

The business of becoming a sustainable nation.

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Llywodraeth Cymru
Welsh Government

Introducing Green Growth Wales

For us in Wales, green growth is economic growth that ensures the careful use of our considerable wealth of natural resources so they can continue to sustain us in a socially equitable way, for the benefit of the people of Wales.

That means achieving greater efficiencies and sustainability throughout our entire economy and within businesses and organisations across all sectors.

Green Growth Wales translates our policy aims into actions on the ground, through legislation, policy and delivery programmes that create the best possible conditions for businesses, organisations and individuals to deliver sustainable growth.

The Welsh Government works alongside businesses to help identify and adopt practices and approaches to support their green growth in all sorts of practical ways, from improving their energy efficiency to supporting skills development, and creating useful industry networks to ensuring strong supply chains or funding research & development.





Foreword

After the historic climate change agreement by almost 200 countries at the UN's Conference of the Parties in Paris, the shift to a sustainable economy is global, irreversible and transformational.

In Wales, we call this shift 'green growth', and it is already underway.

I want Wales to be a world-leading nation in green growth: we are one of only a handful in the world to have sustainability at the heart of our statute, and we have the natural resources, the commitment and the drive to deliver that ambition.

Most importantly, we are not just talking about becoming a genuinely sustainable nation: we are making change happen, with legislation, policies and major renewable energy and infrastructure projects already in place to ensure and enable our transition to a low-carbon economy.

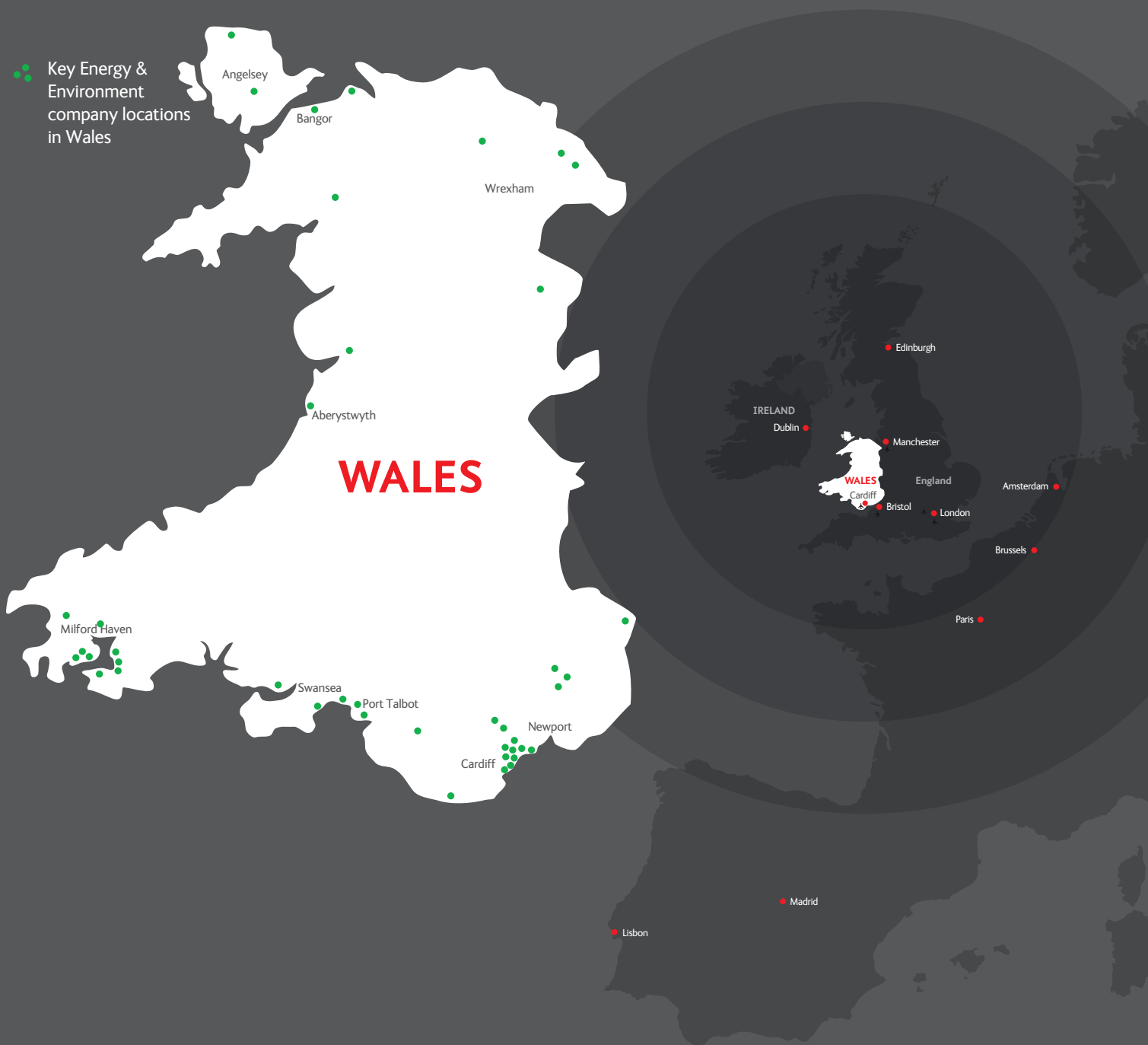
These are significant steps, but only part of the story: key to making this happen are businesses, organisations and individuals who share these values. We are already working with and supporting companies in every sector who know the only way to move forward is sustainably; who run their businesses today with a focus on tomorrow.

