Environmental Change: Opportunities for Actuaries
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Contributing to the Energy Debate

Why – do we need to contribute?

• GB Electricity - £200bn of investment in 10 years
• Uncertainty e.g.:
  – Decarbonisation vs security of supply vs affordability
  – Electricity Market Reform
  – Liquidity
• Volatility e.g.:
  – Capital – scarcity and cost
  – Commodity prices
  – Demand forecasts
  – Carbon prices

The world is getting riskier but the light must stay on
What – would we contribute?

• The general challenge:
  – Massive capital investment
  – Long term decision making
  – Multiple variables
  – Complex relationships
• Specific answers will require:
  – Stochastic analysis
  – Long term forecasting
  – Valuing uncertain cashflows
  – Quantification of risk

Enhancing gut feel with science

How – are we contributing?

Case Study:
• Modelling for the Department of Energy and Climate Change
• Stochastic model of UK power generation from 2011 to 2050
• Analysing the impact of policy on investor behaviour
• Forecasting
  – Emissions
  – Policy costs
  – Probability of blackouts
  – Consumer prices

Quantifying uncertainty in decision making
When – will our contribution be needed?

- Capital Requirements Directive 2012
- Carbon Price Floor 2013
- Emissions Performance Standard 2013
- Government backed Contracts for Difference 2014
- New capacity mechanism 2015
- Renewable Obligation Certificates 2017

The opportunity exists now and stays around for a long time

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenters.