the world's waterways where it creates economic, health, and environmental challenges. Population growth and urbanization further intensify this challenge with increasing wastewater generation that places more pressure on clean water resources. More stringent regulatory issues, and increasing environmental concerns make wastewater treatment systems (WWT) more relevant than ever and aids in the growth of this market. Moreover, growing focus on sewage treatment in countries in China, and India, provide significant opportunities in those marketplaces. ****Conventional WWT technology**** The WWT technology deployed in the majority of sewage farms worldwide was invented in the 1890's and has remained unchanged. It emits approximately 3% of total GHG emissions (CO₂, methane and dinitrogen oxide) and is unable to effectively remove phosphates, pharmaceuticals, endocrine disruptors, poly- and perfluoroalkyl substances (PFAS) and microplastics. ****NEST WWT technology**** NEST is carbon negative and uses GHG emissions as a carbon and nitrogen source. Demonstrated removal of phosphates, pharmaceuticals, endocrine disruptors and microplastics. Poly- and perfluoroalkyl substances (PFAS) removal efficacy trials planned for 2020. Produces microalgal biomass for monetisation as fertiliser and soil conditioner. Alternatively, the biomass may be hydrothermally liquefied (pressure cooked) to produce biocrude oil and a fertiliser concentrate. ****POSITIVE ENVIRONMENTAL IMPACTS**** Climate change mitigation through GHG emission reduction with potential for 4% reduction globally. Phosphate removal and recovery will mitigate toxic algal blooms in water bodies. Pharmaceutical, endocrine disruptor, PFAS and microplastic removal will have hugely beneficial impact on the aquatic environment, thus maintaining biodiversity.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
NATIONAL OCEANOGRAPHY CENTRE	SHARC: Submarine High-fidelity Active-monitoring of Renewable-energy Cables	£59,903	£59,903

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The project 'SHARC: Submarine High-fidelity Active-monitoring of Renewable-energy Cables' aims to improve the operational efficiency of offshore renewable energy generation by improving failure management of critical infrastructure, i.e., the submarine cables. Between 2014 - 2017, recorded cable failures across UK sites alone led to a cumulative generation loss of £227 million, highlighting the importance of innovations improving cable failure-management strategies. It is therefore highly desirable to understand the status of offshore assets, to reduce failure rates, extend routine maintenance periods, and avoid costly downtime. Reducing these costs will make offshore renewables more competitive and accelerate their uptake, contributing to the UK Government's Clean Growth Strategy and enabling net-zero emissions. Furthermore, COVID-19 has increased the need for remote monitoring of assets. Remote monitoring can be performed in socially distanced settings, rather than sending crews offshore to operate in the tight confines of vessels. This approach is more economically efficient, where in-service fibre-optics is remotely accessed. Additionally, it will alleviate health risks to employees by limiting their potential exposure to COVID-19, enabling the offshore renewable energy industry to 'build back better'. We will develop innovative techniques to monitor the cable-health in real-time, albeit under the combined influence of various marine-environmental and intrinsic cable heating effects. This will result in early detection of potential threats to cables or better prediction of their incipient failures, which will enable timely intervention, avoidance of large-scale damages and associated costly downtimes. To achieve this ambitious goal, world class domain experts, ranging from marine-geoscience and ocean technology and engineering (NOC), machine learning & artificial intelligence based algorithm design and use (University of Southampton), modelling of dynamic and static rating (Kinectrics) and next-generation distributed fibre optics design and instrumentation (Worthy Photonics and Fosina, respectively) have been brought together with end-user/stakeholder in the form of European Marine Energy Centre (EMEC).

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ROADMAP SYSTEMS LIMITED	Next-Generation Telecom Switch	£54,836	£54,836

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

ROADMap Systems is a global leader in high-capacity optical telecom switching technology. In this project ROADMap will conduct a feasibility study in partnership with a multinational telecom systems vendor. This study will identify the best designs for a next-generation high-capacity optical switch based on ROADMap's novel technology platform. This optical switch will transform the data capacity of current and next-generation telecom networks. This will enable substantial bandwidth increases for business and domestic subscribers, providing widespread Gigabit internet services while simultaneously lowering subscription costs. The COVID 19 pandemic has illustrated that the broad availability of high-bandwidth internet is essential for the continued function of the UK and global economies under lockdown restrictions. Business, social and leisure services are moving increasingly online. This trend has already shown significant environmental benefits, reducing the carbon emissions and localised pollutants produced by commuting and leisure travel. Improving the performance and availability of high-speed internet access will be essential to support the economic recovery, while simultaneously maintaining and further enhancing the environmental benefits of this societal transformation. ROADMap was spun out of the University of Cambridge in 2014, to commercialise the optical switching technology developed in the Department of Engineering. The company will leverage its proprietary technology in high-capacity optical switching together with its established relationships with telecom network operators, to design a product that will transform the optical network capacity in the near term. ROADMap has a track record of successfully delivering advanced optical switching technology platforms, and will now work with end users to develop a product to match the current needs of the market. The project will apply ROADMap's proprietary two-dimensional beam-steering technology. This uses liquid-crystal-on-silicon (LCoS) microdisplays to steer free-space optical beams in two-dimensions, providing greater capacity than the state-of-the-art one-dimensional steering. ROADMap will also leverage their unique experience with new 4k-resolution LCoS microdisplays. These provide significantly greater switching capacity than the current 1080p-resolution microdisplays, but have not yet been successfully integrated into a telecom switching product. Combining these two technologies will allow ROADMap to design optical switches with an order-of-magnitude greater capacity than existing products. In turn this will significantly decrease the cost, size and power consumption for each unit of bandwidth switching capacity. This will be of enormous significance in enabling a high-capacity network, capable of fully supporting Gigabit landline and 5G mobile services.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
PRAGMATIC PRINTING LIMITED	SPRITE - Sustainable Plastics Recycling Innovation by Tagging Electronically	£60,000	£60,000

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Plastic packaging waste is a >\$80Bn global opportunity according to the World Economic Forum. Only 14% of plastic packaging reaches recycling plants and only 9% is actually being recycled, whilst 40% ends up in landfill. The UK's Clean Growth Strategy has a goal to reduce emissions from landfill and achieve zero avoidable waste by 2050. One way to reduce emissions from landfill is to stop the avoidable waste from reaching it. This will be achieved by a combination of actions generally grouped into reduce (removing unnecessary packaging) and re-use (refillable schemes and recycling) categories. Progress on all these has seen a significant setback during the COVID-19 pandemic. Whilst there is rightly focus on reducing the amount of plastic that is consumed it is not practical to eliminate all plastic due to its many benefits including it being lightweight (with associated low transport costs and carbon footprint) and its robustness. It is, therefore, essential to increase recycling rates and quality so that the highest material value is retained for reuse. Most approaches to improving recycling have looked to make the sorting/identification systems smarter, for example using infra-red to identify types of plastics. Relatively little activity has been directed towards making the packaging smarter so that it is easier to identify, sort, separate, reprocess and reuse. Our project focuses on simplifying and increasing recycling of plastics by providing a machine readable unique digital identity onto each pack. This new capability provides a technology platform that can enable a wide-range of different innovations and applications. An emerging approach is to incentivise consumers to recycle plastics using so-called reverse-vending machines (RVMs). Each plastic bottle has a deposit which can be redeemed by consumers when they return their plastic bottles into one of the RVMs, and then exchanged against future purchases. Within Europe these have been rolled-out widely across Germany where now only 3% of plastic bottles are not returned. Although these are already proving successful, some limitations of current RVMs are: - line-of-sight to detection - low throughput - lack of unique identity limits information and is open to fraud - integrated separation/sorting is difficult and expensive Within the project we will investigate the use of PragmatlC's ultra low-cost RFID technology to drive improvements within recycling, specifically demonstrating potential use-cases for deposit-return schemes such as reverse-vending machines.

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMB POWER LIMITED	Managing and Trading Batteries as Assets	£27,360	£27,360

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

EMB Power, in collaboration with Keele University and industry stakeholders, is leading a project to develop a large lithium battery asset management and trading platform to address the clean energy and road-to-zero carbon emissions agenda, by providing deeper understanding of the physical condition and value of lithium batteries throughout their life. The toolset will support: * Effective lifecycle decisions * Assessment of environmental sustainability factors * Optimisation of return on investment Technological battery development will improve kWh cost, number of cycles, safety, volumetric and gravimetric energy and power density, impacting favourably on effectiveness, environmental considerations and return on investment. However these all increase complexity for asset evaluation. The system will exploit AI "big-data" technology to provide real-time information to support decisions on how to maintain and deploy assets at each stage of a battery's lifecycle. The innovative, algorithm driven approach has already been validated: * Two patents are pending, proceeding to grant with no major Prior Art or Freedom to Operate challenges yet identified * Extensive customer/influencer dialogue indicates no market solutions of similar utility are available/planned * Academic research with Keele and Warwick University validates the novel nature of the approach EMB Power benefits from its founder's extensive experience and connections in automotive electronics engineering in OEM and other organisations throughout the battery lifecycle. Phase 1 is addressing a feasibility study, consequent specification of system requirements to form the basis for a Phase 2 development of prototype applications, initially to support exploitation of commercial opportunities in improving business and industry efficiency for a wide range of stakeholders including: battery manufacturers, land, marine and aviation vehicle manufacturers, insurers, vehicle dismantling, battery remanufacture, vehicle rental and used vehicle businesses and reclamation businesses. As more is learned about customer information and decision support requirements, further commercial opportunities are expected related to decarbonising energy, business and industry and for climate change adaptation and mitigation. Data generated will help reduce waste and achieve environmental goals by establishing the efficiency and carbon footprint of the battery through its life and by transforming batteries into a tradable commodity asset rather than a product component/sub assembly, giving greater visibility of potential for "second" life prior to progressing to end of life reclamation.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
STEATITE LIMITED	Zero Emission Wood Chipper Project	£53,698	£53,698

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

We will be designing a bespoke Power Train UK Battery solution , including BMS (Battery Management System), to partner with an electric motor device and integrating into replacing a Diesel combustion engine for a forestry and park commercial machine. This project will allow for the CERP (Combustion Engine Replacement Projects) and AMR (Autonomous Mobile Robots) to become a powerhouse of Powertrain technology in the South West .

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
RECYCLEYE LTD	Project ADER (Automated Detection, Ejection & Recovery)	£59,154	£59,154

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Project ADER (**A**utomated **D**etection, **E**jection & **R**ecovery) delivers a turnkey waste sorting solution that outperforms the current state-of-the-art in recycling technology. ADER utilises cutting-edge computer vision algorithms and a novel air jet ejection system sorting to a higher granularity, speed, and greater affordability than ever possible before. ADER's eyes, combining near-infra-red (NIR) and advanced computer vision algorithms, provide the speed and accuracy of NIR with the granularity and knowledge of the Recycleye AI Vision system. The ejection system, cuts down space, reduces cost, and can sort into more categories than existing NIR machines (10+ vs 2-3). This project is led by Recycleye, a world-leading company in smart AI systems for the waste industry. Recycleye's first product line radically innovated waste detection by leveraging advanced proprietary computer vision algorithms spun-out of PhD research at Imperial College London. At Recycleye we believe waste does not exist -- only material in the wrong place. Project ADER is formed from Recycleye's team of technologists, each with years of industry experience delivering radical new innovations. There are no subcontractors as part of the project as the Recycleye team is perfectly placed to pioneer the next breakthrough for the industry. ADER's development is in two Phases: Phase 1 feasibility studies focus on validating the radical innovation of combining NIR sensors with Recycleye Vision and the novel ADER ejection system. Phase 2 involves data acquisition, further software development, prototype build and industrial testing. This culminates in the production of a commercial system that brings together newly developed IP, harnessing novel technological development to benefit waste facilities in the UK and abroad. Enhancing the benefits and value of our natural resources is the main theme of this project supporting the UK's Clean Growth Strategies, working towards achieving zero avoidable waste by 2050. Project ADER contributes to this by enabling sorting of entirely new waste materials, increased granularity (sort food-grade vs non-food-grade material) and a radically cheaper system. By optimising the waste industry and improving the recycling rate of materials, ADER is accelerating the UK's transition to a circular economy.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
POWER ENABLE SOLUTIONS LIMITED	Advanced AI for Integrated Financial Optimization of Wind Energy Assets	£59,911	£59,911

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

REOptimize Systems (REOS), was formed to exploit research developed at University of Edinburgh, which has implemented a unique approach to increasing the efficiency of wind turbines. Through advanced modelling and the application of novel machine learning techniques the algorithms minimise the end-to-end losses in the system. This technique has patents pending and is the result of 7 years of research at The University of Edinburgh. The success of the algorithms has been proven experimentally in small-scale wind turbines, and found to yield increases in energy capture of 6%. A 6% increase in energy capture can drive net profit increases for the operator on the order of 50%-100% depending on the specific turbine and location. If only half of UK turbines achieved a 6% gain, it would result in an additional 3000 GWhr of generation and a saving of 1.3 million tonnes of carbon in a single year. This is equivalent to removing around 290,000 petrol passenger cars from the streets. However, this 6% gain has been proven only in medium-scale wind at approximately 100 kW ratings. It is expected that larger turbines will start from a position of better control which will allow us to achieve gains on the order of 3%. REOS is currently preparing a pilot project to validate the technique on a MW scale Siemens 2.3-92 turbine, which is a workhorse of the UK onshore fleet. Now, through this new project, REOS will develop and integrate novel machine learning technologies into a single platform which will provide end-to-end financial optimization of wind power assets, with a truly holistic view of the entire wind system. The project will develop and integrate: * Continuous per-turbine settings optimization * Advanced detection of false alarms to increase in-service time * Advanced AI-based wind farm control This will create a step-change in the control and performance of wind energy assets with the aim of maintaining the gain of 6% increase in energy output in large modern wind farms. This will contribute to creating sustainable innovation and help deliver the transition to net-zero.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ATALANTA MOTOR CARS LIMITED	Feasibility study of a small, efficient, zero-emissions last-mile delivery vehicle	£32,219	£32,219

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Project: Feasibility study of a small, efficient, zero emissions, last-mile delivery vehicle Household deliveries have grown significantly during the COVID19 lockdown period and are forecast to remain higher than pre-lockdown levels. These deliveries are normally performed by diesel-powered vans. These have a large footprint, and are often parked in the road, or on the kerb, obstructing traffic flow and visibility, frequently with the engine idling whilst making a delivery. This project seeks to define an alternative, low cost, zero-emissions last-mile delivery solution to the use of diesel-powered vans. AMC are working with a potential future customer, that has over seven years' experience operating a zero-emissions delivery business, to clearly define requirements and gain feedback on current and future delivery vehicle solutions. AMC are designing and intend to produce and market a small, lightweight, energy efficient, zero-emissions vehicle for last-mile deliveries of products. The vehicle will be rider-powered with an electric assist function. Potential customers for the product are logistics companies, self-employed couriers, and local businesses offering a delivery service.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CITY SCIENCE CORPORATION LIMITED	Heat as a Service for Retrofit	£59,899	£59,899

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project explores the use of novel algorithms to inform a Heat as a Service (HaaS) business model. The project will demonstrate how the HaaS business model will accelerate energy retrofit and heat supply solutions in domestic properties. The project builds on an innovative, cutting-edge thermal modelling capabilities to develop a new application, demonstrating a viable Heat-as-a-Service (HaaS) business model. Based on a calibrated, detailed and disaggregate understanding of the property energy use, the project will develop simulation to evaluate technical and financial impact of alternative provision of domestic heat and identify how these can be financed to accelerate decarbonisation. The HaaS solution will include provision of heat comfort via: * Energy efficiency retrofit measures * Electrification of heat via heat pumps * Boiler replacement * District heat. The solution will identify the most viable solution for the provision of heat in the property using detailed research from financing of energy efficiency measures in the domestic sector, enabling a single customer interface through which retrofit and low carbon heat measure can be financed and accelerated. The Chancellor has announced a £2bn Green Homes Grant to help the country build-back better, creating jobs and a sustainable recovery. Our solution will extend the options for domestic retrofit, in particular focusing on the decarbonisation of heat, specifically addressing the theme of improving the energy efficiency, heating and cooling of our homes and other buildings.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CITY SCIENCE CORPORATION LIMITED	Non-Domestic SMETER & 5D BMS	£59,702	£59,702

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

****PROJECT CONCEPT:**** Activities within a building matter and can lead to vastly different energy uses, even within similar building types - for example, in a non-refrigerated warehouse energy use could account for 15% of the operating budget, while in a refrigerated warehouses, refrigeration alone could account for 60% of the energy used. This project brings together buildings and activities for the first time developing and implementing a cutting-edge AI-based control and decision support system for non-domestic properties based on detailed Building Management and HVAC system integration. The project then utilises a detailed disaggregate building and process model to develop a costed pathway to net zero tailored to the specific environment & activities. "5D" refers to the three spatial dimensions, the use of AI based on time-series data, and the 5th dimension being business processes/activities.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
RHEENERGISE LIMITED	High-Density Hydro [HDHydro]; New energy-storage system demonstration.	£59,957	£59,957

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project is about decarbonising energy, climate-change mitigation and facilitating growth in new renewable energy installations. HDHydro: An energy-storage solution that uses an innovative environmentally benign, high-technology fluid in a pumped-energy-storage system. Pumped-energy-storage is conceptually very simple: at times of energy abundance, low-cost electricity is used to pump massive quantities of water, up mountains, from a lower-reservoir to an upper-reservoir. As energy prices rise, the water is released back down the mountain, through pipes and a turbine, which regenerates electricity back to the electricity-grid, typically round-trip efficiencies for pumped energy storage using water is about 80%. However Instead of using water, RheEnergise use their proprietary high-density fluid (2.5x the density of water), in a buried, closed-loop system. All else being equal, this increases the power and energy available by a factor of 2.5. The fluid is an environmentally benign suspended-solid in water. Round-trip efficiencies are ~83%, without parasitic cooling loads, found in battery systems. Because of the high-density fluid it also means that projects can be installed on low hills rather than mountains, as HDHydro projects achieve the same power, compared to water, on sites that are 2.5x lower. HDHydro projects are located on small hills rather than mountains. The-Committee-on-Climate-Change, The-Energy-Systems-Catapult, Aurora-Energy-Research, BloombergNEF and others all agree that energy-storage is an essential technology to balance the supply and demand of future energy-systems dominated by large volumes of intermittent renewable-energy and base-load nuclear generation. Both generation types will rely on energy-storage to match variable supply with variable demand. This project is Phase1: A technical feasibility study with some initial enabling works that would facilitate the delivery of a phase2 project (if successful in the application process). The Phase2 project would be a physical exhibition quality demonstration of an operational reversible-pump-turbine specifically designed for use with the RheEnergise high-technology fluid. The turbine would be mounted on portable base (ISO container sizing) be connected to pressurised store tanks (to simulate the elevation of a hill) use a manifold and valves to control the flow. It would include a bespoke power-system, operational control system and customer display interface. The project has been scoped to ensure deliverability against COP-26 timescales. This project fulfils the UKs aims of 'build-back-better' following Covid-19. It is * Highly innovative across several engineering disciplines * Provides large UK business opportunities * Protects the climate and environment * Shows customer interest and the opportunity for volume sales. * The ability to construct a demonstration by COP26.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
INFERSENS LIMITED	Carbon emission reductions and water savings via innovative AI-driven remote water flow sensing	£59,927	£59,927

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

To achieve the UK's ambition to become net zero by 2050 we must significantly reduce carbon emissions in all areas of society. The UK water industry is a major contributor to carbon emissions, consuming 3% of the nation's electricity in treating and supplying water, whilst generating 15,315 tonnes of CO₂, each day. Cutting water wastage, and related carbon emissions, is imperative in a drive to decarbonise business and industry. Every day 6.9 billion litres of water is lost, and 59,000 tonnes of carbon emitted due to: * Daily leaks in UK water infrastructure (3.1 billion litres of water and 3,000 tonnes of CO₂) * Daily water flushing for Legionella risk compliance (121 million litres of water and 900 tonnes of CO₂) * Daily wasteful consumption (3.7 billion litres of water and 55,000 tonnes of CO₂) One of the root causes for the above is a lack of awareness of when and where flow occurs in the customers' environment. This is because no easy to use and affordable technology currently exists that allows industrial, business and domestic end users to comprehensively monitor water flow and usage (flow sensing) across their pipes within their properties or across the national water infrastructure. InferSens is developing an innovative clip-on technology to solve this problem -- an ultra-affordable Artificial Intelligence enabled remote flow and temperature sensing device for in-pipe water. This transformative patent-pending invention will enable real-time widespread monitoring of flow and temperature, providing live alerts and detailed analysis for duty-holders and consumers, facilitating water savings and carbon emission reductions of: * 33% through early identification of delivery infrastructure leaks * 80% of water wastage from flushing and testing for Legionella risk compliance * 17% of wasteful consumption by consumers With the fundamental proof of concept already successfully evidenced, we will now embark on the development of a commercial prototype. To do so, we will work closely with three Customer Partners from different sectors (Sport and Leisure Facilities, Water Utilities, Social Housing) to ensure our device is developed with our future customers at the forefront of our consideration. The ultimate outcome of the SBRI programme will be a product that enables the extraordinary environmental benefits described above, as well as a great opportunity for UK manufacturing, UK employment and prosperity and a more sustainable national economy.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Biocleave Limited	A bio-based solution to food security	£58,812	£58,812

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Food security is of significant importance, both locally in the UK, and more widely across the globe. As such it is highlighted in the UK government's clean growth plan and is one of the 'Global Goals for sustainable development'. The food and drink sector council's Covid-19 recovery plan has highlighted the need to create a more resilient, cleaner and greener food system for the future. One aspect of this that has been more and more evident over recent years, relates to the banning of certain chemical pesticides. This has had the knock-on effect of leading to wide-spread crop failures. It is therefore imperative for sustainable food production that alternative strategies for agricultural pest control are established. Within this project biocleave will work towards these aims, using a biological approach which is both sustainable and maintains UK science at the cutting edge of bio-based technology development.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
EDF ENERGY R&D UK CENTRE LIMITED	EcoFlex for SMEs	£57,634	£57,634

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Covid-19 pandemic has impacted all businesses in the UK, but SMEs have been hit particularly hard. At the same time, the climate crisis is putting pressure on businesses of all sizes to become more sustainable and reduce their impact on the environment. While these two objectives may seem at odds, we believe there is an opportunity to create a proposition that uses data about carbon intensity to achieve both. Carbon intensity is the amount of CO2 that is released by generating electricity. This varies throughout the day depending on the amount of renewable energy that is being produced and the demand of users on the grid. By shifting usage to times of lower carbon intensity, electricity consumers can reduce their carbon footprint. At the same time, a Time-of-Use tariff will be studied to lower the electricity cost at the times of lower carbon intensity so that SMEs could further reduce costs. The project combines data on energy consumption, carbon intensity, with time of use-based pricing and behavioural changes to create a proposition that can result in lower costs and carbon impact for SMEs. Through a combination of technology development and user research, our Phase 1 project will assess the feasibility of developing an innovative time of use proposition for SMEs, which can be tested in a real-world environment in Phase 2.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CORRIE ENERGY PARTNERS LTD	A step change in solar PV generation	£43,704	£43,704

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The UK is committed to achieving net zero emissions by 2050, requiring solar generation of at least 60GW p.a. (from 13GW today) (Aurora Energy, 2019). However, UK deployment of solar PV fell from 4GW to 0.4GW between 2015-2019 as a result of subsidy reductions, with a subsequent loss of 25% (2.4k) of jobs (STA, 2019). For the solar industry to thrive without subsidies, project economics need to improve (STA, 2019). Solar trackers - devices used to orient PV panels towards the sun - can significantly improve project economics by increasing energy yields and the average price of electricity achieved. However, existing solutions are predominantly 'single-axis trackers' (track the sun in one direction) and are most effective at lower latitudes (below c.40 degrees latitude) where the sun's elevation does not vary significantly between seasons. The few 'dual-axis trackers' systems that do exist are expensive and remain a niche market. We have developed a hybrid tracking system that optimises solar tracking for a significantly reduced cost. This project will be used to build on our existing prototype, to implement a series of design changes and test the new systems on live client sites.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Cummins Ltd	Zero Emission Long Haul Sustainable Commercial Vehicle Propulsion (ZELUS) - SBRI phase 1	£59,940	£59,940

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

****Market need:**** Diesel-fuelled medium-duty trucks used for regional/urban logistics cause 45% of air-pollution in and around built up areas, with devastating social, environmental and corresponding economic impacts. The UK targets a zero-emission vehicle fleet by 2050, but many cities target blanket diesel-bans far sooner via zero/low emission zones, fundamentally risking the capacity, reliability and cost of regional/urban logistics. Electrified propulsion remains the most credible approach, and whilst the broader evolution will occur incrementally alongside technology driven / organic cost reductions, the immediate need for a cost-effective commercial vehicle electrified powertrain for commoditised mass-production remains unmet. Aim is to demonstrate a long haul zero emission sustainable truck at the end of Phase 2. From the system (truck) perspective, two prime energy storage are considered -- battery and fuel cell. A detailed system level and component level comparison would be presented to make a quantitative based decision. ****Innovative solution:**** During the Phase 1, the focus is on the electrified drivetrain feasibility study with three prime objectives is performed as, 1. To analyse the variation of performance (i.e. weight, efficiency, etc.) with respect to the speed of drive. There are various solutions for electrified propulsion in the market for passenger. These solutions are spread over a wide range of speed. Going through the same iterations as that of passenger car would result into delayed and expensive market entry for electrified HGV solution. Determining the sweet spot for the drive speed would result in to a robust, light weight/compact and cost competitive solution for electrified propulsion of HGV's. 2. The fast sizing models developed in objective 1, would enable determining the quantitative comparison matrix for different system architectures. Specifically, four architectures would be compared -- a. Centralised, one drive per vehicle, b. Distributed, one drive per axel, c. Distributed, one drive per wheel, and d. Distributed, more than one drive per wheel. This would provide a clear direction for Phase 2. 3. Various PE converter and E-machine topologies are available to satisfy wide speed range requirement. Reduced PM solution, dry machine internals, inverted motor, hybrid converter, GaN/SiC, etc. are potential solutions that would empower reaching newer heights. The fast sizing model would allow to analyse these topologies for machine and PE converter for highest power density. All these objectives are working towards increasing the system power density and making it light weight/compact. Aim is to make it light weight that would result in cost-competitive final solution.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
EMISSIONS ANALYTICS LIMITED	Getting a Grip: Measuring tyre emissions to reduce them for better air and faster decarbonisation of transport	£59,135	£59,135

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Tyres are the rolling basis of all transport yet during use are a major but largely 'invisible' source of microplastic pollution affecting air, land and sea. The UK alone produces 530,000 tonnes of tyre waste a year, but before we even get to the discarded carcasses of old tyres each one will have shed at least a kilogram of weight in abraded particles mostly at the micro-level (<5mm). This is an enormous and overlooked problem for which there are currently no regulations and no consumer labelling. A further dimension of this problem is that it affects all future electric vehicles just as it affects the cars and other vehicles we are already familiar with. To assist the uptake of electric vehicles and the associated decarbonisation of the transport system, this project will develop a product that will collect, measure and characterise tyre emissions in real world conditions. The hardware is the basis also of a tyrewear methodology we will offer as a commercial service. The principle subcontractors for this product development are Staffordshire, UK company Alconbury Weston Ltd and Oxfordshire, UK company Scielutions Ltd., while the identified future customer for the product and service is London, UK-based company ENSO Ltd. The project lead is Emissions Analytics, UK-based experts in both exhaust and non-exhaust emissions. We have also identified a range of future customers, the immediate one being ENSO, a UK-based company that is developing better tyres and tyres as a service. Through ENSO we have potential future traction for a series of freight trial partners including DPD, Royal Mail and Gnewt; beyond it we have further interest from Geely and its principal brand Volvo and LEVC, which have committed to apply rigorous metrics to all components of future vehicles with a view to value retention and extended longevity. We believe that our product will materially contribute to accelerating the shift to low-carbon transportation by addressing one of the key hurdles to electric car adoption.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Texture Jet	Next Generation Processing Technologies for power generation	£53,627	£53,627

