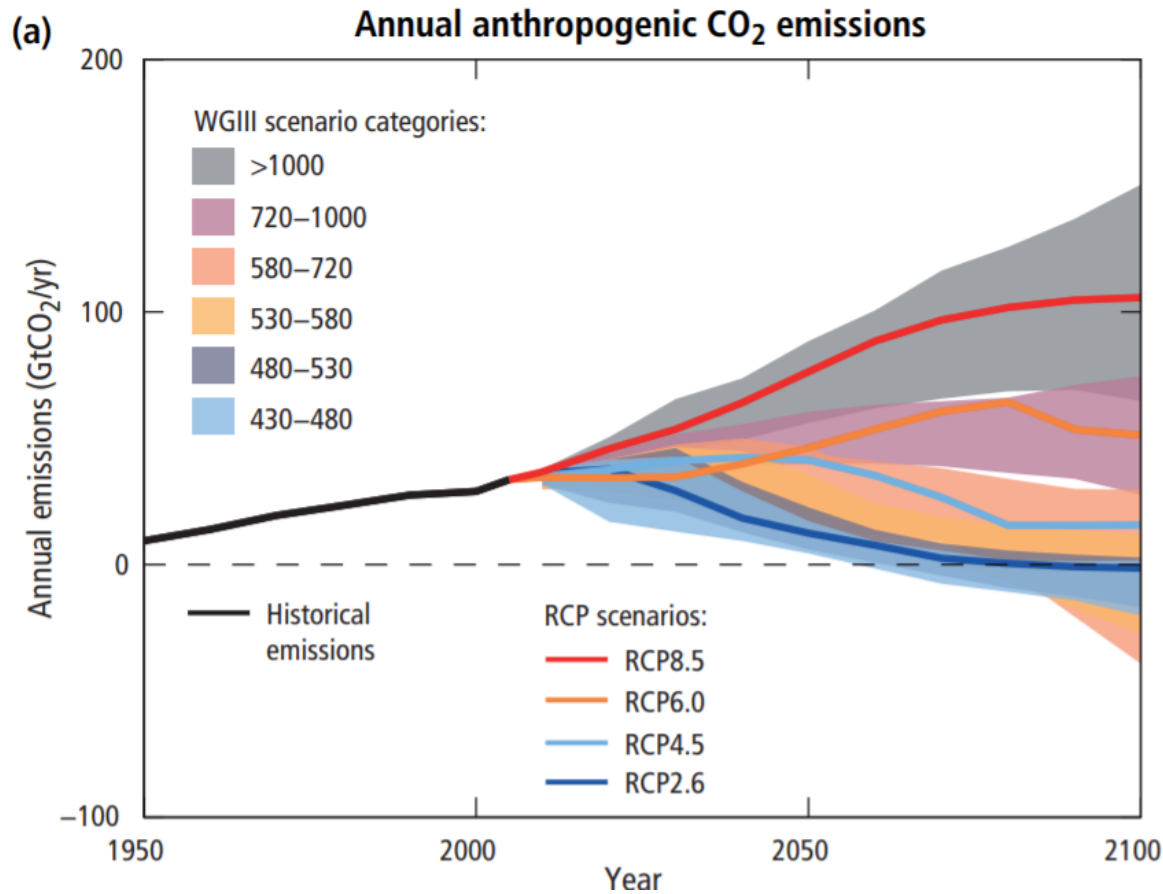
