

Energy Transition Success Stories



GREAT



BRITAIN & NORTHERN IRELAND



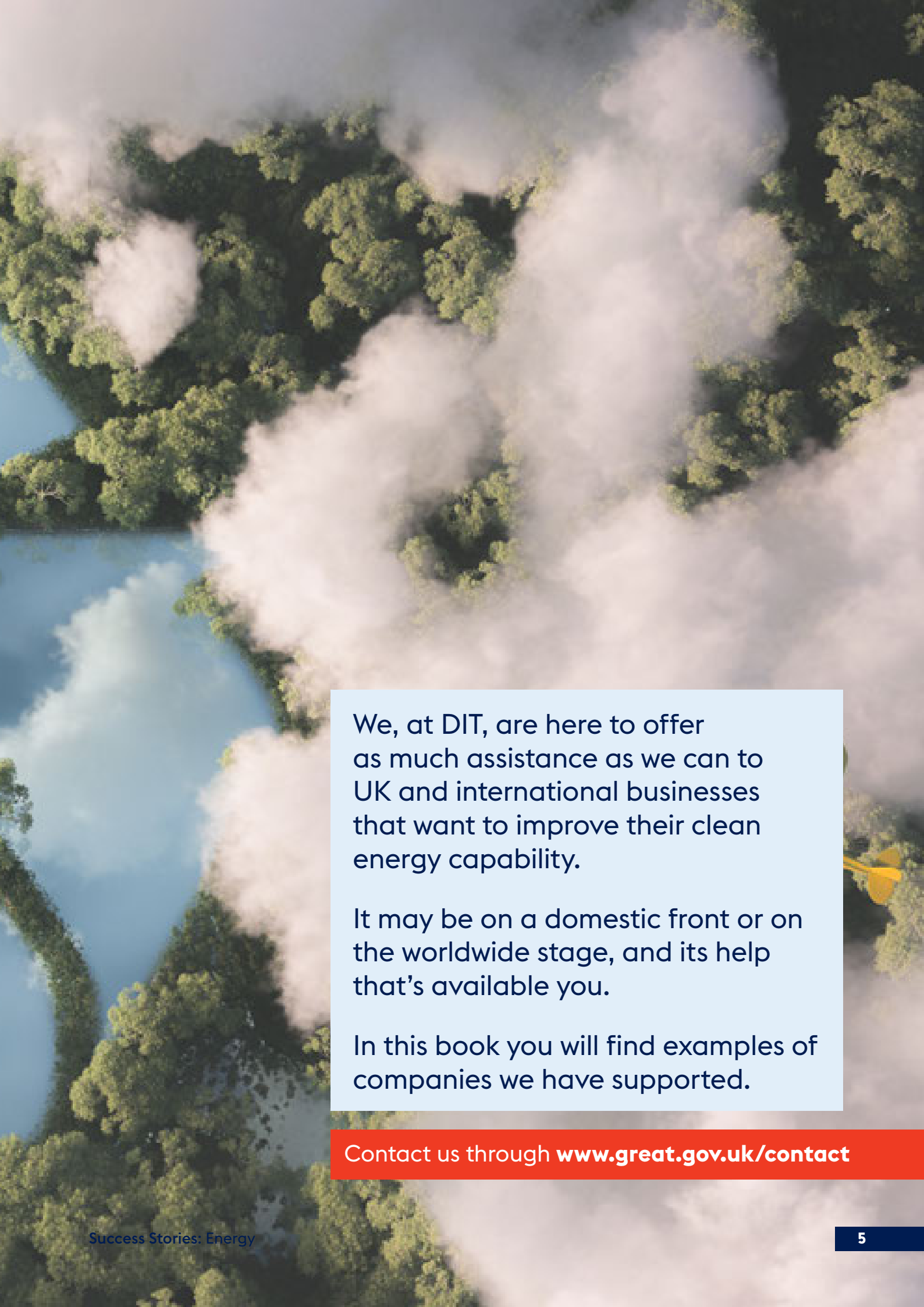


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An aerial photograph of a large, irregularly shaped green island in a blue lake. The island is covered in dense green trees. The lake's surface reflects the sky and the surrounding greenery. A dark blue banner is positioned at the top of the image, containing the word 'Introduction' in white, bold, sans-serif font.