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The long-term future of UK manufacturing is reliant on it being sustainable and achieving government targets. However, the need for **increased cost efficiency in manufacturing** is critical to remain competitive and key for survival and regrowth, which is especially relevant to the midlands manufacturing cluster having been severely impacted by COVID-19. It is paramount that industry realise, through innovation, not only cost savings but **environmental sustainability and clean growth** thus creating **a more sustainable economy**. Therefore, technologies that can achieve all these goals are highly sought **This project is intended to directly improve business and industry efficiency through providing a sustainable solution to industry pains.** Across a wide number of applications, there is a need to modify the surface texture of components providing the optimum function and performance. However, current surface texturing and finishing operations across high-value manufacturing are heavily dependent upon dirty, dangerous, and unsustainable legacy processes, with currently no meaningful alternatives available offering a level of performance at cost whilst delivering a sustainability advantage. Finishing processes in high-value manufacturing typically involve acid-based chemical etching and media blasting due to their knowledge base and ease of working difficult materials. Although the hardware is considered relatively low cost, there are significant cost inefficiencies caused by non-value-added process steps, enlarged factory footprint and high operating and infrastructure costs. Additionally, current processes have a significant environmental impact across multiple waste streams and energy usage. **TextureJet has the technological potential to replace these legacy processes in their entirety.** TextureJet's core technology is a unique, neutral solution electrochemical machining process which offers an innovative and clean solution to address both the economic and environmental constraints of current methods. It can roughen, polish, etch and structure surfaces, without inducing surface damage or requirement of masking. It has the benefits over prior art of simplicity aiding low-cost scalability, precision, and flexibility. Vtally TextureJet's solution is environmentally sustainable, eliminating use of toxic chemicals only requiring low concentration saltwater solutions, with no dust or fume contamination and can operate at up to 100% machining efficiencies. Uniquely, it can be performed on site or in-situ, so the production line attributable footprint can be drastically reduced. Through this project TextureJet will demonstrate the viability of its technology to vastly reduce the environmental impact of finishing technologies by providing a cost-efficient solution where one does not currently exist enabling UK manufacturing to **'build back better'**.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Extronics Ltd	Covid19 worker safety tag with social distancing warnings and contact tracing functionality .	£56,375	£56,375

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This funding will enable us to perform a technical feasibility study into the practicalities of adding software to our existing tags to facilitate a proximity warning (visual, sound and vibration) when two or more worker worn tags come close to each other. Our hybrid technology tag encompasses Bluetooth Low Energy (BLE) technology, which we feel is the most appropriate technology to drive connectivity between the workers' tags because of its transmission range and low energy. The tags would be configurable to allow variation in proximity and contact time to enable different work situations to be accommodated. These "encounters" would be electronically stored and recoverable to aid contact tracing and also provide enterprises with data to educate workers, in particular those who are regular "offenders" whilst also giving operatives a real time warning of accidental or prolonged encounters, allowing the parties to swiftly separate. The feasibility study will also consider location of the tag on workers and establish the best "wear" position giving due consideration to the practicalities of these locations so as not to hinder worker productivity / comfort. Extronics are world leaders in wireless technology and have been involved in the production and marketing of worker safety tracking devices for 12 years and have a global presence with exports, accounting for 90% of revenue. Customers of Extronics have been making enquiries as to the feasibility of adding contact tracing functionality. The feasibility study will also consider location of the tag on workers and establish the best "wear" position giving due consideration to the practicalities of these locations so as not to hinder worker productivity / comfort. Consideration will also be given as to utilising the current X30 functionality to improve compliance, such as recording when operatives have activated hand sanitizers or even connecting compliance to access control systems. A further element of this feasibility study is to consider a "watch" type tag which would be aimed at predominantly internal working environments, in particular where operatives tend to move around the workplace. Extronics also plan to work with 5D Health Protection Group Ltd (5D) to consider the feasibility and merits adding sensors into tags and antimicrobial additives into the plastics of the tag casing. 5D have been working with Warwick University on research into antimicrobial plastics and have sensor expertise relative to the health sector. 5D will also provide guidance and support on cleansing of our tags.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CUSH Health Ltd	The H2H Study: Sustainable Hospital-to-Home digitally enabled exercise pathways to improve older adult's post-operative outcomes	£59,982	£59,982

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

A recent Kings fund review highlighted how the National Health Service (NHS) is a significant contributor to public sector carbon emissions. The NHS accounts for 25 per cent of all public sector carbon emissions, or around 4 per cent of total emissions in England. This is greater than the annual emissions from all passenger aircraft departing from Heathrow airport. Current healthcare models are enormously inefficient with different specialties of healthcare providers siloed away from each other even within the same system; accounting for the vast waste of resources associated with routine care. The Kings fund report called for investment in new technologies to facilitate self-management as well as telecare and telehealth to drive the NHS to a sustainable future. The Academy of Medical Royal Colleges published a report in 2015 called Exercise the Miracle Cure, not only promoting the benefit of activity as a therapy in its own right, but also emphasising the dangers of inactivity. Those treated in ITU or elderly patients post-hip fracture will have the most severe form of "deconditioning syndrome", a side effect of their hospital admission and a consequence of inactivity. These patients require intensive rehabilitation regimes to regain their previous function and reduce their chance of ongoing health conditions associated with deconditioning. Current healthcare models require in person assessments from different speciality teams and continual follow-up clinic appointments. This leads to unnecessary travel, long waits between appointments and even multiple appointments from different departments which is all incredibly resource inefficient. Cush Health aims to develop a revolutionary remote monitoring healthcare platform for integrated care for patients and clinicians. Our solution allows remote monitoring through wearable devices to deliver assessment and treatment in the community when patients need it. It will function as a closed-loop system, whereby the clinical multi-disciplinary team(MDT) can review their patient population's progress in real time. They will be able to set individuals remote targets while deteriorating patients also be automatically highlighted to the relevant MDT members for review. This reduces travel and resources of the MDT and enables patient rehabilitation progression without waiting for follow-up appointments. By integrating into technology already widely disseminated in the community such as smartphones and smartwatches, this solution is scalable and can grow quickly to meet demand nationally leading the way towards net-zero in the public sector.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CROFT FILTERS LTD	Development of Croft Clean Energy Filter (CCEF) filtration system for waste energy and carbon recovery systems.	£56,682	£56,682

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Croft was approached by Titan Electricity to investigate potential commercialisation of the Geo-Engine. Geo-Engines generate power from wasted energy. This technology fits with Croft's own ethos for a more sustainable future, driven by the creation of IP and technology to promote CO2 reduction. To date, Titan has been unsuccessful in sourcing any suitable off the shelf product or method to protect the very expensive Geo-Engine core from damage. Due to its integral nature and high cost, this part requires an extended life to protect the core from catastrophic damage. Filtration is the first and last line of defence for Geo-Engines, with high flow rate, pressure and temperature, compounded by high levels of corrosion. This represents a significant technological problem. Croft has long been an Industry leading company in the filtration sector, boasting an extensive back catalogue of IP and techniques to achieve this. Croft is confident that given sufficient funding, they will overcome any material or technological obstacles that may be encountered.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
iCOMAT	Lightweight Automotive Fibre-Steered Structures (LeAFS)	£44,650	£44,650

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

LeAFS focuses on the development and commercialisation of an automated manufacturing process, aiming at introducing the light-weighting benefits of composites in the automotive sector, in a cost-efficient way. During LeAFS, iCOMAT will use its novel manufacturing technology of Continuous Tow Shearing to manufacture preforms for composite structural components that require the use of fibre steering. These are often highly curved and will be manufactured by stamping a combined preform of 2D fibre-steered tapes and randomly-fibre-orientated material such as sheet-moulding-compound (SMC). In this Phase 1 project, the fibre-steered composite preforms will be manufactured and evaluated. As light-weighting technologies are crucial to enable green mobility, LeAFS is key to develop an automated manufacturing capability in the UK to produce ultra-lightweight automotive parts.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
TIME TO ACT LIMITED	Feasibility Study for the Commercialisation of a Ferrite-Based Permanent Magnet Generator for the UK Onshore Wind Market	£59,975	£59,975

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The purpose of the project is to conduct a Feasibility Study (phase 1) on the development of a multi-MW generator for the UK onshore wind market. The intention is that when customer requirements are confirmed that GreenSpur will submit a phase 2 application to develop and demonstrate the multi-MW generator. This will result in a new UK generator technology researched, developed, built and tested by a new and high value UK supply chain. The outcome will be of strategic benefit to the wider UK economy, as the disruption caused by the Covid-19 pandemic has severely impacted global supply chains, stalled the deployment of UK wind turbines and exposed a long-term UK reliance on European OEMs. The development of the generator in phase 2 will act as a steppingstone to the UK offshore wind turbine market. GreenSpur's proposed solution is: 1) Highly innovative, as it uses raw materials that are cheaper and more sustainably sourced than this used in current state of the art technologies. 2) Practical and deliverable, as phase 1 will assess and confirm a customer specification and phase 2 will engage with a motivated UK supply chain to develop a confirmed market requirement. 3) Cost competitive solution, as it uses ferrite magnets, which are abundant and cheap, in substitution of a rare earth ones, which are scarce and expensive. 4) A sustainable innovation that will be supported by a new and environmentally clean UK supply chain. The project will address the UK Government's "decarbonising energy, business and industry" theme contained with its Clean Growth Strategy, as GreenSpur's generator has been designed to produce low cost renewable energy from wind turbines. This stated aim of "Ensuring the UK is the Best Place for Low Carbon Innovators" to operate. Consistent with this objective, GreenSpur's generator technology will (1) reduce the cost of offshore wind energy and (2) support the UK's ambition to become a global leader in low carbon innovation. Adopting this approach will leverage private sector investment, create strong international partnerships and create export opportunities. Two secondary themes to the project are: 1) Enhancing the benefits and value of our natural resources, which is achieved by the substitution of rare earth magnets for ferrite within the generator. 2) Climate change adaption and mitigation, which is achieved by increasing the amount of renewable energy generated to offset carbon emissions and contribute to the UK Government's net zero by 2050 target.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CLAIRVAUX LTD	First mile Input for Last mile Output - FILO	£59,947	£59,947

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

For many years, Formula 1 and other racing cars have used KERS (Kinetic Energy Recovery Systems) to convert some of the energy normally wasted to heat when braking, and used it to boost acceleration for overtaking. Electric cars and buses also capture some of this energy (a process known as Regenerative Braking or Regen), storing it in their on-board batteries to help extend their range. In this project Clairvaux Ltd will investigate the feasibility of fitting Regen to heavy commercial vehicles (trucks and articulated combinations) to capture some of their braking energy, storing it in batteries and then connecting to stationary energy storage devices at depots where it can be used to boost the charging rate of electric home delivery vehicles. Drivers of heavy commercial vehicles are required by law to take regular breaks during the working day, providing an ideal opportunity to harvest the energy stored. This may be achieved using wireless power transfer, similar in principle to the wireless charging of a mobile phone or other device, or by connecting a conventional cable. Parcel delivery companies and supermarkets will be able to increase the flexibility of their delivery hubs by using Regen from this project to charge electric home delivery vehicles. The trucks delivering the parcels to the hub will be able to boost on-site electricity supply, meaning that the electric vehicles can use high-power Rapid Charging to increase their available range in a shorter time period. Supermarkets will also be able to power the trailer fridge from the energy recovered, reducing the exhaust emissions and improving air quality when delivering to High Street and Convenience Stores. By providing Regen on trucks and trailers, the amount of dust produced during braking will be reduced - this is a known pollutant and has come into focus alongside exhaust emissions in Air Quality Improvement initiatives. Reducing the particulate levels in this way will help improve air quality along the roads and in our towns & cities. By designing a self-contained axle + generator + battery module, Clairvaux Ltd envisages being able to fit the solution to some of the thousands of trailers already on the roads as well as offering the module to manufacturers for inclusion on newly built vehicles. The project will also develop a commercial model by which both providers and users stand to benefit.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ECONOMICS FOR THE ENVIRONMENT CONSULTANCY LIMITED	Farm natural capital accounting tools	£48,426	£48,426

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project will develop a farm-level Natural Capital Accounting Tool that provides information on (i) the environmental impacts of land managers current land use and actions; (ii) how those actions can be changed to enhance the value of natural resources and make their businesses more economically efficient and (iii) consequent environmental impacts of such changes. The ambition is to design a user-friendly tool that produces results that are easier for land managers to use, at an affordable cost than current bespoke applications. This tool will help: *enhance the way we use natural resources, so improving business and industry efficiency and values gained *provide land managers with an understanding of the potential to deliver public goods and approach potential funders *increase carbon storage and sequestration and reduce Greenhouse Gas Emissions *assist climate change adaptation and mitigation The technical deliverables from Phase 1 will be captured in a Tool scoping report prioritising users' needs and providing a design specification for a Farm Natural Capital Accounting Tool, to be developed in Phase 2\.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CCM TECHNOLOGIES LIMITED	Transformational change using Zero Carbon fertilisers	£58,270	£58,270

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

CCm Technologies aims to utilise its Carbon Capture Utilisation technology to address 2 key policies in the Clean Growth Strategy, ensuring the UK does not contribute to global GHG emissions by 2050; 1. **Industry efficiency**: De-carbonising and increasing efficiency of waste processes through development of carbon capture utilisation and storage technology 2. **Natural Resources**: utilise waste resources for production of zero carbon fertilisers, reducing agricultural emissions and utilising UK soils for permanent carbon sequestration. In Phase 1, CCm will investigate using recovered biochar material from Thames Water Pyrolysis treatment process, as the core feedstock for a range of carbon sequestering, Nitrogen, Phosphate and Potassium (N-P-K), Zero Carbon fertilisers, suitable for agricultural and horticultural crops. Phase 1 will work with Velcourt farming to confirm phase 2 crop and field trial parameters, using confirmed biochar formulations investigated in Phase 1. Finally, phase 1 will confirm emissions reduction plans with industry 'carbon removal' expert, Puro. These trial plans will assess the boundaries and baseline required for an emissions reduction study in Phase 2. Phase 2 will see installation of a large scale prototype, carbon capture utilisation system at a Thames Water treatment site. Prototype installation will scale up production of phase 1 Zero Carbon fertiliser investigations, to provide material for fertiliser field trials. An emissions reduction study (LCA) will also take place to certify the carbon removal potential of CCm Technologies, Carbon Capture Utilisation & Storage (CCUS) process in an industrial environment. Development of a carbon sequestration method enhances the commercial value for CCm's existing CCU process. COVID-19 has meant CCm's ability to start new projects with its target customers in the waste and agricultural sector has been significantly slowed, impacting future commercial development. This Phase 1 & 2 project would allow external validation and integration of CCm carbon capture utilisation technology in new sectors. Industry budgets are 'on pause' until more confidence is available, this project would provide suitable support to accelerate this showcase project.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
DIREK LTD	Smart Occupancy Monitoring System (SOMS)	£59,402	£59,402

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

To stop the spread of coronavirus, people around the world are practicing social distancing and should avoid close contact with anyone they do not live with. In order to maximise the number of people who can return to work safely, employers must make the workplace as safe as possible for staff, customers and anyone else who visits. This raises a need for a smart system to analyse how occupants use and move around building. DIREK is developing and testing the Smart Occupancy Management System (SOMS), which enables building operators and occupants to monitor real-time movement within building and send any relevant notification regarding the presence of occupants. Existing tracking technologies rely on mobile apps or wearing other smart devices, whilst SOMS rely on smart sensors which are sensitive to people's presence and activity and are low-energy, low-cost, and easy to deploy. The advantage of using SOMS compared to conventional sensors, thermal and infrared cameras is that it does not require any user device involvement and at the same time does not capture sensitive information. In addition to social distancing, SOMS can be integrated with the Building Management System (BMS) in smart buildings to optimise energy consumption and reduce carbon footprint. BMS is a computer-based control system installed in buildings that controls and monitors the building's mechanical and electrical equipment such as ventilation, lighting, power, fire and security systems. One of the significant variables which can lead to under or over prediction is usage profiles. Having increased understanding of occupational densities and when people enter and leave a building is crucial to helping to improve the design and operation and ultimately help meet the UK's zero carbon agenda. To achieve the above, we need to address three challenges: 1) accurate estimation of propagation characteristics of signals 2) correlate propagation characteristics to activity and occupancy level 3) Feed the BMS system with the appropriate command. SOMS proof of concept (PoC) will be developed as a module for DIREK cloud-based platform. We consider scalability measures that give us time saving in future developments for market-ready production. The baseline will be implemented the for validation and test the technology with at least 3 different sites at our customers' offices in the UK. The accuracy of the model will be assessed through controlled tests and energy consumption impact will be measured through simulations.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
RENKAP LTD	Development Management Platform - A SaaS Enabled Marketplace for the Construction Sector	£58,594	£58,594

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Development Management Platform - A SaaS Enabled Marketplace for the Construction Sector

The UK faces an unprecedented housing shortage; 3.9 million new homes must be built just to meet current demand. Despite this, just half the 340,000 homes needed each year are being built and the shortfall continues to increase. This was the situation in the construction sector before COVID and what we have learnt in the past few months is that adequate housing is an integral part of the fight against COVID. It has been proven that overcrowded and intergenerational housing drastically increases the risks of catching the COVID virus. This has disproportionately affected the BAME community in the UK, as well as those affected by the housing crisis. The UK has enough under-utilised, brownfield land to deliver over 1 million homes so why are we not building the homes we need? There are several reasons for this. Here are a few of the issues that our project will help overcome: 1. The large private sector housebuilders that now dominate the market are mainly interested in the large lucrative sites and are not focused on the smaller brownfield sites. 2. Construction SME's have reduced by 80% in the last 30 years resulting in less competition and less construction capacity for the smaller brownfield sites. 3. Large public sector landowners own a lot of land but they have limited Development Management capacity so they only focus their limited resources on the largest sites. 4. The nascent offsite construction industry is growing but these new providers need access to large pipelines of sites to keep growing. This project consists of R&D to validate the use of a SaaS enabled Marketplace in the UK construction sector. The aspiration is for the Development Management Platform to provide automated Development Management solutions through software (SaaS) and then procure works to our specialist vetted suppliers via an online marketplace. The solution will allow public sector landowners to instantly boost their in-house development capacity via tech whilst unlocking opportunities for SME's and the offsite construction industry at scale. Our aspiration is to allow any public sector landowner to directly develop their land for housing at a click of a button. Our consortium includes RenKap, a government backed PropTech start-up, Ecologic Homes Consultancy, a leading offsite construction consultancy and Advice Cloud, an industry expert in enabling tech companies to overcome public procurement hurdles.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENERGY SYSTEMS CATAPULT LIMITED	Digital?Retrofit Enabler?at?Meadows?Estate (DREaMEs)	£59,798	£59,798

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

There is an urgent unmet need in the UK social housing sector for more effective, affordable digital methodologies for delivering energy efficiency retrofit programmes, at a faster pace and greater scale than currently possible.

Public bodies working to "build back better" post COVID-19 also need solutions that combine improved energy efficiency results with visible socio-economic benefits (jobs, wellbeing, inclusion) as part of neighbourhood sustainable recovery plans.

The **Digital Retrofit Enabler at Meadows Estate (DREaMEs)** project will research and prototype a practical, affordable solution to meet this combined challenge. Crucially this will be done in close collaboration with two project "customers" - London Borough of Hounslow (LBH) and Places for People (PfP). Both will play an active role in R&D during Feasibility Phase 1 and the demonstration of the prototype solution on the Hounslow Meadows Estate in Phase 2 - a flagship project for LHB and PfP.

DREaMEs integrated solution will deliver:

- * Transformation of existing asset management capability via Digital Twin technology, linking building models dynamically with real-time data, creating estate-level digital data sets for housing assets and defining long-term retrofit plan of works through multi-step 'Pathways to Net Zero' tool-sets.
- * Logic framework for measuring social, economic and environmental impacts on the local economy of a coordinated approach to greening homes.
- * Skills and training standards to support sustainable green economy job creation
- * Business/financial models that speed up delivery of retrofits and unlock new investment options for budget-constrained public bodies

DREaMEs prototype will demonstrate:

- * integration of real-time data and survey intelligence into PfP business systems
- * actionable insights into local recovery factors for asset and place management teams
- * capacity for proactive delivery of targeted services to PfP residents
- * larger scale interventions for green retrofit than possible currently

Linking to Skills Academy and HE/FE establishments will deliver at local level the right skills at the right time, avoiding lag often encountered with technology developments. New green roles will be defined.

Several commercialisation opportunities are envisaged for the end of Phase 2\.

Lead organisation -- Energy Systems Catapult (ESC) -- an independent RTO working with innovators in industry, government, academia and research to deliver the innovative products, services and value chains required to transform the UK energy system. Technology partners -- Sero and Studio Victoria -- provide advanced tools for data survey/pathways and Digital Twins development. Expert consultants Frontier Economics will research and design the benefits mapping system. Gemserv are specialists in Green Finance/business modelling.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
TENZOR GEO LTD	Integrated offshore CO2 reservoir monitoring feasibility study	£57,902	£57,902

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Combating climate change is one of the biggest challenges of our time and is a critical measure to combat in the post Covid-19 recovery. To mitigate it, we must act to reduce or prevent the emissions linked to human activities. Reaching net-zero greenhouse gas (GHG) emissions is going to require fundamental contributions from Carbon Capture and Storage (CCS), with up to 75-175 MtCO₂ expected to be stored annually by 2050 (Global CCS Institute, 2019). The wide scale development and deployment of CCS in the UK has stalled for a while and this is due to the high costs associated and fear of sequestered CO₂ leaking out of the reservoir and into the environment. TenzorGEO aims to address this challenge/barrier by innovating a method to continuously monitor the reservoir using geophysical methods that will detect and track the spatial movement of injected CO₂, to ensure the CO₂ stays in the ground within defined boundaries and warn of any potential CO₂ leakage. The technology can be deployed in a cost-effective way without the need for a specialist offshore deployment vessel and can be deployed efficiently to the seabed to offer continuous microseismic monitoring of the target reservoir and injected CO₂ over the period of injection and until the injected CO₂ is safely secured within the confines of the storage boundaries in the reservoir. TenzorGEO is a leader in passive microseismic technology (PMT) and aims to leverage this imaging technique to optimise long term CO₂ site monitoring. Backed by successful case studies of reservoir characterisation and fluid injection monitoring, TenzorGEO are now pushing the envelope to extend the application of PMT to offshore CCS in its mission to achieve NetZero target in the UK and help reduce global CO₂ emissions in the battle against climate change. This innovation will enable energy companies, oil and gas operators, and regulatory organisations to safely monitor the storage of CO₂ underground in a cost effective way and prevent leakage due to early warning, thus allowing CCS to become a prevalent, reliable and scalable option to prevent the release of CO₂ in to the atmosphere and help mitigate against the adverse effect of global warming and climate change. The cost-effectiveness of this solution will also support businesses (CCS operators) to recover from the pandemic with CCS underpinning the UK government and oil and gas authority energy transition plan.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
RUTHERFORD RESEARCH LIMITED	Revolution-ZERO: Reusable Personal Protection Equipment as a Vended Service Feasibility	£52,902	£52,902

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

PPEVend will test the feasibility of a sustainable PPE vending solution that is serviced by local business and uses zero waste reusable masks and other PPE that will preserve the environment, stimulate the economy and save money for organisations and individuals that use personal protection equipment.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRILL POWER LIMITED	Intelligent Grid-scale Energy Storage System (INGRESS)	£59,617	£59,617

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Brill Power is conducting a feasibility study for developing its novel Battery Management System (BMS) technology for application in a 49.9MW grid-scale solar plus Energy Storage System (ESS) deployed by Narec Distributed Energy (Narec DE). Solar plus storage combines clean, renewable, but variable solar energy generation with a means to store that energy and help to match supply with demand. This can assist in the avoidance of network reinforcement and can also contribute grid services such as frequency response. Co-locating solar PV generation with battery storage is the most effective and profitable way of deploying these two technologies (US Department of Energy, 2019). System costs are reduced by ~8% (NREL, 2019) by sharing hardware components, a grid connection, land use, site preparation, permitting and developer overhead. In addition, revenues are increased by optimal utilisation of variable solar energy. The problem with combining solar PV with energy storage is that lithium-ion batteries are expensive, and to create a viable business case the battery needs to be able to tap into multiple revenue streams of grid services. However, existing battery technologies are very sensitive to their use cases and the more they are utilized, the faster they degrade, the shorter their life and the greater the safety risks. This was confirmed recently by DNV-GL, who have investigated one of 28 large-scale battery fires in South Korea and found that intensive use of the batteries led to extreme wear-and-tear, which was an underlying cause of the fire (IHS Markit, 2020). Brill Power has developed a new type of BMS, which can significantly reduce the rate of battery degradation. This enables the operator to access more revenue streams without reducing the project lifetime or safety. In addition, a battery with Brill Power BMS can be directly connected to a solar PV array without the need for DC/DC converters or charge controllers, which reduces system cost and complexity. Finally, the open source BMS enables the requirements for grid services to be more readily met and modified with time as services change, future-proofing the battery system. At the end of phase 2, the stakeholders will be in the position to commercially roll out this technology for a 49.9MW energy storage system on Narec DE's site, which will be co-located with a solar PV farm.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
PHASE BIOLABS LTD	Engineered Autotrophs for Enhanced Carbon Recycling of CO2 to Ethanol (CO2-ERT)	£38,942	£38,942

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Phase Biolabs Ltd is leading a consortium of UK-based biotechnology companies to develop its carbon recycling platform, which is based on gas fermentation. Gas fermentation has only been developed following the recent discovery of a new class of microorganism that thrive in the extreme conditions of deep-sea hydrothermal vents. These microorganisms actually "eat" and grow off of industrial waste gas and convert them into useful chemicals. The development of this technology is aimed at decarbonising business, energy and industry, by addressing the need for technologies that allow for the efficient and low cost conversion of waste industrial gases such as carbon dioxide (CO₂) into sustainable and higher value products. Phase Biolabs' innovate technology aims to unlock the potential of gas fermentation as an efficient, low cost and scalable solution to recycle industrial greenhouse gas emissions into carbon neutral chemicals. Their technology enables the creation of a carbon value chain by linking emitters of CO₂ (upstream customer), with a user (downstream customer) of industrial chemicals. With their technology and commercial partners, Phase Biolabs is aiming to help the UK decarbonise and eventually reach its ambition for carbon neutrality.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
MATRIX AGRI VISION LIMITED	Enhancing rural business efficiency and growth by minimising harvester induced damage to root crops through development of a vision-based smart system to detect damage in real-time and adjust machine parameters - CropVision	£49,254	£49,254

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

UK Vegetable producers (such as potatoes, beetroots, swedes, carrots, cabbages and onions) are hindered by poor quality and short storage life of produce damaged during harvest, resulting in a reliance on imports from the continent to ensure that domestic demand is met, such as: potatoes (import value of £51.6M, 2016); onions (£191M); carrots (£46.6M). With the increasing challenges of food security for a growing UK population and the continuing uncertainties surrounding Post-Brexit import tariffs and Covid related disruption, it is crucial that the UK agricultural industry and rural economy innovates in order to ensure greater efficiency, self-sufficiency and green growth. Harvesting of root crops is an aggressive process and the minimising of damage is reliant on the observations and skill of a harvester operator. Our approach to this challenge is the development and demonstration of an innovative vision-based technology, CropVision, in order to detect damage post-topping of root vegetables in the harvester, in real-time. This phase 1 technical feasibility study and follow-on phase 2 prototype development and testing project will improve agricultural and food production business and industry efficiency and "building back better" by reducing food damage during harvest and storage (brought about by damaged crop causing rotting of undamaged crop during storage) and therefore positively impacting on productivity and profitability. We anticipate this system will allow users to harvest higher quality (less damaged) produce with longer storage life potential, reducing our imports, minimising food waste, and the associated environmental effects. It will also enable growers to generate greater revenues through extending the supply season and allowing them to differentiate produce based on quality.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
COMPOSITES EVOLUTION LIMITED	Net Zero Biocomposites for Automotive Applications (Biocomp-NZ)	£59,910	£59,910

