



the London School of **Economics**
and **Political Science**



CHATHAM HOUSE



Economics of Climate Change

Policy Action and Competitiveness

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Grantham Research Institute on
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the Environment

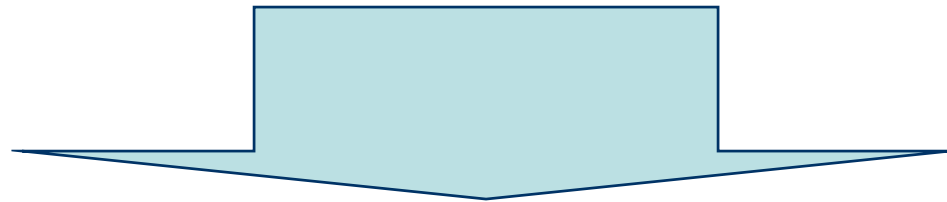
A path for climate action

1 Developing political consensus and common understanding

- Costs of inaction? costs of action? costs of earlier action?

2 Credible policy framework based on principles of:

- Effectiveness (sufficient ambition)
- Efficiency (match policy to market failures: price and non-price mechanisms to harness markets & investment)
- Equity (a fair distribution)



3 Implementation and institutions

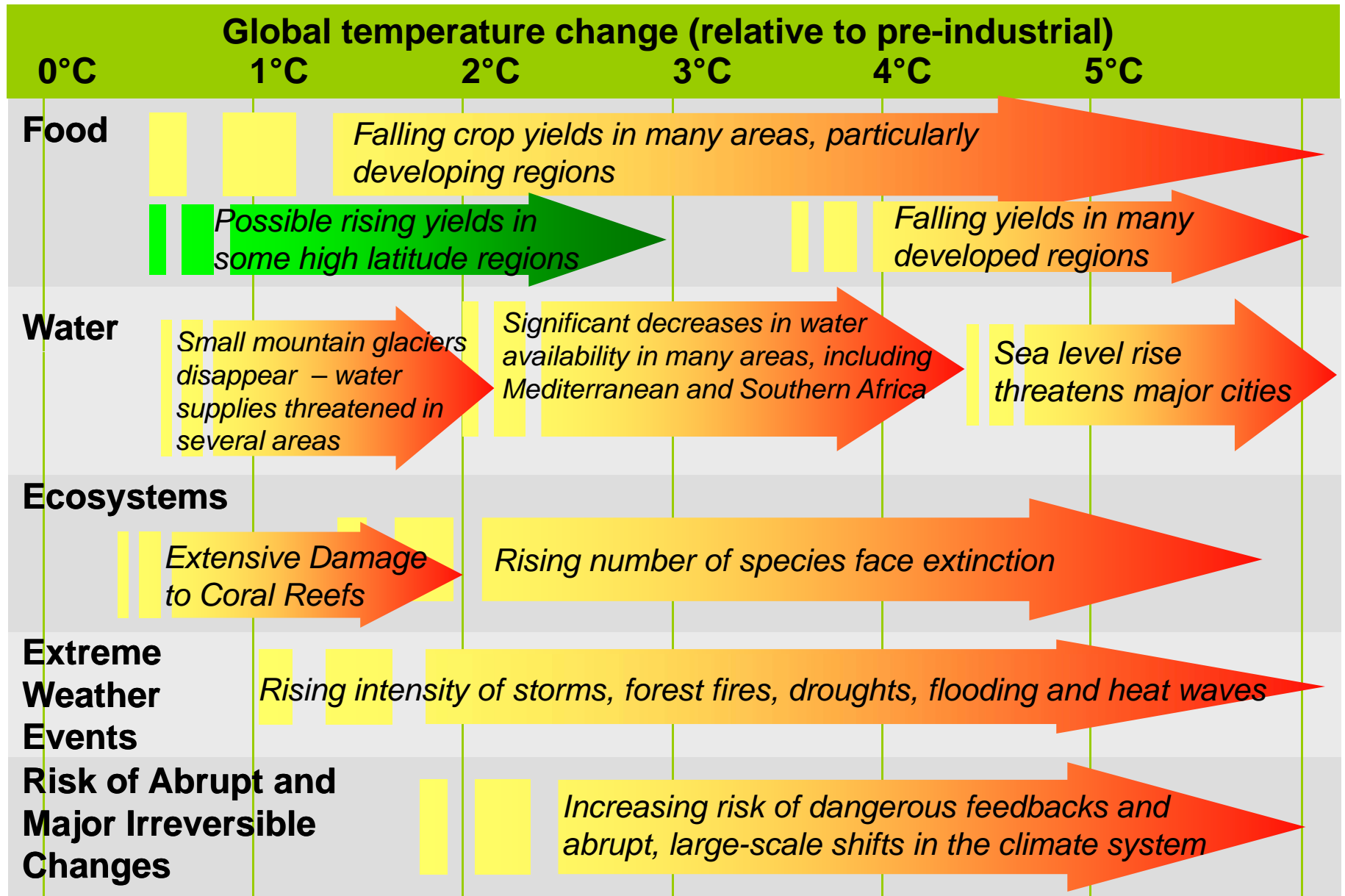
4 New markets and business opportunities