We want more of these like-minded businesses - both those already here and those looking to invest in Wales - to become part of our green growth journey. We want to work with businesses who can help us deliver our major projects; whose innovations will power our low-carbon future; who are tackling the global challenges of diminishing natural resources, increasing materials prices, and emissions reduction; who will make positive, sustainable use of our remarkable natural resources; and who will sustain our communities with the creation of sustainable jobs.

This prospectus will tell you more about how we have created the environment these businesses need to drive their long-term, sustainable growth here in Wales: quick response and strong support from the Welsh Government; relevant skills and academic expertise; robust physical and powerful virtual infrastructure; innovation networks; established supply chains, and more.

Rt Hon Carwyn Jones AM

First Minister of Wales





Wales: A naturally sustainable nation

An important element of our green growth is ensuring the careful use of our considerable wealth of natural resources so they can continue to sustain us.

Our natural potential for marine, hydro, solar, onshore and offshore wind energy generation presents major opportunities for businesses to propel our transition to a low carbon economy.

With coastline of 1,200km, around 32,000km² of sea to the north, south and west, and the second highest tidal range in the world flanking our southern shores, our marine energy yield potential is 10GW.

We want to work with businesses who will harness our natural assets - while also safeguarding them - to develop clean, efficient energy generation for today and tomorrow. We are seeing large investments from overseas companies in Wales, such as RWE and Vattenfall, who are using these assets to develop sustainable energy sources as well as delivering significant economic and community benefits for the people of Wales.

Wales is home to a wide mix of hydro businesses ranging from utility providers such as Dŵr Cymru Welsh Water to small scale hydro operations of 5 MW or less – especially in areas such as farmland and community development.

And our seven major ports along our north, west and south coast are equipped to support marine and other renewable energy projects by providing expertise in operations, maintenance and shipping.

Wales' natural resources provide opportunities beyond energy generation: the ecosystem services market here is growing, with opportunities around carbon, water and biodiversity.

Our £6million Nature Fund, for example, is supporting projects to increase biodiversity in our rural and coastal areas. Our secure and resilient water supply also plays a vital part in our economic development, while our woodlands present great potential for sustainable employment in the supply of timber to the construction industry.

The Well-Being of Future Generations Act (Wales) 2015 puts in place seven wellbeing goals for Wales:

- 1 A prosperous Wales
- 2 A resilient Wales
- 3 A healthier Wales
- 4 A more equal Wales
- 5 A Wales of cohesive communities
- 6 A Wales of vibrant and thriving Welsh Language
- 7 A globally responsible Wales

“The Wales Future Generations Act captures the spirit and essence of two decades of United Nations work in the area of sustainable development and serves as a model for other regions and countries. We hope that what Wales is doing today the world will do tomorrow.”