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

"Biocomposites" are plastics that have been reinforced (i.e. stiffened and strengthened) by natural materials such as plant fibres. Some typical plant fibres used in biocomposites are flax and hemp. The plastic part of a biocomposite may also be plant-based, at least partially. The aim of this project is to use biocomposites to develop the next generation of lightweight automotive components such as body panels and interior parts. The UK has a target to meet "Net Zero" by 2050. This means that any greenhouse gas emissions must be offset by corresponding schemes that remove them from the atmosphere. So, for example, trees might be planted to offset the emissions generated by transport. However, Composites Evolution believes that biocomposites offer a complementary and more responsible approach to greenhouse gas mitigation. Rather than relying on entirely separate schemes such as tree planting to mitigate greenhouse gas emissions, the life cycle of a biocomposite material has an inherent greenhouse gas absorbing phase whilst it is growing as a crop prior to harvesting. Like all plants, flax and hemp absorb carbon dioxide as part of their natural photosynthesis process. They, therefore, start their lives as engineering materials having already removed significant quantities of carbon dioxide from the atmosphere. This is in contrast to most other materials that generate carbon dioxide during their extraction and processing. Within this three-month feasibility study we will: * Consult with key players across the UK automotive supply chain to establish the industry's requirements and expectations with respect to biocomposites. * Review and evaluate the biocomposites that are currently available. * Produce representative demonstrator elements as "building blocks" that will form the basis of a more in-depth prototyping phase in a follow-on project. The automotive sector has been hit particularly hard by the COVID-19 pandemic. The forced closure of car showrooms led to a dramatic 97% drop in sales in April 2020, the lowest level of sales since 1946. Furthermore, the industry was already facing considerable technical challenges and financial pressures as it transitions away from petrol- and diesel-engined cars towards electric vehicles. This project will help the automotive industry to "build back better" in the post-pandemic era by providing them with greener materials for the more sustainable vehicles that will be required in the future.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SKY MEDICAL TECHNOLOGY LIMITED	Development of a Protocol for Treatment, with a Neuromuscular Electro-Stimulation Device, to Improve Outcomes and Reduce Length of Stay for Critical Care Patients	£57,706	£57,706

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

CC is high-risk with a mortality rate of 20-30% It is also costly, accounting for approximately 3% of the NHS budget, or £3.75bn per annum This project aims to reduce the length of stay of patients under Critical Care (CC) or in Intensive Care Units (ICU). Currently, a vast array of care mechanisms are used to stabilise and treat a CC patient in a range of types of specialist ICU -- dependent upon the type of condition or injury. Normally, Intermittent Pneumatic Compression (IPC) or ThromboEmbolism-Deterrent stocking (TEDS) are used as a standard measure for the prevention of DVT. Also drugs are used to maintain a fine balance between blood flow to critical internal organs and the body's periphery whilst maintaining healthy blood pressure and pulse. In severe patients these drugs can compromise the patient as a balance cannot be found. The applicants have developed the geko™ device: a small battery-powered, device that sticks to the back of the knee, sending small electrical pulses to stimulate the common peroneal nerve. This produces contractions of the calf muscles causing blood to flow around the body. It currently approved for use in the NHS and US healthcare systems to prevent DVT. The geko™ has also been shown to: significantly increase blood flow in critical internal organs: kidney and heart increase venous, arterial and microvascular blood flow and to reduce swelling due to trauma or surgery. These are all major indicators of the health of a patient under critical care. The geko™ is a innovative technology protected by 6 families of global patents. Freedom To Operate has been established by numerous and regular professional searches. The innovation in this project will be to substitute IPC or TEDS with geko™ - ostensibly for DVT prevention - but also gain the significant advantages of system-wide support offered by the geko™. * This will address a global market worth over £1bn in the UK and US alone with an estimated value of £40m over the first five years. * Use of the device will save the NHS approximately £570m per day reduction in the Length Of Stay of CC patients. * Potential for the environmental impact of the device have been studied previously and demonstrated a 10x saving over TEDS and IPC. This Phase 1 project will develop the first stage protocols needed to conduct a full clinical trial, Health Economic Study and Economic Impact Assessment in Phase 2\.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SEM ENERGY LIMITED	Bio-security and sustainability in Agriculture slurries	£59,668	£59,668

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

no public description

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>
Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Q-BOT LIMITED	DART (Digital Automated Retrofit Toolset)	£59,068	£59,068

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The \$10 trillion construction industry currently relies on manual, labour-intensive processes, has falling productivity and is slow to adopt new technologies. It has been severely affected by the Covid-19 crisis and its low rate of technology adoption is likely to greatly hinder the post-pandemic recovery. The repair and upgrade of existing buildings is particularly challenging and can be broadly characterised as: * inefficient, relying on repetitive, manual, laborious processes; * highly variable and subject to individual expertise and interpretation; * depends on information that is rarely accessible, shared or disseminated; * failing to learn from past mistakes. The UK government has passed legislation to reach net zero carbon emissions by 2050. Many local authorities have declared a carbon emergency and set targets to reach net zero carbon emissions two decades sooner, by 2030. However, the UK has some of the least efficient housing stock in Europe (Association for the Conservation of Energy, 2015) and energy use in homes accounts for approximately 14% of UK greenhouse gas emissions (Committee on Climate Change, 2019). An unprecedented effort will be needed to upgrade the UK's 28 million homes (Ministry of Housing, Communities & Local Government, 2019) to modern standards in order to meet the challenge of climate change. The scale of the task and the necessary timescales mean that retrofits must be cost effectively delivered at volume and without sacrificing quality. Current practises are entirely inadequate when faced with the challenge of reducing climate change through whole-house retrofit, or managing the maintenance of the UK's 28 million homes. This project will rethink how buildings are surveyed, maintained and retrofitted by connecting the built environment with state of the art digital, surveying and AI technologies. Surveying buildings and the retrofit process, is currently laborious, bespoke, highly variable, reliant on individual expertise and interpretation, while lessons learned are rarely shared. In many cases surveys are still performed with pen and paper. When digital technology is employed it is often little more than a tablet version of pen and paper. Q-Bot will address this opportunity and bring the retrofit process into the 21st century by developing a unique solution that can survey a building, identify its needs, manage the risks inherent with the process, select and design the most cost-effective upgrade path, manage the specification, procurement and installation of energy efficiency measures to ensure the optimal retrofit solutions are selected and verify the installation and measure performance post-retrofit. [0]: #_msocom_1

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
KORN WALL LIMITED	SCREENswitch: Switchable Opacity Patient Isolation Systems	£59,885	£59,885

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Many people have been put into isolation in hospitals due to COVID-19 and this will continue into the future if the pandemic persists. Using partition screens is one of the most hygienic ways to segregate patients but they are limited by the fact that they are either opaque or transparent. There is need for both options, as patients require privacy but also must not be left to feel completely secluded; there are well documented negative mental health impacts on patients who have undergone extended periods of isolation. There is therefore a need for patients who are isolated in hospitals to have both the option of privacy, and to be able to see the rest of their ward. SCREENswitch is a feasibility study to understand whether Smart Glass, which switches from being opaque to clear at the click of a button, can be used in creating retractable hospital screening partitions. These would transform the delivery of in-ward patient isolation, giving the patient the control over their environment, minimising the stress on their mental health. Currently, there is no solution that allows for a clear infection control screen to become opaque at the touch of a button. Instead, an external product must be used alongside the clear screen to allow for privacy. These products, such as curtains, are usually unhygienic and inconvenient to use. Most worryingly, 90% of curtains used in NHS hospitals are made of disposable polypropylene, disposed of by incineration or landfill every few months, which is damaging the environment. Working with UCLH, SCREENswitch would help lead to a more sustainable public sector, by creating an easy-to-clean and therefore reusable product that can ultimately replace single-use curtains in hospitals with an innovative, sustainable alternative. It would help the NHS recover from the COVID-19 pandemic and implement better isolation systems to prevent further spread of infectious diseases in hospitals and reduce the mental health effects of isolation in the future. KwickScreen has over a decade of experience in designing, manufacturing and selling retractable privacy and infection control screens to hospitals. The company's screens can be found in every NHS trust and their equivalents in the UK. SCREENswitch will work with a specialist producer of Smart Glass. The two companies, who are both local to each other, will work together to carry out this feasibility study, and later development, of creating a switchable-opacity isolation system.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ICEOTOPE TECHNOLOGIES LIMITED	Project Grand Hammer	£59,994	£59,994

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Working with Avnet, Iceotope is investigating and implementing new technological approaches to high-density liquid cooling to support energy efficiency and heat reuse in public network infrastructure and edge computing.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIBERTY POWDER METALS LTD	Development of Atomiser Nozzle Design to increase Yield (DANDY)	£59,976	£59,976

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Additive manufacturing (AM) of aerospace components create opportunities for lighter weight and higher performance parts which could significantly reduce both manufacturing waste (lower buy-to-fly ratio) and the weight of an aircraft. This will result in fuel savings, operational costs and decrease carbon emissions, thereby benefiting our environment. We do not anticipate a change to the crucial parts of the aircraft, such as the wings and fuselage in the near future but there is real potential in the replacement of less flight-critical parts, such as brackets, clamps, hinges, seat buckles and furnishings. To produce a 1kg bracket for an airplane, for example, requires 10kg of raw material input into the manufacturing process. From an engineering design perspective, that final bracket may still contain much more metal than is required for the application. 3D printing, on the other hand, requires far less raw material inputs and can further produce parts that minimise weight through better design. Current sub-optimal designs are due to the limits of conventional manufacturing. When we make something in layer-by-layer fashion as in AM, those constraints diminish. One of the biggest barriers to the aerospace industry fully adopting additive manufacturing, according to companies we have spoken to, is the cost and availability of the powder metal. The 15-45 micron fraction used in AM is only approximately 40% of the production. If the atomiser nozzle can be designed to increase this fraction to 50-60% the price significantly reduces and availability increases, making it more viable for aerospace components. Liberty Powder Metals (project lead) and the Materials Processing Institute (subcontractor) have employees with over 30 years experience in the metals industry who have been involved in redesigning basic oxygen steelmaking, oxygen lance nozzles, using physical and mathematical modelling and working closely with the nozzle manufacturer to successfully improve refining of the steel bath and to maximise the amount of scrap melting to make the process more efficient and economically viable. The same people and skills will be used in this project to use modelling to investigate the feasibility of modifying the atomiser nozzle. This project will help deliver on the government's [Clean Growth Strategy][0] and [net zero ambition][1] to protect the climate and environment for current and future generations by reducing waste from the manufacturing of aerospace components, light weighting of aircraft and reducing fuel consumption. Successful implementation will also strengthen this important UK supply chain. [0]: <https://www.gov.uk/government/publications/clean-growth-strategy> [1]: <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CELLUCOMP LIMITED	VegBrik	£54,704	£54,704

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Project leader CelluComp, a Scottish-based material science company producing microfibrillated cellulose (MFC) from waste streams of root vegetables, will team up with its partners and customers to design the next level of sustainable food packaging. There is a global issue with the use of plastics in packaging, often ending up in landfill and littering the environment, causing problems for natural ecosystems, thereby increasing the potential environmental impacts. Paper-based products could possibly address this, as paper is biodegradable and recyclable, but there are issues with barrier performance. Multi-layered paper-based solutions can use 3-7 layers consisting of plastic, cardboard and foil, making recycling or composting of this packaging extremely difficult. CelluComp proposes to replace plastic and metal foil layers, by utilising films of its MFC product called Curran. This will reduce the issues of recycling and enable re-pulping and re-use in paper products. CelluComp's extensive knowledge in coatings, composites and paper applications makes it well-suited to find ways to achieve its objectives. It has already shown how Curran can add strength to paper and close its porosity. It has demonstrated Curran's ability to improve barrier properties of coatings on paper and it knows Curran can form a natural barrier film. Putting these elements together is the next logical step. The Project will support the government's Clean Growth Strategy by focusing on enhancing the benefits and value of the UK's natural resources. By using sugar beet pulp as a feedstock and turning this co-product stream into a high-valued product using low energy and non-toxic chemicals, CelluComp will make efficient use of agri-products, get rid of avoidable waste and maximise the value of resources. Plastic and/or foil reduction in packaging means a reduction of incineration of non-recyclable packaging, thereby reducing carbon emissions.

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
MIMICA LAB LTD	Developing Mimica Touch universally applicable flat label to cut food waste and mitigate COVID-19 disruption to the food industry	£55,452	£55,452

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

COVID-19 has disrupted the global food industry, with the UN warning that the world is facing the worst food crisis in half a century. Food waste expert, Kevin Quigley, has cautioned that the UK could now miss its Sustainable Development Goal of halving food waste by 2030. Globally a third of food produced is wasted (FAO, 2015), with 70% of it still safe for consumption (FAO, 2020). A major issue is confusing and overcautious expiry dates, leading to perfectly edible food being thrown away.

The Clean Growth Strategy and Net Zero Ambition has the potential to put the UK as a world leader in this systemic change. We believe Mimica can significantly contribute to DEFRA's goal of no food waste entering landfill by 2030.

Food producers and retailers have pledged to tackle food waste, but COVID-19 has forced them to look at different ways of operating. Mimica products will give the food industry confidence to manage stock levels and wastage, whilst giving consumers the confidence to purchase fresh foods.

We at Mimica have been advocating and practising the 'build back better' mission before the campaign existed. We are developing a solution usable for all, regardless of ability, providing secure well paid jobs as we grow and fundamentally, our mission is rooted in tackling the climate crisis.

Lockdown has caused the UK public to take food less for granted, with shop stock levels never guaranteed. Cooking at home has reestablished a connection to food that many had lost, or never had, and most (77%) are expressing that they want to develop more sustainable habits. Mimica will support this shift by launching Mimica Touch, helping citizens better manage their food, whilst simultaneously reducing food wastage.

Mimica Touch is a temperature-sensitive food freshness indicator. This procurement project will explore the feasibility of a universally applicable flat label. Mimica are currently scaling up a bottle cap design as a proof of concept in the juice industry. The bottle cap and juice are a feasible, low risk development trajectory suitable for market entry, but is too much of a niche market to achieve the sales volumes required for sustainable company growth. We will achieve higher sales margins with our flat label.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
U-FLOOR TECHNOLOGIES LTD	IHV - Intelligent Heating & Ventilation	£58,591	£58,591

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

UT's has developed an intelligent air brick (AirEx) that measures temperature & humidity and regulates airflow accordingly by opening/closing embedded air-vents using IoT-enabled algorithms. By replacing existing air bricks, AirEx is proven to deliver a 10-15% reduction on energy bills whilst maintaining indoor air-exchange. AirEx has thus far been optimised for energy efficiency, but we now want to build on its capabilities as an indoor air quality (IAQ) management system. For this project, we therefore want to integrate AirEx into an existing smart-heating control system to develop the first retrofittable smart-heating and ventilation control system ("IVH" - Intelligent Heating & Ventilation") to optimise heating efficiency whilst maintaining air-exchange to improve IAQ. Phase 1 will enable us to design an integrated system with a technology partner and to develop a plan for a Phase 2 trial in conjunction with at least one key customer.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
THERMULON LTD	Super insulating aerogel lime composites for heritage buildings	£50,874	£50,874

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Improvements in energy efficiency of existing buildings is a necessary part of building back better from the Covid-19 pandemic, as highlighted by the £2bn Green Homes Grant. Thermulon Ltd. brings a novel insulation material that can directly meet the need to improve the building fabric of existing stock. Our vision for this project is to design and start producing a highly-insulating aerogel-based plaster which can contribute to retrofit the 7.7m hard-to-treat homes with solid walls. This plaster, formulated by Thermulon in conjunction with experts in the field, will have highly-insulating properties thanks to our proprietary aerogels - the most insulating material known to man. In Phase 1 of this SBRI competition, Thermulon will confirm the feasibility of incorporating our aerogels into plaster, determine optimal material characteristics and test the aerogel-based plaster.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FLEX MARINE POWER LTD	Unlocking scalable tidal wealth: clean growth for the coastal zone	£58,770	£58,770

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The UK has some of the best tidal resources in the world. However, to-date, this predictable, indigenous, clean energy has remained largely untapped, due to the non-commercial cost of tidal energy technology. FMP is developing SwimmerTurbine™, a 50kW tidal turbine that delivers a scalable, affordable solution, unlocking the tidal energy opportunity through key innovations, leading to breakthrough metrics. This project now allows us to move quickly to a commercially-ready machine.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
IPFT Fuels Limited	Autonomous Charging For Efficient & Safe Vehicle Charging In Fleet Depots And On-Street (Public)	£59,255	£59,255

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

IPFT is developing autonomous electric vehicle charging solutions for applications across the transport system (surface transport, aviation, maritime). Autonomous charging technology addresses many of the challenges of charging battery electric vehicles, and is an enabling technology for Mobility-as-a-Service (MaaS), EV car clubs and Vehicle to Grid (V2G) which have further environmental and economic benefits, including supporting better integration of intermittent renewable energy generation. In this project, we propose to study and outline the adaptation of our technology for applications where we see potential for early adoption at scale. We will focus our Phase 1 study and Phase 2 trials on charging fleets of LCVs in fleet depots and specific use cases in public charging to alleviate needs and concerns arisen as a result of the pandemic. We will implement Phase 1 in close consultation with the parties who have expressed support and offered to host Phase 2 trials.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CADPEOPLE UK LTD.	Renewable energy - Enhanced visual integration platform	£59,795	£59,795

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The purpose of the Digital Integration Platform is to find a more effective and intuitive way to utilise the abundance of source sensor data provided by wind farms to increase productivity. The increased productivity of onshore/offshore wind farm data visibility will help the UK recover from the impacts of COVID-19 by maintaining and creating jobs, boosting economic growth, and improving energy sustainability and resilience is to find a more effective and intuitive way to utilise the abundance of source sensor data provided by wind farms in order to increase productivity.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
HV SYSTEMS LTD	Feasibility of a zero-emission heavy goods vehicle powered by hydrogen fuel cells (HV Truck)	£49,409	£49,409

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

HV Systems Ltd (HVS) designs hydrogen electric vans and heavy goods vehicles. It plans to use hydrogen-electric technology in a range of vans and trucks, which are intended to produce zero emissions. HVS are working with road haulage companies to help them deliver goods sustainably. The lockdown has seen up to a 50% decrease in UK pollution levels, largely due to reduction in vehicle usage. Our project aims to facilitate the decarbonising of the road haulage sector with the introduction of hydrogen fuel cell "HV-Trucks" to uphold the environmental benefits observed from the COVID-19 lockdown. HV-Truck will have a capacity of up to 44 tonnes and is the main development goal for HVS. It will be a hydrogen-electric truck with a range of 1100km offering rapid refuelling. The truck will be positioned as a direct competitor to, and replacement for, diesel-powered vehicles.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SYLVERA LTD	Enhanced Forest Above Ground Biomass estimation using LIDAR, Machine Learning and Earth Observation data	£51,858	£51,858

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The project aims to transformationally improve the accuracy of estimates of carbon stocks in above ground biomass using remote sensing data. The ability to accurately measure carbon stocks in the world's forestry is of vital importance to the development of voluntary carbon markets, the development of international climate policy and the scientific community's understanding of the effects of the climate crisis. The project aims to improve the accuracy of these estimates by deploying ultra-high resolution LIDAR data to train the latest generation of machine learning models.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
MAKING CHANGE HAPPEN COLLECTIVE LIMITED	To use insights from social science identity research to build a toolkit to equip organisations with new behaviours as they return to work post Covid-19.	£59,100	£59,100

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

****Using behaviour change research to help businesses create new behaviours**** Our project is innovative in its use of recent research in identity theory as the lever to create changes to employee behaviours. It uses insights from social science identity research, to help organisations create new work identities as they return to work post Covid-19, encouraging automatic prosocial behaviours at the employee level. ****The outcome product set**** To achieve our target outcome, the project will create a set of behaviour change products that can be used by organisations to help them apply at a practical level the insights gained from research in this area. Thus creating interventions that can be taught to in-house teams to make change happen. ****Targeting employee behaviours and enhancing existing frameworks**** This work will complement existing leadership frameworks that focus on sustainable leadership, policies and metrics. Aiming to add a behaviour and attitude change set of interventions that are targeted for the employee level and creating automatic prosocial behaviours. We would seek to change behaviours in that huge stakeholder group of employees, who make such a difference to the way organisations work. ****An expert team with a behavioural focus**** Making Change Happen will lead the project that brings together a team of experts combining the skills of social psychologists, behavioural insight and language specialists and sustainability experts. The focus on a sustainable recovery post Covid-19 will aim to help organisations to: * Create work cultures that encourage the development and adoption of products and services that allow for a decarbonised future. * Ensure those work cultures address human wellbeing as an aspect of sustainability and encourage prosocial behaviours. We aim for businesses to encourage truly collaborative working in thriving teams to make socially conscious decisions. We believe this project will also work to increase the potential uptake by employees of other projects funded by the competition. Thereby increasing their chances of uptake.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SPACE INTELLIGENCE LTD	STOMPER: Satellite Technology for Opportunity Mapping and Prioritisation of Ecosystem Restoration.	£59,693	£59,693

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

In the UK, over 10% of the land is covered by peat, but 80% of this peat is degraded: you can see this on a walk in Scotland, where the land is drying and breaking up. This is a problem because peat contains a lot of carbon, and as it dries it releases this carbon into the atmosphere. In response to this, we need to know which areas are degrading the fastest, in order to prioritise restoration activities and secure carbon storage, thereby mitigating climate change. Big companies like BP are investing in restoration projects like these, which are known broadly as Nature Based Solutions (NBS) to climate change. However, we do not have a good system for mapping where degraded peat is, nor for tracking how it is changing with time. This means we can't easily see which areas need to be prioritised for restoration, to make the biggest possible impact on climate change. This creates a technology gap, and also a market gap for innovative UK technologies to address climate change and help create jobs to support post-Covid-19 recovery. Space Intelligence is an exciting analytics company that uses satellite data to support nature restoration projects around the world. In this project called `_STOMPER_`, the Space Intelligence team will test and deploy new satellite analysis technologies to map degraded peat. We will then create a web mapping system that will highlight the priority areas for Nature Based Solutions in peatlands. This will take into account peat's ability to capture carbon from the atmosphere to combat climate change, but also the other uses of the land, such as tourism and biodiversity benefits. This decision tool will help the government, companies, charities and landowners obtain the most benefit for the climate from investment in nature, and plan restoration sensibly. This will help all teams in the private and public sectors to develop high-impact restoration projects more quickly, and create much-needed land-management jobs in rural areas heavily affected by economic impacts of Covid-19, as well as new digitech jobs. Whilst we are focussing initially on land management in the UK, Space Intelligence has years of experience selling services internationally, and is selling into a growing international market, supporting long-term growth and high-value employment in the post-Covid UK economy, whilst addressing climate change.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
IBISVISION LIMITED	Synchronous Engagement Remote Optometry- SERO: Tele-refraction platform to enable optometrists to interact with patients, test vision and prescribe correction remotely	£47,980	£47,980

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

IbisVision was founded by an eye surgeon from Aberdeen and was established in 2013 to complete the development and commercialisation of a suite of computer-based tools backed up by a secure database and cloud-based patient management system. The objective was to make eye testing easier and more intuitive for both the optometrist and the patient by using the familiarity of a computer and simple inputs. We are continuing to improve the system which now includes visual field, colour vision and the Amsler grid test. The corona virus pandemic has highlighted that routine eye tests to prescribe glasses or contact lenses are impossible with social distancing and, at the time of writing are suspended completely. This application is a feasibility study to explore whether eye tests to prescribe corrective lenses can be done remotely with the optometrist in their consulting room and the patient somewhere else, maybe at home, with a laptop. This has been attempted before with mixed success and always by trying to develop automatic self-testing software that by-passes the optometrist and thus their skill and experience is lost in real-time. Our proposal is highly innovative because we want to keep the optometrist and provide a means for them to interact with the patient remotely in real-time using a fully integrated suite of tests to assess the person's vision and prescribe the correct lenses to correct any near- or farsightedness or astigmatism. This is a challenging undertaking but we will work closely with a large optometry chain to look at the feasibility of three possible ways of achieving it. If successful our product will make eye-testing and getting new glasses highly resilient to subsequent lockdown events and help the optometry sector build back better and compete outside their normal physical catchment area without increasing their carbon-footprint (Green Growth). From the patient's perspective they are responding to a real person in real-time who is conducting the test and taking responsibility for the outcome. This personal interaction and surrender of responsibility to the optometrist has mental health benefits over a purely technical interaction with abdication of responsibility for testing and outcome onto the patient themselves. Also, because people will not have to travel to get their eyes tested, we are saving about three journeys per patient which contributes to our aspiration towards a net zero carbon economy.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
STEAMOLGY MOTION LIMITED	Zero Emission Diesel Engine Replacement Drive Train	£58,426	£58,426

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Minister for Transport has announced the ambition to remove all diesel only trains off the track by 2040. This presents technical challenges to the UK rail network, where only ~42% of the 20,000-mile network is electrified, for passenger locomotive Diesel Multiple Units (DMUs). For the last five years Steamology have been developing innovative hydrogen based zero emission steam power turbines. For over a decade the technical team have been working with superheated steam engineering. Following a successful world land speed record project for a steam turbine driven car the priority has been the development of a clean, novel energy dense hydrogen and oxygen fuelled steam unit for commercial applications. The Sustainable Innovation Fund: SBR1 phase1 will enable the application of this technology to the specific competition theme: accelerating the shift to low carbon transport. The Zero Emission Diesel Engine Replacement Drive Train will deliver a full scale operational ~300kW diesel engine replacement drive train for a Class 158 DMU demonstrating a typical in-service duty cycle in a test cell driving a Dynamometer. The steam turbine and transmission will be designed to be installed, on vehicle, on network following phase2 Steamology have partners in place owning ~34% of the UK's passenger rolling stock as well as a global supplier of transmissions. Support is in place to re-traction a DMU by replacing the diesel engine with a certified zero emission direct drive train and fuel system. The impact on climate change can be directly recorded by carbon dioxide emissions removed by the reduction in diesel fuel use. The Steamology steam generators are patent pending. The closed system is emission free, producing no Carbon, Sulphur, NOX or particulate emissions in a repeatable cycle. Steam turbines are compact, robust and reliable with few moving parts, suitable for the aggressive duty cycle of the railway industry. Steamology adopt a 'Cradle to Cradle' approach. This means not using rare earth or toxic materials or exotic manufacturing processes designing and engineering products with simple, service, maintenance and long-life. Demonstrating a ~300kW steam turbine in the highly regulated setting of the UK rail industry will provide an excellent marketing opportunity to the ~3700 UK DMU's and more widely to the Worldwide ~14,000DMU's in operation in more than 80 countries. Steamology will explore wider zero emission power turbine applications in; rail freight marine, heavy haulage and static industrial power applications.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOLTROPY LIMITED	Integrating Heat Pumps with Novel Solar Thermal Collectors to Decarbonise Space and Water Heating	£48,365	£48,365

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Our project will help reduce operational costs associated with space and water heating and will help decarbonise heat. Our proposal is to integrate our novel solar thermal innovation with air source heat pumps to provide space and water heating. Our innovation allows our solar thermal panels to freeze without damage eliminating the requirement for antifreeze. This means we can use water as the heat exchange fluid and design larger systems without being size constrained. Our system can overheat safely allowing larger arrays without the corresponding large water storage required to prevent overheating. Existing systems that use antifreeze are sized so that they never overheat as the antifreeze degrades and requires replacement. This means that the system is sized for the sunniest day of the year and matched with the available water storage and is undersized for most of the year. In the UK a 4.5 sqm evacuated tube collector (30 evacuated tubes) would require around 250 litres of water to prevent it overheating in summer. As our system uses water as the heat exchange fluid we can allow it to overheat, have larger arrays and get useful energy throughout the year that can contribute to space heating when it is needed in the cooler months. We have proven this innovation with 20 sqm of evacuated tube collector but with only 200 litre of water storage on a dairy farm. If this was an antifreeze type system it would require 1,200 litres of water storage to prevent overheating in summer. This would be costly and impractical to implement in most cases.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
DES19NCOR LIMITED	Gas Quality Fuel Cell Feasibility Phase 1	£59,239	£59,239

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

A feasibility project to test whether a fuel cell based sensor (FCS), developed by Loughborough University and Des19ncor Ltd, is capable of sensing and calculating calorific values in natural gases, Hydrogen gases and Bio-biomethane in near real time, such that these can be used to control gas quality (i.e. Wobbe index and relative densities) in a fully integrated system for net zero purposes. To assess and test the technical barriers for the adoption of the new technology in the market with end-users from utility and industrial backgrounds.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
DG CITIES LIMITED	Integrated platform for EV fleet transition	£56,183	£56,183