Introduction



We, at DIT, are here to offer as much assistance as we can to UK and international businesses that want to improve their clean energy capability.

It may be on a domestic front or on the worldwide stage, and its help that's available you.

In this book you will find examples of companies we have supported.

Contact us through [**www.great.gov.uk/contact**](https://www.great.gov.uk/contact)



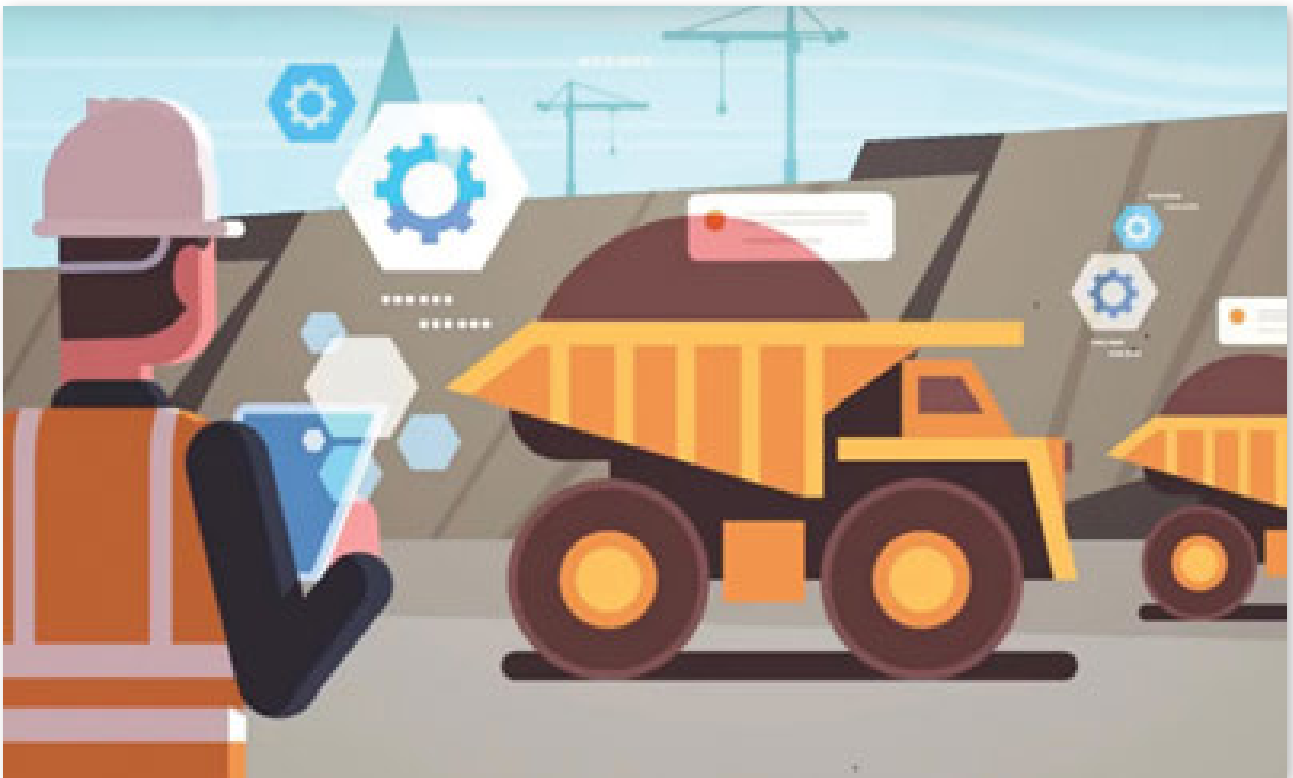
Energy Transition – Sustainable Infrastructure:

Success Story: Modern Efficient Power System for Uzbekistan

The Asian Development Bank is supporting the government of Uzbekistan in modernising their power sector.

