

# Two Degrees of Change or 2% of GDP? Investment, Growth and Climate Change

Two Degrees of Change Conference  
April 2016

Dr Nigel Wilson  
Chief Executive Officer  
Legal & General Group

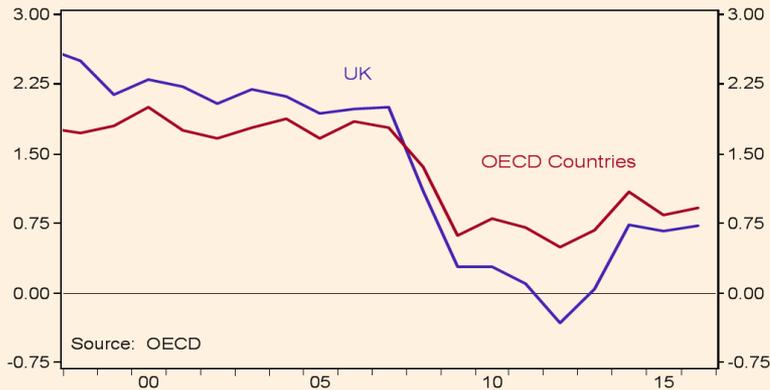


“There is no shortage of energy on earth. The sun delivers 5000 times more power to the surface of the earth than humanity needs. The cost of renewables has been falling. But not fast enough. Renewable energy gets less than 2% of the world’s publicly funded RD&D (Research, Development and Demonstration).”

Apollo Programme, 2015

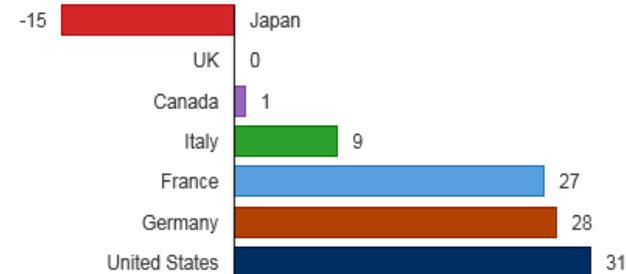
# UK Productivity: Is it really a puzzle?

Long Term Labour Productivity Growth Rates (%pa over last 5 years)

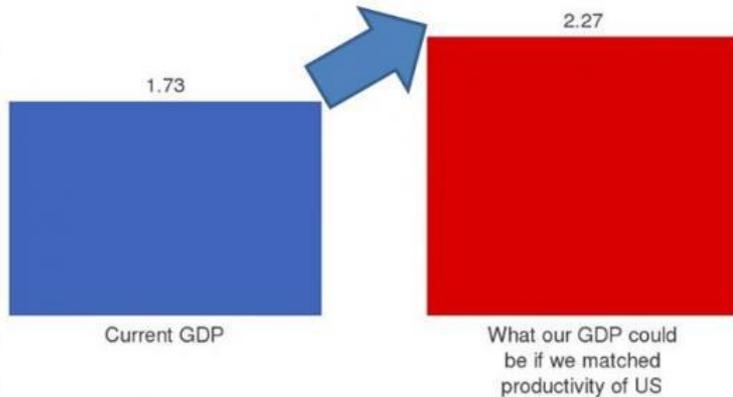


## How do we compare with our rivals?

UK has second lowest productivity rate in group of world's richest nations



If we matched productivity rate of the US, our economy would grow by 31 per cent



“Let me be clear: improving the productivity of our country is the route to raising standards of living for everyone in this country... our future prosperity depends on it.”

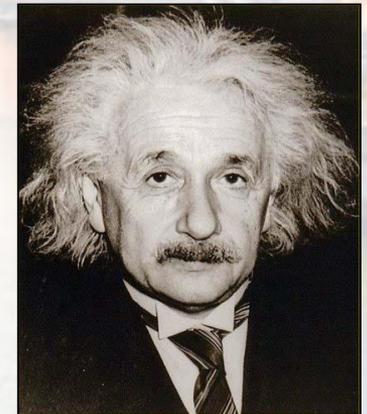
George Osborne

## ➤ Is the global macro economy moving to a digital world of zeros?

		Downside
	Analogue Economy Paper Money % change	Digital Economy Digital Money % change
- Economic growth	2 - 4	0
- Nominal interest rates	4 - 6	0
- Real interest rates	2 - 3	0
- Inflation	3 - 10	0
- Normal	10 - 30	
- Hyper		
- Wages	4 - 6	0
- Nominal	2 - 3	
- Real	10 - 30	
- Hyper		
- Currency	Fixed with "crashes"	Volatile with Competitive devaluations