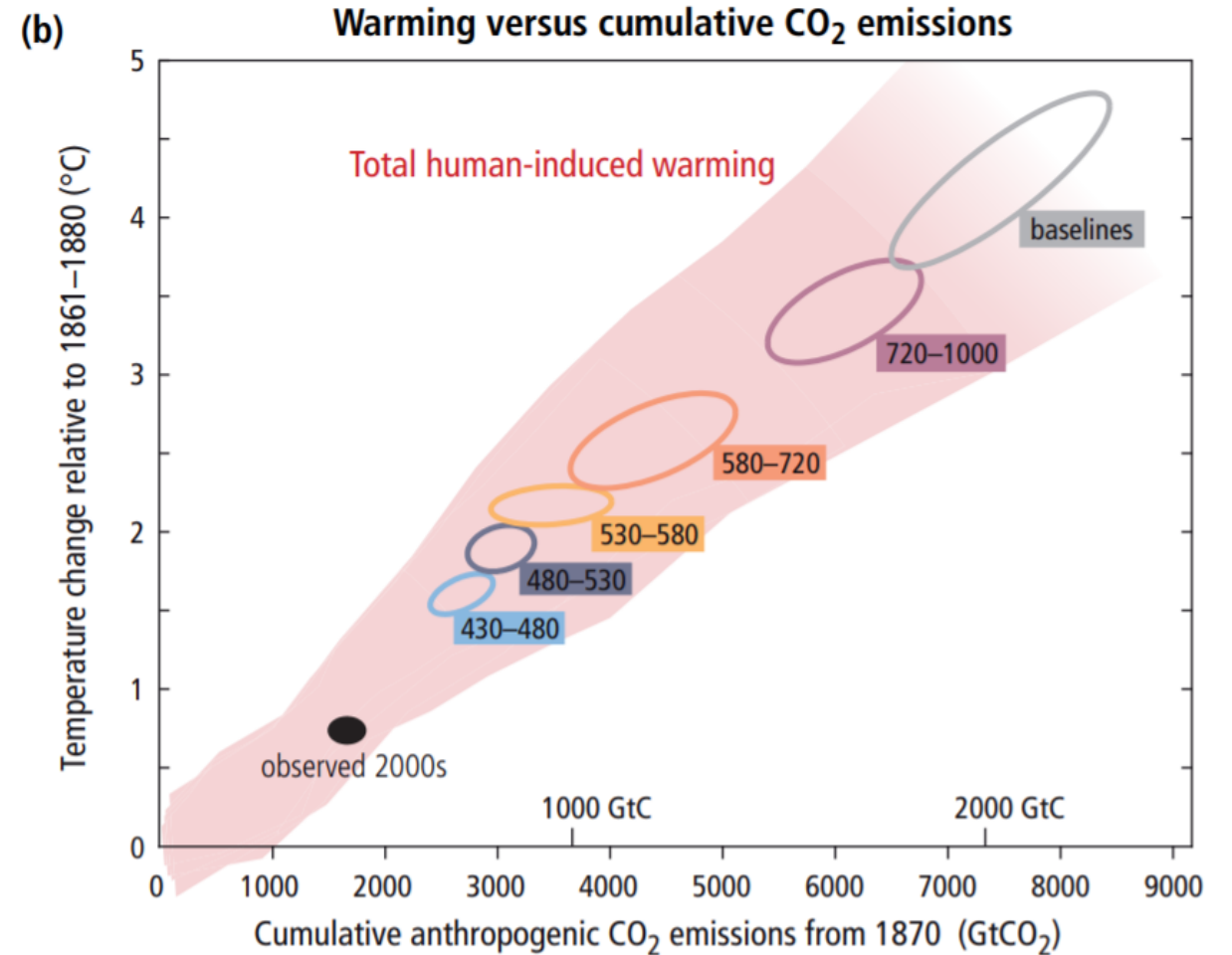