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Municipal and commercial fleet managers are under pressure to transition to a zero-carbon operation, but often lack the necessary tools and experience to do so. We propose to develop an integrated platform for EV fleet management; specifically charging, vehicle allocation and scheduling to better support fleet managers. The aim is to help fleets transition to electrification successfully and more efficiently, whilst also streamlining EV fleet operations once electrification is implemented. The product from this feasibility study will provide a single system that enables EV fleet management to account for vehicle data (e.g. charge levels) as well as vehicle and task allocation to drivers. This will enable a 'smart' scheduling and allow vehicles to optimise charge levels and also intelligently advise charging (e.g. time, speed) based on numerous factors relating to site characteristics, charger speed, grid availability and availability and upcoming future tasks. Additionally, optimisation of routes will be layered in, for example, prioritising uphill sections of routes or energy intensive tasks when the battery charge is optimal, and charging location options along the route (if required). Challenges we have identified fleet managers face with regards to electrification involve a lack of knowledge, resistance to change, range insecurity, and high or unknown infrastructural costs (both upfront and ongoing operational). Therefore, the tool will: 1) provide knowledge via site-specific assessments, 2) provide company-specific or site-specific streamlined solutions to overcome resistance/barriers, and 3) reduce infrastructure and operational costs through making use of AI and smart applications of technology to fleet management and charging. The adoption and application of the tool will help accelerate the shift in the UK (and beyond) to low-carbon transport, helping aid a successful UK response to net-zero carbon commitments and the UK Clean Growth Strategy. Additionally, the product will help businesses and the public sector recover from the COVID-19 pandemic, through job creation in a growing market that deploys EV infrastructure, as well as increased efficiencies in fleet ops that will result in better service delivery to citizens and money-saving for municipal fleets.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
INSIGNIA TECHNOLOGIES LIMITED	Development of a quality assurance CO2 leak detector for modified atmosphere packaging	£59,839	£59,839

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project addresses the theme "Enhancing the Benefits and Value of our Natural Resources" in the government's Clean Growth Strategy, targeting the reduction of food waste and associated carbon emissions and greenhouses gases. Unnecessary food waste is a significant problem which has substantial cost and environmental impact associated with it. One challenge the industry faces in the fight against waste is ensuring food doesn't spoil in the supply chain before the end of the shelf life. Modified atmosphere packaging (MAP) is used widely throughout the food industry to help extend shelf life by preventing the growth of aerobic spoilage microbes. It involves replacing air within the pack with a carbon dioxide (CO₂) rich/oxygen deficient gas mixture which keeps the food fresher for longer by inhibiting the growth of spoilage microbes. However, a major problem with MAP is the presence of leaks within the packaging, which results in the CO₂ rich protective atmosphere being disturbed. This results in premature food spoilage as the growth of the aerobic spoilage microbes is no longer inhibited, which ultimately leads to food being wasted. This project aims to develop a cost effective, colour-changing indicator that can be on every pack to quickly identify if a leak is present. Such a technology will allow the manufacturer/packer to continually monitor the packaging process and identify problem packs which can then be reworked rather than being wasted. The economic and environmental benefits of this technology for the food industry are significant, as wastage will be reduced, and costs associated with current expensive and unreliable testing methods can be cut. As with many sectors, COVID-19 has impacted the food industry and is changing the way in which it operates. Due to restrictions posed by COVID-19, such as social distancing measures, food production facilities are having to adapt to operating with less staff and enhanced safety/hygiene protocols. To account for this, there is a move towards using more automated processes to increase operating efficiency and reduce the resource required to perform the necessary quality checks etc. As a result, time and cost savings will become ever more important and an innovation like this, which can improve efficiency, save cost and address food waste reduction, will help the industry with a sustainable economic recovery from the COVID-19 pandemic.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FRE-ENERGY LIMITED	GREEN Project: Green Rural Economy Energy Network Project	£59,776	£59,776

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

AD installations have benefited from the government's renewable energy financial incentive scheme. However, this has been scaled back the AD industry has stalled. Nevertheless, the farming industry still appreciates AD's wider potential. Interest is emerging, looking at the **"_bigger picture_"** to support the sustainable investment in AD to future-proof the core business for next generation farming. The outputs of AD are **"_resources_"** that enable diversification. These **"_green_"** commercial industrial opportunities, create jobs, strengthening the local economy and community. The enabling **"_business models_"** need to show economic viability without subsidy support. RP Partnership, are innovative third generation farmers with ambitious business plans for growth. Actively exploring various options and ready to invest significantly for the future generation they are, in essence, real-world customers of this type of project and have agreed to contribute to the Phase 1 Feasibility Study and if successful, for the Phase 2 Prototype showcase site to be located at their premises. Integral to this is the integrated developments of a new 500-herd robotic dairy unit on their greenfield site and a commercial industrial complex on their adjacent brownfield site. They want to achieve sustainable business growth with a net zero or better, carbon footprint. This will enable more regenerative farming with increased environmental benefits that will also benefit the local community. This aligns with the concept of a Whole System approach centred around a suitably sized AD system. The farms primary food production (dairy and arable crops) will create waste streams that will sustain an AD; this will capture and convert GHG emissions into usable energy, electricity, heat, and transport fuel. Input plant nutrients will be recovered and recycled back onto the land to support plant growth, to enable the cycle to start again. **"_Our innovation_"** seeks to advance the established technology of AD, by progressing the **"_AD Whole System approach_"** to reduce the societal and environmental impacts of agricultural practices. It considers how resources are produced and managed, to realise sustainable agriculture and support future generation of farmers. Digestate to improve land fecundity is realistic and sustainable, it is the right thing to do! Surplus CO2 and heat will support crops grown under cover, reducing reliance on food imports. **"_Our challenge_"** is to change the general perception and application of AD. In this project we will present for the first time an operational showcase facility to demonstrate the benefits of a synergistic AD Whole System approach.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FACTORAI LTD	Improving the sustainability of the formulated products industry by using real time quality measurements	£50,543	£50,543

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Processed liquids, creams, pastes and gels are classed as formulated products and are used every day by billions of people worldwide. From toothpastes to shampoos, and from paints to medicine. They are ubiquitous. Most of these products are manufactured in batches in industrial mixers; the ingredients are pumped or poured into the mixer; and they are mixed and combined to form the finished product. In this project we develop a solution to retrofit an innovative sensor inside industrial mixers, thereby digitizing them. The sensor outputs real time quality data during the manufacture of formulated products and uses artificial intelligence to increase the sustainability of the industry enabling reduced manufacturing times, identifying problematic ingredients and helping the industry to attain higher levels of compliance, traceability and sustainability.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ACUITY ROBOTICS LIMITED	Robot Enabled Analytics for Water Utility Infrastructure and Asset Maintenance	£59,615	£59,615

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Acuity Robotics Limited (AR) is a spin-out from the University of Leeds and its Real Robotics lab in 2019 to commercialise its inspection robots. Water utilities operate complex pipe networks with limited information on system connectivity and asset condition. Action is typically taken once failure occurs and performance is compromised. The purpose of the intervention is to fix the specific problem ASAP. Onsite reports of the fix may include images of any issues found and some textural description. These are disparate reports that can only be cross-referenced on a superficial level resulting in loss of insight to the condition of other assets locally and nationally. AR's innovation is an intelligent, data-driven analysis and decision-making tool enabled through robotic technology applied in the field to capture onsite data rapidly and simply.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
TISICS LIMITED	LightLand	£58,370	£58,370

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

For aviation to achieve net zero emissions and meet rising demand for passenger and freight travel, aircraft efficiency must be significantly improved. Recent changes replacing Aluminium with carbon fibre and steel with titanium have shown the impact advanced materials can have on fuel burn and hence emissions. But there remain components in aircraft such as landing gear systems, where the loading conditions, operating environment and component life expectancy exceed the performance of conventional lightweight materials mentioned above. TISICS ultra lightweight metal composites can now deliver the exceptional performance landing gear systems need in very demanding environments. With stiffness double that of titanium and compression strength 50% to 100% greater than steel, titanium composites would be a good alternative. Increased corrosion resistance and can be very low material waste net-shape manufacture means they are an exceptional solution to create lighter aircraft. Most direct replacement components are 35% lighter than the current solutions, but utilising design optimisation methods many future parts can be up to 70% lighter. For example replacing the major tubular components on an Airbus A320 with titanium and aluminium matrix composites would save over 1000kg per plane and deliver over 2 million tonnes of CO2 emission reduction for the world A320 fleet. This project will in the first phase, identify a limited number of landing gear components where metal matrix composites offer significant weight savings, can be manufactured to demonstrator level and have the potential for viable production economics in the near term. The UK a world-leader in the production of continuous fibre reinforced metal matrix composites. This project accelerates the current development status towards near term product development and product opportunities. Successful completion of the project will generate the success needed for industrialisation investment and early product entry on current airframes as well as the baseline case for radical new aircraft and systems in development for a 2050 net zero aviation target.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
MAS DESIGN PRODUCTS LIMITED	A Zero-Carbon Transport for post-COVID needs	£26,551	£26,551

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The bicycle is the ideal affordable sustainable transport product for a post COVID World. The sales of bicycles, e-bikes and folding versions, soared during COVID-19 by offering healthy, easy to store, personal transport that avoids infectious enclosed spaces. As countries come out of lockdown, the benefits of bicycles are also recognised as solutions to, not only pollution free urban transport, but also climate change, environmental sustainability and congestion. They have been given space and a renewed prominence in most towns and cities. After years innovating many bikes we want to bring our experience, best ideas and value engineering into the design of a folding/e-bike. A bike that is better than any other: larger riding/smaller folded, lighter, roll-when-folded, on its wheels - a clean affordable design. Based in the UK, this project is perfectly positioned to benefit from the booming global demand for bicycles, whilst leveraging UK's leadership in lightweight and new low-cost composite developments. This innovation project will explore new materials and processes along with the radical new folding geometry.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
B. & M. LONGWORTH (EDGWORTH) LIMITED	Volume processing to recycle Fast Fashion	£59,047	£59,047

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Public description We plan to reduce and reuse the waste from fast fashion sales Recycling and recovering would deliver a significant reduction in CO2 and generate a valuable new revenue stream reducing the reliance on our planet's raw materials. The innovation aims to reduce and recover the volume of waste going to landfill and incineration, whilst reducing carbon footprint. If this waste could be successfully removed from the residual waste stream and recycled, this could: * make a significant positive contribution to overall recycling and landfill rates * deliver a low energy recycling solution * reduce the amount of waste going to landfill, or burning. * reuse materials - BML anticipate the full recovery of remaining raw materials to be reused in manufacturing, delivering a sustainable solution. Our aspiration is for the materials to be reused. Project proposal is to assess the feasibility of applying two forms of BML technology to fashion waste. Stage 1 Reduce its mass by more than 75% Stage 2 Reclaim remainder for reusable constituent parts A winning partnership; * Customers with many years of experience handling fashion waste * BML - over 40 years experience innovating, developing and optimising reclamation technologies * **Primary Theme:** Enhancing The Benefits And Value Of Our Natural Resources - will contribute to the UK government objective of being a Zero Avoidable Waste economy by 2050. * **Secondary Theme:** Innovating For A More Sustainable fashion business - will reduce the carbon footprint.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
B. & M. LONGWORTH (EDGWORTH) LIMITED	Recycling of Absorbent Hygienic Products (AHP)	£59,532	£59,532

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

By 2041 the ageing population is set to double in volume which also means increase in the resulting waste. Currently our estimated CO2 emissions for incontinence waste (4 tonnes per week) based on our current waste volumes is 95,000kg CO2 pa. Our current waste transport emissions are 5,000-7,000 kg CO2 pa. Recycling and recovering would deliver a significant reduction in CO2 and generate a valuable new revenue stream reducing the reliance on our planet's raw materials. LES want to deliver a circular economy of Absorbent Hygiene Products (AHP) for incontinence, feminine hygiene, non-infectious hospital waste and nappies. The innovation aims to reduce and recover the volume of waste going to landfill and incineration, whilst reducing carbon footprint. If this waste could be successfully removed from the residual waste stream and recycled, this could: * make a significant positive contribution to overall recycling and landfill rates * deliver a low energy recycling solution * reduce the amount of biodegradable waste going to landfill. (89% of an average used nappy is biodegradable) * reduce hospital waste - LES aim to recycle and recover AHP from NHS trusts, delivering environmental and commercial savings to the tax-payer * reuse materials - LES anticipate the full recovery of raw materials to be reused in manufacturing, delivering a sustainable solution. Our aspiration is for the materials to be reused in AHP production (currently unsustainable wood fluff pulp and plastics) * reprocess materials - based on our research and a European study on the fibre market we have identified established uses for reclaimed fibre and plastics, including plastic pellets, roof tiles, trunking, AHP containers, bollards Project proposal is to assess the feasibility of applying two forms of BML technology to AHP waste in two stages: **Stage 1** Reduce its mass by more than 75% **Stage 2** Reclaim remainder for reusable constituent parts A winning partnership; * Pilot customer - 30 years of experience handling AHP waste * BML - over 40 years experience innovating, developing and optimising reclamation technologies * **Primary Theme**:
Enhancing The Benefits And Value Of Our Natural Resources - will contribute to the UK government objective of being a Zero Avoidable Waste economy by 2050. * **Secondary Theme**:
Innovating For A More Sustainable Public Sector - will reduce the carbon footprint of the NHS - 'The NHS is responsible for around a third of public sector carbon emissions'

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Compass Agronomy	The development of technology to link nutrient advice to a sustainable, independent and unbiased fertiliser planning tool	£44,083	£44,083

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Fertiliser inputs to crops usually create the largest increase in yield and quality of any of the crop input decisions but they are also the largest (>50%) contributor to greenhouse gas (GHG) emissions associated with crop production. However, the crop production industry is very poor at matching the hundreds of fertiliser products available with the crop's nutrient requirements which leads to loss of yield and profit, increases in GHG emissions and other pollution such as ammonia emissions and nitrate leaching. Matching fertiliser product with crop requirement is very challenging because of the wide variation in crop requirement for the 12 essential nutrients and the wide range of fertiliser products available that contain different nutrients at different ratios. New start-up company 'Compass Agronomy' will lead the development of the first tool that identifies the optimum fertiliser product choice for both maximising gross margin and minimising GHG emissions and other pollutants. Ability to optimise both economic and carbon metrics is a particularly innovative and unique feature of the tool. The 'Fertiliser Optimiser tool' will rank fertiliser products for different output metrics: gross margin, GHG emissions, ammonia emissions, risk of nitrate leaching and phosphate run-off. The tool will enable a wide range of businesses to recover from the impact of COVID-19 by enabling: i) farm businesses to reduce unnecessary fertiliser costs and achieve greater crop yield and quality, ii) fertiliser distributors and manufacturers to have the trusted evidence to sell technically superior fertiliser products that increase the yield and quality of crops, iii) farm advisors to improve and expand the advice they can offer to not only include more accurate fertiliser recommendations to maximise gross margin, but also to optimise product choice to minimise GHGs and other pollutants. The tool will be accessible on-line, so these recommendations can be made without farmers and advisors having to physically meet. By identifying fertiliser products, which provide both the greatest gross margin and lowest environmental impact, the tool will ensure the recovery from COVID-19 will be cleaner than before and help transition crop production towards carbon net zero. In addition to helping farmers to reduce the carbon footprint of their crops, the tool will help the UK reach its target of reducing ammonia emissions, and help farmers reduce the risk of nitrate leaching and phosphorus run-off which cause eutrophication of water courses and cost millions of pounds to remove from water supplies.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
POWER CIRCLE PROJECTS LTD	Climate Positive. Developing a Social Housing Showcase	£58,819	£58,819

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The objective of this project is to undertake a feasibility study for developing Climate Positive houses for the social housing sector, with a view to testing the concept in Phase 2. Climate Positive homes generate a net saving in carbon emissions, thus making a positive contribution to achieving 'net zero' carbon.

As we emerge from Covid-19 social housing providers are challenged in meeting their budgets and rising unemployment risks an increase in fuel poverty and bad debt on rent payments. This will challenge their ability to deliver their responsibilities to improve the energy efficiency of social housing, deliver net carbon zero and address fuel poverty. They are therefore interested in alternative delivery models that can operate within their financial constraints.

Power Circle Projects (PCP) has developed an innovative business model to support this. PCP works with social landlords to develop local energy systems which generate, store and trade energy to achieve affordable climate positive solutions. There are many barriers to social landlords delivering these projects such as small capital budgets, lack of trust in third party funded solutions, low 'risk appetite' and lack of experience or time.

PCP's business model addresses these barriers by operating as a socially-owned licence-exempt energy services company offering a range of services that will deliver and operate local energy systems. These services include developing, owning (where applicable) and managing local systems, operating a socially-owned Virtual Power Plant, selling the resulting electricity and providing grid services. Project structures can be flexible to suit individual customers and their risk appetite.

The feasibility will be tested for GHA's new build development at Bilbohall in Elgin, as well as a retrofit scenario for roof replacement programmes which could achieve a similar outcome. GHA has already engaged PCP to undertake early concept work. This looks at installing whole roof building integrated solar PV to create a local power plant linked to a centralised battery by private wire to create a local energy network. The energy will be sold back to tenants at affordable rates with excess being exported to grid.

Building on early concept work the Phase 1 feasibility study will develop a technically and commercially verified solution for a new build and retrofit scenario to enable field testing of a prototype system in phase 2. The business model and technical innovations will enable PCP to support the wider delivery of 'climate positive' homes in the social housing sector.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
YOU. SMART. THING. LIMITED	GoGreen - Getting Staff There The Green Way	£59,506	£59,506

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

****GoGreen - Feasibility Study of User-Network Optimisation to Minimize Carbon Emissions**** The aim of Phase 1 is to assess the technical feasibility and commercial potential of "GoGreen", a personalised travel assistant that will use artificial intelligence and machine learning to increase use of sustainable travel choices by local authority staff. GoGreen is a Software-as-a-Service platform for local authorities to manage and track both commuting and business travel, enabling cost savings and a greener post-pandemic recovery for the public sector. Simple to deploy and low-cost to operate, GoGreen uses a unique 'eco-algorithm' to help local authority employees identify, select, and book the most appropriate and sustainable journeys, incentivising behaviour change to ensure transport carbon reduction targets are achieved. Features of GoGreen travel itineraries include journey durations, price (and comparison with a car journey), estimated carbon emissions by leg, productivity, and active travel time, allowing users to fully evaluate and get updates on selected journey options. Available travel modes will include walking, cycling, bus, train, low emission vehicles, electric vehicles, bookable fleet vehicles, and ride sharing in cars. GoGreen is designed to reduce the overall number of passenger car journeys made in the UK by innovatively promoting and improving access to sustainable transport modes and shared low emission vehicle fleets. This objective aligns with the UK Government's strategy for making public transport and active travel a "natural choice" and for reducing greenhouse gas emissions to meet its 2050 "net zero" targets. It also aligns with local authority initiatives to encourage sustainable alternatives to car usage, including rail, bus, walking and cycling, car sharing and low emission vehicles. Project leaders You. Smart. Thing. have defined a work programme that sees the definition, development, and demonstration of a mature GoGreen prototype with Dumfries and Galloway Council staff verifying its ability to generate an increase in the use of sustainable transport modes. Research will be conducted to refine the GoGreen eco-algorithms and the deployment model for supporting transport system stakeholders in nudging the travel behaviour to achieve net zero targets. Over a 3-month period from October 2020, Dumfries and Galloway Council will articulate their requirements and explore the feasibility of the GoGreen proposal, demonstrating how the innovation enables local authorities to recover from the impact of the coronavirus without compromising their sustainability principles, whilst also assisting with planning for Phase 2, to build a GoGreen prototype and to test it in real world scenarios.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

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Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE NATIONAL ENERGY FOUNDATION	The SuperHomes Rating Scheme	£59,616	£59,616

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The new SuperHomes Rating Scheme (SRS) is a leading-edge approach, which establishes a range of performance tiers for the retrofit of existing homes, covering energy use, comfort, health and well-being and can accommodate all mainstream domestic retrofit solutions. Building on the success of the existing SuperHomes network of 200 homes, this feasibility study explores the potential of the SRS to accelerate the uptake of retrofit solutions to achieve one million SuperHomes by 2030, as a significant contribution to creating a more sustainable economy ('building back better') following the COVID-19 pandemic. During the feasibility study the National Energy Foundation (NEF) will work closely with social housing landlords and other customers to develop a methodology to:

- 1\ Monitor and evaluate carbon, comfort and cost savings post install so that these can be compared against modelled improvements.
- 2\ Gather end user (tenant) feedback on the comfort rating with a view to accommodating differing comfort needs e.g. for higher room temperatures due to age or ill-health and to assess its potential to influence behaviour change. And:
- 3\ Undertake stock assessments to identify 100 properties for an indicative SRS.
- 4\ Complete Whole House Plans, in accordance with PAS 2035, for a variety of building archetypes, to test compatibility with the SRS.
- 5\ Develop a performance assessment and certification process for application of the SRS.
- 6\ Examine the business drivers for the adoption of the SRS.
- 7\ Produce an impact report quantifying the level of new job creation and re-skilling needed to deliver one million SuperHomes by 2030 post Covid-19\.
- 8\ Prepare a business plan for further development of the SRS.

The plan for year one of Phase 2 is for 1000 Whole House Plans and SuperHomes assessments to be delivered and for 100 SuperHome retrofits to be completed. A key innovation is to explore how the business case for deep retrofit can be used to drive market uptake, for example through Landlords integrating retrofit with long-term maintenance plans, or through increases in property value driving market demand for owner-occupiers. The focus on actual (measured) performance for energy, comfort and health is a further innovation that will help create market demand. The study is also innovative as it explores how a SuperHomes retrofit trajectory can enable incremental improvements to take place over time in pre-planned stages. To deliver this feasibility study NEF will work with Strathclyde University, Resolution Energy, Propernomics and the Sustainable Development Foundation.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
University of York	BetaBeet: distributed processing and citric acid production from locally farmed Sugar Beet	£59,758	£59,758

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Betabeet project aims to develop new distributed sugar beet processing technology with lower costs, lower carbon emissions and a better environmental footprint. It will achieve this through cold-pressing of sugar beet using technology developed for root vegetable processing, such as for potatoes, together with fermentation of the pulp for manufacture of the widely used preservative and cleaning product, citric acid. By-products from the process will be used for other uses, such as animal feed. We will take particular care to reduce the impact of soil erosion during sugar beet cultivation. The development of a beet processing industry in the North of England will deliver good jobs in areas hard hit by COVID. The project will help businesses in the UK recover from the COVID 19 pandemic through development of local sources of both citric acid and sugar for the North of England's food, drink and personal care manufacturers. Importantly, the project will build the technology and supply principles for the manufacture of a range of bulk and high value bio-based chemicals needed to address supply challenges emerging from both political and environmental changes. The principle of more distributed processing offers greater flexibility in the UK to add value to UK farming without the need for expensive centralised investment and high transport costs. Betabeet will also contribute to the UK's net zero and other environmental commitments: cold pressing reduces the carbon emissions for sugar beet processing by around two thirds. The scale of operations will reduce the transport costs and emissions significantly. Cultivation of sugar beet will offer a new break crop for farmers in the North of England, reducing agricultural inputs, improving soil quality and enhancing biodiversity.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FIBERIGHT LIMITED	FARRM: Fiberright Advanced Recovery and Recycling of Materials	£59,897	£59,897

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Covid-19 has impacted many sectors; one such sector is the waste management and recycling industry. The sector is facing many challenges; increasing levels of waste generated by households during the pandemic and disruption to waste and recycling collection services, against a background of stagnant recycling rates, increased public and regulatory pressures and a collapse of global recycling markets. A solution is needed which responds to these challenges and supports the UK's green recovery, by developing sustainable and circular economy. The FARRM (Fiberight Advanced Recovery and Recycling of Materials) project is a feasibility study of Fiberight's circular economy technology which creates value-added products from residual waste. In Phase 1 of the project the opportunity for an innovative advanced recovery and recycling solution for the UK's municipal solid waste stream will be evaluated.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE TECHNOLOGY RESEARCH CENTRE LIMITED	A novel automated system for the grape processing sector to reduce waste by 50% and provide economic benefits for users of up to £19 million per annum	£59,722	£59,722

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

During the sorting & packing process, grape bunches can be found to possess a variety of defects; particularly botrytis (necrotrophic fungus), splits, shrivelled/damaged fruit, moulds and maggots, which can lead to accelerated rotting of fruit and decreased shelf life - 47% of grape punnets are affected by rots and moulds at current 'end of life'. This results in economic losses of £39million per annum and waste of ~12,900tonnes per annum of grape for UK wholesalers/retailers and households (AM Fresh & WRAP data). Typically workers are employed to manually look for and remove these defects, whilst the fruit is travelling along conveyors during the packing process. However the effects of Covid-19 has led to much lower numbers of workers available due to travel bans and the need for safe working environments. This situation is unlikely to improve, due to not only the lingering concerns with further Covid-19 waves, but also Brexit. As European workers make up a large proportion of the workforce, the entire food production sector is likely to suffer. Our solution is to develop an automated prototype system for grape processing that will identify defective fruit and trim during the packing process -- reducing the impacts of lower worker numbers and improving productivity and profitability. It is envisaged that some of the benefits of the solution will be: ***Reduced supply chain waste** - System users could benefit from enhanced revenues as the technology could extend shelf life and reduce grape losses. Extending shelf life from 5 to 7 days (through removing defective/damaged/diseased fruit) would reduce waste by 50% between packing and sale. This would leading to cumulative revenue increases of up to £19million per annum. ***Quality assurance** -- The presence of rotten fruit, spiders and webs etc in grape punnets is highly emotive to consumers and can results in considerable cost in terms of sales and public relations on the produce industry. Providing quality assurance by adopting this innovative automated approach could therefore improve public relations and consumer confidence; which may lead to sales uplifts. **Reduced impact of lower worker numbers** -- The impacts of Covid in the fresh produce sector have been substantial, due to travel bans, as ~90% of workers are from European nations. With Brexit looming, this situation is unlikely to improve. By automating the quality control process, our technology reduce the impacts on the sector imposed by Covid, and anticipated future impacts resulting from Brexit.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
TALGA TECHNOLOGIES LIMITED	Evaluation of graphene as an antimicrobial additive in surface coatings	£37,547	£37,547

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The ongoing COVID-19 pandemic has disrupted lives of one and all. As countries, industries and general public begin to enter a phase of recovery, perhaps the most relevant lesson is in the ever-increasing role of material surfaces in virus transmission. One of the most accepted mechanisms of the virus transmission is through surfaces of various materials that humans are exposed in everyday life. While it is imperative to find solutions that inhibit the spread of Covid-19, the current pandemic has opened up a wider discussion and need on antimicrobial surfaces that inhibit fungi, bacteria and viruses from growing on surfaces. Nano-sized materials, such as titanium dioxide, silver, copper and more recently graphene and carbon nanotubes, have been widely studied to provide evidence of their antimicrobial properties. Use of metal additives in coatings has often been a cause of concern with respect to environmental sustainability. For example in marine industry, additives like tin and copper for antimicrobial/anti fouling coatings have face stiff opposition from environmental legislation. This has led to a preference for organic additives. Studies have shown that graphene's sharp edges disrupt the cellular membrane, its high electron mobility can extract electrons from the molecules thereby oxidising/poisoning microbes while its lubricating nature could help create a low friction surface reducing the tendency of microbes to adhere. In this feasibility study, Talga aims to explore the antimicrobial properties of coatings containing graphene. The program addresses value addition and efficient use of natural resources, in line with the government's clean growth strategy.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
UPSIDE ENERGY LTD	Determining the feasibility of provision of frequency support from wind turbines	£59,117	£59,117

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Offshore wind will be pivotal in helping the UK meet its net-zero 2050 target but successfully increasing the proportion of offshore wind in the energy mix will require the industry to aggressively pursue measures to facilitate the smooth integration of energy generated into the grid. There are a range of technical challenges that must be overcome to achieve this, one of which is the ability of offshore wind farms to actively and competitively provide frequency and inertial support services. This presents an opportunity that Upside Energy Limited plan to take advantage of using our existing cloud based platform, the Upside Platform, that provides services to forecast, monitor, optimise, trade and analyse distributed energy resources, on a software-as-a-service basis. This project will investigate and demonstrate the feasibility of using the rotational inertia of a wind turbine in combination with the Upside Platform to allow wind farms competitive access to frequency and ancillary support markets. The feasibility will be established using the Offshore Renewable Energy Catapult's 7MW Levenmouth demonstration turbine as a reference turbine. This will involve the development of a new turbine operational mode and integration of the turbine into the Upside Platform via a data transfer interface. Phase 2 will involve a full scale demonstration of the technology using the Upside Platform and the LDT in order to demonstrate the technical merit of the solution and assess the economic and environmental benefits of deploying it.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
TOOTHBRUSH CLUB LTD	Reswirl the zero waste toothbrush	£59,266	£59,266