With our help, UK consultancy **Mott MacDonald** deployed a state-of-the art simulation 20-year demand forecasting, generation and transmission planning models to enable the government and the utility company to migrate from its reliance on gas to a more diversified and renewable generation mix, while also reducing system losses.

Power shortages are now a thing of the past, and the country will be able to tap into its large renewable resource.



Energy Transition - Sustainable Mining:

Success Story: Software solution to assess the impact of a mining project throughout the whole mine life cycle

The vision of London-based **Minviro** is to ensure that the raw materials for the low-carbon economy are produced with minimal impact. The company provides Life Cycle Assessment (LCA) software tools to quickly provide accurate environmental performance data with minimal LCA knowledge or experience

MineLCA, one of their cutting edge software tools, helps the company calculate the impact of a project as early as Scoping Study stage, and measure life cycle assessment performance over the life of the project.

Similarly, their MineMetric database tool provides a range of industry environmental life cycle impact factors facing a range of the technology metals supply chains.

Tools that allow the company to compare the environmental impact of a mining operation with a range of projects around the world and thereby identify project environmental risks or competitive advantages.

They also help identify the major contributors to the climate change impact of a product, whether it is direct on-site emissions or emissions embedded in energy or reagents, and also the major contributors to drill into the different impacts for a project, indicating future impact mitigation opportunities or future impact scenarios.



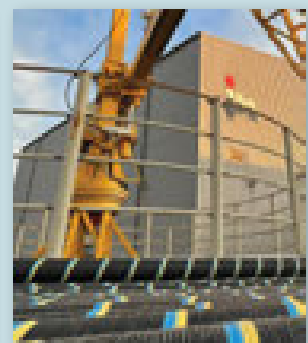
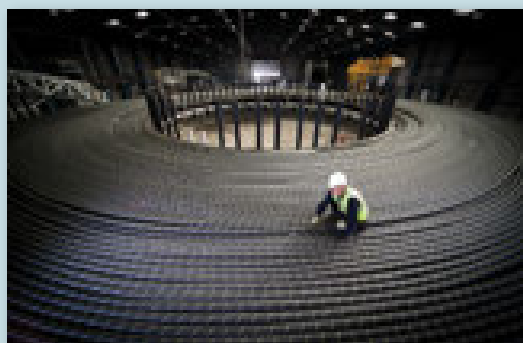
Energy Transition – Offshore Wind:

Success Story: Promoting the UK offshore wind supply chain

Hartlepool's **JDR Cables** have played a significant role in the export of inter array cabling used to connect and transport large amounts of renewable energy from offshore wind turbines to an offshore substation, before transmission back to shore.

They were contracted by Siem Offshore Contractors based in Leer, Germany to supply 97 kilometres of cables for the Veja Mate project at an approximate value of €24million. DIT has actively supported JDR in the German market and also worked closely with our colleagues in UK Export Finance, who have been able, working with the company's bank, to financially strengthen JDR by issuing guarantees for a bonding facility to support current and future projects.

The support has underpinned subsea power cable project awards to the company for a series of German wind farms, including Meerwind, Nordsee One, Veja Mate, Sandbank and Dan Tysk.



Success Stories: Energy



Energy Transition – Biofuels:

Success Story: Working to produce biofuels in India

In 2020, **Green Fuels** formed Aris Green Fuels Ltd (AGF), a majority-owned subsidiary with Aris Bioenergy, in India. The company is leveraging Aris's leadership in used cooking oil collection to refine biodiesel in a Green Fuels FuelMatic GSX20 biorefinery.

On 30 June 2021, AGF received official notification of intent to enter into an offtake agreement from Bharat Petroleum Corporation Ltd, for this and future plants, applicable to India's three state-operated Oil Marketing Companies for a period of 10 years.

Green Fuels views India, which is leading the world in incentivising biofuels production, as pivotal in its worldwide refining capacity-building programme, as it builds a business that will install 20 similar plants across India and save a million tonnes of CO₂ by 2025.

A programme that is helping the UK and India to play leading roles in combating climate change and promoting the energy transition globally.



Energy Transition – Civil Nuclear Decommissioning:

Success Story: Decommissioning the Fukushima-Daiichi power plant

The decommissioning of the Fukushima-Daiichi power plant following the 2011 incident is one of the most complex challenges facing the global nuclear industry today, but one where the capability of UK businesses is on full display.