Nikhil Seth *Director of Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (2015)*





UPM, Shotton



Braemar Howells, Milford Haven

Creating a sustainable business environment: policy and legislation

Businesses succeed when they are operating within a supportive and pragmatic regulatory environment.

Welsh Government is delivering this in genuinely ground breaking ways so that sustainable businesses can confidently invest here and thrive.

The Well-Being of Future Generations (Wales) Act 2015

places sustainable development at the heart of all we do, to ensure our transition to a low-carbon economy. Our public bodies have a legal responsibility to think about the long term, work with their communities and together consider the impact on the future, with this work monitored and supported by our Future Generations Commissioner.

The Environment (Wales) Act 2016 improves regulation and puts in place a carbon budgeting framework and interim targets to achieve at least an 80% reduction in emissions by 2050 providing certainty and clarity for businesses. It will also open up opportunities for businesses to invest in future waste management, in producing energy from waste and improving resource efficiency.

Alongside our pragmatic legislative agenda we are also committed to setting out a clear strategic vision across a range of policy areas. For instance we have recently published our first **Energy Efficiency Strategy for Wales**.

One of the key concerns for businesses can be the planning and regulatory framework, so we have simplified regulations and streamlined the process.

We merged the Countryside Council for Wales, the Forestry Commission Wales and Environment Agency Wales to create **Natural Resources Wales (NRW)**: a 'one stop shop', single decision-making body for environmental permitting that plays a key role in enabling green growth.

The Planning (Wales) Act 2015 seeks to simplify our planning system, while our new **National Development Framework (NDF)** sets out our land use priorities including **Developments of National Significance (DNS)**, which now fall to Welsh Ministers to determine.

“Seizing the potential of green growth is key to transforming the way we do business. At the heart of the green growth agenda is the need to become ever more innovative, efficient and sustainable – this is good business sense, and Wales has a strong story to tell.”

Edwina Hart, MBE, CStJ, AM

Minister for Economy, Science & Transport, Welsh Government





Delivering a sustainable nation: projects and opportunities

Wales' transition to a low carbon economy provides many commercial opportunities as the private and public sectors here work towards our targets.

Hitachi's construction of a new, £12billion nuclear power station on Anglesey will be completed by the mid-2020s, and includes its aspiration to bring 60% of the project value to native suppliers and inward investors.

The station's projected 60-year operational lifetime means security, engineering, maintenance and other contracts could provide stability for business' long-term growth.

Environmental professional services businesses, waste and recycling businesses are in demand, as targets increase. Our public sector energy efficiency programme is ambitious, ultimately aiming for a carbon neutral public service. This is supported by Resource Efficient Wales, Local Partnerships and our new Re:Fit programme, together with new investment.

Invest to Save green growth schemes have already seen over £21.4million committed to projects including streetlight replacements, LED lighting in fire stations and hospitals and heating and lighting replacement in schools. Now, £13.4million more has been announced, with still more investment planned.

We will need contractors to help us deliver our targets of saving over £452million on public sector energy bills and more than 8m tonnes of carbon emissions – and the opportunities are long-term.

These opportunities provide a real growth platform for the companies delivering these contracts: the investments are recycled as they are repaid, so the original £34.9million initial investment will support more than £140million of investment over 20 years.

We are also encouraging more locally driven, distributed energy generation and heat systems and smart demonstrators.

We have invested more than £285million over the last six years in flood and coastal erosion risk management, to reduce risk to homes and businesses. We are continuing this investment to increase the resilience of Wales. Between 2018 and 2021 we will be working in partnership with local authorities to invest an additional £150million in sustainable coastal risk management, providing further business opportunities.

How we help green growth: funding and skills

Achieving our transition to a low carbon economy requires innovative businesses, products, technologies and services.

So we are maximising our investment and supporting businesses whose innovations underpin this sustainable growth both financially and with the recruitment and development of a skilled workforce.

Funding

We have one of the best funding regimes in the UK and, during 2014-2020, over £2billion of European funding will be invested across Wales in infrastructure; renewable energy and energy efficiency; skills, research and innovation.

This translates into a flexible suite of finance packages to help businesses with project costs to support green growth, from sourcing a property to recruiting key people, from capital investment to R&D that can bring concepts through to market.