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

We estimate that over 300,000 toothbrushes are thrown away every day in the UK. If everyone used just one a year, those used toothbrushes laid end to end would stretch around the UK coastline. And most would remain recognisable as toothbrushes for hundreds of years to come. We are a start-up formed for the purpose of addressing this challenge. First, we plan to mould toothbrushes from a fully biodegradable plastic that will break down into natural elements, even if it ends up in the sea. Second, we plan a subscription one-for-one return scheme, asking customers to post our toothbrushes back to us when they've finished with them. By closing the loop in this way we aim to prevent as much plastic as possible from going to landfill, finding its way into the sea, or contaminating other plastic recycling streams. We plan to have our brushes made in the UK and market them as 'Reswirl' toothbrushes. Once trading, we will offer consumers an easy, low risk option to try a new toothbrush that allows them to play their part in a circular economy:- As a plastic toothbrush Reswirl toothbrushes will look and feel familiar. - The subscription service means customers won't have to remember when to replace a brush as a new one will be delivered automatically. - Used brush return will be simple, by putting it into the postage-paid, biodegradable packaging that a new brush just arrived in and popping it back in the post. This initial project is to prove the technical and commercial viability of our concept, taking us through testing and approvals to the point of manufacture and launch. The project will ultimately lead to a new environment friendly option for consumers, new UK manufacturing capability, new skills for working with a bio-based and biodegradable form of plastic, and demonstrable proof that products can be sold and usefully recovered by the firm that made them.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
UK POWER NETWORKS SERVICES (COMMERCIAL) LIMITED	Low-profile EV Charging Solution for Fleets	£57,756	£57,756

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The project goal is to develop and demonstrate a Low-profile EV Charging Solutions for Fleets, minimising the use of depot floor-space, whilst maximising charging power and so operational flexibility. The UK is currently going through a unique period. COVID-19 has shocked society and the economy, whilst at the same time the world must respond quickly to reduce green-house-gas emissions and prevent catastrophic climate change. The requirement for economic stimulus to help recover from COVID-19 offers an opportunity to "Build back better". This project aims to support public transport operators' and emergency services' transition to zero-emissions fleets, whilst ensuring response to rapidly changing requirements due to COVID-19 recovery efforts. Transport accounts for the largest proportion (28%) of the UK's Green-House-Gas Emissions and fleets and heavy goods vehicles consume the majority of UK's diesel and so largest contributor to air-quality issues. Electrifying road transport is a proven solution for the UK to reach net-zero. This project focuses on reducing the infrastructure barriers for fleet electrification, so encouraging EV uptake. COVID-19 highlighted that flexible public transport is critical for COVID-19 recovery, and society. Operators are required to change schedules and maximise capacity in response to changing social distancing rules. However, bus operator's transition to EVs can lead to reduced flexibility and bus garage capacity due to charging infrastructure space impacts, and the time required to charge. This project focuses on developing a solution to maximise operational flexibility with higher power charging, whilst minimising space impacts of charge-points. Similarly, Emergency Services remain key to the UK's COVID-19 recovery. Emergency Services fleets must respond rapidly to critical events. EVs limit responsiveness of the fleet due to charging times. This project will address this challenge.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
VECTOR AI LTD	Remote Productivity and Paperless Processing in a Trade Document Workflow Platform for Pandemic Resilience and Greener Recovery	£59,783	£59,783

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

In April, the World Economic Forum (WEF) noted, in regard to supply-chains, that "measures for COVID-19 have made clear that operations dependent on physical assets, such as paper, can face serious disruption when physical presence is not a possibility...paper printouts are usually handled by operations personnel who must come to the office, or another place of work, and coordinate with others. In addition, value chains that rely on information in these paper documents lose access to that visibility very quickly and cannot react to changing conditions...Trade is notoriously reliant on paper-based processes". JPMorgan's 2017 trade outlook report estimates that trade-involved Fortune 500 companies incur more than \$81 billion of unnecessary supply chain costs each year due to inefficiencies and lack of visibility around paperwork. The current manual approach to checking paperwork results in long turn-around times, limited visibility, no formal knowledge capture and error prone processes. Beyond monetary costs, there is an environmental burden, global trade generates 320 billion documents/year (JPMorgan,UNCTAD), conservatively assuming each document is only printed once, that equals 1.5mio paper tonnes and 16.5mio tonnes of CO2 emissions/year.. WEF notes for better performance under COVID-19, "digitizing...is not simply a matter of cost, but primarily of visibility and managing supply chain risk. To limit the impact of points of failure... it is important to make data available through digital means." COVID-19 has created "fragmented knowledge across an organization, the knowledge transfer that normally happens when you're sitting in an office doesn't happen naturally anymore. The cumulative knowledge and know-how of organizations is going to have to be captured better in the systems and processes --- because collaboration will still be the key to survival in shipping." This project aims to conduct research and preliminary testing into cutting edge machine learning research to upgrade our core platform's algorithms and deliver highly accurate, reliable document digitisation to incite the heavily impacted trade sector's movement into paperless trade and expedite a robust, sustained recovery through use of flexible, remotely accessible, digital tools. We will deploy machine learning improvements to our current extraction algorithm, in doing so delivering productivity enhancements, captured know-how and greater remote digital visibility over data within paperwork. We will further develop team communication features that will enable trade operations departments to work efficiently remotely and in collaboration in a way that is currently not possible.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
GENGAME LTD	GenGame SME Energy Saver App	£59,677	£59,677

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Our project looks to investigate the feasibility of a solution that combines the use of gamification techniques and energy analytics in a mobile application with a low-cost, cloud based IoT energy management system to deliver a step change in engagement with energy efficiency and cost savings across the UK SME sector.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
GYROTRICITY LIMITED	Local Grid Boosting For Electric Vehicle Fast Charging	£57,666	£57,666

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

By 2035, or perhaps even sooner, it will not be possible to buy petrol or diesel cars in the UK. Most vehicles will be electric (EVs). Mainstream customers in the near future will want fast charging and we need to get to 200 miles on a 10 minute charge if EVs are to be as convenient as today's vehicles. The technology is on its way and manufacturers of cars, batteries and charging points are working to bring them to market. All of this could be held up if the UK and world's electricity infrastructure is not boosted to cope. The problem is who pays to upgrade the grid? We must electrify transport as fast as possible but the electrical infrastructure costs could be anywhere from £16 billion (UK Commons report) to £45 billion (Capital Economics report). We are developing an innovative, mechanical energy storage technology specifically to boost power for the current and next generation of fast charge electric vehicles. Located near EV charging points, our product charges from the grid when there are no cars. When a fast charge EV vehicle arrives, the energy is discharged into the car quickly and the driver can be on their way. Rather than upgrade the entire national grid at once, our technology allows a "spot" reinforcement of the electricity network for fast-charge EVs just where needed. This is critical to allow an as-needed, scalable and cost-effective solution, rather than huge infrastructure investments that are politically fraught, difficult to commit to and hold back progress. Fast charge EVs cannot just be available for people in big cities with good infrastructure. Our product addresses the need to be able to upgrade the power network in rural and other locations that will never attract large capital investments. The success of EVs, and meeting the climate challenge, requires a fast, cost effective and widespread an implementation as possible. Gyrotricity is creating a highly innovative, new product, uniquely designed to solve a huge problem in preparation for the biggest transport revolution in over a century. Working with UK universities to ensure we build a world-leading technology, we have created something environmentally friendly, safe, efficient and cost effective that will accelerate Britain's transition to emission-free transport.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
D2H ENGINEERING SERVICES LTD	Rapid Electric-vehicle Brake Optimisation System (REBOS)	£53,605	£53,605

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The REBOS project is aiming to revolutionise the design, development and optimisation process for automotive braking systems, particularly those used on electric vehicles. Current industry processes rely heavily on physical vehicle testing, which is time consuming and expensive and the results of which can be open to the subjective feedback of the test driver. This testing also involves significant non-environmentally-sustainable international travel. Furthermore, the inaccuracy of physical testing means that brake systems are rarely fully optimised across all use cases meaning either they are often overly heavy, costing vehicle weight and therefore emissions/range or undersized, reducing performance and safety. D2H's proprietary optimisation system increases the input in the vehicle design process from simulation and modelling, biasing the development away from the physical and into the digital domain. The advantages of this are: 1. Faster vehicle development, bringing new ZEVs to market sooner, therefore speeding our transition to zero-carbon mobility. 2. Better informed decisions can be taken whilst still in the digital domain, reducing the number of changes made once physical prototypes have been built, significantly reducing costs and testing time, so improving business efficiency. 3. More configurations and system options can be trialled in far less time meaning the system can be better optimised, especially for EVs with a combination of regen and hydraulic braking: * Lighter, lower drag vehicles for better range * Improved stopping-power & EV torque distribution, therefore better stability and safety * Reduced emissions from brake particulates Overall, the REBOS project will allow a vehicle manufacturer to offer the consumer better products at lower prices than is currently possible.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
IMPACT RECYCLING LIMITED	BOSS - Medical Waste	£46,120	£46,120

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project seeks to carry out a technical feasibility assessment to determine the viability of recycling high value polymers from currently incinerated medical waste. The project will lead onto a full demonstrator at a decontamination centre based in Glasgow.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
VASCULAR FLOW TECHNOLOGIES LIMITED	Technical Feasibility for an Early Cannulation Vascular Access Graft with SLF(TM) Technology	£59,587	£59,587

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Vascular Flow Technologies intend to build on the success of the Spiral Laminar Flow Vascular Access Graft by developing the best treatment possible for dialysis patients. The development of an **Early Cannulation Access Graft coupled with the patented Spiral Laminar Flow technology will allow immediate use of the graft post implantation**. By developing in-house end-to-end manufacturing, Vascular Flow Technologies will firmly establish itself as a leading vascular graft manufacturer with facilities based in the UK. **Phase 1** of the project will address the technical feasibility and explore design for manufacture options and evaluate new and existing technologies. **Phase 2** of the project will ultimately lead to Vascular Flow Technologies setting up full scale expanded polytetrafluoroethylene (ePTFE) graft manufacturing, capitalising on existing assets and creating long term supply chain security.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOLAR POLAR LIMITED	Outdoor solar warmth.	£59,036	£59,036

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The COVID outbreak has reminded us of the importance of our outdoor spaces. It might be someone living in a flat and unable to meet family and friends in their homes. It might be a pub, cafe and restaurant that needs the outdoor space to seat their customer at a safe distance while seating enough customers to make their business profitable. If these outdoor spaces can't be used; during the COVID crisis many independent restaurants, bars, and coffee places might have to close. Affecting the high streets and pubs across the country. Communities, and crucially, the employees working in these industries who will find themselves unemployed. In addition the impact on communities not being able to access outdoor spaces because of bad weather and the effect of that on their wellbeing. The opportunity identified is to supply outdoor, covered and warm spaces for bars, restaurants, cafes, parks and community spaces to the UK community during the COVID infection as the weather gets colder and wetter during Autumn and Winter. These would remain as environmentally friendly assets in future years that would enhance community cohesion. The response to the opportunity is to produce a solar-heated outside space warming system that can be quickly deployed. Creating usable outdoor spaces when the weather is bad.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Scottish Association For Marine Science	Binder2020	£54,833	£54,833

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The seaweed sector is a huge global industry worth over \$11 billion per year, however it is still in relatively early stages of development in the UK and elsewhere in Europe. The industry in the UK has significant potential to deliver products for UK and international markets, from fresh seaweed for use in gourmet restaurants, to high-end pharmaceuticals, as well as large volume markets such as animal feed. All of this can be done with minimal carbon footprint and very nearly at net zero carbon, using no fresh water and only minimal land-based infrastructure. However, the growth of UK seaweed industry has struggled as a result of high input costs for seeded material (juvenile seaweed), which is traditionally done using a hatchery technique to produce a 1-2mm twine and then wrapped around ropes at a farming site. The issue is that this process can be highly time and labour intensive and therefore expensive both in terms of hatchery and farm deployment. SAMS have been involved in projects to develop an innovative solution to this problem, with a direct-seeding method, whereby the seed is attached straight onto a deployable rope and is held in a gel substrate until it has had time to bind onto the rope. Although this process will be ground breaking for the seaweed sector, the current barriers have been formulating the hydrocolloid gel to bind the seaweed and provide it with required nutrients while it goes through initial growth phases, and also developing a mechanised way of spreading the gel onto the rope substrate. The Binder2020 project will use the world-renowned seaweed expertise at the Scottish Association of Marine Science (SAMS), combined with the UK's leading rope manufacturer and hydrocolloid developer, to address both of these key issues. The hydrocolloid chemistry will be refined through expert input and assessment, and a new technology will be developed -- the Seaweed Binder Solution (SBS). The initial development of the Seaweed Binder Solution (SBS) through Binder 2020 will have an immediate impact for SAMS through knowledge gained. However, it is also hoped that a successful proposal will proceed through Phase 2 to allow further development and enable growth of the sector as well as contributing to recovery from economic impacts of the coronavirus pandemic.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NGENIUS LTD	Data-enabled Smart Cities (DeSC)	£55,742	£55,742

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

From monitoring the types of construction activity that cause the most pollution, to automatically regulating the number of people on our busiest high streets, Smart Cities will be essential to aiding the UK's sustainable recovery from Covid-19. Through the efficient collection of comprehensive physical data, Councils can become significantly more informed on where the most impactful environmental changes can be made. However, typically, Councils are not collecting this data because it requires the installation of numerous bespoke Internet of Things (IoT) sensors, at a significant up-front cost, making it unfeasible both in terms of time and cost. ngenius.ai have proposed to build the Data-enabled Smart Cities (DeSC) platform to address this. The DeSC platform will use state-of-the-art machine vision and deep learning techniques to convert existing CCTV feeds into meaningful, accurate, real-time data to enable Councils' environmental interventions. By utilising the comprehensive networks of CCTV cameras that are already in place in our communities, ngenius.ai have eliminated the need for additional hardware, enabling authorities to maximise their investments. The DeSC platform will enable local authorities to be "guided by data" as they decide how best to promote clean economic growth in the wake of COVID-19. As with all data collection, privacy must be the priority. The DeSC platform will be built in complete compliance with GDPR regulations and in direct collaboration with local council authorities. It is important to state that our platform will not have access to any Personally Identifiable Information (PII), and all data gathered will be solely controlled and owned by the local authority concerned, with ngenius.ai acting purely as a Data Processor. Equally, authority's data must be protected, and ngenius.ai's flexible approach will mean that only data that is deemed appropriate will be processed and/or stored in the cloud. As part of bringing the DeSC platform to market, it will under-go G-Cloud certification to ensure it is approved for Public Sector use.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
RIVER LANE RESEARCH LTD	Anian Virtual Lab	£59,382	£59,382

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The UK government has recently identified several important industries for significant investment and innovation. These industries are vital for the UK's future economic, social, and environmental prosperity. The government has also set ambitious environmental targets, including the achievement of net-zero emissions by 2050 to end the UK's contribution to global warming. One of these industries is battery technology. £246m has been allocated to the Faraday Battery Challenge, addressing research in areas such as battery materials identification, enhancement, and recycling. £153m has also been allocated to quantum technologies, including the enhancement of conventional computers with quantum computing capabilities. This is a fundamentally different approach to computing, using the properties of quantum systems to provide massive improvements in computational speed and accuracy. However, as for many industries, battery and quantum technologies have suffered disruption due to the COVID-19 pandemic. This has stalled research progress and made it harder to future-proof the batteries industry through engagement with disruptive technology like quantum computing. Our project uses quantum computing to address a long-standing bottleneck faced by researchers who develop battery materials. They find it challenging to accurately and efficiently identify and screen new battery materials. Current methods are very unreliable and involve a 'trial and error' approach. It takes several years to verify new battery materials in the lab. This is highly costly and time-consuming for a materials development company. Global annual spend on materials screening, selection, and performance testing exceeds £40bn (Boston Consulting Group 2019). We will create, develop and commercialise a quantum-enhanced battery materials screening product. It will be set up in a 'virtual lab' environment, so that researchers do not need to be physically present in a lab to conduct their research during the pandemic. We will fully integrate our product into the existing processes of two clean energy materials companies - Johnson Matthey and Merck -- to check that it works. We will therefore create an unrivalled "quantum-ready" product, "Anian VL", developed to support customer needs and providing commercial advantage in these challenging times. More broadly, our ambition is to create a game-changing product and make it available to major battery materials companies to make their research easier and quicker. This will lead to societal and economic benefits aligned to cleaner, more sustainable technology.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ALMAC SCIENCES LIMITED	Manufacturing Oxidative Products (MOP)	£59,462	£59,462

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Almac Sciences is the chemistry business of the Almac Group, a Global Pharmaceutical Service Organisation headquartered in Northern Ireland, UK. Almac Sciences is a contract development and manufacturing organisation (CDMO) producing active pharmaceutical ingredients (APIs) and other finished healthcare products. Almac Sciences specialist expertise extends well beyond traditional chemistry and includes dedicated groups focused on biocatalysis and flow chemistry. Manufacturing Oxidative Products (**MOPs**) is a critical technology platform for the fine chemical and pharmaceutical industries in the UK to access oxidative products in a sustainable, environmentally cognisant, cost effective and safe way. **MOPs** will pave the way forward for the UK chemical industry for the growth of manufacturing of key advanced raw materials, alleviating the reliance on (for example) China and India for supply of these crucial materials. The technology platform is comprised of two strands including (1) the use of innovative flow chemistry, where safe control of materials allows products to be oxidatively manufactured in a pipe as a continuous stream rather than a batch reactor and (2) the application of enzymes for the mild and selective oxidation of materials with all of the desired environmental credentials required by recent legislation. Enzyme catalysis enables the elimination of toxic metal catalysts and reactions may be performed in water rather than solvents. Both flow chemistry and biocatalysis will be investigated for the synthesis of key advanced oxidative products. The aim is to equal or better existing chemical routes in terms of cost and to develop processes that may use waste biomass for catalyst production and that generate less corrosive waste. All of which can only have a positive impact on our environment and lead to a more sustainable future for the industry, as well as focussing on the safety and well-being of the operatives involved in the manufacturing processes. **MOPs** will also help to alleviate supply issues related to geography. Security of supply for advanced raw materials is becoming critical to Almac Sciences and to their customers. The covid-19 pandemic has further highlighted this with significant supply issues from overseas companies becoming a common theme throughout lockdown.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SAFETYNET TECHNOLOGIES LIMITED	Themis: Precision Fishing technologies to 'catch better'	£52,243	£52,243

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

****Background**** The need for precision fishing is becoming more acute, driven by environmental, commercial, regulatory and ethical factors. The fishing industry has invested heavily in research and development of fishing gear technology to address the issues that they face around bycatch, however the return is diminishing as we approach the limits of gear modification to address bycatch issues. Alternative approaches are needed and this project aims to facilitate precision fishing based on the parameters that surround the vessel in real time and provide insight on the likely catch composition based on these.

****The Idea**** SNTech will work with technology partners and customers to develop groundbreaking sensor technology that can be affixed to the fishing gear alongside our Pisces bycatch reduction solution. The data will be collected in real time via an acoustic wireless data connection linking the sensors and the vessel. The data will then be presented to the fisherman in an intuitive and informative manner and also uploaded into the cloud where it can be accessed by permissioned 3rd parties. The solution will contain the following:

- * a set of Pisces lights
- * a rechargeable wireless sensor capable of measuring water depth / temperature / salinity / pH / Turbidity / dissolved oxygen / light intensity / 3 axis movement and transmitting the data back to the vessel acoustically in real time.
- * a gear recovery beacon which can be activated via an acoustic ping from the vessel in the event that the gear is lost and thus recovered.
- * an onboard transponder to receive the acoustic data from the sensors and supporting App to take the raw data and turn it into insightful information.
- * the project will look to integrate with onboard systems that collect and transmit data such as VMS and eLog in order to add extra layers to data set or if not provide tools to gather and transmit this data to the cloud
- * A web App linked to the database providing UI for subscribers
- * API's for data sets accessible to subscribers

****Benefits**** The direct benefits of this project will see fishermen equipped with easy to use technology that will increase their understanding of their fishing environment and allow them to use our precision fishing tools to only catch the fish they need in an efficient and effective manner. Secondary benefits will come from sharing the gathered data with other stakeholders to improve science, management and the market.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FRAUNHOFER UK RESEARCH LIMITED	Decarbonising mining and mineral extraction with intelligent in-line sensors	£59,735	£59,735

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Mining operations for mineralogical extraction underpins almost every aspect of the global economy. Product manufacture, and the services which depend upon them, would not exist without these raw materials. Despite a global shift towards sustainability, the carbon footprint associated with mining and, particularly, onward material processing accounts for a significant proportion of global emissions. For example, crushing of rocks into a fine powder suitable for onward chemical ore extraction accounts for an enormous 8% of global energy consumption. The economics and processes associated with such processing preclude real-time measurement of the mineralogical content of rocks extracted from the earth, and so a very large amount of energy is needlessly consumed in processing rock of little mineralogical or commercial value. We propose an in-line state-of-the-art sensor system which would give plant operators access to mineralogical content information with unprecedented speed and accuracy. Such technology would allow uneconomic spoil to be rejected early on in the processing cycle, thus conferring significant efficiency improvements on plant operators and enormous reductions in CO2 emissions associated with this industry.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE TECHNOLOGY RESEARCH CENTRE LIMITED	Using Artificial Intelligence to develop a prediction model, increasing the viability of previously unrecyclable, low grade, post-consumer polymers; promoting Clean Growth through business efficiency and helping to achieve Net Zero - ColourAI	£59,690	£59,690

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

A key challenge for plastic recyclers and a major limiting factor in producing recycled polymers, is the wide variation in base polymer input materials which means that meeting the customer specification is very challenging and every batch requires a unique formulation that must be derived experimentally; unlike virgin polymer compounders - who have a standard formulation which will consistently yield a compound with the desired properties. Multiple trial and error iterations are performed to match the specification for colour, as the relationship between mixed colours is not linear (e.g. blue plus yellow inputs do not always produce green). Formulating batches can take an average of 5 iterations to achieve the desired colour - and in some instances this can take up to 20 iterations. This phase 1 technical feasibility study and follow-on phase 2 prototype system development and testing project will help deliver the Government's Clean Growth Strategy by enabling plastic recyclers and compounders to improve business and industry efficiency by reducing processing costs experienced by having to produce multiple test batches of recycled material in order to achieve the customer's colour specification.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CIRIA	Construction soil sustainability optimizer	£51,740	£51,740

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project will generate ****an on line tool**** that will provide decision-support guidance to clients, consultants, contractors across the whole soil management process i.e. via: *planning for surplus soil management *selecting sustainable options. Interfacing with a rule-based decision-support system, users will be offered a number of soil management options ranked/scored according to project and site information and user priorities delivering sustainable soil management. This comprises of resource selection, compliance and verification and will be a combination of report cards, checklists and templates for validation data and verification reporting.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CIRCULOGIC LIMITED	Delivering Sustainable Growth through the application of 'Tech' for Reuse	£34,314	£34,314

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Technology has a significant role to play in helping find and deliver solutions to the world's pressing climate emergency and resource efficiency challenges. With Governments and large corporations exploring how we can emerge from the COVID-19 pandemic more resilient, the Circular Economy is highlighted as a solution to 'build back better'. A Circular Economy disrupts existing linear models of consumption based on take, make and dispose. In a Circular Economy nothing is wasted: resources are retained at their highest possible value for as long as possible and recycling is the option of last resort. Emerging from this concept are new business models and product / service design philosophies, including design for disassembly, leasing and sharing platforms. Product reuse, incorporating elements of refurbishment, remanufacturing, upgrade and repurposing, represents a central pillar of any Circular Economy. As a sector, reuse organisations (e.g. charities) deliver strong social value, providing valuable training and jobs for those with e.g. physical and/or learning disabilities. Barriers to reuse that this project aims to help overcome, include: * As a throwaway society, it has become the norm to discard reusable items and buy new. This is because it is commonly cheaper and easier to buy new than to refurbish or repair; * Whilst reuse helps keep a number of key commodities, including those with high levels of embodied carbon (e.g. clothing), out of the waste management chain, it suffers from a lack of national level policy and fiscal support; * The application of technology to reuse is limited, meaning it is poorly monitored and recorded. This contributes to a situation where the benefits of reuse are not well quantified in waste avoidance terms, and operations are rarely optimised; * Reuse activities tend to be labour intensive, making it difficult to efficiently scale and add value. As a result, too many items with reuse potential are disposed of. Hence, opportunities to match reusable items with customers prepared to pay a fair amount for them (covering all costs in the reuse chain) are missed; and * The above time/effort issue is exacerbated by the high level of variability between products, which limits resale potential and the ability of resellers to achieve the best price. This feasibility study aims to address a key challenge associated with speeding up the process of identifying a used product's reuse/resale potential, through the application of AI-powered computer vision, and associated platform integration.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
WILLINGSFORD LIMITED	Integrated use of telemedicine and AI in wound treatment - contributing to public sector financial and environmental sustainability and resilience during pandemics.	£51,119	£51,119

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Cost of healthcare in the UK and world-wide continues to place an increasing burden on public finances, e.g. the 2019 NHS budget was £134 billion. There are annually 2.3 million wounds in the UK, but treatment times are long and 39% remain unhealed because existing treatments are ineffective. Wounds therefore annually cost the NHS £17.3 bn and require 278 million dressing changes; this translates into 12.9% of the entire NHS budget, 51,711 full-time nurses and 20,000 tonnes of medical waste of plastics, silicones, antimicrobials and chemicals without gaining any substantial health benefits. Furthermore, wounds result in personal costs to patients, social care costs and lost productivity. Amicapsil is an easy-to-use novel wound treatment with proven efficacy. Amicapsil and its use do not involve harmful plastics, silicones chemicals or antimicrobials. The past 2 years Willingsford has supported healthcare-professionals and private patients in the use of Amicapsil. This has gradually developed into a telemedicine approach. The project will focus on developing a telemedicine approach based on the Amicapsil that can be scaled to cover the UK and later to export. Calculations indicate that this could provide annual savings in the order of £12 billion in wound care, free up at least 40,000 nurses for other tasks, improve patients' lives and reduce costs for social care. A telemedicine approach would also provide resilience during pandemics. Furthermore, Amicapsil and its use do not involve any harmful chemicals, plastics, silicones or antimicrobials, and, with telemedicine, the need for transport would be greatly reduced. The approach would contribute strongly to the net-zero UK policy and environmental protection. The platform would also be suitable for export, creating UK jobs and tax revenues. The project will initially focus on diabetic foot ulcers (DFUs) as diabetics are particularly at risk due to Covid-19 and only 16% of infected DFUs heal within the first 12 months. In 2017, there were 174,000 DFUs in the UK costing £1.37 billion; globally there are annually over 30 million DFUs.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
VANGUARDIA LIMITED	SONIC - Streamlined & Optimised Noise Information & Control	£57,411	£57,411

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The 'Live' music industry has been decimated by COVID-19, The music industry is in a crisis and every effort is needed to provide efficient ways of kick-starting the industry back to life. The objective of this project is to streamline the noise monitoring required at all open air concerts and festivals by the use of acoustic modelling and historical data which take account of the effects of meteorological conditions on sound propagation. This would significantly reduce the multi-location community noise monitoring that currently takes place, minimising the cost burden for promoters/venues and the local authorities. This project theme is therefore related directly to improving business and industry efficiency as informed by the government's Clean Growth Strategy. The noise management plan (NMP) often enshrined as a condition of the Premises Licence (Licensing Act 2003) includes many aspects of noise control including sound system design, acoustic predictions, pre-event sound propagation tests, public liaison with interested third parties and extensive noise monitoring both within the event and at many off-site locations. This projects intends to use historical noise data and acoustic modelling such that an accurate prediction of noise emissions at community sites can be predicted for a given sound level on-site thus reducing the need for extensive monitoring in the community. The innovation in this project is to establish the dynamic relationship between sound and atmospheric conditions at multiple sites and from this develop a predictive tool that enables sound and frequency levels at off site locations to be confidently determined from sampling data at a central control point. This project would reduce costs for the promoter/venue operator and reduce time and resources for compliance monitoring by local authorities. The project offers a sustainable business model as future events are likely to be fewer in numbers and potentially promoters may seek to run them over extended periods to recover the fixed infrastructure costs. Pressure will be increased on more extensive noise monitoring and control at a time when there is equal pressure on affordability. The output of the project will offer a greater transparency in monitoring that will assist all Local Authorities efficiently manage compliance under the Licensing Act whilst allowing the re start of live events. It will provide community confidence that the build back from Covid is being undertaken responsibly and transparently. This exciting project offers a sustainable showcase of how opportunity can be derived from troubled economic times.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
RECYCLING TECHNOLOGIES LTD	Recycling Technologies: A sustainable manufacturing platform for the chemical recycling of mixed plastic waste into high value products	£59,959	£59,959

