

Speech for London Climate Week

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The book *The Time Machine* begins with the time traveller explaining his discovery to some dinner guests.

One of them says:

It would be remarkably convenient for the historian... One might travel back and verify the accepted account of the Battle of Hastings, for instance!

Another thinks:

One might get one's Greek from the very lips of Homer and Plato.

And, one character says:

Then there is the future... Just think! One might invest all one's money... leave it to accumulate at interest...and hurry on ahead!

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The Time Machine was published in 1895. The same year, the London School of Economics was founded.

Today, we often talk about the concept of “resilience” as if it's a new idea.

But, the LSE's founders would have known all about urbanisation, population growth, rapid technological shifts, and hostile weather impacts.

We are still using much of the infrastructure built over 100 years ago.

Including the world's first underground railway – which opened in London in 1863.

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Nonetheless, today's world would feel extraordinarily different to the time travellers – not least because of technological changes.

For instance, cars.

On 22 September, London is going car free for a day to improve the capital's air quality.

But, in late nineteenth century London, traffic meant horse drawn carriages.

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Around about that time people saw cars in a similar way to how many now view the rise of artificial intelligence and robots – as a threat to jobs.

A study released last week by Oxford Economics said that up to 20 million manufacturing jobs could be replaced with robots by 2030.

But, as with the invention of the car, modern technological breakthroughs bring great risks and opportunities, many of which we can't yet fully understand.

Oxford Economics' report suggests that while increased automation takes away jobs in manufacturing, it will boost employment in other ways.

In his analysis of that report, the BBC's technology correspondent Rory Cellan-Jones said:

The challenge for governments is how to encourage the innovation that the robots promise – while making sure they don't cause new divides in society.

Last year, the Intergovernmental Panel on Climate Change said we have 12 years to hold global warming to 1.5°C above pre-industrial levels.

They say if we don't, the acceleration in long-term climate trends will create a conflagration of impacts...

like floods, storms, heatwaves, and the spread of disease

...that already threaten cities, economies, and ways of life.

Total global damages from climate related events rose by more than 11 percent per year over the past two decades – to more than 300 billion dollars in 2017.

100 million people are at risk of being pushed into poverty by climate change by 2030; particularly in sub Saharan Africa and South Asia.

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The experience of global economic and social inequality will be felt acutely in cities.

By 2030, the population of the world will have reached 8.5 billion, and roughly two thirds of people will be living in urban environments.

London is currently home to almost 8.9 million people. This is projected to be 10.8 million by 2041.

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The scale of these human challenges are unique to our time, but they are not totally unprecedented.

They present a massive investment opportunities in new technology.

I recently read in the Financial Times that Jeremy Grantham, who funds the Grantham Research Institute, is also investing in:

- the new solid-state lithium battery, which Volkswagen is testing for electric cars;
- the gene-edited potato, which starves the destructive Colorado beetle, and
- scores of other lab-stage discoveries.

But, no one should pin their hopes for the future on technology alone.

We also need to invest in infrastructure, systems, skills and expertise – to protect people and businesses.

In the UK, the Infrastructure and Projects Authority forecasts there will be £600 billion of investment over the next 10 years: 50 per cent of which will be financed by the private sector.

Nick Stern, the Chair of the Grantham Research Institute, has said:

If it is dirty and high carbon, it will lock us into that technology for a long time.

We will be sentenced to live in cities where we cannot breath or move or be productive.

If we do it using sustainable technology, however, we could have an extremely attractive future where you have strong growth, poverty is reduced, cities are cleaner and forests are saved.

Finance is key to getting this right.

Which is why I was delighted to see the launch of the government's Green Finance Strategy yesterday.

The joint working group with regulators on climate-related financial disclosure will drive businesses to do more by ensuring investors take better account of climate risks.

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A few years ago, the Environment Agency Pension Fund set up the Transition Pathway Initiative with the Church of England National Investing Bodies.

The TPI, run out of the Grantham Research Institute, assesses how companies are preparing for the transition to a low-carbon economy.

We use the results of its analysis to inform investment decision-making and our engagement with companies.

It is now supported by asset owners and managers with over \$14 trillion combined Assets Under Management and Advice.

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The Environment Agency Pension Fund has also recently been asking major companies what they are doing to prepare for the physical impacts of climate change.

Convincing people to participate in a pension fund scheme means asking for their trust over the long term.

We need confidence that companies we invest in are sufficiently protecting assets and supply chains, so our 40,000 beneficiaries retire into a world worth living in.