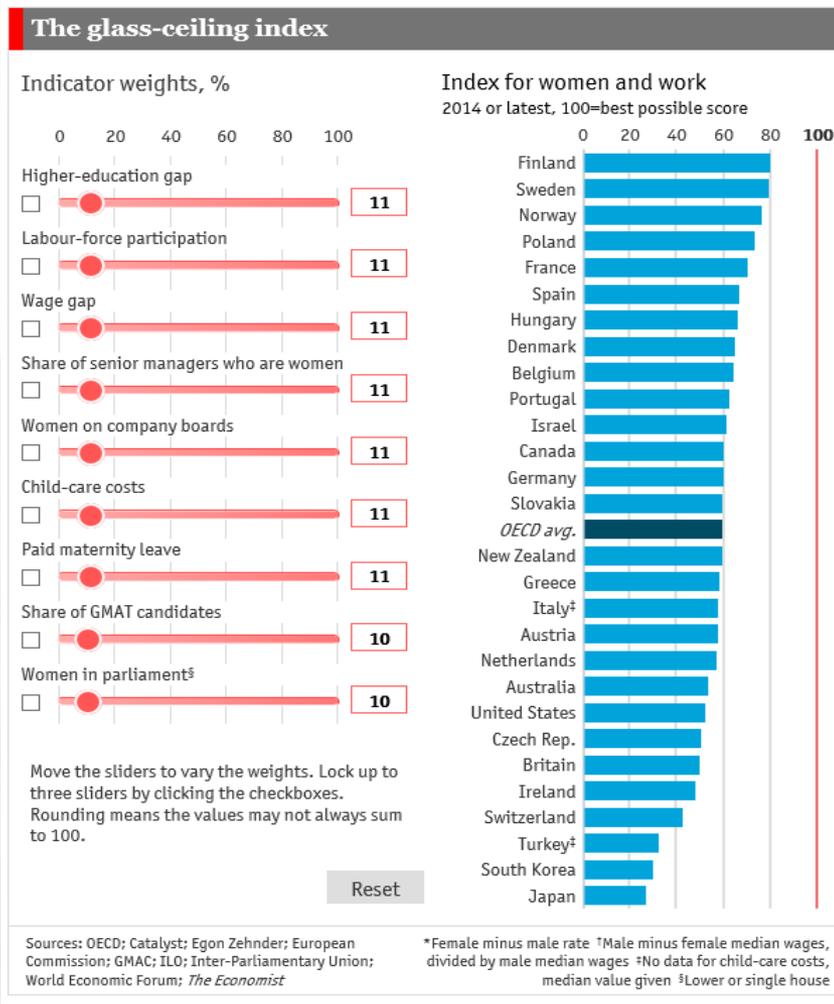
"We cannot solve our problems with the same thinking we used when we created them."

- Albert Einstein



# Half the Workforce are Under-used

## What is holding us back?



- Ambition from school onwards
- Skillsets (not a gender-specific issue)
- Focus on NEDs and top echelons
- Childcare and workforce re-entry
- Culture
- Impact of alpha females: positive or negative?
- Enough Institutional Pressure?



**Sarah Aitken**  
Head of Distribution, LGIM



**Manjit Wolstenholme**  
Chairperson, Cala Homes

**Karan Martin**  
Customer Services  
Director, Insurance



**Natasha Mora**  
Head of Legal (LGC & Corporate)

**Cheryl Agius**  
International  
Development Director, LGR



### OUR INSPIRATIONAL ROLE MODELS

We have identified 13 of our high potential women as role models to help us achieve 50/50 by 2020.

- To share career stories;
- To be Career Sponsors for early career, high potential women;
- To shift mind sets and challenge the unconscious bias in day to day interactions;
- To provide referrals for successful women they have worked with in the past;
- To influence the 50/50 by 2020 action plans for their business areas.