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

According to PlasticsEurope, in 2018, nearly 360 million tonnes of plastic were produced globally. Of this, around 260 million tonnes ended up as waste. A study by McKinsey&Co in 2016 found that just 16% was collected for recycling, and just 12% actually recycled. The rest was either incinerated, landfilled, or simply lost to the environment. However, to avoid using plastic altogether will bear many unintended consequences. Therefore, it is imperative that we find a solution for its end-of-life so we can continue to reap the benefits of this valuable product. Chemical recycling of plastic waste is an essential component in achieving zero avoidable waste. It will enable mechanical recyclers to become more effective and profitable; the low-value plastic material that is currently left over at the end of their process can be accepted into feedstock recycling, alleviating the financial and environmental burden of disposing of this material elsewhere. Under a system where mechanical and chemical recycling work together, we envisage recycling up to 90% of all plastics. With the widespread adoption of this new system, plastic can gradually be decoupled from fossil fuel. We will develop a commercial concept for a sustainable, integrated, distributed manufacturing platform for the chemical recycling of mixed plastic waste into high value products, specifically for reuse in plastics manufacturing. The manufacturing platform will integrate renewable energy to generate green hydrogen (via electrolysis) required for the upgrading process in a state-of-the-art modular oscillatory baffled reactor (OBR). The aim is to realise an integrated reactor that will deliver improvements in product quality and suitability for onward processing, although components will be modular to ensure feedstock flexibility for other renewable and sustainable carbon sources (such as lignocellulosic biomass). A digital twin will be developed to allow the concepts of a cyber physical production system to be embedded from the outset in order to realise a responsive and distributed manufacturing model. The RT7000 machine creates market value from waste plastics which are currently hard-to-recycle via the current state-of-the-art (mechanical recycling) or incineration. Although incineration recovers energy from waste plastic, the replacement of those plastics still requires a linear system (source, produce, dispose) using virgin feedstock. This machine could be a significant tool in the quest to bring the waste plastic back into circularity and reduce the depletion of natural resources. RT recycles plastics into Plaxx(r) (Hydrocarbon mixture) through an innovative process which uses thermal cracking.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Queen Margaret University Edinburgh	PALM-ALT: Novel palm fat replacer for the food industry	£39,384	£39,384

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Led by the Scottish Centre for Food Development and Innovation (SCFDI) based at Queen Margaret University, the PALM-ALT project aims to provide a game-changing solution to the environmental issues associated with the food industry's dependency on the over-cultivation of palm. Due to its unique lipid composition allowing it to be solid at room temperature and its low production costs, palm oil has become the main functional fat ingredient across the food industry, including the bakery sector in which it is used for its texturising, shortening, foam stabilisation and mouthfeel properties. However, due to the devastating environmental impact of palm over-cultivation the industry is looking for sustainable alternatives. Alongside efforts to develop more sustainable cultivation practises, current palm fat replacement strategies have led to a number of commercial products, however, their impact and expansion are limited due to health-related concerns including high saturated fat content. The PALM-ALT solution is based on a novel combination of ingredients (linseed processing co-product and beta-glucan), which when processed in specific conditions is able to mimic palm fat functionality, allowing to replace it with healthier rapeseed oil. This phase 1 project will seek to demonstrate the technical feasibility of processing this ingredient mix into a palm fat replacer and to incorporate this novel ingredient in a range palm-free bakery applications including cake, biscuit and oatcake. This project will pave the way for the development of healthier palm-free bakery products, which will allow partner companies to capture a significant segment of their relevant bakery sectors, thus contributing to their recovery from the COVID-19 pandemic and to reducing the bakery sector's dependency on the over-cultivation of palm and importations of palm fat.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SAMSUNG ELECTRONICS (UK) LIMITED	Zen Energy Optimisation for Electric Car Rental	£58,975	£58,975

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

To help accelerate the shift to low-carbon transport (and help meet the UK Government's goal of net zero emissions by 2050), the car rental and fleet sectors will need to electrify. For this to happen car rental companies will need to change the way they operate. For example, as electric vehicles are charged on-site, optimising electricity costs (e.g. charging during off-peak half-hour periods) will be essential. Similarly, the car rental business model requires a short vehicle turn-around to keep rental charges competitive. As companies move to fully electric fleets, optimisation of charging and encouraging behavioural change in car renters (for example incentivising rental discounts if renters charge the car before returning during periods of high returns) will become a key part of fleet management. In this project Samsung Research UK will work with Energy Saving Trust, Enterprise Car Rentals UK and Octopus Business Energy to conduct a feasibility study into creating a fully operational demonstration "rental car agency of the future" at Glasgow airport in 2021\ . The feasibility study will assess the costs and benefits of various types of Electric Vehicle (EV) charger, EVs and battery storage units; as well as testing cutting edge machine learning and Artificial Intelligence approaches to optimising costs and minimising environmental impacts. We aim to show how far operational costs and carbon emissions could be reduced by switching a rental branch's electricity contract to one based on an "agile" variable rate, using "flexible" network connection contracts, installing battery storage, optimising vehicle charging and encouraging behaviour change in renters.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
MATERIALS PROCESSING INSTITUTE	Lithium and Graphite Recovery from Lithium-Ion Batteries (LaGReLiB)	£59,771	£59,771

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project will deliver technology capable of the full recycling of lithium-ion batteries; currently this is unavailable due to lithium and graphite losses. The successful project will put the UK at the forefront of lithium-ion battery recycling. The current estimated usage of lithium-ion batteries for the automotive industry is 21 million by 2030 globally, including up to 2 million in the UK; IMF predicts 90% electric vehicles by 2042 (higher than current Department of Transport predictions). The UK has no lithium-ion battery recycling facilities, with batteries exported to Europe at great cost in terms of miles traveled (fuel, carbon emissions, time), jobs and special transport requirements (lithium batteries are classified under UN category 9 as dangerous goods); also with question marks on the usability of European facilities post Brexit. Successful implementation of the project will decrease greenhouse gas emissions and create jobs in the UK recycling sector. The plant will be designed to be flexible for future battery developments, not only lithium-ion but others, enabling the continued evolution of recycling technology. The built-in flexibility of the pilot plant could be exploited to optimise other hydrometallurgy processes, (e.g. primary extraction, WEEE recycling, materials recovery from legacy sites, Zinc recovery from steelmaking sludge). The Materials Processing Institute is ideally placed to hold this facility due to its open access research provisions. With no known hydrometallurgy pilot plant within the UK this will be a showcase development in hydrometallurgy, creating a UK wide facility that provides return on investment for many years after the project has been completed. This project will be joined by Inprotec Ltd and Cornish Lithium Ltd. Inprotec will help the integration into the pyrometallurgy routes of the remaining materials, helping with pilot plant specification and technology development, trials melts will be carried out to confirm the full recycling process route. Cornish Lithium will collaborate over hydrometallurgy techniques, pilot plant specification and scale up studies on the pilot plant; the knowledge gained from the pilot plant studies is expected to help expedite commercial production of lithium from UK primary sources via environmentally responsible production techniques. By applying these innovations to lithium-ion battery recycling and lithium primary extraction, the UK will develop both recycling and primary extraction industries, securing lithium supplies for the automotive sector and their jobs, as well as modernising the UK recycling industry creating jobs and accelerate the growth in the UK lithium extraction industry and the associated jobs.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
OLIO EXCHANGE LIMITED	Digitally enabling Local Authorities to tackle food poverty	£47,323	£47,323

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Thanks to the Small Business Research Initiative, OLIO will transition its Food Poverty Prediction map from an academic project built in partnership with the University of Nottingham, to become a powerful tool for Local Authorities. The Food Poverty Prediction Map was created in partnership between OLIO and the N/LAB at the University of Nottingham's Business School, with the support of Innovate UK's Knowledge Transfer Partnerships. The original goal was to better understand, model and predict food sharing behaviour of users through the use of data analytics. The outcome of this project was the creation of the OLIO N/Lab Food Poverty Prediction Map prototype. This project will enable the Food Poverty Prediction Map to acquire 'ground truth' and build a Local Authority centered interface for Local Authorities to use. The interface will help Local Authorities identify which areas are suffering from food poverty and which ones are at risk of falling into food poverty. This data will enable Local Authorities to target their resources in areas that need it the most, and set up preventative campaigns in areas that are going to be affected by food poverty in the near future.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
PEC HOMES LIMITED	Building Net Zero, Affordable Homes	£54,467	£54,467

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

PEC Homes wants to deliver affordable, high quality, well designed, cooperative and zero carbon housing projects that : * are flagships for innovation; * are community owned, warm, affordable, desirable zero carbon homes, * demonstrate a development cost model that can support replicability without ongoing government support, * deliver net zero energy homes for which the total energy and maintenance costs are significantly less than business as usual. To achieve this PEC Homes has to do things differently and intends to use the '[Energiesprong][0]' approach, which has been used for retrofit in the UK but this would be the first new build project in England. PEC Homes has completed a soft market testing exercise, which has demonstrated significant interest across the supply chain but is proposing to develop the market further. We are now going to fully test the feasibility of the approach and deliver a prototype project of 38 new net zero affordable homes at Kings Tamerton, Plymouth. The feasibility study will test: 1\ Supply chain delivery feasibility, helping the supply chain to be tender ready. 2\ Project funding and finance feasibility, including analysis of viability, income generation and costs compared to BAU, and discussions with funders. 3\ Contracting and procurement feasibility, including stress testing draft Contract and ITT document suite. 4\ Market development feasibility, including evaluation of other project pipeline opportunities and transferability of approach. 5\ Customer validation. PEC Homes is working with Energiesprong UK and the aim is to deliver a national first, leading onto many other net zero energy homes across the country. [0]: <https://www.energiesprong.uk/>

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
COSTAIN LIMITED	Hy-Value : Waste Biogas to Hydrogen for Road Transport	£59,398	£59,398

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Hy-Value scheme offers a source of hydrogen that can be an important resource regionally or nationally as the number of hydrogen vehicles grows, offering a low-cost route from sewage waste biogas to hydrogen, for use as a road transport fuel. Hydrogen vehicles have advantages over Battery Electric vehicles in specific applications, offering a similar user experience to petrol/diesel with 400 miles range and 5 minute fill times. Hy-Value provides an integrated approach by considering both hydrogen supply and hydrogen demand (from vehicles) in one real-world scheme. Hy-Value addresses the fact that the hydrogen economy is currently slow in taking off by demonstrating cost effective, large scale production of green hydrogen, alongside hydrogen fueled vehicles that use the hydrogen produced at the proposed facility. Current progress is too slow due to the absence of a readily available supply, to stimulate the industry to create vehicles and vice versa. Opportunities to store CO2 captured by the hydrogen production process will be investigated, by reviewing the regional industrial clusters progressing CO2 storage through the IETF fund. Costain will be collaborating closely with Dŵr Cymru / Welsh Water, a potential customer of technology to convert biogas to green hydrogen and of hydrogen vehicles to decarbonise their fleet. This single project has the potential to fully decarbonise the whole of Welsh Water's transport. The availability of green hydrogen will de-carbonise the water industry and transport in South Wales and across the UK. Welsh Water are well-suited as a close partner because they already use renewable biogas for CHP at four locations. The hydrogen production facility is planned to be located at one of their wastewater treatment sites that produce the biogas. Parity with diesel costs at £5/kg hydrogen is currently sought. An earlier scouting study indicated the cost of hydrogen would be at that level from this project. We will work with Cardiff City Council to understand their potential demand for hydrogen vehicles. * Phase 1 of the proposed project will build confidence, defining the scheme through technology reviews and a concept design. * Phase 2 will develop the design to investment grade detail, whilst in parallel demonstrating hydrogen use in converted vehicles, providing assurance to potential off takers of hydrogen that the technology is ready to be deployed.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
TREEGREEN LIMITED	EGG Lighting - Bluetooth Mesh Enabled Circular Lighting Service	£33,911	£33,911

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Through close collaboration with stakeholders and existing customers, this project will utilise technical and business model innovations to maximise energy savings from lighting and minimise associated material waste and embodied carbon. The specific theme this project addresses is "decarbonising energy, business and industry". EGG Lighting believe Bluetooth mesh is the digital catalyst which can enable a circular economy business model to be realised. Bluetooth mesh technology offers an enormous opportunity for using automated lighting controls to deliver and measure energy consumption savings, to improve the visual environment and other valuable services. A business model based on circular economy principles and research can extend product lifetime indefinitely through upgradeable modular design, preventative maintenance and service-based contracts in which the supplier retains ownership. This project seeks to exploit this novel technology to not only deliver energy cost savings to businesses recovering from the pandemic disruption, but to offer a service contract in which customers pay a monthly fee and are not prohibited by the capital cost of the products to generate the savings. EGG Lighting have been heavily invested in transitioning to the circular economy and Bluetooth mesh for over 3 years. EGG Lightings experience and commitment has been celebrated through the following awards: Winners of the Global Game Changers Award in 2018 for the Circular Breakthrough category, sponsored by Circular Glasgow. Also receiving a commendation for bringing the circular economy to customers with our modular upgradable luminaire 'The Stroma' at the November 2018 Lux Awards. In 2019 EGG lighting won Best Circular Economy Initiative at the Scottish Resources Conference Awards, the Innovation in Business award sponsored at the Glasgow Business Awards and the Research Business Award commendation at The Herald Pioneers Awards. At the 2020 CEED Industry Awards, EGG Lighting were awarded the Circular Economy prize for utilising a modular product strategy to extend lifetime and improve material efficiency.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
VERT ROTORS UK LIMITED	Energy harvesting to reduce the carbon footprint of the gas distribution network	£59,944	£59,944

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Vert proposes to develop a novel technology for the harvesting of energy from the natural gas distribution system. Vert will develop the novel Conical Rotary Expander (CRE) and work with G-Plus Technology Ltd as commercial partner in the integration of the CRE into fully-functional systems. Natural gas is distributed primarily through fixed pipeline networks. To drive the flow of gas through the system, its pressure is raised by large-scale compression stations located at major feed-in points and intermediate locations within the network. Together, these compressors consume many hundreds of megawatts of power to operate and raise the pressure within the distribution network to 30-50bar. The gas pressure required by the majority of end use applications is only 21mbar, the pressure is reduced in stages by throttling, so the majority of the energy added to the gas by compression is ultimately wasted. An opportunity exists to recover a significant portion of the energy invested in gas transmission by harvesting the energy released by the decompression of the gas from transmission pressures to end-use pressures. In concept, a device known as an expander would harvest the energy from the gas and drive an electrical generator. Through preliminary studies, Vert has identified that the unique pressure and flow capabilities of our patented Conical Rotary Compressor (CRC) are well suited to the expander application and will fill a critical gap between established technologies. While Vert has gained substantial experience in a range of gas compression and liquid pumping applications, the expander has not yet been addressed. The R&D-focused project enabled by this competition will enable Vert to evaluate the technical and commercial opportunities for adapting CRC technology to expander applications, enabling the company to explore opportunities in energy harvesting initially from natural gas distribution and later in a range of other applications. Under Phase 1 of this project, Vert will focus on developing and evaluating a novel expander technology. G-Plus will contribute technical and commercial specifications and provide commercial focus. In Phase 2, it is anticipated that Vert will carry out further refinement of the expander and associated technologies while G-Plus will focus on balance of plant, system-level validation and production/commercialisation.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
WINBRO GROUP TECHNOLOGIES LIMITED	Ultrashort Pulse Laser Manufacturing for Sustainable Transport (UltraMach)	£60,000	£60,000

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Transport is the largest contributor to greenhouse gas emissions in the UK accounting for 24% of the total emission. Full-fledged use of advanced composite materials, such as ceramic matrix composites (CMC), in transportation vehicles, is vital for the UK Government's Transport Decarbonisation Plan, which aims to achieve net-zero emissions by 2050. However, currently, there are technical challenges associated with the mass-production of composite components, specifically the lack of appropriate material processing technologies, which is limiting their pace of adoption in wider transport sectors. Most of the established material processing systems, including, electrical discharge machining, mechanical tool-based machining, and long-pulse laser processing were developed for metals and alloys, and are incompatible with composites due to their low conductivity, and anisotropic thermal and mechanical properties. The UltraMach project aims to develop and commercially exploit a novel picosecond laser-based computer numerical control machining system that will enable industrial-scale economic material processing of composite components and support the pace of transformation required within the transportation sector. Ultra-short pulse (USP) laser technology (with pulse duration in the range of a few picoseconds (ps) to femtoseconds (fs)), which was recognised by a Noble Prize in 2018, can ablate virtually any material with negligible thermal defects. While this extraordinary capability has been proven in academic demonstrations, and a few niche applications, the issue of low material removal rate along with edge wall taper (during machining of thick materials) limits their relevance to the mass-production environment. This project will exploit the recent academic advances in picosecond laser technology along with the development of a fully integrated 8-axis (5-axis positioning stage and 3-axis galvanometer scanner) machining system for economic drilling, cutting and machining of aero-engine and power generation gas turbine components. The phase-1 of the project will focus on two aspects. Design and development of a fully integrated 8-axis laser system (that can orient the laser beam with a specific angle to control the edge wall taper) for machining of complex-shaped features with a high-aspect-ratio over gas turbine/aero-engine component, and broad in-depth research to establish the feasibility on economic picosecond laser machining of composites. Working closely with end-users and UK High-Value Manufacturing (HVM) catapult centre, this project aims to address the market gap on machine tools for the manufacturing of composite components and accelerate the exploitation of composites within the aerospace and power generation gas turbines to enable net-zero carbon economy.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
EQL LIMITED	Augmented Reality & AI/Computer Vision Technology for Enhanced & More Efficient, Remote Individual and Group Physiotherapy in COVID settings & for environmental sustainability	£59,834	£59,834

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

****Project idea:**** will be shaped and informed by customer Circle Health along with leading Artificial Intelligence and Physiotherapy experts at EQL who will develop (Phase 1) a technical specification for a cost-effective, practical and innovative interoperable AI/AR (Augmented Reality) technology to provide home-based rehabilitation for musculoskeletal patients, including those recovering from e.g. knee or hip replacements, etc. This tool, the EQL-Online-AR app, will provide physiotherapy businesses with a means by which they can 'see' their patients and continue providing paid rehabilitation support -- protecting the sector/jobs and the continuity of a needed service. Key requirements for R&D focus, it must: * use AR to generate a bespoke avatar that mirrors the patient's body in real time so this data can be used to accurately understand their MSK 'issues' to better inform physio decision-making and interact with the patient, and to make clear comparisons at each session to chart recovery progress and quickly identify any ongoing problems * utilise the technology that the patient already owns (smartphone, tablet, PC/Mac, etc) regardless of platform to ensure cost-effectiveness * overcome environmental barriers (such as light quality and camera stability) * be intuitive to use to maximise take-up by physio businesses and their patients. Phase 2 of this project will take the learning from Phase 1, to build and test EQL-Online-AR with Circle Health providing a real-world test environment and scenarios. ****Building back better:**** The EQL project aims to reduce unnecessary journeys and reduce carbon (in line with the UK's Net-Zero Carbon goal). Pre-pandemic there were c6,500,000 private appointments in the UK every year. Approximately 60% of these would have involved the patient making a journey by car or taxi. The specific theme that this project supports is therefore improving business and industry efficiency. ****Covid impact:**** there are circa 70,000 physiotherapists in the UK and ~ 7,700 working in private practice (including micro-SMEs) [1,7]. Since the pandemic some of the healthcare providers in this space have seen up to 90% reduction in business since Covid-19. This threatens these and other private physiotherapy businesses with closure due to loss of revenue, which puts at risk circa 8,855 jobs (physios and support workers) in this highly qualified UK industry.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
YELTECH LTD	: AI-enabled Smart IoT tagging/sensor system for intelligent, efficient Formwork management (SmartForm)	£59,999	£59,999

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Concrete cores are increasingly used in very tall buildings. Since the 2001 collapse of the World Trade Center Towers in New York, it has become clear that robust concrete cores can play a critical part in minimising loss of life and structural damage and they have been proven to be superior to steel-framed cores in terms of resisting fire, blasts and impacts. Tall buildings, such as the 163-storey Burj Khalifa, require a high degree of repetition in the Formwork used to mould floor-after-floor of a poured concrete structure. However, this is still a very labour-intensive process, consuming large quantities of plywood and generating wastage in the form of offcuts and discarded components. The SmartForm project targets the development of a digital technique to optimise formwork efficiency, reducing cost and increasing productivity. We apply an Internet of Things (IoT) approach to introduce bidirectional data flow, combining pre-existing BIM data with on-going sensor inputs and site progression mapping to provide a dynamic formwork management system to reduce time and labour requirements as well as optimise material use, resulting in 20% fewer carbon emissions and 40% time saving on concrete construction. With Formwork costing as much as £58 per m², the 25% overall reduction (combined labour and materials cost savings) we expect to achieve with SmartForm would offer the UK construction industry savings of up to £15 for every m² of poured concrete.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE OAK NETWORK UK LTD	Developing a Big Data artificial intelligence platform to assist the hospitality SME sector to achieve a green recovery from COVID-19 by reducing energy consumption, identifying wastage, controlling costs and becoming more resilient.	£57,332	£57,332

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Current energy management solutions are geared toward larger companies and are too expensive and complicated for SMEs. As a result, UK SMEs annually overconsume £8.6 billion in energy, which is equivalent to 15.4 million tons of CO2 emission (7). However, the smart meters rollout has been continuously delayed and is now not expected until 2024 (8). An energy management solution that is accessible to SME business owners, provides useful recommendations to reduce energy wastage and is independent of smart meters, will fulfil a critical need -- every year wasted means more unnecessary carbon emissions. If a successful full rollout of smart meters is ever achieved, OAK can incorporate their data into our offering. OAK is well positioned to fill this market need: **WHY**: To accelerate the transition to a sustainable future **HOW**: Provide SMEs with actionable energy insights, based on real-time data, showing them how to manage their consumption in order to reduce and save, making their businesses more resilient in a post-Covid world **WHAT**: An affordable and accessible energy optimisation platform OAK's initial target market is hospitality. Hospitality businesses have been severely affected by COVID-19. According to a recent UK Hospitality report, once lockdown was in full operation, month on month sales dropped by 89%, which is equal to £4.7 billion of lost revenue (9). Future growth rates are uncertain, but it is clear that the pandemic will continue to have a significant impact for many years (10). These businesses require new strategies to survive through this period and recover previous profitability. OAK presents an ideal solution that allows them to reduce fixed costs and increase profit margins, all while becoming more sustainable and helping achieve the government's 2050 net zero carbon targets. Our aim is to develop a scalable machine learning IoT tool that helps reduce these economic and environmental deficits by up to £6.3 million over the course of Phase 1 and 2 SBRI projects and save the equivalent of 10,000 tons of CO2 emissions. Further economic recovery will be supported by providing businesses the financial stability to retain their existing staff and potentially make additional hires to return to pre-Covid levels. Our 3-year ambition is to impact 10% of the UK deficit to the hospitality industry and grow our business to 50 employees and turnover of at least £7M whilst continuing R&D in this high growth and important sector.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENSPAN INNOVATIONS LTD	Digital Supplier - Helping SMEs operate in the post COVID-19 world in a sustainable way	£59,225	£59,225

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

We don't know what a post-COVID world will look like. But it's becoming increasingly obvious that it will be fundamentally re-shaped. Social distancing and reduced 'contact opportunities' will be key to social and workplace safety. When it comes to the workplace, many of the requirements to be 'in the office' are driven by the location of documents, tools, machines, and non-portable devices. Physical meetings are less of a constraint. We are now able to Zoom ourselves together from any location to meet. But these other artifacts are generally located on-site or are harder to share virtually. The world is recognizing that now is the time to digitize. We are already seeing this - *en masse*. Microsoft recently reported a 775% increase in cloud services from regions with enforced social distancing. The silver lining in all of this is that businesses now have the opportunity (and frankly speaking, are forced) to re-imagine how work gets done. Which drives three extremely important side effects, starting with the most obvious: 1) **Efficiency** - Replacing the 'paper interface' drives significant process efficiencies. We see a 69% process step reduction in receiving goods using data exchange vs. paper for example 2) **Environment** - Removing paper greatly reduces the CO2 burden on the environment and helps ease water consumption (10 liters of water to produce a page;4 each page contributes 0.092 lbs of CO25 - meaning 22,870B liters of water and 210.4B tons of CO2 from European office workers each year alone) 3) **Employee morale** - Workers that previously labored over meaningless data entry, can now grow into problem-solvers -- which improves morale by making the job more interesting while increasing their sense of ownership Given the size of the opportunity, the question becomes: **How do we give all organizations the opportunity to easily digitalize and provide the means to participate in a digital-driven economy?** Our innovation is to **use existing supply chain data to remove the paper, reimagine processes, and drive efficiencies to contribute to environmental sustainability.** Every organization has data but most organizations rarely do anything with that data. Therefore, we are proposing to explore: 1. Using supply chain data to generate digital supply chain paperwork - providing access to the three benefits above, 2. Identify processes that would benefit the most from this approach, and 3. Re-imagine how these specific processes can operate anew in a post-COVID world.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
WLF INNOVATIONS LTD	Supporting The Gym Sector Recovery Through Human Powered Clean Energy Generation	£59,964	£59,964

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Microgeneration is small-scale energy generation up to 50kW and is key to helping gyms decarbonise their businesses in line with the Government's Clean Energy Strategy and 2050 carbon net-zero ambition. Energym is putting microgeneration technology into gym equipment to harness human power as a renewable energy source. While generators have been attached to static bicycles and rowing machines before, the full energy-generating potential is yet to be achieved. The technology that already exists is good but improved efficiency means more energy generated per session and therefore, more energy available for the gym to use. One big advantage of this is that gyms can massively off-set their energy costs. Additionally, focus on cardio equipment has meant that no one has yet harnessed energy from fixed-weight machines and free-weights. By filling that gap, we will help gyms generate enough power to run their businesses in a way that not only benefits the environment and their members but their bottom line, too.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIGHTRICITY LIMITED	Sustainable, wireless asset-tracking and monitoring system for hospitals and supply-chains using self-powered sensor beacons	£60,000	£60,000

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project involves understanding the feasibility of a self-powered network of sensing and communicating beacons/trackers that enables the location and status monitoring of assets in a hospital thus reducing lost time of healthcare professionals and enabling life-saving equipment to be easily located and usage to be optimally managed. It seeks to apply Lightricity's proven and world leading commercially available low-light indoor photovoltaic (PV) technology to wireless trackers/beacons that can be deployed in other vendor's networked systems thus providing a much-improved and scalable service to customers such as hospitals. It addresses practicality and user experience by making tracker instalment a fit-and-forget operation. It reduces costs associated with maintenance e.g. battery change. It helps healthcare system operate more efficiently locating critical equipment and monitoring status/condition of tracked items thus saving money and lives, relieving the current pressures and helping prepare for future periods of high demand. It is sustainable in the sense that it reduces workloads in overstretched public health systems and addresses power challenges with a renewable energy source thus avoiding the environmental issue of disposal of billions of batteries.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CAMLIN TECHNOLOGIES LIMITED	BioSpec SILOX – online monitor of siloxane contaminants in biogas from wastewater	£59,725	£59,725

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The water industry has significant untapped potential to contribute to net zero targets by fully utilising available wastewater to generate biogas as a renewable energy source. Siloxanes are a known contaminant in biogas, especially prevalent from sewage (wastewater) anaerobic digestion systems, and their removal is critical. If not removed, they will damage CHP engines resulting in downtime and increased maintenance costs. This will impact the cost-effectiveness of using renewable biogas as opposed to fossil fuel derived energy sources. Addressing the siloxane problem has a direct environmental benefit by supporting the water industry to meet its net zero targets and hence supporting the governments to deliver their net zero targets. Siloxanes are normally removed by activated carbon filters. Understanding the effectiveness of such filters and ensuring their timely replacement when they become saturated is a key factor in the efficiency of such plants. Camlin shall develop an entirely new approach for the online monitoring of siloxanes with the aim of developing a product at a price point that will enable the widespread adoption of the technology by the wastewater industry. Current technologies on the market are typically adapted from laboratory equipment and result in prohibitively expensive solutions that do not meet the needs of the user. They also suffer from high maintenance and support costs when deployed in harsh field environments. Following the success of this project, a product will become available to the wastewater industry at the required price point that supports the industry with its goals of reducing methane emissions, increasing self-generated renewables by utilising wastewater for anaerobic digestion, and providing renewable gas to the gas grid. During Phase 1, we shall determine the feasibility of developing a novel spectroscopic solution for siloxane monitoring that meets the performance, cost, and usability requirements of the industry. In a future Phase 2, a product which meets this triumvirate of requirements shall be prototyped and trialled with a UK based water utility to validate the technology, quantify the value it delivers, and measure the resulting environmental benefit.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
HUBL LOGISTICS LTD	Development of an improved, flexible, multi-temperature Click & Collect service for online grocery shopping, in response to the massive growth in demand following the Covid19 pandemic	£59,818	£59,818