UK support includes a strong government-to-government relationship between the UK and Japanese decommissioning authorities, and significant contributions by a wide range of UK businesses supply chain companies, from engineering consultancy service providers to SMEs with innovative technologies to meet the unique challenges at Fukushima.



MODULAR AND SCALABLE
COST-EFFECTIVE
10 TIMES SMALLER
STRAIGHTFORWARD TO INSTALL

Energy Transition – CCUS:

Success Story: Leading the way in CO2 capture

Headquartered in London, **Carbon Clean** is a global leader in cost-effective CO2 capture technology and services for industrial emitters.

UK government funding in 2012, 2016 and 2018 totalling £5 million has accelerated the commercialisation of its innovative technology currently installed at 46 installations globally.

It has recently announced it has been selected to provide the carbon capture technology to the Acorn project in Aberdeenshire – one of the most mature carbon capture and storage projects in the UK.



Energy Transition – Renewable energy:

Success Story:
helping
renewable
energy
generators in
Europe access
better export
power prices

Renewable Exchange have recently completed their first international contract with one of the largest renewable energy generators in Germany.

Connecting renewable energy generators with energy buyers, Renewable Exchange is the first British power purchase agreement (PPA) trading platform. It provides generators with the simplest way to secure new PPA contracts, helping them find route-to-market or improve export power revenue.

Having attended the DIT's Export Academy, the company was able to prepare for the opportunities and challenges of launching their product in other countries.

Looking ahead to full European roll-out in 2022, Renewable Exchange began their international expansion in Germany. The platform was used to tender a contract for a multi-turbine wind park. Going out to 20 energy buyers for multiple contract terms, Renewable Exchange helped the generator access the whole market, obtain higher value PPA for their assets and make the best decision for their business.



Energy Transition – Solar Energy:

Success Story: Decarbonisation of the solar supply chain in Malaysia

Gas Recovery and Recycle Limited, GR2L, located near Gatwick Airport, Surrey, have enabled a substantial decarbonisation of the Solar PV supply chain through the deployment of their unique argon purge gas recycle system – the ArgonØ.

GR2L have supplied 15 ArgonØ systems to Longi Green Energy at their production facility in Malaysia delivering to them the triple benefits of increased profitability, reduced carbon footprint and improved supply chain resilience. The Longi facility now operates on recycled argon reducing their carbon footprint by >3,000 Tonnes CO₂e per year.



With our help, GR2L are supplying argon recycling systems across the Far East and Northern Europe including China, Vietnam, Malaysia, Singapore, and Norway and expanding into new markets such as float glass production and the sintering of ceramics all of which use large quantities of industrial purge gases.





Energy Transition – Sustainable Energy Infrastructure:

Success Story: Major steps forward for African electricity networks and smart systems

Lucy Electric have recently helped to complete a number of key sustainability projects across Kenya, advancing the transition to greener energy infrastructure by supplying new improved power distribution for **solar and wind farms**.

New Aegis 36 RMU systems have been installed in solar farms at Daisensklip, Redsol Malaysia, Swaziland and De Wildt, supporting local sites across the region. Developed for easy installation and operation, each power distribution system also delivers improved additional safety features and performance.

What's more, Lucy Electric has created a special single panel variant which enables wind turbines to be connected to the grid, with recent projects completed at PerdeKraal East and Kangnas - major steps forward for sustainable energy in Africa.



Energy Transition – Energy Storage:

Success Story: Making the global transition to low-carbon energy

Invinity Energy Systems plc (LSE:IES) is delivering utility-grade energy storage to grid-scale and large commercial projects around the world, helping a planet-wide transition to low-carbon energy.

Invinity's safe, economical and proven vanadium flow batteries provide continuous performance for over 25 years without degradation, built in Canadian and UK factories. Today, they are used in a number of world-first projects which have accelerated the progress toward net zero.