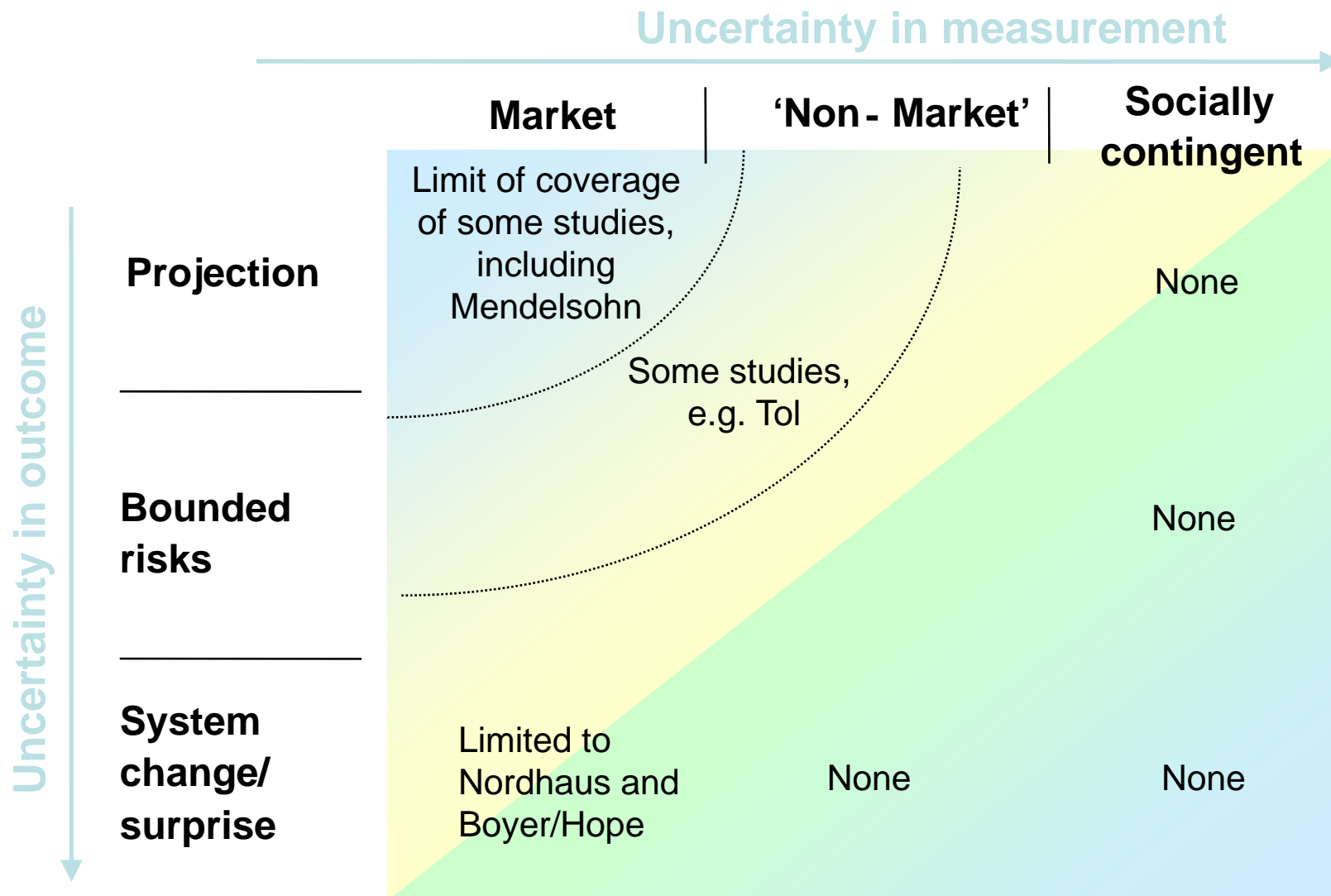
Part One

Developing political consensus and common understanding

- Risks and costs of inaction
- Costs of action