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The aim of Hubl Logistics Ltd is to develop a novel Click & Collect (C&C) solution, to meet the demand for cheaper and more convenient access to online groceries and FMCG. The explosive growth in grocery home delivery during the Covid19 pandemic, (online sales running ~5% pre-pandemic, now ~10%), has exposed the weaknesses within current grocery home delivery networks and C&C services. This is shown by the lack of delivery and collection slots for consumers. Grocery delivery networks are serviced by multi-temperature refrigerated vehicles that are fuel-hungry and have limited load capacity. Customer orders are often picked from shelf, in-store, which is slow, inefficient and costly to operate. Purpose-built 'dark stores' and automated fulfilment centres are few, as these are capital intensive and slow to develop. An initial means of increasing online capacity is through store-based C&C. This, generally, sees orders passed over the counter within the store, or handed-over in the store car-park. Again, they rely on in-store picking, manual assembly, temporary storage in inappropriate locations and a manual hand-over process - all very labour intensive, subject to errors and not economically sustainable. Hubl's proposed C&C is based on its existing proprietary and patented technology, the CoolRun Pod. This is an insulated, multi-temperature container, the size of a roll-cage, but with built-in secure compartments. The pods can be loaded automatically at a fulfilment centre or loaded from store locations. Once full, they travel through the delivery network (or simply move within the store), to the C&C hub in the retailer's car park. They remain there, with goods secure and at the correct temperature, until collected by the customer. Access to the correct compartment is provided by a code delivered to the customer's phone. Once empty, the CRPod is returned for replenishment with more orders. Additional technologies, including the supporting IT and C&C enclosure, will be integrated from established third parties, to ensure rapid development and deployment of the system. Our approach will create a sustainable solution which, when adopted by major retailers and third-party logistics operators, will be rolled-out to multiple locations in urban, suburban and rural areas. This will provide consumers with both secure access to online grocery shopping and a returns mechanism, at convenient locations within close proximity to their homes. Hubl and its subcontractors will undertake an initial feasibility study with major retailers and third-party logistics providers, followed by full development of the C&C technologies.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ATLANTIS OPERATIONS (UK) LIMITED	Marine energy wet-mate connection system	£56,977	£56,977

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Atlantis Operations (UK) Limited is developing a new version of its wet-mate connection system for tidal turbines, to make it applicable across the marine renewables industry. Atlantis has proved its Connection Management System, CMS, on its AR1500 turbine installed as part of the MeyGen Project, world's first megawatt-scale tidal array. The CMS makes all the electrical and control connections between the turbine and its subsea cable as the turbine is being lowered onto its foundation, making the turbine installation simple and quick. It significantly reduces the cost of deploying and retrieving the turbine, reduces the risks in the marine operations, and makes interventions possible in a wider range of weather and sea states. Other devices use dry-mate connectors, which introduce extra operations into deployments involving cable handling, additional vessels, divers or ROVs. The CMS on the AR1500 relies on its integration with Atlantis' unique 'stab' system that locates the turbine on its foundation to passively bring the wet-mates together. Other marine energy converters do not have this feature, so the project is to make an actuated version of the CMS that is more generally applicable and that Atlantis sees becoming a standard in the industry and a product that can be sold to other companies. Atlantis is already in discussion with project owners and other tidal turbine manufacturers about supplying the system. The new CMS will reduce the operating costs of marine energy arrays, promoting a new renewable energy source and helping to move towards net zero emissions. Marine renewables are at an early stage of development, and to be installed on a larger scale it is important to bring down their cost of energy to levels that are comparable with other renewables. In this it lines up with the UK governments Net Zero Ambition and Clean Growth Strategy.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
C-CAPTURE LIMITED	Feasibility experiments to quantify the compatibility of C-Capture's solvent technology with the requirements of the glass manufacturing industry	£59,600	£59,600

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

C-Capture designs world-leading chemical processes for the capture of carbon dioxide. We have patented a unique, safe, low-cost post-combustion capture technology which uses up to 40% less energy than current commercially available technologies. The technology uses a new class of capture solvents that are amine and nitrogen free, are not classified as hazardous, are inexpensive, and could be manufactured on a large scale from biological sources. Data generated thus far has demonstrated our solvent to be very resistant to oxidation, and therefore would not degrade as quickly as existing technologies in industrial applications. Hence, C-Capture's technology presents an ideal decarbonisation solution for heavy industry, at considerably lower cost than existing options, freeing up funds to sustain their economic recovery from the pandemic. We wish to build upon existing data and expose our solvent to the most challenging conditions, such as those found in the glass-making industry which contains very high levels of oxidants. We propose to build an enhanced oxidation rig to expose our solvent formulation to extreme conditions of flue gas pollutants, to demonstrate the resilience of our solvent technology. This feasibility study will evaluate the robustness of C-Capture's advanced carbon dioxide capture process, with a view to subsequently piloting the technology in collaboration with Pilkington Glass, with whom we are working closely, in order to fully understand their requirements. By working alongside customers who are trying hard to find technological solutions to decarbonise, we are optimising our technology to fulfill market needs. Many industrial customers operate in markets characterised by razor thin margins, and are currently fighting for survival due to COVID-19. These feasibility experiments are a crucial step in providing an industrial carbon capture technology which allows customers to recover sustainably from the pandemic by investing in infrastructure which provides jobs and reduces greenhouse gas emissions. This will have a positive impact on climate change and environmental sustainability and enable the industrial sector to 'build back better' from the COVID-19 pandemic, create a more sustainable economy, and help deliver on the government's Clean Growth Strategy and net zero ambition.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FIELDWORK ROBOTICS LIMITED	Development of a strawberry gripper for robot harvesting	£56,652	£56,652

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Fieldwork Robotics aim to address the shortage of harvesters of strawberries by developing a strawberry harvesting robot.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CONNECTED RESPONSE LIMITED	Storage Heating and Renewable Energy (SHARE)	£40,470	£40,470

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The award is to Connected Response who specialise in the retrofit smart-charging of electric storage heating and hot water systems, as found in 1.5m homes in GB, many of whom, especially in the North, are disproportionately fuel poor. Their technology has evolved over the last five years to serve social housing tower blocks and keep residents warm when they want to be warm. This is done by moving away from night-charging only and has been delivered collaboratively with major social housing landlords and energy suppliers. This Sustainable Innovation Fund award will enable Connected Response to develop a low cost solution for the existing large installed base of electric storage heaters in GB (1.5m+, 10GW peak load, potentially 2Mt of CO2) and/or domestic electric hot water properties to have their electric heating energy consumption dynamically synchronised with the availability of renewable energy. This provides financial benefits for the homeowner as well as reductions in CO2 by making better and more efficient use of renewable generation. The solution is energy supplier agnostic and designed to work with the consumer's preferred supplier. Flexible charging is especially relevant for consumers post Covid-19 in that it enables improved comfort, reduced bills and better health. It is widely acknowledged that there is a direct correlation between warmth and wellbeing - better heat means better health - especially important when households are experiencing a disruption in circumstances. Household heaters will be charged according to individual resident comfort needs, local weather forecast and room temperature, rather than to suit historic electricity network needs. Each household will also be able to play its part in the wider climate change agenda by their heater charging being dynamically aligned with the availability of renewable energy. This innovation will add further value to the Smart Meter roll-out and demonstrate that a smart-charging retrofit storage heating solution can play a major part in the electrification of home heating and future grid management.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
POWERSVAULT LTD	Second Life SaaS (Storage as a Service); the resource efficient, mass-market home energy storage solution	£59,411	£59,411

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Government has committed to Net Zero GHG emissions by 2050, but is already off-track to meet its 2020 renewable electricity target(CCC), whereby households account for 40% of emissions. In tandem, households and businesses face increasing energy bills as we electrify transport and heat, with costs of £40bn by 2050 where unmitigated with flexible energy assets. Renewable energy(RE) is constrained by with an inflexible grid unable to handle variable supply, with costly new curtailment measures (£500m) introduced from over-supply during Covid-19\ . Finally, figures from Birmingham University, IET and IEA calculate that there will be 30-60m tonnes of waste EV batteries globally by 2040; alarming in regions such as the US, EU and Australia where typical recycling rates are presently 5%. These factors create strong drivers for adoption of domestic Battery Energy Storage Systems (BESS) that i)reduce business and household energy bills by storing solar and low cost electricity ii)support the grid providing extra revenues and system savings iii)utilise second-hand EV batteries and no/negative cost. However, existing BESS have payback periods of ~7yrs, high CAPEX ~£5,000-£7,000, and with battery lifespan/replacement being a key cost concern. Powervault has surveyed its historic pipeline of leads who did not buy BESS: 55% objected on cost, and a further 24% on warrantied-lifetime payback. In turn, uptake in the UK has been low compared to international markets where incentives are available(Germany, Japan, Australia, USA). To meet this need Powervault plans to develop an innovative mass-market BESS solution using second-life EV batteries(SLBESS) and capitalise on closing a resource loop. This project constitutes technical and business model innovation, providing a system that is cashflow positive for customers from day 1 due to i)no upfront cost ii)improved battery lifespan and warranty duration iii)integration of grid services to generate revenue. This innovation addresses the key competition theme: decarbonising energy, business and industry. A zero upfront cost SLBESS solution provides a pathway to mass-market residential energy flexibility, which is critically needed for decarbonising at least cost (BEIS, Element Energy, Imperial College). Other themes the innovation addresses are improving the energy efficiency of our homes and other buildings (by helping homes import electricity at more efficient times as they switch to electric heat and transport) and accelerating the shift to low carbon transport (by reducing grid constraints and recycling costs for EV manufacturers, lowering price).

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
NPL MANAGEMENT LIMITED	Online H2 Quality Service	£59,938	£59,938

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The National Physical Laboratory (NPL) is the UK's National Measurement Institute and is a world-leading centre of excellence in developing and applying the most accurate measurement standards, science and technology available. For more than a century, NPL has developed and maintained the nation's primary measurement standards. These standards underpin an infrastructure of traceability throughout the UK and the world that ensures accuracy and consistency of measurement. Hydrogen is used extensively in industry and is, on a small scale, already sold commercially as a zero emission fuel for busses and passenger cars. In the near future hydrogen use will expand in the UK and abroad as new zero emission fuels are needed to heat homes and power cars, busses, HGVs, trains, ships and aeroplanes. When it's used to fuel vehicles, the hydrogen needs to be very pure, as even trace amounts of impurities can impact the vehicles performance (performance loss, shorter range or lifetime). NPL is a world leader in measuring impurities in hydrogen and offers a commercial service where NPL scientists will fill gas bottles with hydrogen and then check the hydrogen for impurities in a laboratory using sophisticated and sensitive instruments. This service is already used by refuelling station operators to periodically check that the hydrogen they sell commercially meets required standards. Unfortunately, the process is expensive, slow to return results and generally won't be suitable when there are 1000's of refuelling stations across the UK and Europe (expected before 2030). A better approach is needed. In this project NPL will develop new low-cost sensors that will detect any impurities that could damage a fuel cell but won't be able to tell exactly what the impurity is. These sensors will be left running at a refuelling station, continuously taking small samples from the station's hydrogen supply. NPL scientists will then only need to take a sample back to the laboratory for a full analysis when a problem is detected. Refuelling station operators will also be able to know immediately (through an app or online service) if there is a problem with the hydrogen they are selling and act as necessary. This innovative solution is a huge improvement over current R&D aiming at only measuring 13 impurities individually. This project and the new sensors it will develop will therefore lead to lower priced zero emission fuels and provide consumers with greater confidence that the fuel they are buying is pure.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
NEXTEK LIMITED	SuperPolyWash - Supercritical CO2 washing and decontamination of post-consumer plastic film waste	£58,931	£58,931

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Covid-19 pandemic has boosted the focus on the need for urgent action on single use plastics, The SuperPolyWash project will look at the commercial potential of using Super Critical Carbon Dioxide (ScCO₂) in the purification of contaminated plastic films, instead of water, to recycle them back into high value products. The process will target the simultaneous removal of oils, inks and contamination from post-consumer polyolefinic films, with the focus being on Polypropylene (PP) and Linear Low Density Polyethylene (LLDPE) films. Existing recycling processes use water and surfactants that need additional energy for drying and create contaminated water that requires additional bio-chemical treatment. ScCO₂ is a non-toxic, non-flammable, non-corrosive solvent and can be selective about the contaminants it removes. Using ScCO₂ as a decontamination solvent is already well established among other industries. **Nextek Ltd** is the lead organisation which specialises in the recycling of post consumer plastics and the developer of a number of breakthrough recycling technologies including food grade recycled High Density Polyethylene (HDPE) , Food grade recycled PP, Near Infra red Detectable black Plastics and Fluorescent markers for polymer sorting. Nextek Ltd also designs large scale plastics recycling plants such as the £65m plant for Viridor at Avonmouth and is well connected to international recycling machinery manufacturers. **Sub-Contractors** **University of Nottingham.** The majority of the initial feasibility and development research will be in The School of Chemistry, under the supervision of Professor Steve Howdle. The UoN team is skilled in sustainability, polymer chemistry, the use of supercritical fluids, analytical chemistry and have experience in the commercialisation of academic research. **The BioComposite Center Bangor University**, The Centre Managed by Dr Robert Elias has facilities that include lab scale analytical equipments for chemical analysis, and a range of pilot scale processing facilities and experience in prototyping materials and de-risking market introduction of new innovations. The Centre set up the supercritical CO₂ Research Lab (now JV company Suprex Ltd). **Theme:** Enhancing the benefits and value of our natural resources - Zero Avoidable Waste economy by 2050 The UK Plastics Pact target of 70% recycled content by 2025 would require an additional 228kt of waste films diverted from landfill and energy plants. This would save a comparable amount of waste and also saves 228kt of CO₂ savings per year based on a saving of 1 tonne of carbon per tonne of polyethylene recycled along with water and (treatment) savings of 684ktpa.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CLYTELL (UK) LIMITED	Avoiding Pollution Hotspot in Post COVID-19 Era: An AI-based Air Pollution Exposure (APEX) Visualisation Platform for Individuals and UK Regions	£59,500	£59,500

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Existing navigation applications (e.g. Google Maps, Apple Maps, Waze) only provide real-time traffic information despite long-term exposure to **air pollution (i.e. inorganic and organic pollutants) being the most significant environmental threat to human health (Public Health England, 2020)**. High concentrations of inorganic air pollutants (e.g. PM2.5, PM10, CO2, NO, NO2 etc.) have been associated with devastating health diseases (e.g. stroke, lung cancer, asthma) (WHO, 2016) while organic air pollutants, particularly aerosols have recently been known to be active transporters of biological agents (e.g. Coronavirus) (Wang & Du, 2020). Hence, there is a pressing and cogent need to find innovative and sustainable ways to monitor air pollutants and curb their devastating effects on the populace (DEFRA, 2020). Despite this urgency over the years, evidence suggests that ***"lack of a sustainable and generalisable air quality monitoring instruments/system"*** is the main reason why there is currently no publicly available system/platform that allows the UK population to navigate pollution hotspots and its devastating effects safely. Although reference air quality monitoring instruments exist (e.g. Highways England's Air Quality Analysers), they are known to be **incredibly expensive to install and maintain**; therefore, such reference instruments cannot be relatively deployed across the entire UK to capture pollutant concentration levels. Furthermore, low-cost sensors (e.g. Zephyr, AirScan) which have recently become prevalent are known to be **plagued with accuracy, reliability and power issues**. This is coupled with the fact that it would take a significant and environmentally unfriendly investment to install low-cost sensors across every road in the UK. It was on this premise that Clytell (UK) Limited have spent the last 12 months on case-study feasibility to develop proprietary **Deep Learning Models that predict pollutant concentrations along the M1 and M56 motorway**. Using Air Quality Data from Highways England's state-of-the-art AQ Analyzers, GIS Location Data from Ordnance Survey API; Weather Data from Open Weather API and Traffic Data from MIDAS, the Deep Learning models were able to **accurately predict (@94%)** pollutant concentration of CO, CO2, NO and NO2 on these motorways. On the back of the feasibility study's significant breakthrough (i.e. that Deep Learning can indeed predict Air Quality using key historical data), Clytell (UK) Limited is proposing an **AI-based Air Pollution Exposure (APEX) Visualisation Platform for Individuals and UK Regions (APEX System)** that will extend and generalise the case-study feasibility Deep Learning Models beyond M1 and M56 motorway **to encompass the whole of the UK**.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ECOSULIS LTD	CreditNATURE - An Innovative Platform to enable Landowners to Model and Apply for Carbon and Biodiversity Credits	£59,965	£59,965

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The fallout from the current COVID crisis will be deep and wide ranging. Impacts will include the loss of millions of jobs, and the recession that follows will cause hardship and strain all areas of the economy. At the same time, the climate and ecological emergency (CEE) is not going away. The UK government has therefore recognised the need to 'build back better' -- to respond to the COVID recession by implementing policies that create a clean, growth led recovery and at the same time support the UK's transition to a Net-Zero economy. Our CreditNATURE project aims to create a new service for landowners that enables them to **map the carbon and biodiversity of their land - and to monitor the success of restoration and rewilding programmes**. CreditNATURE brings together a collection of innovative technologies to create a platform underpinned by real world data; where landowners can baseline the carbon, biodiversity and ecosystem recovery of their land, plan investment and future revenue returns and generate carbon, biodiversity and ecological integrity (rewilding) credits. Examples include the Woodland Code and Biodiversity credits. By enabling landowners via a cost effective, simple route to map and generate these credits, they can more easily access new revenue streams that reward them for enhancing the environmental conditions of their land, rather than depleting them; as well as setting them up to access to higher tier payments via future Environmental Land Management policy payments. CreditNATURE will be working with an exciting potential future client - The Bunloit Wildland Project. This project has been set up by solar entrepreneur and environmental activist Jeremy Leggett. It's stated aims are to explore and develop understanding around carbon sequestration and biodiversity enhancement via Rewilding land management. This project solves a key identified need for Jeremy and Bunloit - **provision of a commercially viable solution to baselining, modelling and continuous monitoring of the carbon and biodiversity fluxes of the estate to support the project aims.** We believe that our innovative CreditNATURE project has the potential to unleash a wave of new job creation due to the requirements to restore, manage and enhance natural land assets and so enable access to new sources of revenue for landowners via nature-based credits. Jobs lost to COVID can be replaced with valuable work enhancing nature - building back better by creating a Net-Zero carbon economy across the UK landscape.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
EDGETRIX (UK) LTD	Diagnostic Net-Zero Carbon Refurbishment and Supply Chains Procurement Tool (Carbon Diagnostics)	£59,800	£59,800

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

As part of the wider UK 2050 energy-efficient homes and Net Zero agenda, the UK Government has put aside £2 billion towards the Green Deal (Green Homes Grant scheme) that will allow eligible homeowners and landlords to apply for up to £10,000 voucher for energy-efficient home upgrades and retrofitting low-carbon heating technologies as part of the economic recovery statement. However, evidence suggests that two barriers are currently militating the achievement of the Government's desired outcomes. Firstly, whilst a wide array of insulation/energy-efficient options, vis-à-vis building specifications are available, evidence suggests that they must be optimised for desired outcomes and this requires a long time and expert knowledge. Secondly, part of the UK government initiative is to stimulate local economies, but no digital tool currently exists where homeowners can easily select from a wide range of contractors for the desired refurbishment action. It is on this premise that the overall aim of this application is to develop a cost-effective and one-stop-shop diagnostic system for building retrofitting and supply chain procurement management ****Carbon-Diagnostics****. This will be the first time that an innovative and comprehensive diagnostic system will diagnose buildings, provide prescriptive options for building retrofitting and suggest qualifying contractors that can implement the refurbishment.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
TURBULENT SIMULATIONS LIMITED	Offshore Wind Charge Station	£59,812	£59,812

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Turbulent Simulations is working with project partners including vessel designers, manufacturers and operators, as well as the ORE Catapult and 'Industry Advisers' including Vattenfall Networks, the Workboat Association and Equinor. Our aim is to address a clear market demand for a system that can provide offshore charging and possibly also alternative fuelling (hydrogen / ammonia) capability for vessels servicing offshore wind farms. We plan to undertake an extensive engagement with industry to better understand the operational requirements and to address the various barriers before determining the details of an innovative offshore charging solution that will see a vessel used to host batteries and other storage technologies which can take power from the windfarm at times of low demand from national grid and then provide power to vessels when needed. The system will be fully automated with fully integrated digital recognition, metering and communications systems between the power vessel, the wind farm, shore-based operations centres and operational vessels in the field. This combination of digital systems and autonomous operations development and integration is where the unique and inimitable value in the project and ultimate commercial offer will be created and is where the expertise and experience of Turbulent Simulations will be brought to bear on the innovation process alongside the vessel design capability of AMC and the power systems capability and experience of MJR. During phase 1 of the project we will undertake feasibility to refine the proposal before pursuing a full scale design, development and demonstration with support of funding from phase 2 of SBRI. Between them, these three UK SMEs will develop a novel innovation with the potential to radically alter maritime logistics and unleash the potential of the UK's nascent clean maritime sector whilst supporting the decarbonisation ambitions of the offshore wind sector.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SMARTLIGHT.AI LTD	SmartLight.ai - Bringing AIoT to the Street Lighting Industry	£60,000	£60,000

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

SmartLight.ai will revolutionise the efficiency of urban lighting using Embedded Artificial Intelligence, combining the benefits of two emerging "megatrends" Artificial Intelligence (AI) and the Internet of Things (IoT), to create the Artificial Intelligence of Things (AIoT). AIoT lighting will address five urban challenges; Energy Efficiency, Running Cost, Safety, Light Pollution, and Maintaining Nightlife. In terms of Energy Efficiency, global outdoor lighting consumes 1.3 quadrillion Btu annually, costing about US\$10B. Labour-intensive Central Management Systems, with current IoT technology, such as Engie's inteliLight, claim a 35% energy saving with binary central switching, or 500M Tons CO2 (1.5%), or 105M cars if applied globally. These systems are only available to coordinated, high-income areas. SmartLight.ai's AIoT platform could deliver greater savings, with less overhead. SmartLight.ai will help businesses and communities recover from the coronavirus pandemic in a sustainable manner, as part of a clean growth and transition to net zero.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIBERTINE FPE LIMITED	Demonstration of variable compression ratio combustion development platform for renewable fuels	£59,556	£59,556

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The proposed project will integrate Libertine's 'intelliGEN' Opposed Free Piston development platform together with subcontractor MAHLE Powertrain's Flexible ECU (MFE) within an engine test cell at MAHLE Powertrain's facility in Northampton, to demonstrate a first-of-a kind variable compression ratio combustion development engine for renewable fuels. The first demonstration fuel will be bioethanol, a low carbon fuel that can be produced from renewable resources including agricultural wastes and residues. During phase 1 Libertine will make plans with MAHLE Powertrain and prospective OEM clients for phase 2, to build a prototype and test it in real world scenarios. In a free piston engine, the crankshaft is replaced by high performance linear electrical machines permitting engine manufacturers to dispense with the crankshaft mechanism in future internal combustion engines. In its place, Libertine's linear electric machines will allow electronic piston motion control to deliver real-time variable compression ratio, providing optimum combustion conditions in every combustion event -- whether during cold-starts, peak power or peak efficiency operating modes, even if the fuel blend in the tank changes with every fill. The variable compression ratio and non-sinusoidal piston motion capabilities of Free Piston Engines allow cleaner and more efficient utilisation of renewable and synthetic low carbon fuels owing to the combustion characteristics of several of these new fuels. Libertine's intelliGEN Opposed Free Piston development engine systems provide the means for OEMs to develop new products to make full use of synthetic, low carbon and renewable fuels. These products will be essential for the decarbonisation of 'hard to electrify' transport applications including light and medium duty commercial vehicles, for a proportion of passenger automotive market where vehicle use and recharging constraints are a barrier to electrification, and for a larger range of distributed power generation applications.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
COSTAIN LIMITED	Hydrogen Decentralised Energy Utilisation and Storage (HYDERUS)	£58,926	£58,926

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Hydrogen Decentralised Energy Utilisation and Storage (HYDERUS) project will develop and demonstrate a zero-carbon combined heat and power (CHP) system, integrating renewable and low-carbon hydrogen production, delivery, blending, and storage technologies with an Aurelia Turbines A400 (400 kW) gas turbine engine. Led by Costain Group plc, Phase 1 of HYDERUS will conduct a feasibility study into the project models, hydrogen production methods, and CHP demand centres best suitable for the Aurelia Turbine A400. In Phase 2, the CHP will be installed at the preferred location to generate low-carbon heat and power at Cardiff University's Gas Turbine Research Centre, which sits at the heart of the South Wales Industrial Cluster (SWIC) in Neath-Port Talbot. Given the proximity of on-shore wind generation (Mynydd Brombil and Pen y Cymoedd) to the demonstration site, the potential to convert and store local renewable generation as zero-carbon hydrogen through electrolysis will be considered by this feasibility study. Other hydrogen production and delivery options to be evaluated include direct pipeline from BOC Margam steam-methane reformer (SMR), utilisation of process hydrogen from Tata Steel via water-gas shift and pipeline, and on-site SMR with carbon capture and storage (CCS). Direct delivery of low-carbon electricity from the CHP to a local Neath-Port Talbot school, Ysgol Cwm Brombil, will also be evaluated in addition to the local Welsh Assembly Government buildings around the installation site. By developing this novel hydrogen CHP package, the outcomes of HYDERUS then aim to provide a roadmap for decentralised, decarbonised hydrogen production, storage, and utilisation for industrial heat and power throughout SWIC, the UK industrial clusters, and the communities which surround them. By engaging directly with Neath-Port Talbot council, HYDERUS will also provide an interactive training tool for engagement with the students and local community on hydrogen technology. The funding requested from SBRI Phase 1 will be utilised to support this feasibility study in preparation for a larger Phase 2 funding application for the demonstrator to be constructed, installed and operated. Costain Group plc will produce the feasibility study, engaging with key stakeholders across the hydrogen CHP value chain, including Aurelia Turbines, BOC, Cardiff University's GTRC, Cardiff University's Centre for Integrated Renewable Energy Generation and Supply, Neath-Port Talbot Council, Swansea University SPECIFIC, University of South Wales Hydrogen Centre, Vattenfall, Wales and West Utilities, and Welsh Assembly Government.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ETHOS ENVIRONMENTAL LTD.	CO2VID-Compliant Building Ventilation	£33,032	£33,032

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

A proof-of-concept air quality metric will be developed based on existing guidance and field trials to assist building owners monitor and evaluate the risk of fine aerosol transmission of SARS2-COVID19 in their premises on an ongoing and automated basis. A product incorporating sensors, hardware and software will be designed to enable this and to deliver appropriate building ventilation performance. This will be a portable, unobtrusive "plug & play" system that will work in tandem with, and augment, existing systems. For the benefit of customers, building users and employees, it will maintain and evidence the ventilation performance against robust and transparent "Covid-compliance" criteria. This real-time information will be able to be used in various ways by the premises manager to provide ongoing reassurance to users that - in tandem with standard social-distancing measures - all reasonable steps are being taken to minimise the transmission risk, and thereby encourage safe return to normal work and leisure activities.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Sustrate Ltd (in formation)	Sustrate	£59,856	£59,856

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project seeks to develop a UK produced, renewable, sustainable, recyclable and biodegradable alternative growing media for intensive horticulture. This will give an agricultural by-product a new purpose, making better use of natural resources and displacing less environmentally friendly established products. Our product will be low energy, low water, low waste and novel in its approach.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
WASWARE LIMITED	Organic Waste Based Seeds Coating Materials for Better Environmental Outcomes	£60,000	£60,000

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The Cabbage Stem Flea Beetle (CSFB) is a little, iridescent, black beetle. It isn't related to fleas, but gets its name from having large, powerful femurs, which allow it to leap like a flea. CSFB feeds on cruciferous vegetables, which most people will know as "leafy greens", so things like broccoli, cabbage and cauliflower. While we don't eat oil seed rape, it is a vital component of UK agriculture. It is used to generate rapeseed oil and generates around £768m for the UK economy. Crucially, oil seed rape is also a key rotation crop, which farmers grow to refresh the soil and keep pests of other major crops down. This means that if oil seed rape losses are so high, that farmers abandon it as a crop, it could lead to shortages in other crops, such as wheat. The husks of oil seed rape are also very high in protein and are used for lots of animal feed. In 2018 neo-nicotinoids, a type of pesticide that were systemic and as such would cover the entire crop, were banned. This meant our last line of defence against CSFB was pyretheroids, which you spray across a field. Unfortunately, these only cover the outside of a crop so don't do anything to prevent the larvae which are already inside the crop from doing the damage. Resistance is also now being seen to pyretheroids, so farmers have few options to control the damage. The global warming makes things even worse as they have been laying all through spring, meaning there are now thousands of young beetles emerging in fields, where they just move through the crop like locusts. It's estimated that CSFB accounts for between 5-15% of the crop being lost, or around £70m per year, so this is a problem that needs attention. In this project, a seeds coating approach based on frass - a natural insect repellent together with biomass based binder (adhesive) to be used to coat rape oil seeds to aim to resolve this problem. Seeds coating is a multi-million pound global business due to it's nature of high efficiency and high local pesticide concentration from seeds coating to be absorbed by seeds. Wasware and NIAB will closely work together to bring this technology from Phase 1 feasibility study to Phase 2, a full development project to transform this technology into a sustainable viable business.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOLVETEQ LTD	Sustainable Lead Recycling	£59,271	£59,271

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Solveteq is developing sustainable and environmentally-friendly technology for recycling of lead-acid batteries (LABs), whilst significantly reducing the environmental impact of lead. Solveteq's technology will enable UK & international recycling companies to significantly reduce their expenditure on energy and environmental control. The green process has the potential to transform the battery recycling industry and establish next-generation practises. Our solution replaces the most expensive, polluting and energy-intensive step in the recycling process with a low-temperature, solvent-based technology. Solveteq's vision is to significantly contribute to a safer and cleaner environment by transforming the way LABs are being recycled today. Solveteq aims to implement its technology worldwide. Our process produces lead and lead oxides, which are commodities that can be directly used in the production of new batteries. Despite the evident rise of Li-ion batteries, LABs remain the most popular power supply in the automotive industry, as they are used in both Internal Combustion Engine (ICE) vehicles and state-of-the-art Hybrid and Electric Vehicles (HEV, EV). LABs are also used in public transport and commercial vehicles (trains, buses, trucks) and in emerging applications such as grid energy storage. Therefore, the use of LABs is not expected to decline in the near future. Our project aims to translate the academic research conducted at Imperial College London into a commercially-viable technology. We aim to test and implement our solution with established recycling companies followed by the distribution of our technology to operators in low- and middle-income countries (LMICs). Informal recycling practices in LMICs are responsible for uncontrollable emissions of lead to the environment, exposing workers and local communities to lead pollution. Due to its toxicity, informal lead recycling in these regions is considered the most polluting industry in the world, with children being particularly affected by lead poisoning. The project is addressing this humanitarian, societal and economic issue. By implementing Solveteq's solution, we strive to contribute to improving the safety, health and wellbeing of communities around the world. The scope of Solveteq's current 3-month project is to evaluate our proven lab-scale process on an intermediate-scale continuous-operation prototype, designed to process and recycle 1kg/h of lead from used LABs into lead and lead oxides. This project presents a significant milestone for Solveteq towards commercialisation, and its success will allow the company to proceed to a 25kg/h for testing at our customer's location, representing real-life operating conditions.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
LIMOSAERO LIMITED	Low-altitude solar UAV	£51,853	£51,853

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The use of unmanned aerial vehicles (UAV) both within the UK and internationally is a rapidly growing industry. As we emerge from the COVID pandemic, UAVs represent a significant growth industry in the UK economy and present an opportunity to reduce the CO2 emissions of industries reliant on aircraft for their operations. Many small low-altitude UAVs (<20kg) are battery powered with fixed-wing and quadcopter configurations commonly limited to less than an hour flight time, this restricts the application of UAVs to wider markets. Limosaero's low-altitude long-endurance solar powered UAV will significantly extend flight time, operate without carbon emissions and therefore present an opportunity to grow the UAV industry and help deliver on the government's net zero ambition. The use of our product by our customers will directly offset CO2 by providing a zero-emission alternative to traditional fuel powered flights (e.g. tasks typically completed using traditional small manned-aircraft and helicopters).