We can also help business access wider EU funding opportunities, such as the EU's Horizon 2020 research programme, or to collaborate across borders through European Territorial Cooperation programmes.

We work closely with UK Government funding programmes including the Business Innovation and Skills department, UK Trade and

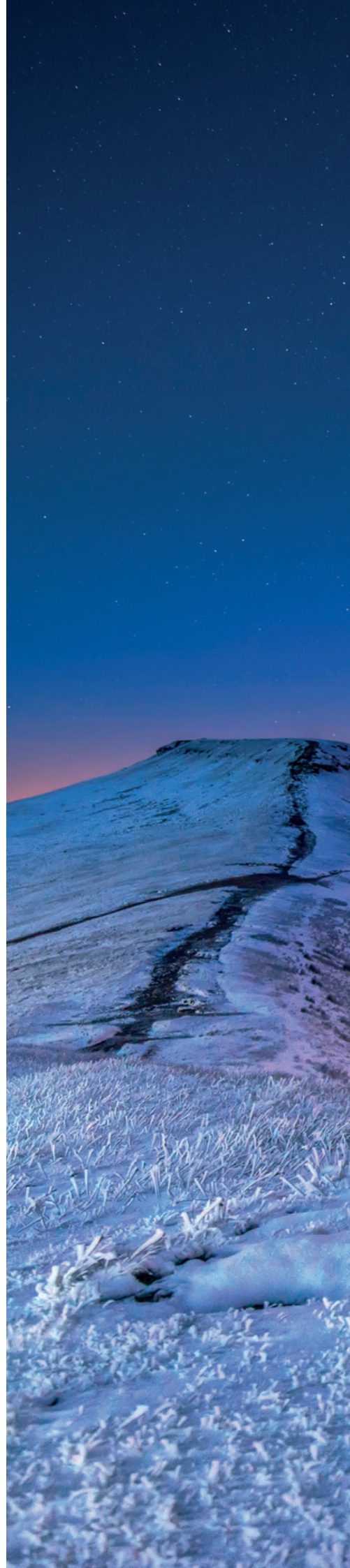
Invest, Innovate UK, the Office for Low Emission Vehicles and the Advanced Propulsion Centre to ensure the optimum package of support for any project.


Our Rural Development Programme is investing nearly £1 billion to support new markets and business improvements to ensure a sustainable and innovative future for our land-based industries and the food supply chain.

Skills

We have a well-educated and skilled workforce capable of responding to the green growth challenge and the Welsh Government works closely with every sector to support the skills employers need.

We will continue to work with the three Regional Skills Partnerships to inform the prioritisation of our skills investment and develop vocational qualifications and apprenticeships, which benefit the energy sector in Wales.





“We are the first country in the world to legislate for the Global Goals and their link to our own well-being goals for Wales. We have legally placed sustainable development at the heart of everything we do.”

Carl Sargeant AM

Minister for Natural Resources

How we help green growth: innovation and Research & Development

We want to support businesses looking to bring to market innovative technologies that will play a major part in improving sustainability, from thermostats to lighting, mobile devices to driverless cars.

We're also growing the research capacity in Wales and creating networks bringing together industry, academia and government for a joined-up approach to green growth. So, businesses here don't just have financial backing and public sector support, they also have academic, industry and supply chain expertise at their fingertips.

Some research centres, initiatives and networks in Wales which support the development of a more sustainable economy:

Marine Energy Pembrokeshire

Industry, the supply chain, academia and the public sector working together to establish Pembrokeshire as a centre of excellence for sustainable marine energy generation.

The National Research Network for Low Carbon Energy & Environment [NRN – LCEE]

The NRN-LCEE, which brings together five of our universities, the Centre for Ecology and Hydrology, the British Geological Survey Wales, and the UK MetOffice.

Aberystwyth Innovation and Enterprise Campus

To support the bio-economy for sustainable food, health, biotechnology and renewable energy.

BEACON+

A £12million bio-refining project that sees three of our universities working with industry to develop renewable materials, fuels and chemicals.

Low Carbon Research Institute

LCRI brings together research across five Welsh universities with topics including the built environment, large scale power generation and marine.