The **Yadlamalka Energy project** in South Australia is one such project, which will see 8 MWh of Invinity batteries deployed alongside a 6 MWp solar array. Led by **Australian investor and landowner Andrew Doman**, the project is supported by the **Australian Renewable Energy Agency (ARENA)** and will create Australia's first dispatchable solar power plant, helping to reduce the country's dependency on coal-fired power.





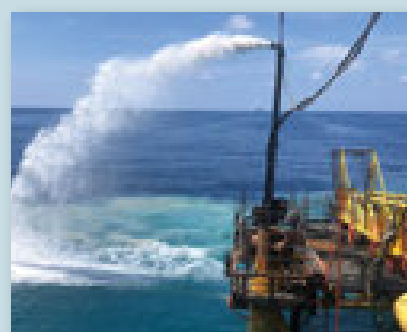
Energy Transition – Oil and Gas Decommissioning:

Success Story:
Relocating idle
oil platforms to
create space for
marine life

Sapura Energy and Chevron Thailand, with support from **James Fisher Offshore (JFO)**, are proud to initiate the 'Rigs to Reef' project, relocating idle platforms to create artificial reefs and create valuable habitats for marine life.

Operating in the Gulf of Thailand, seven platforms and associated pipelines were removed, with the project reaching completion three weeks ahead of schedule. The project's key priorities were safety and the protection of marine resources, in accordance with all national and international regulations.

With the new reef sites now ready, **Chevron Thailand** in collaboration with **Chula Unisearch** will study and track progress over the next two years, to recognise the benefits of this new artificial reef.





Energy Transition – Hydrogen:

Success Story: Deploying PEM technology on an industrial scale

ITM Power are supplying the polymer electrolyte membrane electrolyser (PEM) for the REFHYNE project at the Shell Rhineland Refinery in Wesseling, Germany.

The electrolyser will be the largest of its kind to be deployed on a large industrial scale. The project will investigate feasibility for the introduction of PEM technology in other industry plants, as well as potentially being a step towards the future of refining and determine the possible technical, economic and environmental benefits of the technology.

The REFHYNE project is funded by the European Commission's Fuel Cells and Hydrogen Joint Undertaking.





Energy Transition – Solar Power:

Success Story: Darlington Point goes solar powered

In August 2020, **Octopus Renewables** from the UK completed construction of the 333 MW Darlington Point solar farm in New South Wales, Australia.

This plant has nearly 1 million panels, is surrounded by a 19km perimeter fence and covers the equivalent area of much of Central London.

The farm, constructed without any subsidy, will provide power to 115,000 homes (representing 5% of homes in New South Wales). The local community provided accommodation, traineeships and COVID-19 care to the 500 construction workers – 26% of whom were women.

There was not a single objection to the planning approach, which is rare for such a renewables project in Australia.



Offshore Wind - UKEF:

Success Story: Green finance, bank lending case study and offshore wind

UK Export Finance is supporting the development of the Formosa 2 offshore wind project in Taiwan. It is one of two 'fast track' projects approved by the Taiwanese government, with the power to be sold under a 20-year PPA to Taipower. The project will utilise 47 market-leading 8 MW turbines to produce 376 MW, the equivalent of powering up to 380,000 Taiwanese homes.

UK Export Finance provided a £230m guarantee to support its construction, securing export opportunities for UK companies. The project financing won several awards, including the Asia Green Project of the Year 2020.



Energy Transition – Green Finance:

Success Story: Green finance for biogas and energy networks

Barclays Bank has provided a green loan to Wyke Farms, Britain's largest cheese maker, based in Somerset and selling in over 160 countries worldwide.

Wyke Farms built a biogas plant to recycle farm and dairy waste to generate green electricity. When operating at full capacity, it contributes to the national grid – 73 million kW/h produced per year, enough to power around 6,00 homes – selling at a fixed price contract to Ofgem.

Barclays put in place a Green Trade Loan facility to support Wyke's working capital requirement by bridging the outstanding monies due from Ofgem.



Department for International Trade

The UK's Department for International Trade (DIT) has overall responsibility for promoting UK trade across the world and attracting foreign investment to our economy. We are a specialised government department with responsibility for negotiating international trade policy, supporting business, as well as delivering an outward looking trade diplomacy strategy.

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