

Quiet aircraft may be the start of a boom in supersonic travel



READY FOR A RETURN OF SUPERSONIC









LISTED: THE GREATEST TRANSPORT INNOVATION OF THE LAST 90 YEARS

TOP AWARDS FOR BENTLEY MOTORS

ALL YOUR LATEST MANUFACTURING NEWS AND FEATURES





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Sheffield Forgemasters makes global leap in nuclear welding technology

ompletion of the first full-sized Small Modular Reactor (SMR) nuclear vessel demonstrator assembly at Sheffield Forgemasters has signalled a global leap in welding technology. The company has pioneered the industrialisation of Local Electron-Beam Welding (LEBW), and complete weld-assembly of the vessel marks a pivotal moment in welding development, taking less than 24 hours to complete four, thick, nuclear-grade welds, typically requiring a year of work to complete.

With a diameter of three meters and a wall thickness of 200mm, the construction of the vessel showcases the reliability and capabilities of (LEBW), setting a dramatic new standard for weld-joining thick-walled components, previously unrivalled in a demonstrator model.

Professor Jesus Talamantes-Silva, Research, Design and Technology Director at Sheffield Forgemasters, said: "We are delighted to have reached a significant milestone in assembling a nuclear vessel demonstrator, using electron beam welding for the first time at this scale, with 100 per cent success and no defects." Our RD&T team deployed specially developed parameters, meticulously finetuned during the welding development stage, including innovative sloping-in and sloping-out techniques to start and finish the weld, ensuring a clean and complete weld join.

Sheffield Forgemasters is the only company in the UK with the capability to manufacture the large forgings required for SMRs, and it now has years of developmental lead on global competitors in welding thick-walled assemblies. Dr Michael Blackmore, Senior Development Engineer and Project lead said: "The implication of this technology within the nuclear industry is monumental, potentially taking high-cost welding processes out of the equation. "Not only does this reduce the need for weld-inspections, because the weld-

join replicates the parent material, but

it could also dramatically speed up the roll-out of SMR reactors across the UK and beyond, that's how disruptive the LEBW breakthrough is."

The demonstration of LEBW technology's potential opens new horizons for more efficient, low cost and less time-heavy nuclear assemblies and also has farreaching implications for other projects which require thick-walled welded

Dr Jacob Pope, Development Engineer and LEBW machine tool installation lead added: "We thank the Government's Department for Energy Security and Net Zero for enabling the project through its Nuclear Innovation Program. We also thank our esteemed partner, Cambridge Vacuum Engineering, for their invaluable support throughout this endeavour. Their remote and on-site assistance played an instrumental role in the success of this milestone, highlighting the collaborative spirit that drives us forward."









Bentley motors awarded top employer status

entley Motors has achieved recognition as a UK Top Employer by the internationally-acclaimed Top Employers Institute. Bentley is the sole UK car manufacturer to be included in the celebrated list and this year marks the 13th consecutive year Bentley has been included.

The luxury marque's approach to employee wellbeing, values, ethics and integrity was commended by the Institute, alongside Bentley's focus on sustainability, digitalisation and diversity and inclusion. The award is based upon a comprehensive review of the business which highlighted Bentley's innovative and compelling approach to its employees' own 'Extraordinary Journeys', as well as Bentley's own progressive strategic ambitions for the future.

Commenting on the achievement, Dr Karen Lange, Member of the Board for Human Resources, said: "Our colleagues are the true heart of the business and our successes are down to their unwavering dedication, determination and diversity. We are proud to be classed as a Top Employer and will always strive to not only value, but celebrate each perspective and contribution, propelling us forward as a dynamic and inclusive team.

"We have ambitious targets for the future and these will only be realised if we focus on collaboration and developing our extraordinary skills together, to drive change and get the very best out of how we work as we aim for sustainable luxury leadership in the future."

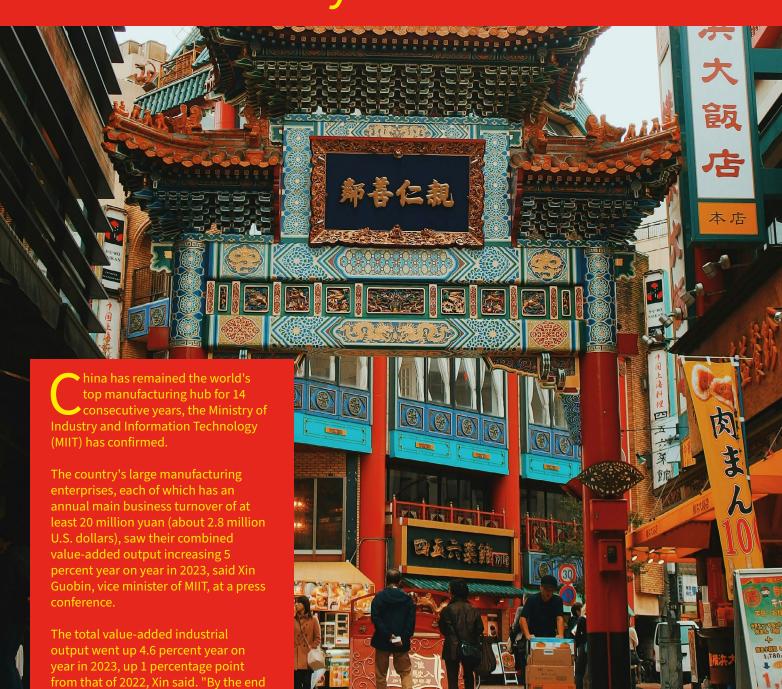
- Dr Karen Lange

The annual international research - undertaken by the Top Employers Institute - recognises leading employers around the world that provide excellent working conditions, make every effort to continuously enhance recruitment processes and nurture and develop talent throughout all levels of the business.

As part of its Beyond100 strategy, Bentley places a strong emphasis on becoming an employer of choice. The luxury British marque aims to become a leader in sustainable luxury mobility through achieving end-to-end carbon neutral status and creating battery-electric only cars by 2030.



China leads global manufacturing sector for 14 consecutive years



of November last year, the number of large industrial enterprises reached 483,000, up 32,000 from that at the

end of 2022.'







More support for industry to cut emissions and energy bills

multi-million-pound package will help businesses across the UK to cut their emissions and energy bills.

Minister for Energy Efficiency and Green Finance Lord Callanan announced
12 winners from the Local Industrial Decarbonisation Plan competition, who will each benefit from a share of up to £6 million to develop plans for a low carbon future.

This funding will give winning businesses and partners the chance to work together on plans to cut their emissions, learning from each other while also having access to technical advisors to prepare for adopting measures such as using hydrogen or carbon capture.

In particular, this will be targeted at projects outside of the UK's major industrial areas – from a Yorkshire pet food manufacturer to a Poole ferry operator. Companies in dispersed locations away from industrial heartlands account for 55% of the country's industrial emissions.

He also shared plans to open a new phase of the Industrial Energy Transformation Fund for a further £185 million, which will help companies transform their operations to run on cleaner, more secure energy – backing measures such as replacing inefficient equipment, installing electric furnaces and switching to hydrogen. The funding is ensuring businesses are supported in the transition to net zero, in a sustainable way and cost-effective way, securing green industrial jobs for the future.

Sectors including manufacturing and recycling – and for the first time controlled environment horticulture, industrial laundries and textile renting facilities – will be among those eligible for apply for this new support, as part of wider government efforts to meet the UK's net zero targets. Minister for Energy Efficiency and Green Finance Lord Callanan said: "From manufacturing chemicals to food and drink, UK industry is at the heart of our economy.

"With over £190 million available for businesses to make the move to cleaner, cheaper energy – and with 12 projects benefiting directly today – we are delivering the support they need to decarbonise.

"I look forward to seeing the plans developed by the successful clusters and encourage other businesses to apply to our Industrial Energy Transformation Fund, which has already made awards to over 150 projects to help companies go green."

- Minister for Energy Efficiency and Green Finance Lord Callanan

Winners include:

- Shoreham Port Industrial Cluster, an established cluster with 175 businesses based on the 110-acre site, which will explore ways to reduce emissions and improve local air quality by working with local councils
- Industrial Decarbonisation for Northern Ireland (ID-NI), which will develop plans to help local businesses increase their productivity while also cutting emissions, embracing the opportunities that a low carbon future will offer
- Decarbonising the Midlands Aerospace Cluster (DMAC), who will work with key players in the region's aerospace supply chain, identifying manufacturing processes that contribute to greenhouse gas emissions and potential solutions

The Industrial Energy Transformation Fund will also offer support for businesses to switch to more energy efficient technologies through a new phase.

Previous winners have included:

- Pioneer Foods in Peterborough a leading cereal manufacturer, to improve the energy efficiency of their 3 industrial ovens by replacing burners, minimising heat loss and installing new motors
- Cemineral in Lincolnshire a supplier of cement products for housing and infrastructure, to convert its conveyance and processing systems to electric power, helping to reduce their carbon emissions
- Natural World Products in Dunmurry
 a producer of peat-free composts and soil conditioners, to replace dieselpowered equipment with electric equivalents.

These announcements are part of the government's commitment to spend more than £12 billion on energy efficiency by 2028, helping more households and businesses to benefit from lower bills and cleaner energy.









JCB hydrogen machine makes trade show debut in India

CB recently unveiled its pioneering hydrogen combustion technology at EXCON, India's premier construction equipment trade show taking place in Bengaluru.

In its first-ever trade show appearance anywhere in the world, the JCB hydrogenpowered backhoe loader prototype, part of a £100 million investment, was unveiled alongside JCB's unique hydrogen combustion engine. Speaking at EXCON, JCB India's CEO and Managing Director, Deepak Shetty said: "It is fitting that this 3DX backhoe loader, powered by a hydrogen combustion engine, is being unveiled in India just as COP28 draws to a close in Dubai. As the world has been assessing its collective progress towards achieving its climate goals, JCB is showing it has a practical and affordable technology in place to decarbonise construction, both in India and across the world."