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Finance can specifically help cities manage the transition.

The Environment Agency is supporting the Greater Manchester Combined Authority's development of IGNITION.

The project sets a target of a 10% increase in green infrastructure in Greater Manchester by 2038.

Over the next three years it will create, and finance, natural climate adaptation projects that are attractive to private investors, and create the mechanisms and confidence for investments in blue and green infrastructure.

We hope to provide a model for investors around the world that would help 'green finance' for urban infrastructure to go mainstream.

I don't pretend any of this is easy.

For instance, during the recent flooding in Lincolnshire, the Environment Agency's priority was to help people recover.

We used high volume pumps to remove water, and these run on diesel – which increases our carbon footprint.

We can't abandon people because we need to reduce emissions, but we do need to reduce emissions.

So, we must invest in new technology and techniques to help us do both.

We have also begun measuring carbon emissions during the lifespan of our flood schemes.

We have set a 40% reduction target. This is ambitious but we are committed.

We're trialling new materials, such as low carbon concrete, and embracing different methods.

Like, cathodic protection, which puts a small current through reinforced steel inside concrete, and this prevents it from rusting in saline environments.

This significantly reduces the lifetime carbon impact of schemes on the coast.

We are also beginning to steer projects using the UN Sustainable Development Goals.

The construction of the Boston Barrier is a good example.

And, our new contract arrangements for the delivery of flood schemes ensure partners are using, and innovating, low carbon solutions for construction projects.

Here in London, two of the major climate challenges are rising sea levels and more severe surface water flooding.

The Thames Barrier was opened in 1982, and was expected to last until 2030.

It is a marvel of innovative engineering, and will now protect London until 2070 – 100 years after it was designed – because the embankment foundations were built to enable them to be raised.

Beyond 2070, the Thames Estuary 2100 Plan sets a long-term approach to managing rising sea levels.

Londoners do not want to be disconnected from the river because of higher defences.

We want to improve access to the river, create habitat, and enhance quality of life for people living here.

The foresight of the Thames Barrier's design shows that although we don't have a time machine, we can still make informed choices about the future.

Or – put another way – Greta Thunberg said:

Avoiding climate breakdown will require cathedral thinking. We must lay the foundation while we may not know exactly how to build the ceiling.

That is what we aim to do with our draft flood strategy, which sets out a national ambition that is adaptable and gives communities more choice about the future.

The Defra Minister Lord Gardiner, wrote in the government's National Adaptation Programme, that:

While we continue to play a leading role in international efforts to keep global temperature rises well below 2°C... our resilience will only be robust if we prepare for worse climate change scenarios.

We agree.

Around the world, there are many examples of incredible work by people to manage climate challenges.

In Bangladesh, deaths from tropical cyclones declined more than 100-fold in 40 years, from 500,000 in 1970, to just over 4,000 in 2007.

This was achieved by innovation in early warning systems, cyclone shelters, evacuation plans, coastal embankments, reforestation schemes, increased awareness, and communication.

In my role as UK Commissioner to the Global Commission on Adaptation, I want to help share the learning of examples like these.

The Global Commission – led by Ban Ki-moon, Bill Gates, and Kristalina Georgieva, CEO of the World Bank – will present an agenda for scaling up adaptation ahead of the UN climate summit in September.

Also at that summit, the UK government will lead on climate resilience.

They want to deliver:

- A systemic shift in the way the public and private sectors think about investment.

And,

- Better capacity to manage climate shocks around the world.

The international climate change resilience market is a rapidly growing one, with significant UK expertise and capability.

The International Trade Secretary recently announced UK Export Finance and the Environment Agency will work together to help UK suppliers with expertise in climate change adaptation deliver infrastructure projects and services across the globe.

Working with UK Export Finance, and others, the Environment Agency can build international partnerships to tackle climate change...

And, help to support and position the UK supply chain at the forefront of this market.

I began this speech talking about The Time Machine, and the young character who suggested using time travel as a way to cheat the stock market.

We can all think of ways we might have invested in 1895 to make a strong return.

But, perhaps the best time to travel to would be now.

Launching Generation Investment Management's Sustainability Report earlier this month, Al Gore said:

Even though much more is needed... the sustainability revolution is gaining momentum... and it now represents the single greatest investment opportunity in all of history.

I hope I've given you a more optimistic vision of the future than the dystopian science fiction of HG Wells.

We need to be honest about the scale of the world's problems...

But, there are also many opportunities to improve the lives of billions of people, living together in clean, and resilient, cities.

– Thank you very much.