

# Speech: Reimagining the buildings of the future

It's fantastic to be here at this Summit, particularly as a Teesider, born and bred on Teeside, it's always good to be back in the North East.

Growing up in Teeside, I was aware that decisions that were being taken, affecting our area, were often taken by people in a city a long way from having the direct experience of living there on the banks of the Tyne. They didn't have the local knowledge to know exactly what was needed, and that's why all my time in government, and indeed before – I have used every position, as the Minister for Cities, Communities Secretary and now as the Secretary of State responsible for the Industrial Strategy, to promote the devolution of decision making from Westminster to our great cities, towns and their supporting regions.

So with the City Deals we now have Mayors in Liverpool, Manchester, Sheffield and Teeside – just to mention some of the Northern ones. The tide has turned.

And as this demonstrates their success, their influence, in my view, will continue to increase.

And of course the more local you look, the more your mind is on the consequences – good and bad – of policy decisions that can sometimes look more abstract. We need to have in mind, the men and women running, or working, in businesses, and judge how any given decision will affect them and their livelihood.

And that's why I say to the investors and workers in the car industry, whether they are at Jaguar Land Rover in the West Midlands or Nissan near Sunderland – you are a big part of Britain's success. We will listen to you with the seriousness and respect due to you, those who give more to our country than you take.

And we are determined to make sure that you can continue to prosper and to invest in Britain.

Just take the North East's contribution – a region that goes from strength to strength. From cars to chemicals, local jobs and livelihoods rely on the supply chains across the continent – we have 120,000 men and women who work in manufacturing here in the North East, and almost half a million working across the North. And of course, as we will hear later from the Design Council, these jobs in manufacturing are increasingly sophisticated and depend on the excellence of design and creativity of our Universities and industry to come together to form a cluster of excellence that is increasingly successful. Services alone in the North East employ nearly 1 million people, with nearly 4 million across the North.

So, as we leave the European Union we need a comprehensive agreement, that

doesn't involve tariffs or customs frictions for manufactured goods and it's also necessary to take steps to allow our services to keep on growing.

In a world in which countries are racing to be more innovative than the competition, we have a huge asset, it seems to me, in bringing together the ingenuity which is on display right across the country. This region, the north-east, stands proudly to show its excellence to the world.

What better example of this than the location of today's summit – the Boiler Shop?

It was here that, in 1823, George and Robert Stephenson opened the world's first purpose-built locomotive works.

Robert – as Managing Partner – was just 19 years old.

And if there's one thing that defined the innovation here, it was the connections between industries: no barriers between them.

Working at Killingworth Colliery north of Newcastle, George Stephenson convinced his manager to let him build his first locomotive – 'Blucher' – for hauling coal.

The next year George invented the 'Geordie' safety lamp for coalmines.

And over a decade later, his son Robert designed and built the famous 'Rocket' in this very building. Powered by coke made from coal.

Yet today, 200 years later, when it comes to energy, 'King Coal' is giving way to 'Queen clean'.

The 21 April 2017 was Britain's first working day without coal power since the Industrial Revolution, while earlier this year we went 48 and now 72 hours without it.

And when it comes to clean energy, the North is putting the 'power' in powerhouse.

The first reference to a windmill in England can be traced to the 12th century in the former village of Weedley overlooking the Humber estuary.

And over 800 years later, the Humber is still a world-leader in wind power.

The Hornsea One wind farm being built off the Yorkshire coast will be the biggest offshore wind farm anywhere in the world. Capable of supplying electricity to well over one million UK homes.

And right now, the North generates nearly half of England's renewable power and this share is growing.

So as today's theme is 'great opportunities', I'd like to talk about how, through our Industrial Strategy, the Northern Powerhouse can seize the huge opportunities of this shift to clean energy.

Today, we are all living in one of the most extraordinary, exciting times in the history of commerce.

There is scarcely an industry anywhere in the world which will not be transformed by the application of AI, the advent of big data, the rise of electric cars, the invention of new medical technologies or – indeed the shift to clean growth.

To those who are ready and willing to act, this time of unprecedented change offers unprecedented opportunities.

For this reason, our Industrial Strategy sets out 4 Grand Challenges in these areas.

- AI and data
- ageing society
- the future of mobility
- clean growth

On clean growth – we are already world-leading.

Since 1990, we have reduced our emissions by over 40% while growing our economy by more than two-thirds.

And looking to the future, a combination of falling costs and global commitments are creating new opportunities for British businesses to lead the world in the development, manufacture and application of low carbon technologies.

Our [Clean Growth Grand Challenge](#) is a commitment from government to work with industry to make this happen.

There is a big business opportunity here.

Worldwide, green building activity has doubled every 3 years for over a decade. Of the more than \$11 trillion of investment expected in global power in the next 3 decades, the vast majority – 86% – is expected to be in low carbon.

And by 2040, electric vehicles could make up over half of global car sales, compared to 1% today.

We will be working with business to highlight these opportunities during the first ever annual Green Great Britain Week, starting on 15 October.

But these opportunities aren't just global or national, but regional and local too.

A report by IPPR North set out a vision for a Northern energy economy which could create 100,000 jobs by 2050.

Indeed – with its unique natural resources, history of excellence in engineering, and deserved reputation for great universities, the North is

uniquely placed to turn this vision into reality.

And that is exactly what this region is doing.

Earlier on I mentioned offshore wind. Last year, when Hull was UK 'City of Culture', they chose to put a 250-foot long wind turbine made by Siemens in their central square.

A fantastic example of the North taking immense pride in great local companies and skilled tradesmen who are creating this clean growth future.