India's concerted efforts towards making hydrogen a zero-carbon fuel of the future is creating the conditions for a hydrogen ecosystem through the National Hydrogen Mission. In advance of the EXCON exhibition, JCB Chairman Lord Bamford said:

"India has a real opportunity to put hydrogen at the very centre of its net zero future – it is a clean zero carbon fuel which can be produced from renewable energy."

> - CB Chairman Lord Bamford

India is endowed with sun and water resources, the two key elements required for producing hydrogen. It is a fuel that allows for fast refuelling and is a mobile fuel solution, in that fuel can be taken to the machine. Our machines work long hours, particularly in India, so minimising downtime to recharge or refuel is essential. Hydrogen is a perfect solution for India, particularly for the earthmoving sector."

"Fossil fuels are not the future. Developed from first principles, the JCB hydrogen engine has been designed to optimise the combustion of hydrogen, so that it can deliver the same power, the same torque, and the same efficiency that powers JCB machines today, but in a zero-carbon way." Prototype JCB hydrogen engines are already powering backhoe loader and Loadall telescopic handler machines under test conditions in the UK.

Government sends mixed message to global life science investors

he government has published new terms for the Statutory Scheme for branded medicines, maintaining sales rebates at levels which have damaged the UK's international standing with global life science companies ascepording to the Association of the British Pharmaceutical Industry (ABPI).

The announcement follows the agreement in mid-November of a new Voluntary Scheme for Pricing, Access and Growth (VPAG), a negotiated alternative scheme which companies can opt into over the Statutory Scheme.

Under the new Statutory Scheme, companies will pay a rebate on the sales of branded medicines to the NHS of 21.9% in 2024, 24.0% in 2025 and 26.8% in 2026.

While the published rates are down on the record 27.5% rebate in 2023, they remain well above the historical average of 10.6% before this year.

The UK's statutory rebate rate is significantly higher than other similar mechanisms operated by other countries - for example, 12 per cent in Germany (and under review for future years), 7.5 per cent in Spain and 8.25 per cent in Ireland.

Despite unprecedented levels of objections to the consultation, with an overwhelming majority of the 97 responses rejecting the plans, the government has largely decided to press ahead with plans industry leaders have warned are likely to be highly damaging to UK life sciences and NHS patients' access to medicines.

However, the government has decided not to implement one of the most controversial

proposals in the Statutory Scheme, the 'Life Cycle Adjustment,' which was widely seen by industry as unworkable and likely to result in low-margin branded medicines being withdrawn from the UK market.

Instead, the government will consult again to ensure arrangements for 'younger' and 'older' medicines in the Statutory Scheme more closely align to the newly agreed Voluntary Scheme, maintaining broad commercial equivalence between the two. Richard Torbett, Chief Executive of the ABPI said: "This announcement sends a very confusing message to global life science investors. The new Voluntary Scheme agreement shows that the government realises that capping the

UK medicines market below its natural growth is unsustainable – yet this Statutory Scheme continues to do so, resulting in damaging headline rebate rates which undermine the UK in the eyes of investors. The government has consistently said it wants to support the international competitiveness of UK-based life sciences. To really make a difference, they should use next year's consultation to unlock the constraints on growth which are impeding inward investment."

Manufacturers of branded medicines are required to join either the Voluntary Scheme or else be in the Statutory Scheme, and must have chosen which to be a member of for the following year before the end of December 2023.









Nissan EV Among World's Great Transport Innovations Of The Last 90 Years

he world's first mass-market electric vehicle has secured its place among some of the world's greatest transport innovations according to a survey conducted by Nissan to mark its 90th birthday.

Since the company was founded, on 26th December 1933, Nissan has established a storied history of pioneering electric vehicles, legendary performance cars and revolutionary crossovers that demonstrate its own daring spirit of innovation over the last nine decades.

From the 1947 Tama electric vehicle, via the LEAF – the world's first mass-market EV in 2010 – to recently revealed future EV concepts like the Hyper Punk and Hyper Urban, the company strives to enrich people's lives with thrilling journeys and pioneering technology that help to create a cleaner, safer and more inclusive world. To mark its 90 years of automotive success, Nissan commissioned a OnePoll survey of 2,000 UK adults to find out people's opinions on a list of other significant transport innovations of the last 90

years – with the opening of the Channel Tunnel, Concorde's first flight and the invention of satnav coming out on top. The electrification of the London Underground, the first modern hovercraft and the first zebra crossing also ranked in the top 30. Looking to the future, the study showed that 69 per cent think that new technologies will play a big part in reducing the environmental impact of transportation in this country.

The survey also revealed that 27 per cent are in favour of introducing artificial intelligence into the car industry, while 29 per cent hold the same views for public transport.

With artificial intelligence (AI) becoming increasingly commonplace in day-to-day life, Nissan has utilised the technology to bring its 90-year heritage to life by imagining transport scenes that compare the Tama, its first ever electric car in 1947, to the modern-day Ariya EV.

The Nissan LEAF featured at number 19 on the list, while EVs specifically were voted as the innovation that holds the most promise

for the future of UK sustainability.
A third of those polled also believe the motor industry has undergone the most exciting changes over the past nine decades - compared to aviation, rail, and cycling.

More sustainable road travel (38 per cent), scientific advancement (16 per cent), and employment opportunities (11 per cent) were also seen as the biggest opportunities within the EV industry.

Seventy percent of those surveyed believe transport innovations have had a positive impact on their own lives, and 54 per cent claim it has made travelling easier for them.

Almost three quarters (71 per cent) agree it has improved their ability to travel and commute up and down the country, and staying connected with family and friends has become easier for 30 per cent.

What's more, 41 per cent of those polled have been able to save time on their journeys, and 43 per cent are able to travel to longer distance locations thanks to the various innovations

- 1. 1976 Concorde makes first passenger-carrying supersonic flight
- 2. 1957 First flight of a commercial jet airliner
- 3. 1994 The opening of the channel tunnel
- 4. 1958 First commercial jet airliner
- 5. 1981 Maiden flight of the space shuttle
- 6. 1960 Launch of the first Sat Nav
- 7. 1951 Creation of power steering
- 8. 1988 First airbag
- 9. 1934 Introduction of the Driving Test
- 10. 1955 Creation of the Hovercraft
- 11. 1959 The first three-point seat belt
- 12. 2022 First zero-emissions electric flight takes place
- 13. 1939 First practical helicopter built
- 14. 1949 First zebra crossing
- 15. 1971 The Lunar Roving vehicle is used on the moon
- 16. 1964 Launch of the Bullet Train
- 17. 1939 Creation of automatic transmission
- 18. 1967 Automatic Train Operation: London Underground
- 19. 2010 Launch of the world's first mass-produced electric car
- 20. 1984 Driverless Cars
- 21. 1953 First air conditioning in a car
- 22. 2022 First railway line run by hydrogen-powered trains
- 23. 1971 ABS technology first used on a car
- 24. 1940 First electric bus delivered
- 25. 2003 First automatic parking
- 26. 2016 First hydrogen-powered flight
- 27. 1984 First car with a CD player
- 28. 2001 First hands-free Bluetooth kit
- 29. 2018 First driverless trams tested
- 30. 1958 Creation of cruise control







ritain's drivers cemented their preference for monochrome cars as grey topped the new car colour chart for the sixth year in a row, according to the latest figures published by the Society of Motor Manufacturers and Traders (SMMT). Boasting a market share of more than a quarter (26.8%), more than half a million (509,194) grey cars were registered in 2023, with volumes rising 22.6% as the new car market enjoyed its best year since the pandemic.

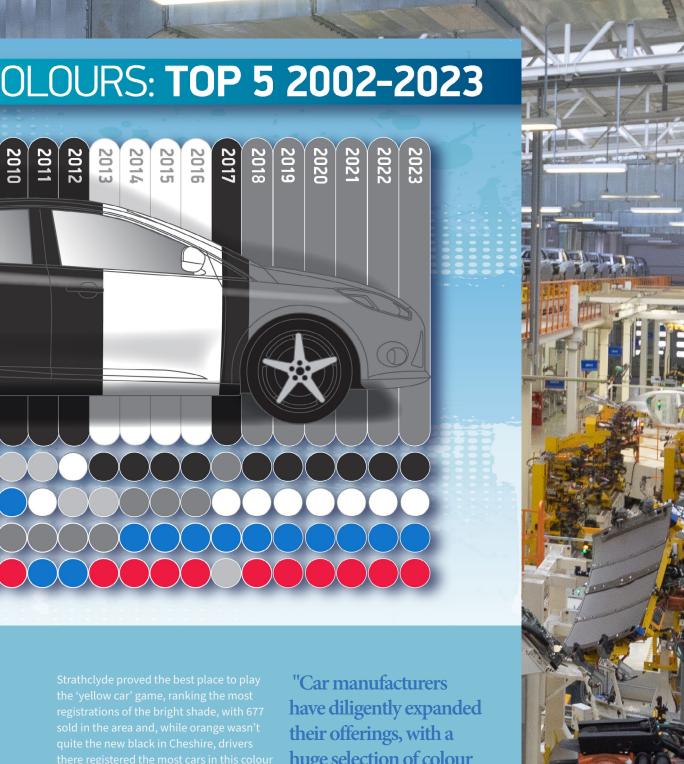
Completing the podium, black and white held second and third place, also for the sixth consecutive year, and recorded their best volumes since 2019. Almost two thirds (63.5%) of all new cars joining UK roads in 2023 were decked in monochrome, while blue rose 10.9% to take fourth place and red remained in fifth – although it also recorded its lowest market share since 2005 and has seen its popularity steadily decline since 2019.

While Britain clearly has a preference for monochrome cars, drivers determined to stamp their style on their motor were able to choose from a variety of colour variations, with maroon, pink and cream remaining at the niche end of the colour palette – comprising just 604 registrations combined. Orange, bronze, turquoise and brown fell in popularity compared with 2023 volumes. Green, however, experienced a comeback, reaching its highest volume since 2005 at 53,426 units and a market share of 2.8%, the highest since 2004. While the colour may have environmentally friendly associations, 'zero emission cars' reaching Britain's roads in record numbers last year followed the same grey colour trend as their internal combustion engine counterparts.

Grey also remained the most popular choice across the majority of segments, including the three bestsellers – supermini, dual purpose and lower medium. Three

segments went against the grain, with black the favoured shade among executive cars and luxury saloons, and white appearing as the top choice for the multipurpose segment. Fleets, which drove investment in the new car market in 2023, also favoured monochrome, with grey making up more than a quarter (26.9%) of all registrations. Private sales saw more variation, brightening up roads as they were marginally more likely to opt for a green or yellow tint over fleets, with 29,919 and 6.964 units registered respectively.

The British regions were unanimous in preference for grey, with white ranking as the second most popular in the Channel Islands, Northern Ireland and Scotland. Black was the second most popular in England, Wales and the Isle of Man.



Strathclyde proved the best place to play the 'yellow car' game, ranking the most registrations of the bright shade, with 677 sold in the area and, while orange wasn't quite the new black in Cheshire, drivers there registered the most cars in this colour of any county, at 1,140 units.6 Berkshire was home to more than one in 10 of pink cars registered (22 units) and was also the top spot for red motors at 8,034 units. Drivers in Greater London snapped up more green cars than any other county (3,650).

SMMT Chief Executive, Mike Hawes, said: "2023 was a bumper year for the British new car market, as buyers continued to gravitate towards familiar monochrome hues for another year – even as ever more motorists embrace new technologies.

"Car manufacturers have diligently expanded their offerings, with a huge selection of colour options available across hundreds of models and thousands of specification options. The extensive variety allows drivers flexibility in choosing a tint that embodies their individuality and style."

- SMMT Chief Executive, Mike Hawes







THE NEW FRONTIER: RIDING THE WAVE OF SME SUCCESSION M&A

n an era characterised by seismic shifts in the global economic landscape, a remarkable phenomenon is unfolding, one that heralds the largest generational wealth transfer in history. As the sun sets on the careers of the baby-boomer generation, a new dawn beckons for the young, ambitious and visionary. At the heart of this transition lies the vibrant domain of Small and Medium-sized Enterprises (SMEs), where opportunity knocks louder than ever before.

A HISTORIC TRANSFER AWAITS

Picture this: over 75,000 companies in the UK alone, each a testament to the entrepreneurial spirit, boasting revenues north of £1,000,000. Their architects? A generation of business owners now on the cusp of retirement. But this isn't a narrative confined to the British Isles. From the fjords of the Nordics to the vibrant markets of the USA, and the bustling economic landscapes of Germany and Australia, this trend paints a global canvas. The baton is poised for passing, but the question looms - who will take the helm?

AN UNPREPARED LEGACY

A startling revelation by Wilmington Trust of industry lack a clear succession plan. sheds light on a critical gap - almost The foundation of their life's work, their companies, remain without a formal valuation, an oversight that could lead to untold losses in potential and opportunity.



Enter the bold and the brave, fuelled by the pioneering ethos of "Entrepreneurship Through Acquisition," a movement birthed in the hallowed halls of Harvard Business School. This burgeoning wave of entrepreneurs sees not just companies, but legacies ready for a new chapter. They recognize the inherent value in established enterprises, where profitability, not just potential, shapes valuation. It's a shift from the ground-up approach, moving away from the venture capital frenzy to a

more measured, value-driven investment in proven entities.



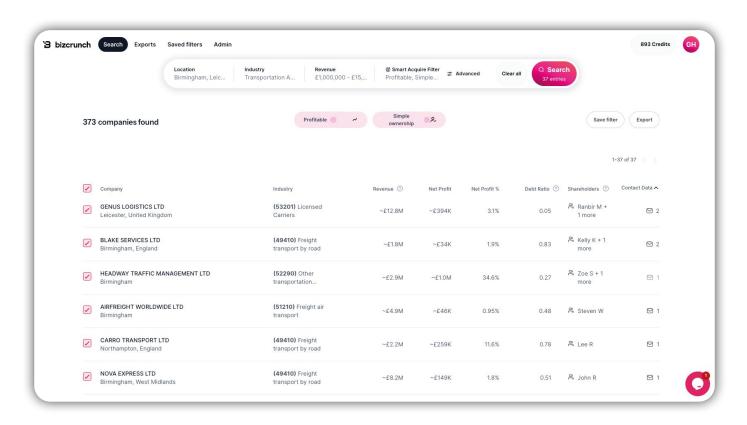
THE MISMATCHED MARKETPLACE

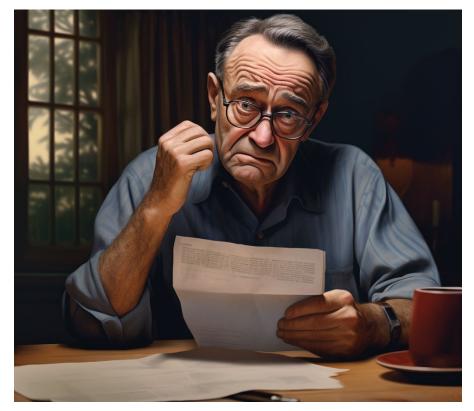
Yet, the journey is fraught with hurdles. According to insights from BizBuySell, a staggering 80% of businesses listed for sale find no buyer, a testament to the chasm between seller expectations and market realities. Often, inflated valuations, spurred by overzealous brokers, derail potential deals, leaving businesses in

BizCrunch: THE BEACON FOR ASPIRING ACQUIRERS

In this landscape of untapped potential and navigational challenges, BizCrunch. co emerges as a lighthouse for the intrepid acquirer. With its vast repository of data on millions of companies, BizCrunch







illuminates the path to off-market deal discovery. Beyond mere numbers, it offers a window into the soul of businesses – their revenue, profitability, and the very essence of their operations. This isn't just data; it's a bridge to direct engagement with the stewards of these enterprises, providing a foundation for meaningful

conversations and – hopefully – ultimately to more successful acquisitions.

BizCrunch.co is more than a tool; it's a catalyst for transformation. In a world where speed and precision are paramount, it offers a fast, affordable gateway to a realm of possibilities. For those poised

to expand their horizons through M&A, BizCrunch is a vital partner in the quest for growth.

THE CALL TO ACTION: SEIZE THE MOMENT

As we stand on the brink of this unprecedented transfer of wealth and opportunity, the call to action is clear. For the business owners and entrepreneurs who envision a future defined by growth and legacy-building, the time is now. The journey begins at **BizCrunch.co**, where aspiring acquirers can get started right now, with a free search and export of companies that meet their target criteria.

Embark on this adventure, armed with the insights and connections that BizCrunch offers. In this important era of transition, you can be the architect of your future, shaping the growth and direction of businesses through strategic acquisitions. The landscape is ripe with potential, for those ready to carve their path towards entrepreneurial success.

Welcome to this new frontier - your journey begins now. Use code biz4Biz to save 10% on any subscription at BizCrunch.co









NOVEMBER 2023

NEW CVs MANUFACTURING

TOTAL: 13,253 16.8%

YEAR-ON-YEAR CHANG





3,802

9,451



13.4%



18.3%



Best November for commercial vehicle production since 2007

K commercial vehicle (CV) production grew again in November, according to the figures published by the Society of Motor Manufacturers and Traders (SMMT). Factories produced 13,253 vans, buses, trucks, coaches and taxis, up 16.8% on the year before, in the best November performance since 2007 and representing the ninth month of growth in 2023.1

The November total is 51.1% up on 2019's pre-pandemic level with output responding to demand from export markets, up 18.3% to 9,451 units with 71.3% of output shipped abroad.2 The EU again retained its status as the most important overseas market for UK CV exports, taking 96.3% of all vehicles leaving Britain. Orders for UK buyers, meanwhile, also rose, by 13.4% to 3,802 units. As a result, British CV production year-to-date is up 15.5% to 111,863 units, the best for the January-November period since 2010, in part due to new production facilities coming on stream and the ability of manufacturers to put supply chain challenges behind them. Strong demand from overseas markets means exports are

up 21.0% to 71,679 units while production for domestic buyers has risen by a more modest 6.8% to 40,184 units pushing overall production more than 10,000 units up on full year 2022 with December's figures still to come. Mike Hawes, SMMT Chief Executive, said:

"UK CV production is on track to record its best year in more than a decade, testament to the competitiveness of automotive manufacturing in this country."

> - Mike Hawes, SMMT Chief Executive

Fresh investment to make the latest, zero emission vans here has helped boost volumes of vehicles that are increasingly

CV MANUFAC

	Nov-22	:	N
Total	11,343		
Home	3,353		
Export	7,990		
% export	70.4%	:	Į.

in demand from fleet operators across Europe. The industry can look forward with renewed optimism, especially with a deal to extend the current EU-UK trade rules for EVs and batteries now agreed."

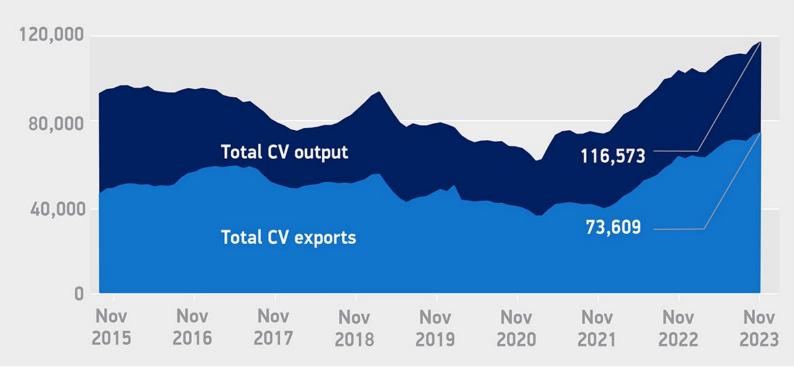
1: 22,028 CVs made in the UK November 2007

2: 8,768 CVs made in the UK November 2019

3: 114,337 CVs made in the UK Jan-Nov 2010

4: Full year 2022 – 101,600 CVs made in the UK

CV OUTPUT - ROLLING YEAR TOTALS 2015-2023



TURING

ov-23	% change	YTD-22	YTD-23	% change
3,253	16.8%	96,890	111,863	15.5%
,802	13.4%	37,629	40,184	6.8%
,451	18.3%	59,261	71,679	21.0%
1.3%		61.2%	64.1%	









Tata Steel announces loss of 2,800 jobs as furnaces are closed in 'transformation'





ata Steel announced earlier this year it will commence statutory consultation as part of its plan to transform and restructure its UK business.

Up to 2,800 employees are expected to be potentially affected, out of which around 2,500 roles would be impacted in the next 18 months with the closure of both blasts furnaces at Port Talbot.

Tata say the plan is intended to reverse more than a decade of losses and transition from the legacy blast furnaces to a more sustainable, green steel business. The transformation would secure most of Tata Steel UK's existing product capability and maintain the country's self-sufficiency in steelmaking, while also reducing Tata Steel UK's CO2 emissions by 5 million tonnes per year and overall UK country emissions by about 1.5%.

Port Talbot's two high-emission blast furnaces and coke ovens will close in a phased manner with the first blast furnace closing around mid-2024 and the remaining heavy end assets would wind down during the second half of 2024. The proposal also includes a wider restructuring of other locations and functions across the company, including the intended closure of the Continuous Annealing Processing Line (CAPL) in March 2025.

Tata Steel has agreed that it would continue to operate the hot strip mill through the proposed transition period and in future. In addition, the downstream and steel processing centres would continue to serve customers by utilising imported semi-finished steel from Tata Steel plants in the Netherlands and India as well as other select strategic suppliers The proposal is supported by the UK Government, which has committed up to £500 million to enable the transformation. Tata Steel plans to invest £750 million in the project, alongside funding for a comprehensive support package for affected employees, business restructuring and transition costs as part of its long-term commitment to UK production. In discussions with the UK Steel Committee, Tata Steel has agreed to revise its proposal and would continue to operate the Port Talbot hot strip mill throughout the transition period and in future. It has

also carefully considered the committee's endorsed proposal for partial continuity of blast furnace steelmaking assets until Electric Arc Furnace facilities are commissioned in Port Talbot.

As part of the review of the endorsed proposals, Tata Steel commissioned independent engineering studies and analysis of alternative-scenarios which concluded that continued blast furnace production while constructing the new Electric Arc Furnace is not feasible due to the following:

- The projected operating costs of such a configuration are financially unaffordable
- Building the Electric Arc Furnace in an already operating steel melt shop would be fraught with risk, significantly increasing costs, creating a sub-optimal plant layout, delaying implementation of the plan and jeopardising the proposed business transformation programme
- The near end-of-life condition and deteriorating operating performance of several heavy end assets in Port Talbot

T V Narendran, Tata Steel's Chief Executive Officer and Managing Director, said: "The course we are putting forward is difficult, but we believe it is the right one. Having invested almost £5 billion¹ in the UK business since 2007, we must transform at pace to build a sustainable business in the UK for the long-term. Our ambitious plan includes the largest capital expenditure in UK steel production in more than a decade, guaranteeing long-term, high-quality steel production in the UK and transforming the Port Talbot facility into one of Europe's premier centres for green steelmaking. "We recognise this proposed restructuring would have a major impact on the individuals and communities concerned, whom we will support with dignity and respect. In consultation with our union partners, Tata Steel will offer a comprehensive support package to mitigate the impact of any anticipated job losses, including helping employees to retrain and find new jobs.

"We will continue our work with the UK and Welsh governments, trade unions and the community to help those who may be affected through the proposed transition."









Commission approves €902m for German battery plant

The European Commission has approved a €902 million German measure to support Northvolt in the construction of a plant for the production of batteries for electric vehicles to foster the transition towards a net-zero economy, in line with the Green Deal Industrial Plan. The aid was approved under the State aid Temporary Crisis and Transition Framework, to support measures in sectors which are key to accelerate the green transition and reduce fuel dependencies.

Germany notified to the Commission, under the Temporary Crisis and Transition Framework, a € 902 million measure to support Northvolt in the construction of a production plant for advanced and high-efficiency electric vehicle batteries in the city of Heide. The plant will have an annual capacity of 60 GWh. This translates to 800,000 to 1 million electric vehicles per year, depending on the size of the battery. The plant will start producing in 2026 and will reach full production capacity in 2029. Under the measure, the aid will take the form of a €700 million direct grant and a €202 million guarantee. Without the aid, Northvolt would establish the plant in the United States, where support was offered in particular under the Inflation Reduction Act. The Commission found that the German measure is in line with Article 107(3)(c) TFEU and the conditions

set out in the Temporary Crisis and Transition Framework, in particular Section 2.8, which enables Member States to support accelerated investments in sectors strategic for the transition towards a net-zero economy. More specifically, the Commission found that:

- The measure concerns the production of batteries, therefore it is aimed at an investment project with strategic importance for the transition towards a net-zero economy. In addition, the project is carried out in Heide, a city in a disadvantaged area as defined under the German regional aid map. The aid has an incentive effect, as without the aid the plant would have been established outside the EEA.
- The beneficiary has set itself the goal of building the world's most environmentally friendly battery, which produces significantly less CO2 emissions than other companies when measured on produced level including recycling at the end of life. The reduction of the carbon footprint is in particular achieved using fossil free energy in the production and a circular design of the production process, including recycling of battery cell materials.
- The measure has a limited impact on

competition and trade within the EU. In particular, it is necessary and appropriate to ensure the establishment of the battery production plant and it will not lead to overcapacity in the market.

- The aid is proportionate and limited to the minimum necessary to trigger the investment in Europe: it does not make the investment in Germany more profitable than the investment in the United States. It will also not exceed the amount of the subsidy that Northvolt could demonstrably receive for the equivalent investment in the United States.
- Finally, the aid will be granted no later than 31 December 2025.
- "This €902 million German measure is the first individual aid being approved to prevent an investment from being diverted away from Europe, under the new possibility offered by the Temporary Crisis and Transition Framework since March 2023. It enables Germany to support the construction of Northvolt's production plant of batteries for electric vehicles. This is an important step for the electrification of transport in Europe, while preserving the level playing field in the Single Market." Margrethe Vestager, Executive Vice-President in charge of competition policy.



WHO launch the WHO Biomanufacturing Workforce Training Initiative to strengthen global health resilience

he COVID-19 pandemic underscored the vulnerabilities of global supply chains, particularly impacting low- and middle-income countries' (LMIC) access to essential medical products. The concentration of global manufacturing capacity in a few countries and regions exacerbated this disparity, highlighting the urgent need for equitable solutions.

Biological products, such as vaccines, and monoclonal antibodies, offer significant promise in combating global health challenges. However, the limited biomanufacturing capacity in LMICs and a shortage of a qualified workforce impede their production locally for national and regional health needs. In response to the growing need, WHO is launching the WHO Biomanufacturing Workforce Training Initiative. This initiative is coordinated by the Local Production and Assistance (LPA) Unit, on behalf of the Access to Medicines and Health Products (MHP) Division at WHO, in close collaboration with the WHO Academy and WHO Science Division. The WHO Biomanufacturing Workforce Training Initiative aims to enhance bioproduction capabilities in LMICs by providing accessible and tailored training programs, aligned with WHO and international standards, and adapted to the evolving needs of the bioproduction sector. Coordinated and managed by Dr Jicui Dong, Unit Head of the Local

Production and
Assistance Unit
(LPA/RPQ/MHP/WHO) with close
collaboration from the WHO Academy
and WHO Science Division, this initiative
will have three pillars: existing capacity
building activities within WHO, the Global
Training Hub for Biomanufacturing and
regional training centres. Organised by
the LPA Unit, WHO's capacity-building
programs have been successful in
providing innovative and needs-based
technical assistance to manufacturers and
Member States.

These capacity building and technical assistance programs, including virtual and hands-on training sessions using reallife scenarios, have been instrumental in promoting sustainable and quality local production. Such as:

- Annual Virtual cGMP Training Marathons for Vaccine Manufacturing
- The Week of Quality and other CMC trainings on vaccines and other medical products
- Regional holistic training workshops on key enablers for sustainable local production

The GTH-B, established in 2023 in collaboration with the Republic of Korea, offers training programs to LMICs to build workforce capacity in the development and manufacture of biological products such as vaccines and cancer medicines. The programs include hands-on training in manufacturing facilities and courses in manufacturing best practices and vaccinology.

Additionally, regional training centres, in line with the recommendations of the 2nd World Local Production Forum (WLPF), will further enhance geographical diversity and resource synchronisation. Expressions of interest for regional training centres to join the global network under the Biomanufacturing Workforce Training Initiative will be invited in the near future. For more information, please visit the WHO Biomanufacturing Workforce Training Initiative website or contact localproduction@who.int.

Leadership for Change

t's truly fascinating when you review the graphic (top right) that modern politics deals with issues like the COVID pandemic in a similar way to Wars and that for quite some time this country has been comfortable with running a borrowing account and then exerting the necessary spending controls on society. This process has effectively existed for some 300 years and appears to be the only way that our politicians seem to adopt when running an economy or what is a business the size of the UK.

Today we can expect the unexpected as free of the financial constraints of the EU we should be seriously developing reserves in such a way that we work to reduce Government debt and the corresponding interest cost of £108 Bn and build an economy that shows greater returns, working towards reducing the tax burden on every business and employee.

We can achieve this by re-establishing our manufacturing bases and exporting products made here to the world. To the right is a graph showing the value created by Business and delivered in taxes to Government annually. When you consider what Government spends each year is £1.15 Trillion, then this equates excluding import duties, to some £762 Bn or 66% annually of all Government spending. We clearly cannot and absolutely should not expect business to shoulder the burden in Taxes or any minimum wage increases (not reflected above), but the relevance of Business in creating Social Value is such that we should aspire to create "Better Businesses" and help them to quickly grow such that we have a much stronger business base, trading internationally and supported with both a vocational and academic skills pool.

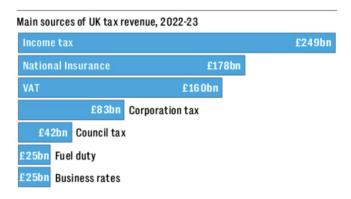
After rising and falling for centuries, the UK's national debt is forecast to skyrocket

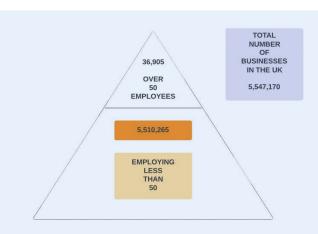
National debt as % of GDP with OBR baseline projection



SOURCE: OBR, B.R. MITCHELL, BRITISH HISTORICAL STATISTICS VIA UK PUBLIC SPENDING

Taxing times





If this is an economy that we all desire, then it is highly possible that immigration plays a far more relevant part of our future. The diagram shows the landscape for existing businesses in the UK and clearly our Country is heavily indebted to our small businesses employing less than 50 people. As you will see, there exists a framework of businesses that form the

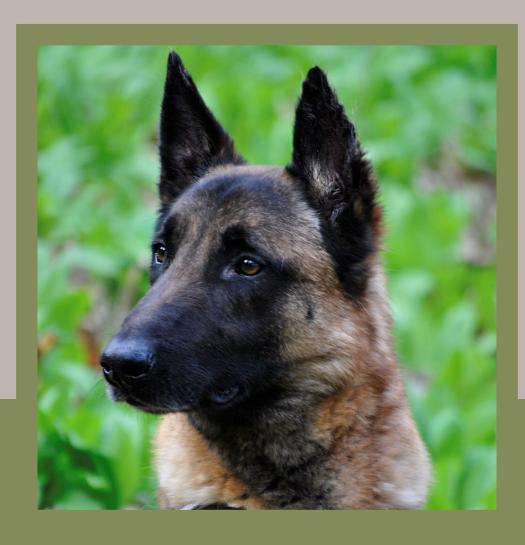
supply chains and research & development skills needed by an economy willing to grow and we simply need to encourage such growth with prudent government lead development. The first step along this road is ensuring that our business base has access to all the relevant tools provided and there exists a clear need to develop the "Soft Skills" of entrepreneurs as a starting point.

biz4Biz are leading the way in this respect and have purposefully developed the biz4Biz Premium Coaching service purely designed to help our UK based business owners and the key decision makers in industry to recognise a range of Skills required to help them develop their businesses by providing them each with the knowledge of the type of operational soft skills required to run a successful company. It would be ideal for Government to support this level of training as the knockon effect for the UK is bigger, bolder businesses creating jobs, skills, taxation, and every bit of Social Value that the UK needs.

For more details of how biz4Biz can help you please CLICK HERE to let us know you are interested.







Dogs use Kromek Detectors to find radiation on Ukraine's battlefields

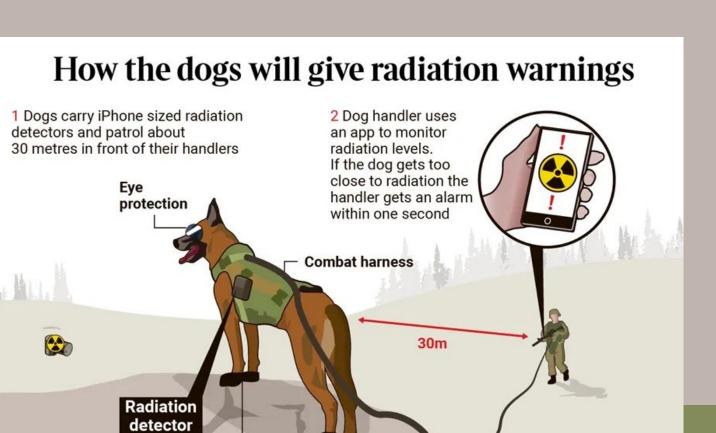
ogs carrying radiation detectors the size of a mobile phone have been dispatched to the Ukraine to provide troops with early warning of a nuclear disaster. Real-time data on radiation levels collected by eight dogs will be sent to soldiers on the ground, who will be able to decide whether to move forward into battle. The radar technology, made in Sedgefield, Co Durham, is so sensitive that it will pick up even the lowest levels of radiation. It can also identify the exact nature of the radioactive source material, such as plutonium or uranium. Arnab Basu, chief executive of the manufacturer Kromek, said:

"The canines are going to add an enormous new capability to the Ukrainian forces to deal with difficult situations."

> - Arnab Basu, chief executive of the manufacturer Kromek

"We are able to provide the highest quality information to people who are responsible for protecting or monitoring the field. If you have the right information you can act in the right way and that saves lives.

The team of detector dogs is made up of Belgian malinois, German shepherds and one Dutch shepherd. They are called Zyga, Ines, Dimico, Bella, Zorr, Rapina, Tomy and Lilly. Although dogs sent to Ukraine previously have been used to find landmines, the latest batch will carry radiation detectors because of the risk of a radiation incident caused by indiscriminate shelling by Russian forces and fighting near some of Ukraine's nuclear power stations. The detectors are attached to a harness on the dogs, which also wear equipment to protect their eyes and paws. The handler carries a phone with an app which tells





Ruggedised footwear

> them if there is any radiation found. If the dog gets too close to the radiation the handler, who will be about 30m away, gets an alarm within a second. The detectors are so sensitive that they go off at the lowest levels of radiation to get the dogs out of danger and protect them. Ukraine has 15 operational nuclear reactors that generate approximately 54 per cent of the country's electricity needs. "They are not areas where you want to have active fighting," Basu said. "The threat of nuclear incidents increases if you use nuclear power plants as a battlefield. It is an accident waiting to happen."

> The dogs have been trained as part of a European Commission programme in co-operation with the Belgian army. A total of 50 dogs will be transferred to Ukrainian





Norway: Electric Vehicle paradise?

y wife and I recently had a two-week holiday in Norway. We travelled most of the country including Oslo and Bergen in the south, Trondheim in the centre up to Bodo and Lofoten Islands in the Artic Circle. We travelled by Expressboat (65 kph catamaran!), the slower but more luxurious Hurtigruten ship, and by train. Our longest train journey was 10 hours with breathtaking scenery to Bodo. Bergen, Oslo and Trondheim all had high EV populations including most taxi's, all buses with Tesla appearing to be the most popular EV for private drivers. I only saw a small handful of eHGVs and a few eVans, but did see eBoats operating from Oslo and Flåm. Outside the cities, the take-up of EVs seemed much lower.

On the beautiful Lofoten Islands, we hired a car to travel from our base, a fisherman's cottage in Solsvær, to the fascinating Viking Museum at Borg and other attractions on the islands. Of course, I insisted on hiring an EV and Avis was



able to offer a Polestar 2. My research on Google Maps showed that there were several rapid charging hubs in Solsvær so was surprised that most hire vehicles were petrol or hybrid.

The range of the Polestar 2 was more than adequate for 3 days around the Lofoten Islands, but we had to return the Polestar to Avis more than 70% charged or would pay a penalty to Avis. On the evening before we left the islands, I went to find the nearest rapid charger, a Shell Recharge hub on the outskirts of Solsvær. When I

arrived, no vehicles were charging at the almost new Kempower 8 x satellite (6@ 200kW, 2 @ 150kW) installation. I plugged in, scanned the QR code, inserted payment details and the Polestar showed 'Charging Initializing' but there it stayed. I tried again with the same result, so I called the Shell Recharge helpdesk. They monitored me following the QR process again and when it failed, they decided to reboot the charger. All eight satellites rebooted, and they took over 10 minutes to come back up. I was joined by another EV driver and when we both tried to start charging, both of our Apps reported the charging hub off-line!

We both moved on to a smaller ABB rapid charging hub operated by a local CPO, Eviny. That immediately accepted my contactless payment, and I breathed a sigh of relief when charging started! Then a few minutes later it changed its mind and stopped. I tried to restart with contactless and the screen told me that I was not authorised to charge. I tried the Eviny

App but it demanded a Norwegian mobile number.

I then gave up and resigned myself to paying the Avis penalty charge!
Fortunately, the Avis rep took pity on me. He said that setting up the first charge is always very difficult on all the local networks. He waived the penalty and charged the Polestar on their own AC charger free of charge.

From an EV adoption and charger availability perspective, Norway is probably 3 years ahead of the UK.

However, the driver's experiences of public EV charging is still very poor. My occasional use in the UK of InstaVolt and Osprey chargers on contactless have been far better than my experience in Norway. In hindsight, I could have used my Tesla App to charge the Polestar on the Supercharger hub in Solsvær but I was having far too much fun with Shell and Eviny!