Institute of Biological, Environmental and Rural Science (IBERS)

IBERS at Aberystwyth University works on sustainability projects including bio-fuel technologies and food production.

Energy Safety Research Institute (ESRI)

The recently completed ESRI at Swansea University is working on the potential of marine renewable, tidal, nuclear and unconventional gas energy, collaborating with industrial and academic partners.

Innovation Point

A private limited company owned by Welsh Government Ministers that works with digital technology companies to increase innovation funding, deliver technological innovation and create sustainable growth in Wales.

Sêr Solar

Sêr Solar at Swansea University, is researching the efficiency, the affordability and the longevity of photo-voltaic solar cells, including solar technology that can be printed on metals.

Centre for Automotive & Power System Engineering (CAPSE)

Based within the Faculty of Computing, Engineering & Science of the University of South Wales, CAPSE is a nationally recognised independent research, development, test and certification house with a reputation for cutting edge research and knowledge transfer activities within the advanced automotive and power systems engineering sectors.

Courtauld 2025

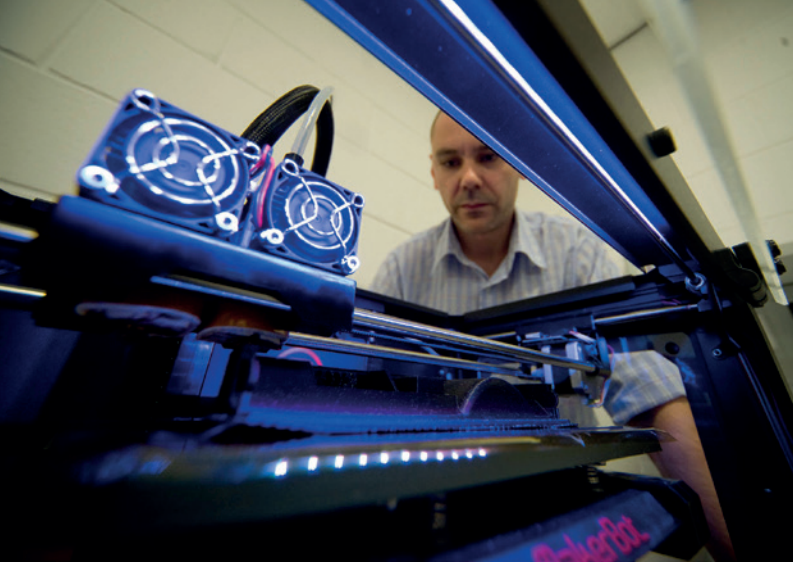
An initiative to help consumers reduce avoidable food waste at home, and encourage businesses to share efficiency savings along supply chains, waste less and get more value from unavoidable waste and increase business resilience.

Food Innovation Wales

This brings together our three food centres of excellence. Towards Sustainable Growth: An Action Plan for the Food and Drink Industry 2014-2020 aims to grow output for the sector by 30% to £7billion by 2020 and has a strong focus on sustainable development through resource efficiencies, waste management, innovation, training/up-skilling in the food and drink industry.

The Hydrogen Research and Demonstration Centre

Developed by the University of South Wales, this is a focal point for new Research, Development and Demonstration of hydrogen energy technology in Wales at Baglan Energy Park.



Invertek Drives

Mid Wales-based Invertek Drives has developed a product which can reduce by more than 50% the energy consumption of electric motors in conveyor, heating, ventilation, pumping and other systems. Investment from our SMARTCymru Fund, was used to employ R&D specialists whose work will be pivotal in ensuring Invertek Drives to double its turnover to £35million.

Solcer House

Experts from Cardiff University have designed and built the UK's first purpose-built, low-cost energy smart house, capable of exporting more energy to the national electricity grid than it uses.



Cardiff & Vale University Health Board

Cardiff & Vale University Health Board has used Invest to Save funding to install LED lighting in the Children's Hospital for Wales and underground tunnels within the main hospital. This will contribute to its estate reduction target of 250 tonnes of CO₂ and £50,000 per annum in energy costs.

Dansco Dairy

Dansco Dairy received Welsh Government support to reduce refrigeration energy consumption. By following a comprehensive five-step action plan across all stages of its cheese production, the company has cut its energy bills by an estimated £100,000 per annum.