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
PROGRESS2IMPACT LTD	Enabling environmentally clean, sustainable and inclusive jobs and growth in UK. Feasibility Study for a 'virtual entrepreneurial ecosystem' to connect impact ventures with public and private sector donors to fund SDG aligned initiatives	£58,841	£58,841

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Progress2Impact aims to create a donation crowdfunding platform for the UN Sustainable Development Goals connecting early-stage impact ventures with a global community of donors to advance the SDGs. In light of COVID19, the need has emerged to adopt a more focused approach to support Government efforts in economic recovery. The proposed solution aims to create jobs and growth that are environmentally clean, sustainable and inclusive to achieve the net zero ambition targets and 'build back better' post-COVID19. We will conduct a feasibility study for the creation of a 'virtual entrepreneurial ecosystem' with the aim of obtaining an in-depth understanding of specific customer segments, desirability, functionalities required to support the UK public sector in its ambition towards achieving the UK Clean Growth Strategy using CleanTech. ****PROBLEM STATEMENT**** Startups and scaleups are important to advancing the UK economy/Industrial Strategy; key to sharing the social and environmental problems the country (will) face(s) and why specifically impact startups are key to economic recovery. Startups are heavily affected by COVID19, an entire generation may never scaleup. With persistent liquidity constraints, there is a need for building an entrepreneurial ecosystem supportive of impact startups. ****SOLUTION**** The entrepreneurial ecosystem will connect impact startups from leading UK universities (Oxford, Cambridge, Coventry, Northampton, Birmingham, Warwick, Cranfield, Aston, Nottingham, Leicester, Loughborough, Keele) to public and private donors with an SDG agenda, including venture philanthropist, corporates, public agencies and impact investors. The nexus will be a crowdfunding technology platform facilitating the flow of funds towards the impact ventures. Access to these stakeholders will be ensured by Oxford University Innovation and the European Venture Philanthropy Association. Phase 1 will carrying out a feasibility study for the ecosystem, using principles of Agile, Lean Start-up, and Human Centred based on IDEO methodology. Phase 1 of the project will last a total of 3 months. It will focus on collecting evidence of market demand, alongside R&D, to support a business case for further investment required to develop a 'virtual entrepreneurial ecosystem' that redistributes financial resources (pre-seed) in the form of donations from public and private sector stakeholders to impact startups in their trajectory of CleanTech Innovation and net zero ambition targets and providing scaleup support to be tested in Phase 2. The platform will embed a curation mechanism to select startups ensuring (1) anticipated measurable impact on SDGs, (2) inclusiveness of founders, (3) regional balance, (4) addressing Cleantech Innovation, the net zero ambition target outcomes.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
URBAN INITIATIVES STUDIO LTD.	Smart Walkability Platform	£59,870	£59,870

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The aim of this project is to develop a **Smart Walkability Platform**. This will help local authorities and other organisations to plan and invest more effectively and comprehensively for the shift towards walking as a means to move around cities and places. By facilitating the greater uptake of walking the platform will contribute to Zero Carbon commitments but also deliver significant physical and mental health benefits. It contributes to the planning for the **'15 Minute City'**, a new vision for a sustainable city of neighbourhoods, where one can find everything in a 15 minute distance from home. Road and public transport planning for long have been the subjects of major planning and investment at all levels, whilst planning for cycling has seen recently a significant boost. However, while **everybody walks**, very little knowledge exists on how people are moving around locally, what makes people walk and how walking access and pedestrian experience can be improved. This project will establish a research-based methodology to **assess and measure the walkability** of the urban realm. Based on this the Smart Walkability Platform will undertake an analysis of existing datasets to evaluate the walkability of routes, and score the walking comfort, safety and experience among other aspects. It further will visualise the quality of the walking environment across a place and help identify necessary improvements. The platform provides a powerful and insightful tool for the planning of development and investment decisions in local authorities, and it puts walkability at the heart of the sustainable transformation of places. The project is led by **Urban Initiatives Studio**. We are urban designers who work interdisciplinary at the intersection of urban design, development and transport planning. We work with the public and the private sector on detailed and strategic urban design projects. We are a creative team, always thinking outside the box to find better ways of designing for cities. We have partnered with experts from the Bartlett School of the Built Environment at **University College London** and with **DXW**, a leading digital agency, to deliver this project. This project will deliver across a number of the themes from the **Government's Clean Growth Strategy** including accelerating the shift to low carbon transport, innovate for a more sustainable public sector, and address the impacts of and mitigate climate change.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SUSTAINABLE VENTURE DEVELOPMENT PARTNERS LTD	Smart Waste Infrastructure and Forecasting Telematics (SWIFT)	£57,264	£57,264

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Current methods of waste collection have remained largely unchanged for decades, whereby significant inefficiencies exist in the system, creating unnecessary air pollutants and the congestion of busy urban roads. Smart Waste Infrastructure & Forecasting Telematics (SWIFT) seeks to address these issues through the use of sensors and collection route optimisation. Retrofitting/installing the SWIFT device in bins/skips will also lead to a reduction in the incidence of litter resulting from overflowing bins/skips (improving the amenity of urban areas) and fly tipping. This project seeks to pave the way for large-scale pilot trials.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
METRION BIOSCIENCES LTD	Approaching Carbon-zero cardiac safety testing in drug development: Green Biology	£59,954	£59,954

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Metrion Biosciences ("Metrion") is a UK-based contract research organisation (CRO) specialising in a class of human proteins called ion channels. The company was formed in September 2015 and provides early stage pharmaceutical research and safety assessment services to the worldwide pharmaceutical and life sciences industry. Metrion combines intellectual understanding of the ion channel target class with depth of early stage drug discovery expertise, with a significant proportion of the drug discovery knowledge being gained successfully providing services to pharmaceutical industry clients or within the industry itself. Metrion Bioscience core product offering is centred around a technique known as electrophysiology, the assessment and quantification of small electrical currents and changes in voltage fields across the cell membranes of biological model systems and native tissues. Metrion's staff are amongst the most experienced ion channel scientists and users of automated patch clamp equipment in the world, with Metrion team members having pioneered the technique for drug discovery research during its infancy. Metrion have been working with the FDA on the CiPA initiative working party to develop a robust set of in vitro cardiac ion channel (CiPA) assays which would predict cardiac arrhythmias. Metrion will implement a "green biology" strategy for developing an in vitro safety screening service used for drug regulatory purposes. The zero-carbon approach would look at reducing direct and indirect carbon usage associated with this project, including waste (plasticware/consumables), transport, water, and energy usage (Carbon Trust's guidelines, 2020).

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SPRCOE LIMITED	Recyclate content	£51,989	£51,989

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project is a critical step for the UK who will launch a plastic packaging tax in April 2022 on all plastic packaging which does not contain at least 30% recycled content. Without this project the government (HMRC) will potentially lose out on large tax revenues from importers of plastic products who will be able to avoid the tax. This will help to ensure the tax is enforceable, ensuring that recycled content is used in plastic packaging and helping the UK deliver on the Clean Growth Strategy and Net Zero ambitions. The project will also help the UK economy recover in a post COVID world. The COVID pandemic has affected the plastic recycling industry in the UK by disrupting their supplies of material, while also closing a number of their sales channels as UK manufacturing shut down. These shut downs have provided an opportunity to change the way the industry works and bounce back in a more sustainable fashion. In order to ensure this bounce back is sustainable, this standard is required to protect the sustainable business philosophy in the UK from fraudulently declared imports from abroad, and avoid UK recyclers missing out on the potentially huge sales increases they could otherwise expect to gain.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
BEINN BIKE LTD	Providing confidence to encourage active travel through the application of AI	£59,964	£59,964

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project will produce a software product (web and mobile app) that is designed for the masses and encourages active travel. Given the impact of COVID-19 on the UK and the government's commitment to active travel, there is a need for a tool that inspires people to choose an active lifestyle. What we are developing is a product that can automatically create routes for running, cycling and walking, while providing the user with complete confidence that the route it creates is the best one for them. It does this through the application of natural language generation, meaning we can automatically describe any route we create anywhere in the World. By working with behavioural science experts, we also ensure that the route descriptions that we create are designed to maximise user confidence in the route.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
MATRIX MOULDING SYSTEMS LTD	Improving energy productivity by over 20% through retro-fit microwave selective heating for thermoplastic extrusion	£59,579	£59,579

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

In this project we will investigate and demonstrate the feasibility of a new technology for the plastics sector, which offers the potential to both halve the electricity consumption required to produce extruded plastics, whilst also doubling throughput per machine, helping to meet the Government's _Clean Growth Strategy_ targets. This project is to undertake a feasibility study in order to understand how our microwave selective heating principle used in batch processing injection moulding form (using a separate microwave heating chamber to heat each individual shot of polymer for each single moulding) could be adapted to the completely different microwave technical requirement to introduce controlled constant microwave energy exposure to a continuous feed of polymer materials within an extruder.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
INHERITING EARTH LIMITED	Capturing Micropollutants from Roadside Gullies with Intelligent Monitoring of Gully Status	£26,972	£26,972

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Matter (Inheriting Earth Limited) is a pioneering microplastic capture technology company. We will develop a robust and easily maintained 'Smart Micro-pollutant Gully Filter' that will insert into existing gullies. It will capture roadside micro-pollutants at source, create value from otherwise wasted resources through the circular economy and mitigate the risk of flooding through IoT asset management. We will accelerate development in this emerging field by combining our existing capability and patents in filtration with leading scientists and stakeholders in the drainage sector. Matter will be the first to combine and update roadside filtration and IoT asset management technologies to provide a solution that is tailored for the UK market.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SMART PORTS SYSTEMS LTD	SMAHRT - Scalable Modular Ammonia to Hydrogen Refueling Terminal	£54,342	£54,342

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The aim to reduce the carbon footprint of transport, or to at least become a carbon neutral society, is currently a main driver for introducing zero emission fuels on a wide scale (domestic, industry, power and transport) and in particular the Aviation and Marine sectors. Green Hydrogen and Green Ammonia, for which hydrogen is produced by electrolysis from renewable energy sources, can be considered to have zero carbon emission and fulfil the most ambitious environmental sustainability goals. The UN's shipping agency - International Maritime Organisation (IMO) has agreed to sector-wide targets to pursue a 70% reduction of emission intensity (from Ports and Vessels) and a 50% overall emission reduction within shipping by 2050. The UN, through the International Civil Aviation Organisation (ICAO), has similarly adopted the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). The object of the SMAHRT project (Scalable Modular Ammonia to Hydrogen Refuelling Terminals) is to design, build, install and operate the infrastructure required to refuel marine vessels and ground support vehicles at Seaports (and Airports) with compressed Green Hydrogen produced on-site from Ammonia as the liquid carrier for hydrogen transport, delivery, storage and bunkering (i.e. refuelling of vessels). SMAHRT is an integral feature of the Dock-to-Dock ("D2D") project and its "Smart-Multiport". The objective of D2D is to repurpose port infrastructures to be an essential component of future Smart Cities in their drive towards zero emissions and energy efficient, integrated and sustainable transportation solutions of which SMAHRT is essential. The innovation of SMAHRT is the development of modular, containerised, liquid ammonia cracking to hydrogen equipment with purification, compression, storage and distribution infrastructure, only seen in large scale static Ammonia plants. SMAHRT will not only sit within the seaport/airport infrastructure but will also be capable of being loaded onto the emerging new generation of electric autonomous zero emission ships (eAZE) as a compact source of continuous onboard hydrogen supply, or, when integrated with a fuel-cell, a self-contained source of electrical power for hybrid-electric vessels. The containerised SMAHRT would be periodically resupplied with liquefied ammonia, benefiting from the ease of transport and relative high density of ammonia (2x the density of liquid hydrogen).. SMAHRT will facilitate the growth of hydrogen fuel cell (H2FC) powered vessels and ground transport thus "Accelerating the shift to low carbon transport". This is an essential component for both the Maritime and Aviation sectors in meeting the zero emissions targets set by the UN.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FRAZER-NASH CONSULTANCY LIMITED	Increasing Yield From Offshore Wind Farms via Thermal Boundary Layer-Sensitive Control	£32,159	£32,159

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Wind farm control is now an established concept, and the industry is beginning to see full-scale demonstration projects and commercialisation of the R&D findings. These so far centre on yaw misalignment and induction control. An important given is that the communication and control technology exists to control wind turbines as a collective; what is lacking in going further with wind farm control is sufficient quantified understanding of the atmospheric physics drivers on wind farm performance. Recent work on Blockage Effects has advanced that understanding, and provided a suite of modelling tools for yield prediction. In particular, the role of temperature gradient in the atmosphere is much better understood. This project will explore the potential for increasing energy yield by controlling a wind farm differently, by responding to the natural variation of the thermal boundary layer. The project will make use of the very latest expertise and tools emerging from the international community's research and development investment in offshore wind. Should the performance improvement anticipated be realised in modelling, it is expected that the offshore wind owner-operator community will eagerly proceed to full scale trial on real wind farms.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Edinburgh Napier University	Homegrown Bio-Offsite Manufactured (Bio-OSM) Accelerator	£57,756	£57,756

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The UK has the renewable natural resource, internationally recognised expertise, and technical capabilities necessary to be at the forefront of a new approach to delivering a sustainable and resilient built environment in response to the COVID-19 recovery (**build back better**), the **declared climate emergency**, and **UN Sustainable Development Goals**. Managed responsibly, the renewable natural capital of the UK can underpin its prosperity and create a built environment which has a positive influence on the health and wellbeing of its occupants. This demonstration project represents the first phase of an iterative journey to market commercialisation for homegrown engineered timber products and a subsequent '[SNRG][0]' courtyard proposal. The core outputs are to design, engineer, manufacture, construct and evaluate the engineered homegrown timber elements of an individual, two storey home that directly replicates modules that will make up a completed courtyard development.

The project will harness well-established international developments in building construction technology, and align them with societal and financial shifts in UK housing design, together with the move towards offsite manufacture of buildings (demonstrated by the **UK Government's 2017 presumption in favour of offsite**), specifically focussing on housing. The UK has experienced a wide-spread market shift in the appetite for mass timber production, with no manufacturing facilities currently in existence, aside from the prototyping equipment at CSIC. Therefore, with increasing demand for the product based on benefits such as its overall life-cycle costs, reduced wastage, increased construction and delivery speed, health and wellbeing improvements and building fabric performance, there is an immediate requirement to investigate an optimal mass timber solution from a UK context. The project objective is to evidence homegrown engineered timber products for the UK market from a mechanical, engineering, productivity, and cost perspective. To rigorously interrogate the potential solution, the proposed project will be fully digitised via the creation of a **digital twin** which will capture all available information, as well as test project suitability with the supply chain and give consideration to **Design for Manufacture and Assemble (DfMA) and Disassembly (DfMA+D)** requirements. This will ensure **mass customisation and standardisation**, enable full process automation, and take cognisance of the need to design and construct for circularity and the paradigm of the **Circular Economy**. In the current COVID-19 climate, factory shift patterns can better manage social distancing, automation can reduce manual handling and personalisation can ensure continuous value add to our **renewable natural resources**.

[0]: <https://www.oursnrg.com/>

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ULTRA LIGHT RAIL PARTNERS LIMITED	Biomethane Double Bogie Design Specification	£60,000	£60,000

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Ultra Light Rail Partners (ULRP) draws on highly specialised skills and experience in ultra-light rail vehicles driven by biomethane and ultra-light rail engineering expertise to provide radical ultra low cost, low carbon transport innovations assisting the delivery of UK ambitions to shift to low carbon transport. This project, BioUltra, aims to deliver a critical investigation into developing a detailed design specification for up to 100 person biomethane-powered railcar building on the knowledge gained through the First of a Kind (FOAK) project known as STEAMUltra enabling the development of a biomethane powered 50-person railcar compressing the driveline into a rail bogie frame. This built on the Stourbridge Class 139 railcars in operation for over the past eleven years to-date, powered by propane and using a flywheel to provide a kinetic energy store. The aim is to develop through this new detailed design schematic a new larger railcar technical specification, operating on biomethane, and accommodating a larger passenger capacity of between 80-100 involving several new technical features to deliver a UK and world first, whilst also designed to meet specific customer and budget requirements. The BioUltra design will include Covid-19 resilient passenger experience (UX) features through ultra-violet lighting, copper fixtures on internal rails, internal plastic shielding and filtered external-internal airflows. The green gas biomethane, available from common waste products including sewage sludge, food, plant and organic waste, red-meat processing waste, poultry and cattle manure, although used worldwide to power all forms of transport including over 24 million road vehicles has not become widely adopted for transport in the UK. The use of a higher capacity light tram railcar in built and rural environments would significantly help to achieve the UK government's ambition of reaching a net zero emission status. Trams with steel wheels along steel rails require 85% less energy than wheels with inflated rubber tyres and deliver greater environmental benefits requiring significantly less energy and emitting no airborne particulates which have particular damaging impact on human health. Noxious gas emissions cause over 14k premature deaths across the UK with airborne particulates responsible for 37,800 premature deaths nationally.. This design and technical schematic will enable targeting UK and international markets drawing on sophisticated sales materials created. Immediately it will enable a successful pathway to the sale of two 80-100 passenger railcars for Premetro Operations Ltd (PMOL) following their expression of interest and meeting their pressing need to accommodate greater passenger capacity.

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
KORN WALL LIMITED	IsoBarrier: A sustainable, affordable transparent PPE barrier to control the spread of infection in hospitals.	£58,574	£58,574

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

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Project description - provided by applicants

Since the start of the pandemic, demand for transparent PPE barriers has dramatically increased due to them allowing hospitals to utilise bed capacity where social distancing between beds is impossible. Currently, many of the ~500,000 of NHS hospital beds only use curtains for separation, which provide little infection control as they are only disposed of every 3-6 months?long after they have become contaminated with bacteria. Furthermore, 90% of curtains used in NHS hospitals are made of disposable polypropylene, disposed of by incineration or landfill which is damaging to the environment. Therefore, a sustainable PPE partition system is required to keep NHS hospitals running efficiently as they continue to treat Covid-19 patients and to reduce transmission of all HCAs in the future. Korn has been designing and manufacturing opaque partition screens for privacy and infection control for the last 10 years, but since February 2020, 90% of hospitals have been requesting transparent versions of our screens. Our screens appeal to many NHS trusts as they are portable, flexible, easy to clean and customisable; however, the transparent Kwickscreens are currently unsustainable and inaccessible to around 50% of NHS trusts: the PVC sheeting we currently use is not eco-friendly, and they do not meet the fire retardant standards of some potential customers. They are also inaccessible to those who cannot currently afford to buy KwickScreen products in bulk to replace their entire infrastructure of curtains and tracks. Therefore, IsoBarrier aims to design solutions which will tackle these issues in two main ways. Firstly, we will find an alternative sustainable material for the screens, which is transparent, fire retardant and environmentally friendly. Secondly, we will investigate ways in which we can incorporate this material into both our current range of products, and a new significantly cheaper system which can be used alongside the existing curtains providing patient privacy. We will then look at ways to commercialise these two solutions, for all NHS hospitals and internationally.

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FOAMTECH SYSTEMS LTD	Feasibility of an Innovative Structural Foam Injection Moulding Technology using Super-Heated Water as the Foaming Agent – Foamtech	£59,761	£59,761

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

FoamTech Systems Ltd is part of The TRC group of companies which develops innovative technological solutions to 'real world' Industrial, Agriculture and Food problems using science, engineering, creativity and AI to develop these solutions. FTS has been working on the technology to replace hazardous foaming agents with a more benign substance for almost 4 years. We have tried several methods for introducing a variety of substances into the molten polymer in various ways and forms. The Foamtech process described in this proposal has shown the most promise, and we are now in a position to explore the feasibility of the process further with the view to developing it into a market ready technology. Structural thermoplastic foam-moulded parts are much lighter, with high strength-to-weight ratio than solid plastic. The automotive sector is the main driver to structural foam growth as lifetime energy & CO2 savings drive the need for lightweight components. So, there is growing demand for foam mouldings, but there is a need for good surface finish. In S-O-A, foamed parts are produced by a form of injection moulding using a chemical blowing agent or gas (HFCs, Butane, N2 or CO2). These foaming processes fail to achieve good surface finish due to low process pressure, heat absorption by blowing agent and bubbles forming at part surface, often with a characteristic swirl pattern preventing use of this technology for good quality surface finish parts. Foamtech is an innovative new process to make good quality surface finish foamed parts. Our innovative process introduces a novel substance into molten polymer to create the foamed structure by controlled expansion into a gas. Foamtech offers 50% weight saving (less polymer), 20%+ cycle time reduction (less heat to remove) & 30%+ energy savings (less heat put in) over solid parts. Foamtech aims to provide generally better finish than the S-O-A by virtue of the un-foamed skin, so this crucially would meet automotive sector needs. It is expected to offer better bubble distribution than is seen in other developments. This technology will enable UK moulders to reduce the cost of foam-moulded parts and minimize environmental impact by eliminating need for expensive, environmentally harmful blowing agents such as HFCs, CO2, N2 and hazardous Butane. These advantages will enable UK moulders to be more competitive in a post-COVID economy.

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ROBOTIZ3D LIMITED	Feasibility of an automatic road crack-filling system	£55,707	£55,707

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

Potholes have been a problem for humanity since when the Appian way was built. In the UK, Highways England and County and City Councils are relentlessly fixing almost two millions potholes each year, but this is not enough. The backlog is growing and there are more and more potholes on the roads. Despite all the effort, the traditional methods (two-man-gang) of fixing potholes cannot cope with their spiraling numbers - too expensive and too slow. A step change is needed and robotics and artificial intelligence can be the empowering tools. Robotiz3d is developing a game-changing solution that sees high-tech autonomous robots patrolling the UK roads and repairing cracks and potholes as soon as they appear. Robotiz3d is a University of Liverpool spinoff born in the Robotic lab of the School of Engineering. Robotiz3d will 1) reduce the cost of road maintenance, 2) reduce the time of repair to a fraction to the current one, 3) make the sector more resilient thanks to autonomous solutions and 4) reduce the carbon footprint of road maintenance and contribute reducing the vehicles GHG emissions by guaranteeing better road pavements. In Phase 1 Robotiz3d will complete a feasibility study and develop a lab-prototype of a small-scale autonomous platform that can: i) monitor the condition of the road surface, ii) identify and promptly repair minor defects that may evolve into larger defects, iii) flag presence of large defects that will require a road maintenance crew to be fixed. It is envisaged that Phase 2 will then transform the proof-of-concept of Phase 1 into the complete autonomous platform for road micro-repair. Robotiz3d has conducted an independent market analysis that supports its proposition and has already been contacted by a County Council that showed interest in the project.

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
AQUA POWER LTD	LOTUS Offshore Energy Storage	£59,645	£59,645

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Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

The project will investigate the techno-economic feasibility of an innovative floating offshore energy storage system known as LOTUS (Large Offshore Tensile Ultra Structure) with a view to installing a modular prototype in 2021 LOTUS is primarily formed from flexible membranes creating very large multi-cellular structures that can store energy by elevating a mass of seawater on top of a cushion of compressed air. The project is a collaboration of specialist marine engineering providers including mechanical engineering design, specialist hydrodynamic analysis services, materials specialists, and fabricators of bespoke marine components.

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Results of Competition: The Sustainable Innovation Fund: SBRI Phase 1

Competition Code: 2006_SBRI_SUSTRECOVERY

Total available funding is £10 million

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
OKULO LTD	Integration of home-monitoring of macular disease in NHS	£59,338	£59,338

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

Project description - provided by applicants

This project is to drive the development of a technological system and corresponding patient pathway to allow AI-driven home-monitoring of vision for patients who would otherwise have had to come for in-person hospital eye clinic appointments, specifically for those living with macular disease. This project will develop diagnostic biomarkers from app data and research ways to optimise their uptake in the NHS and beyond. This will increase both the environmental sustainability and the financial sustainability of the NHS. This responds to the acute COVID challenge that we now need to triage/monitor vision away from hospital clinics. The mass cancellation of in-person appointments means that our patient population face sight loss if a deterioration in their condition is not picked up early enough in time for treatment. In the project we will work closely with Nottingham hospital, City University and with charity Macular Society. The proposed project isn't just about developing connected and clever technology, but it's about co-designing with patients and their families, and doctors, nurses and hospital administration systems a brand new digital pathway of care that will revolutionise the experience of eye care for all of us when we need it.

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