Projected impacts of climate change

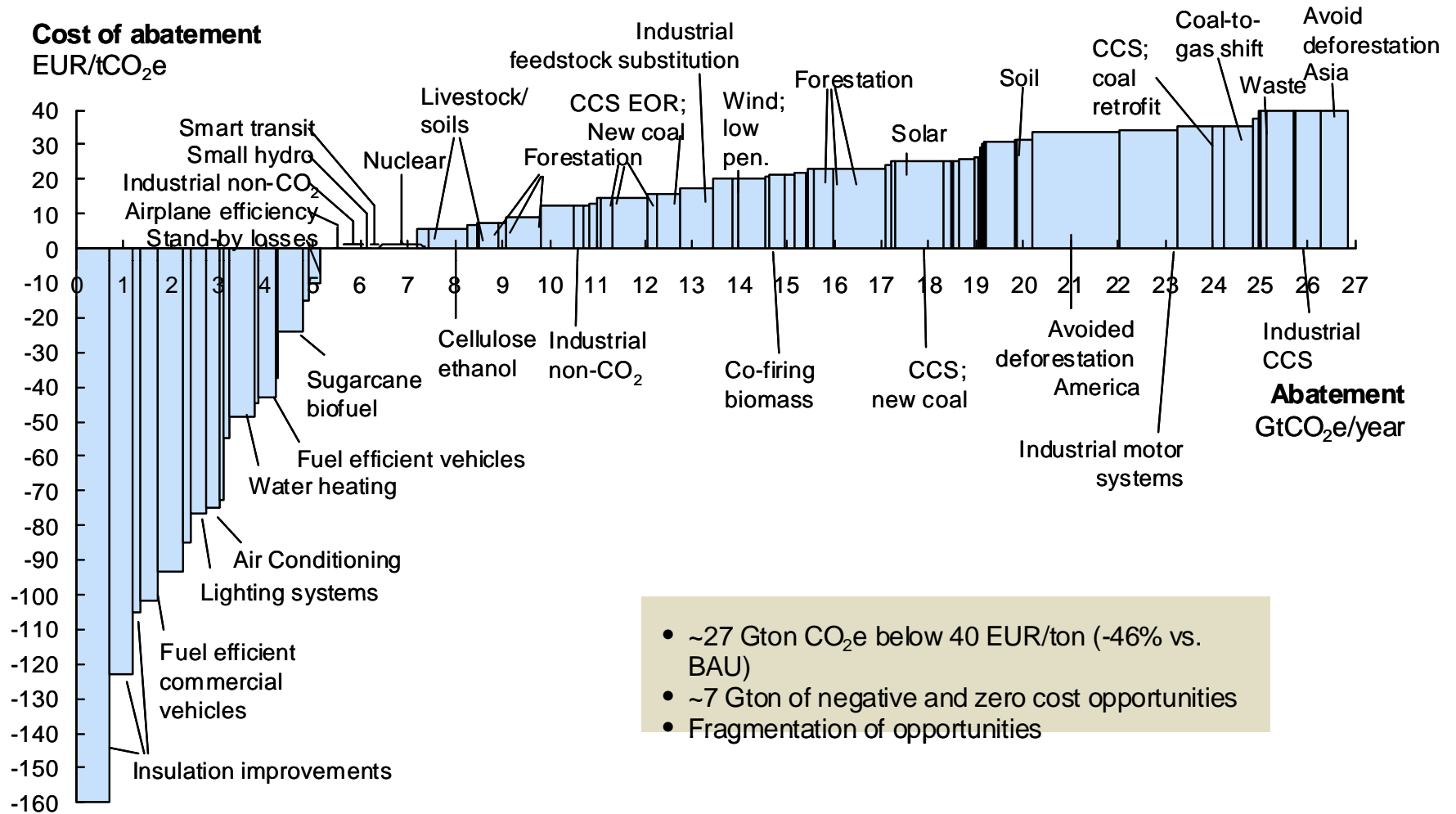




Models only have partial coverage of impacts
Values in the literature are a sub-total of impacts