IPCC – Climate Change Scenarios

IPCC Representative Concentration Pathways (RCP)



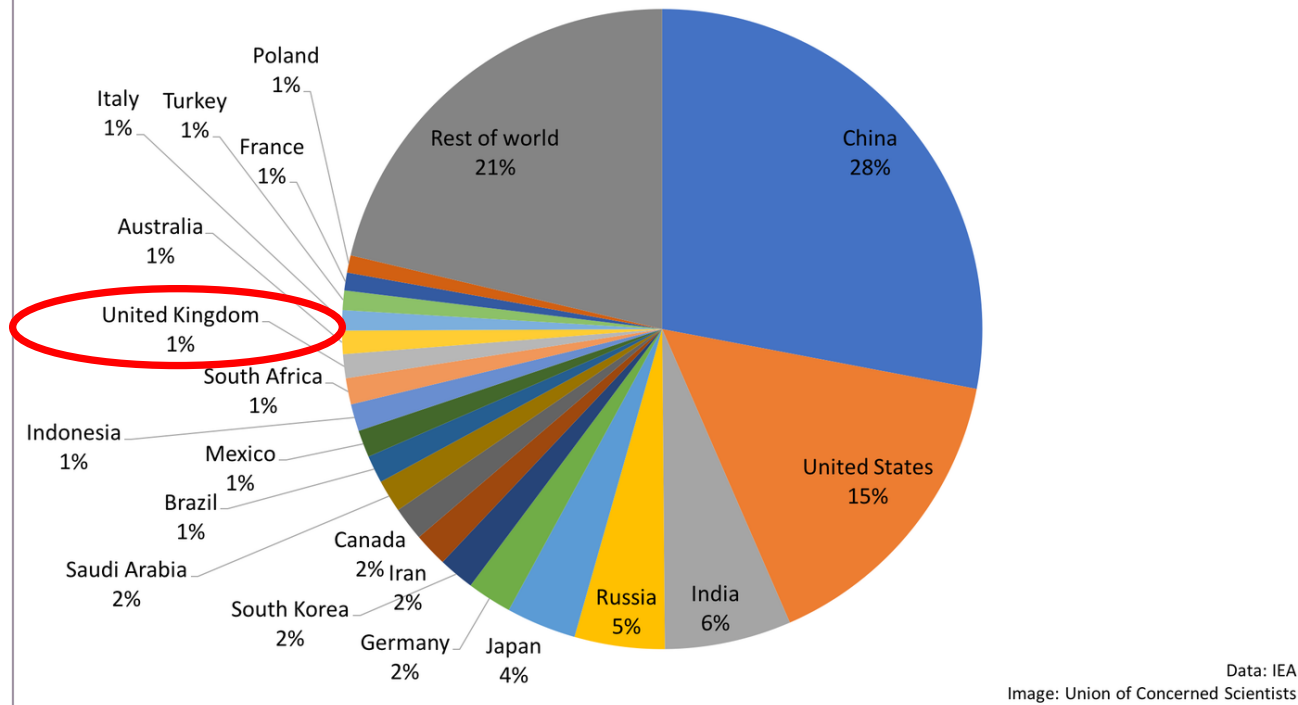
RCP2.6: + 1-1.5°C by 2100 from pre-industrial levels
RCP4.5: + 1.6-1.8°C. RCP6.0: + 3-3.6°C
RCP8.5: very high GHG emissions: + 3.6-5°C



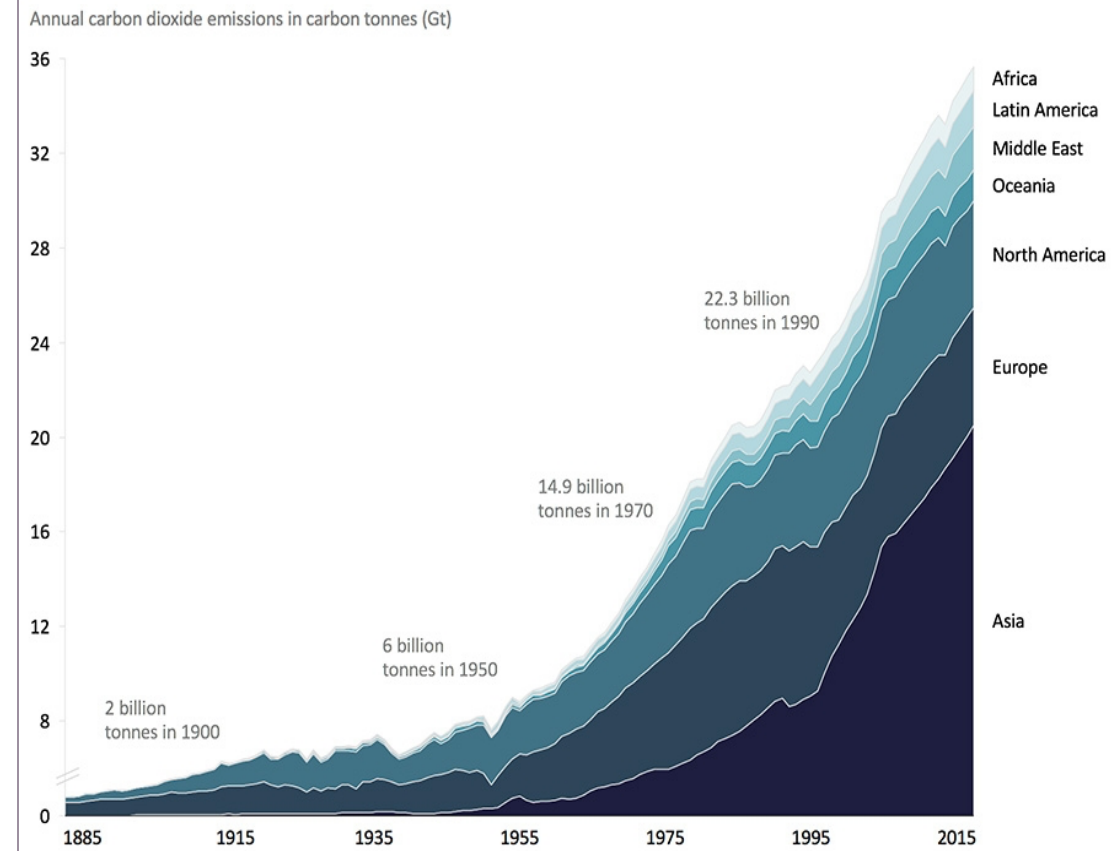
Global GHG Emissions – going up

Not one to point fingers, BUT one country is emitting more now than the whole world did in 1990.

Share of global carbon dioxide emissions from fuel combustion (2015)

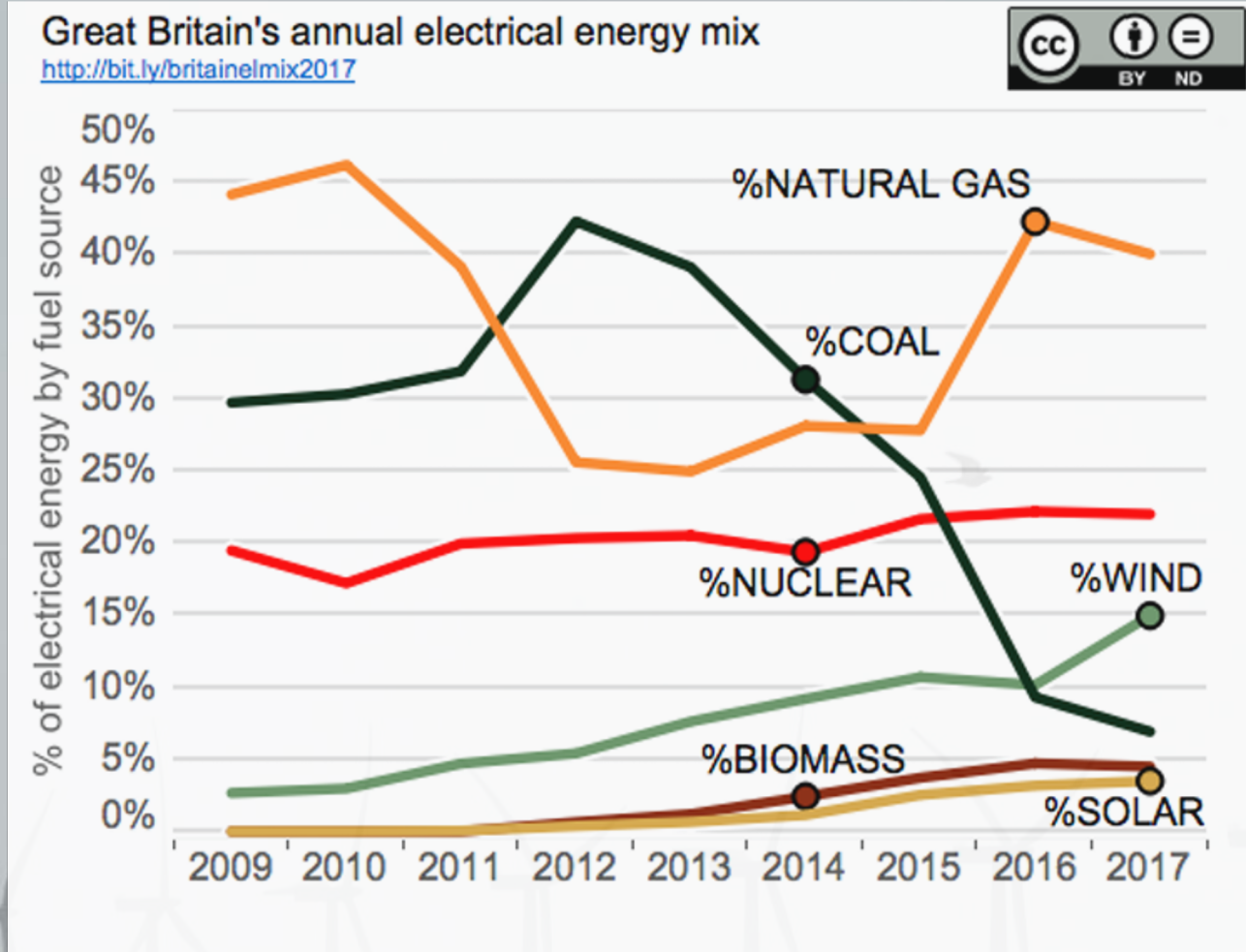


Global CO₂ emissions globally by region



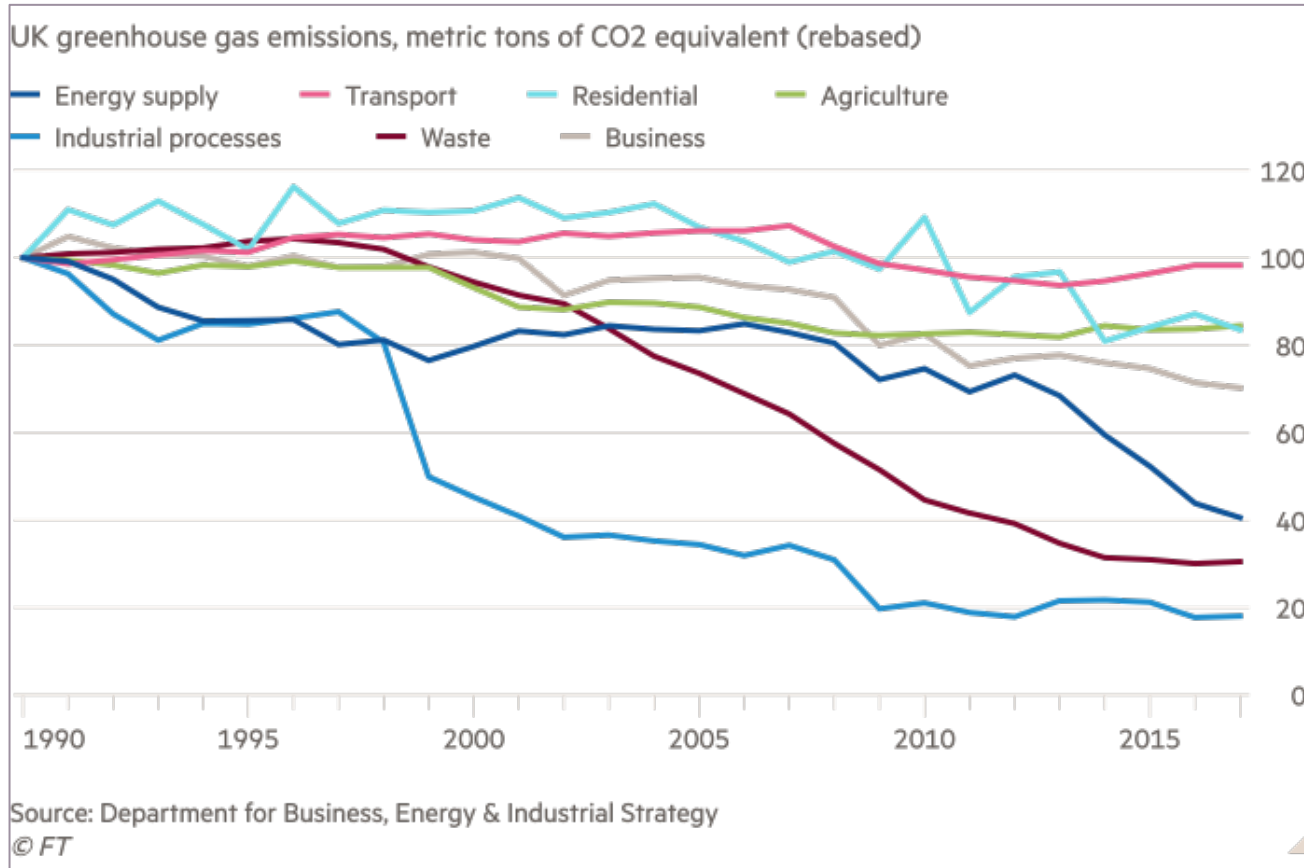
Britain Generation Mix

Wind generation is now twice that of coal.



Bank of England – Call to Arms

Banks and insurers have been requested by the Bank of England (SS3/19) to provide a plan to address the risks related to climate change by October 2019



Transition Risks

- Driven by the need for new technologies or investment to help reduce green house gas emissions over next thirty years to meet climate change policy targets
- This will have a significant a wide number of sectors, notably utilities, transport, materials, construction and industrials

Physical Risks

- The impact of adverse weather and rising sea levels on physical assets and productivity
- This will impact nearly every region of the planet adversely and will require a detailed regional hazard model aligned to climate projections that can be mapped to company earnings and at a country level

- Focus of transition risk has been utilities, in future this will switch to transport and retail where consumers will switch away from the Internal Combustion Engine and Gas Boilers.
- Cows will be asked to cut down on flatulence!

Quant Foundry Corporate Model

The corporate model forms part of a global economy that is driven from the outputs of a specified Integrated Assessment Model (IAM)

The IAM provides a view on the mix of energy usage, energy prices and the types of **technology** and costs that will be used to ensure given greenhouse gas targets for each **region of the world**. The corporate model links to these inputs to provide a forward looking simulation of the company. For energy generation business each company is **constrained** by green house gas emissions targets and market share per region.

Integrated Assessment Model

















Green House Gas Emissions will create a constrained economy, in which the amount of energy for each technology will be restricted to meet GHG targets.

This is fed into the Model of the corporate.

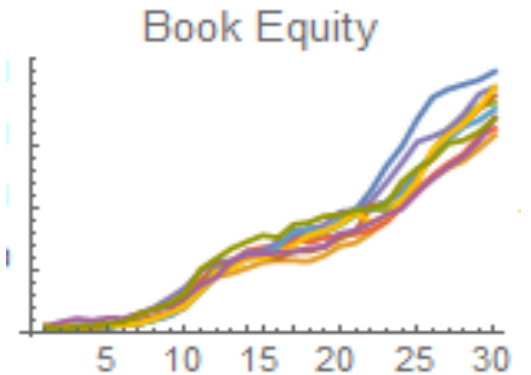
Physical Risk, regional sea level and climate patterns and their associated hazards.

Detailed damage maps for each region, outage times and repair costs estimates

Multiple Revenue Steams Modelled From IAM

Company	Business Unit	Region
Electricity Generation	  	
Networks		 
Customer Solutions		 
Gas Distribution		 
Other		

Financial Model Outputs



Model incorporates a long run simulation of company revenue streams factoring in different technologies with different carbon foot prints.