**Eleanor Nasar**  
Investment  
Director, LGR



**Emma Byron**  
Strategy Director, LGR



**Eve Finn**  
Head of Portfolio  
Solutions, LGIM



**Claire Singleton**  
Head of Legal  
(LGAS & Digital)



**Honor Solomon**  
Head of Retail  
Distribution LGIM



**Kaye Maguire**  
Head of Legal (LGR  
& Resources)



**Laura Mason**  
Director Direct  
Investments, LGC



**Jackie Noakes**  
MD, Mature & Digital



**Vishaka**  
CEO, India First



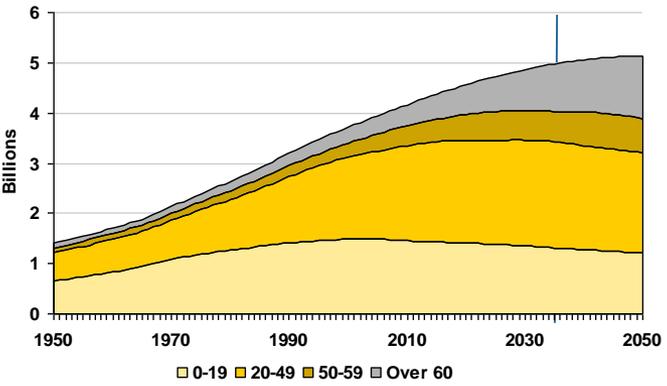
**Shannon Wood**  
Commercial Director,  
Mature Savings

# Are we ready for a Greyer World?

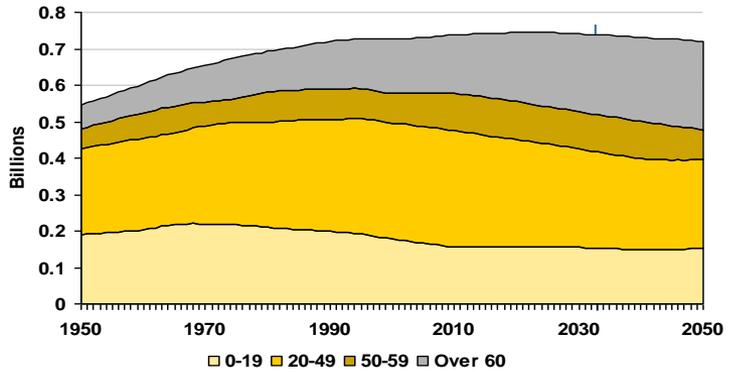
*“The world is becoming grey. Over 60s rising from 600 million to 2 billion by 2050”*

WORLD POPULATION GROWTH 1950-2050

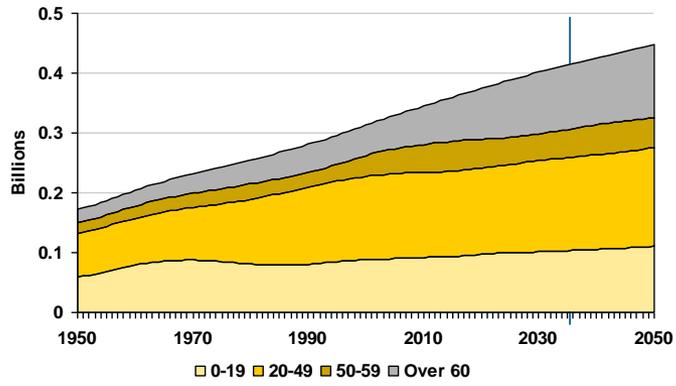
ASIA



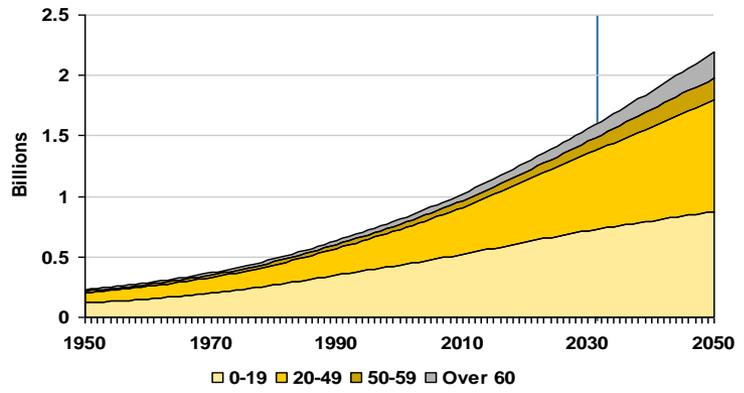
EUROPE



NORTH AMERICA

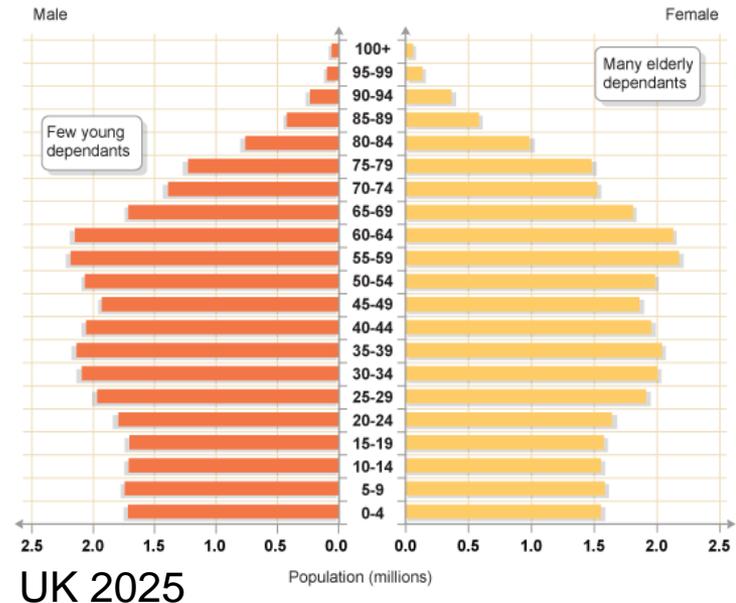
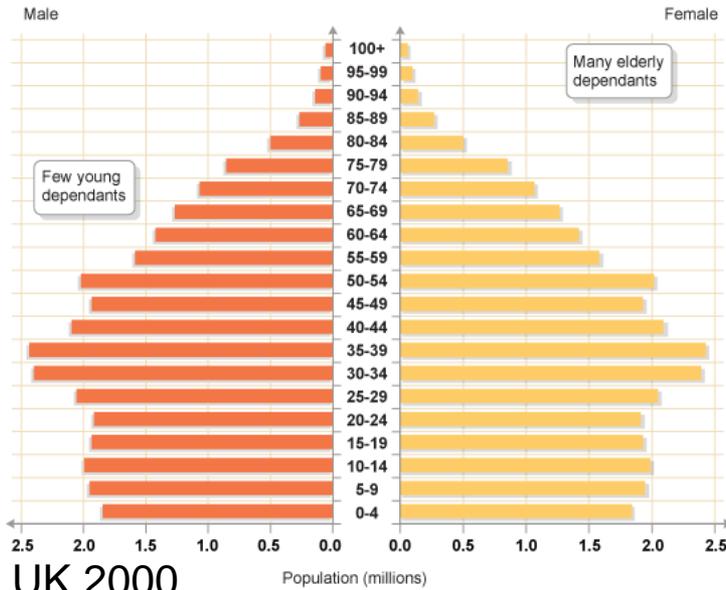


AFRICA



Source: United Nations Population Division, 2010 projections. Total projected world population in 2050 is 9.3 billion.

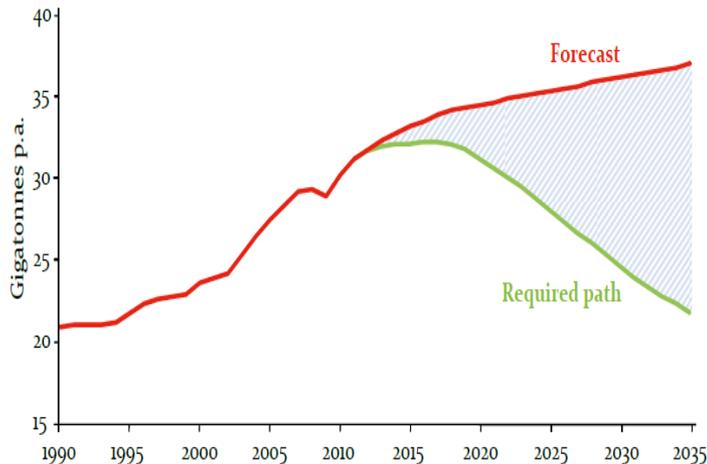
# Are we ready for less intergenerational and government support?



Dependency Ratio	1950	2030 (Est)
Japan	12.2	1.8
Germany	7.1	2.1
Italy	8.0	2.3
France	5.8	2.4
UK	5.9	2.9
US	8.1	3.0

# Carbon and Climate

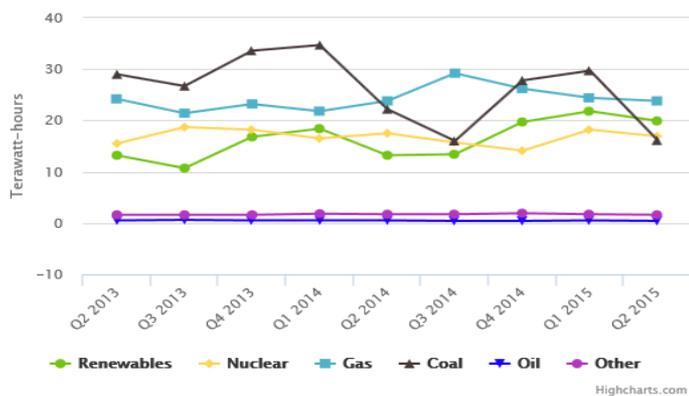
## Energy-related CO2 Emissions



- By 2035, atmospheric CO2 will pass the level for a 2C rise in temperature.
- Solar and wind generation are potential solutions
- UK Renewable generation now surpasses coal

## UK electricity generation

(source: DECC)

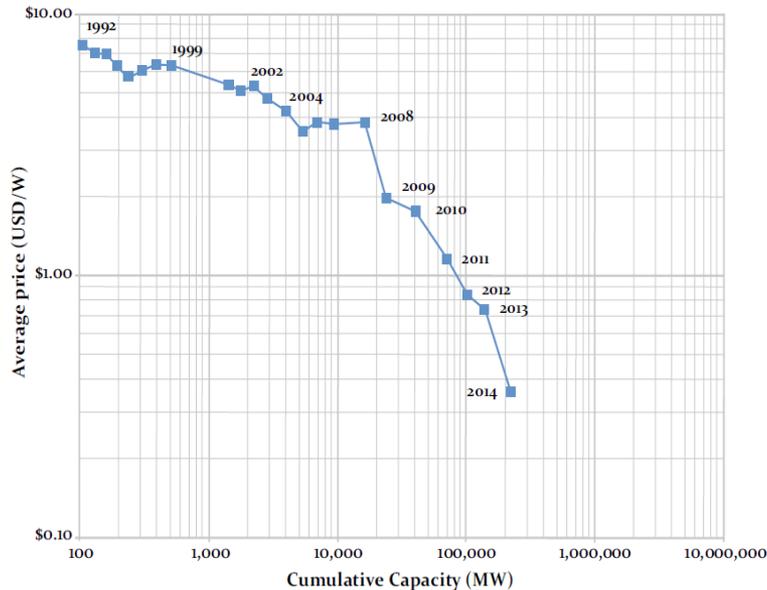


We also need:

- Better energy efficiency (eg in modular housing)
- Storage and smart grids
- Expenditure on R&D, not subsidies

# Carbon, Climate and Cost: Economics 1.01 for Energy

How the price of silicon PV modules has fallen as installed capacity has risen



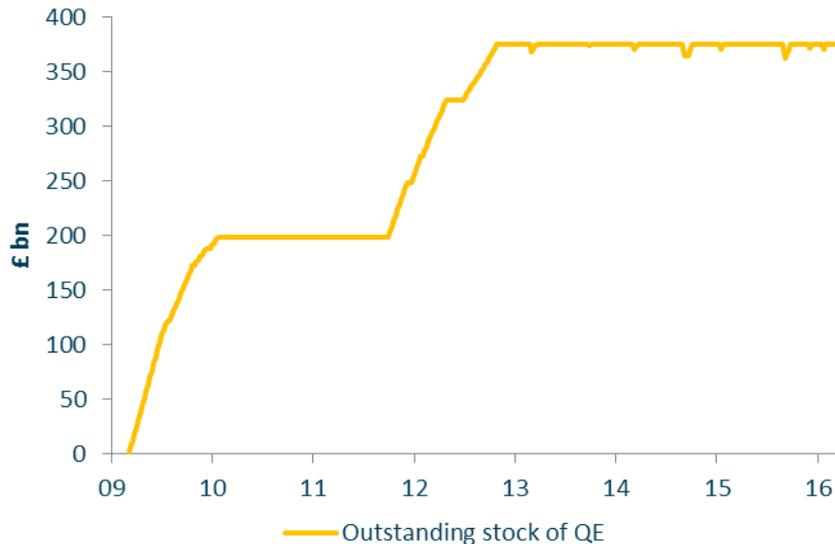
- OECD subsidies to fossil fuel and renewables are over 100 times greater than government R&D on renewables
- Long-term investment is available for suitable energy projects

- A wide range of generation technologies now have levelised costs below \$100 per MWh – ie. Competitive versus fossil fuel plus carbon price
- “Moore’s law” applies for solar PV: plastic PV will further reduce prices, and wind turbines are scalable
- Local “mini-grids” improve efficiency and reduce transmission losses

	\$ billion p.a.
<b>Govt R&amp;D expenditure (OECD):</b>	
Total	333
On renewables	6
<b>Subsidies:</b>	
to renewables	101
to fossil fuel	544
<b>Official development aid (OECD)</b>	127
<b>Promised public and private payments by rich countries to developing countries for climate change mitigation</b>	100

# “Money, Money Everywhere, Nor Any Drop to Invest...”

The UK's QE 2009-2016



STERLING M4 2009-2016



- **QE probably saved us in 2008, but it's not a policy for growth**
- **Money creation has driven mis-allocation**
- **Negative interest rates should spur a shift from “synthetic” to real assets**
- **Long-term institutions can lead the way... and earn enhanced risk-adjusted returns**

# LONG TERM DIRECT INVESTMENTS BY LEGAL & GENERAL.

Direct investment programme, with £6.3bn invested to date

▶ **£15bn**

## Launching a €250m Renewable Energy Fund:

"By using our balance sheet to pave the way for large scale, long term institutional investment, we are helping revolutionise these technologies to benefit investors, consumers, and wider society."

John Bromley

Head of Clean Energy, LGC

Transport and Logistics:  
£320m, maturities to 30 years

Salford MediaCityUK  
£500m

English Cities Fund  
schemes in Liverpool,  
Plymouth, Canning Town,  
Salford and Wakefield:  
over 5.4m sq ft of mixed-  
use space, brownfield land  
Royal Liverpool University Hospital:  
£429m rebuild

£400m Cardiff city centre  
redevelopment joint venture

Places for people:  
£252m, acquiring 4,000  
homes, building 7,000  
houses, 50 year lease

Methodist Care Homes:  
£70m investment, 30 year  
lease

University of Southampton:  
£93m, 1,104 beds, 40 years income

CALA Homes:  
£210m investment (47% stake),  
further £200m for Banner Homes

Leeds Thorpe Park  
£162m urban regeneration  
investment

Hyde Housing Group:  
£102m investment  
15 year facility

Thames Valley Housing:  
£40m to fund  
500 affordable homes

Sentinel Housing:  
private placement (

## ➤ Environmentally efficient Digital Cities

“Our Towns and Cities aren’t overbuilt, they’re under-demolished”



# 10:1



Digital infrastructure investment' multiplier: key to economic growth – a collective responsibility

Direct Investment programme over five years

L&G's Investment in a £400m Development - Cardiff

# Productivity and Wages in the Second Machine Age

## A history to repeat?

3

Average real wage, year 1=100

— Britain, year 1=1770

— United States, year 1=1970



Sources: "Pessimism Preserved: Real Wages in the British Industrial Revolution" by R.C. Allen (2013); US Bureau of Labour Statistics

## Who feels most excluded?

Rich people in  
Rich countries

Poor people in  
Rich countries

Rich people in  
Poor countries

Poor people in  
Poor countries

## Questions for Policymakers:

- What is productivity in a digital world?
- What are the implications for employment?
- What are the implications for inequality?
- Successful businesses will ride the digital wave. Can government respond? If so, how?