And rightly so. Just across the Humber estuary, Grimsby is becoming a centre of excellence for maintaining wind farms in the North Sea and is now home companies like EON and Orsted.

But that's not all. Less than a mile north of here, just over the road from St James' Park stadium, is the National Centre for Energy Systems Integration at the University of Newcastle.

They are looking at some of the most fundamental questions of our time, like: how can a smarter energy system deliver cost efficiency and security of supply while integrating more renewables?

They are also working with Northern Powergrid to look at how electric cars can feed energy back into the grid when they're not in use.

Just another example of the North East setting the pace for electric vehicle technologies.

From Nissan's Sunderland plant producing the Nissan Leaf – the world's best-selling electric vehicle. To the North East having more electric charging points per person than any other UK region or nation.

The North is no stranger to cutting-edge transport technologies.

In 1825, at the opening of the world's first public railway using steam trains between Darlington and Stockton, a man on a horse ran ahead of George Stephenson's 'Locomotion No. 1', made on this very site, carrying a flag with the words: 'the private danger is the public good'.

Then, as now, it was business – not government which was innovating, taking risks and trialling new ideas.

But there is a role for government to create the right conditions for innovation.

So as part of our Industrial Strategy, we are supporting businesses and innovators across the North as they develop the clean technologies of tomorrow.

For example, we are providing nearly three million pounds for Manchester City Council's Civic Quarter heat network scheme.

This will distribute heat from electricity generation through two kilometres of underground pipes to some of Manchester's most iconic buildings, including the Town Hall and Art Gallery.

And, in so doing reduce carbon emissions.

And today, I'm delighted to announce that the £18 million Industrial Heat Recovery Support programme will open for applications this autumn.

This should encourage industry to invest in heat recovery technologies, harnessing the power of heat, that would otherwise go to waste in manufacturing and data centres across England and Wales.

So it's clear that on clean growth, the North is leading the way.

And our next challenge is to make the buildings we live and work in more efficient. This is vitally important.

Buildings account for around 30% of total emissions and around 40% of final energy consumption in the UK.

We want to lead the world in designing and building safe, smart, energy efficient, affordable homes and commercial buildings.

So our initial 'mission' for the Clean Growth Grand Challenge, announced by the Prime Minister, is to halve the energy use of new buildings by 2030.

In the coming year, we will announce further missions to build on this one.

And we will be looking at how to harness the pioneering innovation in this room which will turn these missions into reality.

So today, I am delighted to announce, the winners of two £10 million innovation competitions which will support companies as they pioneer energy efficient technologies.

The successful applicants include northern companies. Such as Free Running Buildings in Leeds, who are pioneering low energy ventilation technology. And Hull University, who will develop and demonstrate a high efficiency, low cost, low carbon heating system on public buildings in the Yorkshire area.

On energy efficiency, the public sector needs to lead by example.

So today I'm proud to announce, that we are publishing guidance on our voluntary wider public and higher education sector target, the Emissions Reductions Pledge 2020.

This is a voluntary target of 30% reduction in greenhouse gases by 2020 to 2021 against a 2009 to 2010 baseline.

As we celebrate the NHS's 70th anniversary today, this is a great opportunity for the NHS to be part of a wider public sector effort. Working towards greenhouse gas targets that cut energy costs at the same time.

On top of this, central government and its agencies have agreed to work towards a more stretching target in the future.

Clean growth is a real commercial opportunity. One that we hope to exploit as part of a series of Sector Deals.

These are long-term partnerships between the government and industry on sector-specific issues to boost productivity, employment, innovation and skills.

And today, I'm delighted to announce that we have agreed a Construction Sector Deal the centrepiece of which is a joint government-industry investment of around £420 million.

This is the biggest government investment in the sector for at least a decade.

It will drive development of digital, manufacturing and renewable energy technologies. Pioneering new techniques which can be exported to markets all over the world. And helping to create healthier, more energy efficient buildings, which are cheaper to run, here at home.

But to really transform the sector, we need to make sure that people have the skills they need to benefit from these new technologies.

The sector currently faces the twin challenge of equipping workers with these new skills while also recruiting enough people with enough traditional skills to replace those who are leaving.

To address this, the Sector Deal will deliver 50 new approved apprenticeship standards, increase the number of apprenticeship starts to 25,000 and co-ordinate how we promote construction careers.

Showing people the wealth of opportunities on offer in this innovative, hi-tech industry.

Finally, the Sector Deal will promote fair contractual and payment practices. I know that there are many small and medium-sized firms in the audience today.

And contractual and payment practices in the construction sector often disadvantage smaller firms in the supply chain. Acting as a barrier to the strategic relationships which could unleash new investment in new technologies and skills.

The government will therefore support the Construction Leadership Council in bringing together industry as it looks to develop solutions, taking into account lessons learned from Carillion's insolvency.

Ladies and gentlemen, from the first house in the world to use hydroelectric power built by Lord Armstrong in Cragside, Northumberland, to the world's first commercial nuclear power station at Calder Hall in Cumbria, for decades the North has been the home of clean growth.

And as we look to the future, to the next clean growth 'firsts', which will redefine the way we live, we need to support the next generation of innovators, inventors and problem-solvers.

The George and Robert Stephensons of the 21st century.

The people whose names will, in the years to come appear on plaques across the North, noting the exact location where expectations were defied, inventions created and discoveries made.

The Clean Growth Challenge is the means through which we shall do this, setting out the scale of the opportunity. Supporting businesses across the North and the entire UK, as they develop new, cutting-edge technologies.

And single-mindedly pursuing our mission to reduce energy use through a [Construction Sector Deal](#) which re-imagines the buildings of the future.

We cannot do this without you – firms from across the North. And I'd invite you all to join with us in government to make this a reality.