LOYD DAVIES
Service Development Director
at ElectrAssure













Help them take the right steps in their Careers with www.Quikigai.com

areers guidance at the earliest age is essential for several reasons, as it lays the foundation for a successful and fulfilling professional journey. Early exposure to career exploration helps young individuals develop a sense of direction, understand their interests, strengths, and values, and make informed decisions about their future. One approach that can significantly contribute to effective career guidance is the Japanese concept of Ikigai, which emphasises finding one's purpose and aligning it with a career path. To begin with, early career guidance provides young individuals with the opportunity to explore a variety of professions and industries. It allows them to gain insights into different fields, understand the skills required, and identify their personal preferences. By exposing children to various career options, they can make more informed decisions about their academic and extracurricular pursuits, setting the stage for a well-rounded skill set that aligns with their interests and potential career paths. Furthermore, early career guidance helps in the development of self-awareness. Understanding one's strengths, weaknesses, and passions is crucial for making informed career choices. Early exposure allows individuals to identify their natural talents and interests, enabling them to pursue paths that resonate with their personal inclinations. This self-awareness is essential for longterm career satisfaction and success, as individuals are more likely to excel in areas that align with their inherent abilities. Moreover, careers guidance at an early age can help in setting realistic goals and expectations. It provides a realistic understanding of different professions, their demands, and potential challenges. This knowledge helps individuals set achievable career goals, enabling them



to plan their vocational, academic and professional journeys effectively. Early guidance can also dispel misconceptions about certain professions, ensuring that individuals enter their chosen fields with a clear understanding of what to expect. The Japanese concept of Ikigai, which translates to "a reason for being," complements the idea of early career guidance. Ikigai suggests that the intersection of what one loves, what one is good at, what the world needs, and what one can be paid for forms a fulfilling and purposeful life. Incorporating Ikigai into career guidance encourages individuals to seek not just financial success but also personal satisfaction and their contribution to society. This holistic approach can guide young individuals toward careers that align with their passions and values, fostering a sense of purpose in their professional lives. In conclusion, careers guidance at the earliest age is crucial for setting the groundwork for a successful and satisfying professional journey. Early exposure allows individuals to explore various options, develop self-awareness, and set

realistic goals. The Japanese concept of Ikigai provides a valuable framework for aligning personal passions and strengths with career choices, emphasising the importance of finding purpose in one's professional life. By combining early career guidance with the principles of Ikigai, individuals are better equipped to make informed decisions, leading to more fulfilling and comfortable career selections.

To compliment this biz4Biz is proud to launch QUIKIGAI which takes the IKIGAI concept and masterfully combined with artificial intelligence or AI can very "quickly" delivers 5 potential careers to consider. Once you select one of these 5 careers you will be provided with a 10-step pathway to achieve this and this is also communicated with you via email. biz4Biz provides any amount of use of QUIKIGAI free of charge as our commitment to helping mankind with careers guidance in order to create happy employees undertaking the paid work that they love and not just because of their qualifications.

Try QUIKIGAI now at www.quikigai.com



FIND YOUR IKIGAI - DISCOVER YOUR PURPOSE IN LIFE. WE USE AI TECHNOLOGY TO HELP YOU FIND YOUR UNIQUE PATHWAY.

his should be the starting point for us all to establish the career pathway we wish to follow for both a lifetime of enjoyment and fulfilment in our careers, given that we spend much of our time creating an income for ourselves, our families, and our partners to survive.

IKIGAI

Ikigai is a concept that has been practiced for centuries in Japan, and it translates to "a reason for being." The Ikigai concept encourages individuals to focus on what they love, what they are good at, what the world needs, and what they can be paid for. Ikigai (ee-key-guy) is a Japanese concept that combines the terms, iki, meaning "alive" or "life," and gai, meaning "benefit" or "worth." When combined, these terms mean "that which gives your life worth, meaning, or purpose".

WHAT DO WE DO?

We have developed and tested this past 18 months, an Al-driven platform that uses the Ikigai concept technology to help you find your purpose in life using Ikigai is a concept that has been practiced for centuries in Japan, and it translates to "a reason for being."

answer a series of inputs about yourself,

and let our AI algorithms do the rest.
So, if you're feeling lost, uncertain, or unfulfilled, give our platform a try. Let us help you discover your Ikigai and live a life of purpose and meaning.
Sign up today and take the first step towards a more fulfilling existence.
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What you the ancient Japanese concept of Ikigai. Ikigai is a philosophy that helps individuals find their purpose in life by focusing on their **PASSION** MISSION passions, talents, mission, and profession. By identifying these four key areas we help What you are GOOD AT Ikigai you to discover your unique purpose in life and live a more fulfilling existence **PROFESSION** VOCATION We understand that everyone's journey towards finding their Ikigai is different, and that's why our platform is What you can be PAID FOR designed to be highly personalized. Using our platform is easy. Simply sign up,





What the world

NEEDS



Green light for construction phase as Sizewell C triggers Development Consent Order

Development Consent Order (DCO), opening the path for formal construction of the new 3.2GW nuclear power station on the Suffolk coast. The project was granted permission to build in July 2022, and while preparatory works subsequently began, many obligations needed to be satisfied before construction could commence under its DCO.

Those obligations, set out in a Deed of Obligation document signed with East Suffolk Council and Suffolk County Council, and which included activity ranging from key road surveys to the establishment of Governance Groups, are all now satisfied and the formal construction phase of the project can begin.

Julia Pyke and Nigel Cann, Joint Managing Directors at Sizewell C, said: "This is a significant moment for our project in Suffolk and a big step for British energy security. We've had a really successful year of precommencement works on site, and we've been working hard with local partners and organisations to ensure we're ready to take this next step for the project.

"While Sizewell C will be a linchpin of Britain's energy system, it's much more

than a power station, especially for this region. Entering the construction phase will be a game-changer for the area, helping to boost employment and skills, enhancing the local environment, and developing new clean technologies."

Sizewell C will be an important part of Britain's energy future, generating low-carbon power for six million homes until close to the end of this century. To mark the latest milestone for the project, Nuclear Minister, Andrew Bowie, today visited the Sizewell C construction site to meet with the project team, local business leaders, and representatives from local authorities. Nuclear Minister, Andrew Bowie, said: "This is a major milestone for Sizewell C and our ambition to deliver up to 24GW of low-carbon nuclear power by 2050. It comes after we announced the biggest expansion of nuclear power for 70 years which will help to bring down bills and bolster our energy security. East Anglia will benefit from thousands of new jobs and apprenticeships as a result, demonstrating the local rewards of backing new nuclear."

In September 2023, the Government, Sizewell C and EDF launched an equity raise process to attract private investors into the project. While triggering the DCO and entering the construction phase is not dependent on a final investment decision (FID), constructive discussions with qualified potential investors are continuing and a final investment decision is expected later in 2024. By commencing formal construction, a £250m package of funding for the local community will become available in phases during the construction phase of the project. That funding includes £23m for community projects, £100m for the environment, £12m to support local tourism, and a £12m housing fund to boost private housing and tourist accommodation.

Sizewell C is determined that opportunities from construction are spread as widely as possible in East Suffolk, and it has longstanding partnerships with Suffolk Chamber of Commerce and MENTA, as well as third sector community organisations and charities like Inspire and Access Community Trust. "A lasting positive legacy for the region": business leaders welcome news Sizewell C will deliver 1,500 apprenticeships and support thousands of jobs across the country, with at least one third of the peak construction workforce of 7,900 coming from the local area. The project will invest in local skills to ensure there is a pipeline of talent



ready, not only to build and operate Sizewell C, but to support the UK's future nuclear ambitions.

The project will also have a transformational impact on local supply chains, and a number of local business leaders have welcomed the news that Sizewell C can now enter the construction phase.

Jake Nicholls, Group MD of Tru7 Group, a family-owned supplier of goods and services to the UK Construction Industry, head-quartered near Ipswich in East Suffolk, said: "As a local employer of over 350 people, we firmly believe this important project will provide a lasting positive legacy for our region. "We're already participating the construction process of Sizewell C will provide communities and businesses in Suffolk and East Anglia with the opportunity and the confidence to invest in people and skills, and we are delighted to play our role in supporting the delivery of the project."

Mark Burrows, Regional Commercial Director of Suffolk-based Breheny Civil Engineering Ltd, one of the largest family-owned civil engineering companies in the UK, said:

"We're already participating in projects on the Sizewell complex, and we look forward to working on many more opportunities. Our 330+ people and their families live and work in the geographical area affected by Sizewell and are looking forward to the social, environmental, and economic benefits the project will provide our community."



"This vast nationally strategic project offers us within Suffolk the chance to showcase our extensive talent and resources and will provide work opportunities for many years."

- Mark Burrows, Regional Commercial Director of Suffolk-based Breheny Civil Engineering Ltd







Quiet aircraft may be the start of a boom in supersonic travel

ockheed Martin Skunk Works® rolled out the X-59, a unique experimental aircraft designed to quiet the sonic boom, at a ceremony in Palmdale, California.

The ceremony marked a significant milestone in Lockheed Martin and NASA's decades-long journey to solve one of the most persistent challenges of supersonic flight – the sonic boom. "We're thrilled to take on this challenge alongside NASA, whose quiet supersonic technology mission will have lasting, transformational impacts for people around the world," said John Clark, vice president and general manager, Lockheed Martin Skunk Works.

"This project is just one example of the broader ingenuity of our industry as we continually strive to push the envelope of what's possible."

 John Clark, vice president and general manager, Lockheed Martin Skunk Works

Rollout ceremonies are a long-standing aviation tradition, and in the case of the X-59, it celebrated technical advancements, collaboration and innovation that stemmed from years of research, development and production of a one-of-akind technology demonstrator aircraft that will reduce the loudness of sonic booms to a gentle thump. "The entire X-59 team

leaned into the expertise of both legendary organizations, NASA and Lockheed Martin, to ensure success for this program. I am extremely proud of everyone who made this historic moment possible," said Greg Ulmer, executive vice president, Lockheed Martin Aeronautics.

Lockheed Martin, NASA and government leaders attended the ceremony to include:

- Greg Ulmer, executive vice president, Lockheed Martin Aeronautics
- John Clark, vice president and general manager, Lockheed Martin Skunk Works
- Pam Melroy, NASA Deputy Administrator
- Jim Free, NASA Associate Administrator
- Bob Pearce, NASA Associate Administrator
- Dee Dee Myers, California's Senior, Economic Advisor to the Governor

Next for the aircraft will be the completion of ground tests including engine-run and taxi tests before its next major milestone, first flight, later this year. After the aircraft is validated in initial flight tests, it will move into the acoustic testing phase. This phase will include flights over populated areas to provide U.S. and international regulators with statistically valid data required to help approve new rules that could allow quiet commercial supersonic flight over land.

This would cut commercial flight times to half of what they are today, transforming travel for people around the world.









illiams Racing has unveiled new livery and new partners for the car that will be driven by Alex Albon and Logan Sargeant in the upcoming 2024 season. The striking blue livery, which links Williams' championship-winning heritage with its mission to return to the front of the grid, was revealed in the heart of New York City at PUMA's Flagship store on Fifth Avenue.

Williams Racing also proudly announced a new multi-year Principal Partnership with Komatsu, a leading manufacturer of construction, mining, forestry, and industrial heavy equipment. Komatsu is rekindling its relationship with Williams having enjoyed a successful partnership in the 1980s and 1990s, which included supplying gearbox components for the title-winning 1996 and 1997 cars. Williams Racing's multi-year partnership with Komatsu is a statement moment for the team as it continues to strengthen on and off the track. This partnership

proudly reignites a previous long-standing relationship forged in the 1980s and 90s during one of Williams Racing's most successful eras in Formula 1 so far. Over that period Komatsu provided expertise and technology to Williams, including gearbox parts for the

Championship-winning FW18 and FW19 cars. Both Williams and Komatsu will rekindle their legacy at a pivotal time in the sport to build a new era of success together in 2024 and beyond.

The Japanese manufacturing giant is renowned as a world-leading company that manufactures and sells construction and mining equipment, utility equipment (compact machines), forest machines, industrial machinery and others. Komatsu and Williams Racing share deep-rooted values of collaboration, resilience, excellence and authenticity through their innovation of cutting-edge technology to drive performance and results.

Komatsu's logo will feature prominently on the FW46 driven by Alex Albon and Logan Sargeant, as well as driver overalls and Williams Racing team kit.Komatsu is the latest partner to join the team's long-term mission to return to the front of the grid. In recent days the team also welcomed data platform provider VAST Data as an Official Partner as Williams continues to build momentum heading into 2024.

Understanding the wealth of data F1 cars produce is critical to on-track success, and VAST Data's expertise in managing and processing large datasets can help optimise the team's performance.

These new partners follow a series of major additions announced in the second half of 2023, including THG – through its Myprotein and Ingenuity brands – and PUMA. January also saw an announcement of an extended power unit relationship with Mercedes-Benz, who will continue to supply engines to the team for 2026 and beyond.

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Sustaina le Biz Manufacturing Biz





Velocys secures US\$40M of growth capital and begins new chapter as a private sustainable aviation fuel technology company

Leading sustainable aviation fuel (SAF) technology manufacturer Velocys has begun a new chapter following the completion of its take-private at the start of 2024.

As part of the transaction, a new consortium of growth investors, including Carbon Direct Capital, Lightrock, GenZero and Kibo Investments, has infused Velocys with US\$40 million of growth capital. The funds will be used to accelerate the delivery of Velocys' proprietary technology to customer projects whilst further building its technology leadership, scaling its production and enhancing the breadth and depth of the team's expertise. Decarbonising aviation is a critical climate challenge given the 800 megatonne annual carbon footprint from airline travel. Velocys expects demand for sustainable aviation fuel to accelerate given the confluence of regulatory support and higher readiness levels of drop-in fuel technologies.

New EU rules will require suppliers to ensure that 2% of fuel made available at

EU airports is SAF in 2025, 6% in 2030, 20% in 2035 and 70% in 2050.

Airlines are also expected to drive the exponential growth in demand for SAF. In 2023, more than 490,000 flights were partially powered by SAF, from just 500 in 2016.

Velocys is a technology company whose patented catalyst and micro-channel reactor platform provide a scalable, flexible solution particularly suitable for projects that produce SAF.

Velocys' Fischer-Tropsch technology is compatible with multiple project types employing diverse feedstocks, including municipal solid waste, woody biomass, and CO2 & green hydrogen, and has demonstrated performance at commercial scale.

Velocys' experience of integrating its technology into an overall scheme is highly valuable to clients, allowing them to maximise lifecycle carbon savings.
Velocys has invested to scale its reactor facility in Plain City, Ohio, to ensure a

stable supply of reactors for delivery to SAF project owner-operators around the world. Velocys' 52,500 square foot reactor facility will be able to produce an initial 12 reactors per year, which is the typical requirement for the operation of a commercial-scale SAF biorefinery. There are also plans to ramp up capacity of the facility as demand for SAF grows. Henrik Wareborn will continue to lead Velocys' management team as the Chief Executive Officer. The new ownership consortium - a global syndicate of climate investors focused on harnessing technology to accelerate decarbonisation – has combined expertise, networks, and specialist scaling support that will better equip Velocys to contribute meaningfully to the decarbonisation of the aviation

Josh Dienstag, Chief Investment Officer of Carbon Direct Capital, said: "We believe drop-in fuels are the most promising, scalable solution to decarbonise aviation and to deliver climate impact the soonest. Velocys is a scarce supplier with the technology readiness, production capacity,





"We are delighted to be partnering with Velocys as it takes the next steps in its journey to becoming the leading provider of SAF solutions to the aviation industry. -Kevin Bone, Partner at Lightrock

This critical objective requires long-term backing with the requisite experience of supporting industrial companies as they seek to realise their potential. I have no Director at GenZero, said: "Decarbonising the global aviation industry will require innovative solutions that can be adopted with ease and at scale. This is where Velocys' pioneering Fischer-Tropsch reactor is relevant, with it's modularity and efficiency to support the development of advanced biofuel applications. By leveraging technology to transform waste materials into sustainable aviation fuel, Velocys is well positioned to play a key role in scaling the use of low-carbon fuels to pave the way towards net-zero

Henrik Wareborn, Chief Executive Officer of Velocys, said: "The deal secures the future of Velocys, our pioneering technology and our industry leading talent, allowing us to keep our foot on the accelerator as we continue to lead the way in innovative

sustainable aviationfuel solutions as we enter an inflection point for our industry. For the past twenty years Velocys has had a critical role in the development of reactors, technology and processes which enable the efficient production of lower carbon SAF, and we and our new partners are excited to see what the next twenty will bring."















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Vietjet to order 20 Airbus A330neo widebodies

letjet Air has signed a
Memorandum of Understanding
(MoU) with Airbus for the
purchase of 20 A330-900 widebodies.
When finalised, this will be Vietjet's
first-ever widebody order.

The aircraft will be operated on the carrier's growing long range network, as well as on high capacity regional services. They will replace the carrier's current fleet of leased A330-300s, as well as providing for network expansion.

At the end of January 2024, the A330 Family had accumulated 1,771 firm orders from more than 130 customers worldwide.

Vietjet Chief Executive Officer Dinh Viet Phuong said, "The new A330neo aircraft is a strategic addition to comprehensively modernise Vietjet's fleet, enhancing operational capabilities to support our global flight network expansion plan. Its fuelefficient new-generation design aligns with our sustainable development strategy and ESG goals, aiming for net-zero emissions by 2050. With the introduction of the A330neo, passengers can look forward to longerrange, well-equipped flights with excellent services at more competitive fares."

"We are excited to work with Vietjet on the next phase of the carrier's expansion," said Christian Scherer, CEO of the Commercial Aircraft business of Airbus. "The A330neo will enable the airline to achieve the lowest possible operating costs per seat and to continue to offer its customers the best possible value wherever they fly. It will also be the perfect complement to the A321XLRs already on order with the airline, as it spreads its wings to more far flung destinations."

The A330neo features the award-winning Airspace cabin, which offers passengers a unique passenger experience, high level of comfort, ambience, and design. This includes more individual space, enlarged overhead bins, a new lighting system and access to the latest in-flight entertainment and connectivity systems.

Powered by the latest generation Rolls-Royce Trent 7000 engines, the A330-900 is capable of flying 7,200 nm / 13,300 km non-stop.









Manufacturers view UK as the place to relocate

he majority of Britain's manufacturers (52.7%) are now viewing the UK as a more competitive place to locate their activities, compared to just 31% one year ago. While less than one-fifth (16.6%) believe the UK is not a competitive place in which to manufacture. These findings come from Make UK and PwC's Executive Survey 2024, which polled more than two hundred senior manufacturing executives. It shows that after a very difficult few years through the pandemic and the shock to energy prices, there are optimistic signs with companies more bullish about the prospects for manufacturing in 2024. More than four-fifths (44.4%) believe that conditions in the sector will improve, with only one in five believing the contrary. While an increasing number also believe the UK is becoming more competitive than its European rivals.

As a result, manufacturers – who are now seeing opportunities outweigh the risks to their firms - are backing this belief with investment in new products, expansion into new markets and acceleration of the use of new digital technologies to improve their business. The adoption of the latter in particular is seen by 71.2% of firms as a way to boost operational efficiency, while more than half (52.2%) see generative Al increasing their workforces' productivity.

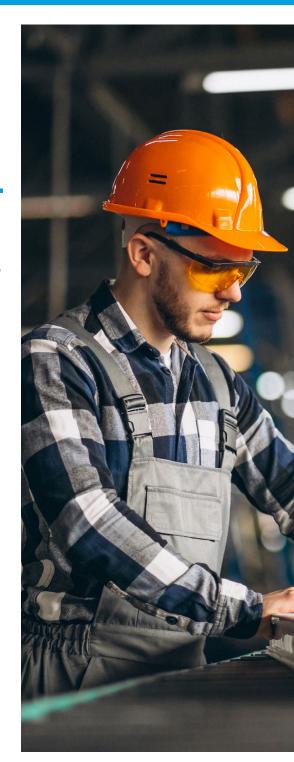
"The last few years have been a rollercoster of emotions for manufactures yet they have more than demonstrated their resilience time after time. We are now seeing some hope that conditions may be improving, amid a more supportive and stable policy environment, but this must be cemented within a long-term industrial

strategy.

"While undoubted challenges remain, the accelerating use of digital technologies, our strength in innovation and expansion into new markets sets the scene for manufacturing to be at the heart of efforts to boost growth.

"After what has been a rocky few years for manufacturers, it seems there is a cautious optimism in the air. In fact, our research showed that in the year ahead, more than half of them are planning to seize opportunities in new products, with more than a quarter (27.3%) hoping to explore uncharted territory, and expand into new markets."

For many, despite January's to-do list likely looming large, as the headwinds of sustained economic challenges, geopolitical instability, and steep employment and energy costs continue, the horizon seems brighter."





£6.5bn worth of offshore wind projects move a step closer

series of projects which could be worth upwards of £6.5bn have passed the first hurdle to becoming reality in Scotland offshore wind economy. The SIM (Strategic Investment Model) Working Group has published further information about the initial three projects moving into the SIM Stage 2 process. SIM projects have been assessed in terms of relevance to individual offshore wind project delivery, with multiple developers also expressing interest in taking part in collaborative meetings.

In Stage 2 the focus will be on how to ensure these projects have confidence to make a Final Investment Decision.

Offshore wind developers, Enterprise Agencies, Scottish Government and other interested parties, will work collaboratively to help these projects secure the backing they need to move ahead. In testing its approach with the three initial projects, the SIM will be looking to better understand how different means of support can be brought together to help projects reach final investment decision.

Details of the initial two port projects being taken forward are below.

Port of Cromarty Firth Expansion (Port of Cromarty Firth)

The Port of Cromarty Firth (PoCF) is planning to expand its port to support the deployment of floating offshore wind farms (FLOW), by developing an additional

5 Hectares of storage space to enable the construction of circa 1GW of floating offshore wind capacity per year. The facility will be capable of supporting the assembly of floating offshore wind foundations and the integration of floating offshore wind turbines

At its peak of operation, PoCF estimates this facility can support 1,148 direct and 1,060 indirect well-paid jobs per annum, along with investment in local training, and provide much needed capacity to the offshore wind industry to deploy its pipeline of projects. It provides an optimal solution to industry needs, reducing supply chain costs, and lowering the Contract for Difference (CfD) price wedge.

This initial 5ha development is part of a wider plan to extend the existing 12ha of open storage capacity adjacent to a 372m quayside, currently being used to marshall the Moray West XL monopiles, by adding 20ha of lay down area and a 413m quay, in four phases. In this first phase, Phase 5A, PoCF will deliver 5ha of land (15t/m2), a 175m quay with a heavy load pad (25t/m2), as well as a deep pocket (16m) next to the quay, delivering 17ha in total with 547m quay ready for 2028. Port of Cromarty Firth is a part of the Inverness and Cromarty Firth Green Freeport.

Port of Nigg West Deepwater Quay Expansion Project (Global Energy Nigg Ltd) The Port of Nigg West Deepwater Quay Expansion is set to address the increasing demand for larger deep-water facilities in the UK to support the offshore renewables industry. Led by Global Energy Group, the project will expand the existing West Quay at Nigg, creating a new ultra-deep water berth, featuring a 160m quay at a water depth of 22m Lowest Astronomical Tide (LAT). The expansion will create an expansive laydown and storage area totalling 46,860m2, with a ground loading capacity of 50mt/m2.

The Port of Nigg has played a crucial role in supporting five major offshore wind projects in Scotland, totalling 2.6GW. The proposed expansion will enhance Nigg's capacity to accommodate the next generation offshore wind structures, both fixed and floating, and larger installation vessels.

Central to this development is the creation of an ultra-deep water sea-facing berth, positioning the Port of Nigg as one of the UK's deepest ports. The expansion will result in a combined addition of 420m of quayside being available at Nigg, taking the facility's total quayside to an impressive 1,555m. The project will cement the Port of Nigg as a leading location for existing fixed-bottom offshore wind projects and support the industrialisation of floating offshore wind. The Scottish Government's Energy Minister Gillian Martin said: "The Scottish Government is determined to maximise





the economic opportunities and benefits from our offshore wind potential. We are kick-starting the First Minister's flagship commitment of up to £500 million over five years to anchor Scotland's offshore wind supply-chain with investment of £67 million next financial year." Moving these three projects – with a combined capital value of around £500 million - to the next stage of the Strategic Investment Model (SIM) is a significant step.

"Around the globe, offshore wind faces challenges in securing the scale of investment needed to unlock its full potential.

SIM is a novel, industry-led approach,

which supports close collaboration between industry and the public sector. It is a model being closely watched by other sectors and the investment community."

Joanne Allday, Strategic Business Development Manager, Port of Cromarty Firth said "Industry and government reports in recent years have all concluded that Scotland needs more port infrastructure to deliver energy security and Net Zero through offshore wind. Its great news that Scotland's offshore wind projects see the Cromarty Firth as a prime location for the build out of offshore wind. This announcement builds on the region's location, capabilities and Green Freeport success and should increase local content and jobs. We look forward to the next stage of the process, to ensure we optimise this opportunity for Scotland." Iain Sinclair, Executive Director, Global Energy Group said "The vital enabling role that Scotland's Ports and Harbours will play in supporting national net zero and energy security targets, specifically for

offshore wind, is well documented. Being shortlisted to progress to the second stage of the SIM process is welcome confirmation of industry confidence in the Port of Nigg's strategic role in the industrialisation of offshore wind. We look forward to working collaboratively with SOWEC's investor stakeholders, and all of our Ports and Harbours partners, to deliver the critical enabling infrastructure required to accelerate the deployment of offshore wind in the UK."

SIM Stage 1 projects

38 projects have completed Stage 1 of the SIM. Each of these projects has a completed prospectus, and will receive further information on offshore wind developer interest over February 2024. 32 of the 38 projects are listed below. Two of the three initial projects being moved into Stage 2 are highlighted in bold. A further six projects have completed Stage 1 but have asked for details not to be shared outside of SIM discussions.



Organisation

Projects

Aquatera and Orcades Marine

BP / EnBW

Scapa Flow Mega Hub

Enabling Crew Transfer Vessel (CTV) Fabrication in Scotland

BP / EnBW

Enabling Service Operation Vessel (SOV) Fabrication in Scotland

Dajin Heavy Industry co. Ltd

Tower Foundation

Manufactureing Facility

eFab Ltd

Kintore Pile Manufacturing Facility (PMF)

Eyemouth Harbour Trust (EHT)

South East Scotland Gateway - Eyemouth

Forsyths Ltd

Secondary Steel Fabrication Facility

Forth Ports Ltd

Deep Water FOW Facility

Fraserburgh Harbour

Fraserburg New South Harbour (NSH)





Global Energy Nigg LTD

Port of Nigg West Deepwater Quay Expansion Project (WDQEP)

Global Energy Nigg Ltd

Port of Nigg Tubular Manufactureing Facility (TMF)

Harland & Wolff (Arnish) Ltd Stornoway Port Authority

Stornoway Offshore Wind Hub

Harland & Wolff (Methil) Limited

Investment and expansion of access and fabrication facilities (Energy Park Fire) - Harland & Wolff Methil

Heavy Lift Projects Ltd

Movile Heavy Lift Ring Crane

Highlands and Islands Enterprise, Argyle and Bute

Campbeltown/Kintyre Integrated Offshore

Council and Machrihanish Airbase Community

Company

renewables Hub (IORH)

Kishorn Port Limited

Kishorn Port Upgrade

Lerwick Port Authority

Lerwick Ultra-deep-water Quay (UDWQ)

Malin Group

Scottish Marine Technology Park (SMPT)

Mingyang Smart Energy Group LTD

Wind Turbine OEM Facility

Montrose Port Authority

Montrose O&M Energy Hub

Offshore Solutions Group Ltd

Temporary Storage - Floating Offshore Wind

(TS-FLOWc)

Orkney Island Council

Scapa Deep Water Quay (DWQ)

Port of Aberdeen

Port of Aberdeen South Harbour Upgrade

Port of Cromary Firth (PoCF)

Port of Cromarty Firth Expansion

PSG Marine & Logistics LTD

Semi-submersible Barge Development

Repsol Resources UK Limited

Flotta Ultra Deep Water Quay (UDWQ)

Sarens PSG LTD

Ring Crane Development

SENSEWind

Self Erecting Nacelle & Service System

Subsea Micropiles (UK) LTD

Micropile Fabrication & Production Facility

Tymor Marine

Wet Storage Mooring Grid

W3G Marine Ltd

W3G floating Assembly Solution

XLCC LTD

Hunterston HVDC Cable Factory









Lumo announce ambitions to extend its services to Glasgow from summer 2025

Popular open-access train operator Lumo hosted an event in Stevenage to discuss the significant economic and sustainability benefits it has generated since launching its all-electric service. Lumo operates trains between London and Edinburgh, with calling at Stevenage, Newcastle and Morpeth and most services also serving Stevenage.

Opened with some of the area's most prominent local stakeholders and business representatives in attendance, the event explored the detail of Lumo's industry-first report, outlining the positive impact of Britain's newest passenger train operator. It was revealed that East Coast Main Line operator is projected to deliver in the range of £470 - £740 million economic benefits over the

next ten years through its faster journeys, fare savings for customers and industry employment. It was also shared that the all-electric train operator has saved 60.6 kilotons of CO2 last year - the equivalent of taking 13,475 petrol-powered cars off the road for a year.

Lumo also recently announced ambitions to extend its services to Glasgow from summer 2025.

Martijn Gilbert, Managing Director of Lumo, said:

"It's been a real a pleasure to discuss Lumo's contribution to economies on our route, and to share an update on the carbon savings that we've achieved together as millions choose Lumo for their journeys. "Our goal is to provide a rail service that supports economic growth and tourism across the UK that is both green and cost-effective - and it's brilliant to be able to demonstrate exactly how we're doing that.

"Our open access model means that we use existing capacity in the rail timetable to boost UK travel at no extra cost to the taxpayer, and we hope that today has given everyone a flavour of what our innovative operation is capable of achieving."

Left to right:

Managing Director of Lumo and Hull trains, Martijn Gilbert, and Deputy Mayor of Stevenage, Cllr Jim Brown and Adrian Hawkins OBE, chairman Stevenage Development Board





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