McKinsey bottom-up approach

2030



Part Two

Credible policy framework based on three principles

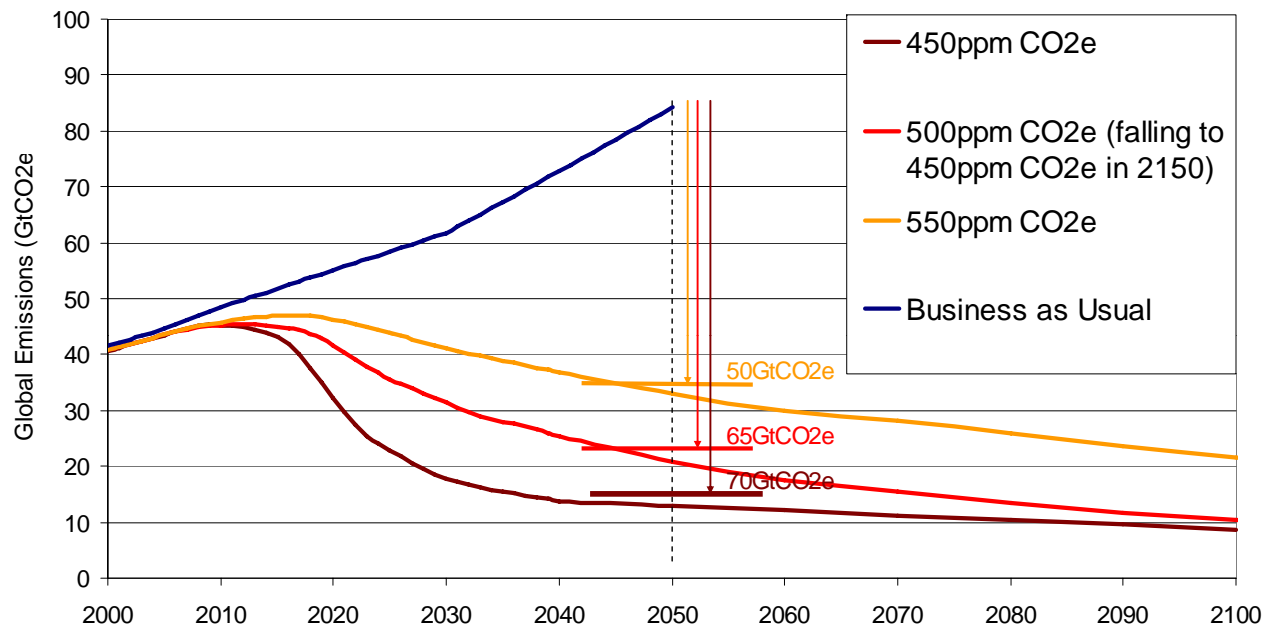
- Effectiveness
- Efficiency
- Equity

Three 'E's

- **Effectiveness:** The frameworks avoid dangerous climate change
- **Efficiency:** mitigation should be undertaken where it is **cheapest**, with markets playing a central role in determining type and origin of mitigation
- **Equity:** mitigation should be paid for on the basis of **fairness** - this is as shared problem with differential responsibilities, ('reservoirs', targets and one-sided trading)

Note demand/supply dichotomy: separate out where mitigation takes place from who pays for it!

Effectiveness: delaying mitigation is dangerous and costly



Stabilising below 450ppm CO₂e would require emissions to peak by 2010 with 6-10% p.a. decline thereafter.

If emissions peak in 2020, we can stabilise below 550ppm CO₂e if we achieve annual declines of 1 – 2.5% afterwards. A 10 year delay almost doubles the annual rate of decline required.

Effectiveness - basic arithmetic

- Current 40-45 GtCO₂e p.a.
- **50% reduction by 2050** requires per capita global **GHG emissions of 2-3T/capita** (20-25 Gt divided by 9 billion population)
- Currently US ~ 20+, Europe ~10+, **Mexico ~6**, China ~5+, India ~2+ T/capita
- **At the COP15 meetings in 2009, developed countries should commit to cutting emissions by 80-90% from 1990 levels by 2050 together with credible interim targets**
- Many developing countries would have to cut strongly too if world average of 2-3 T/capita is to be achieved

Efficiency – coherent policy

- **Pricing** the externality- carbon pricing via tax or trading, or implicitly through regulation. Harness power of markets
- Bringing forward lower carbon **technology**- research, development and deployment
- Overcoming **information** barriers and transaction costs– regulation, standards
- Promoting a shared **understanding** of responsible behaviour across all societies – beyond sticks and carrots

Equity

- **Common understanding** of the global problem
 - Who is hit? Who is responsible?
- **Differential impacts** of climate change
- **Differential responsibilities** for the stock of gases
- **Differential costs** of action
- **Differential ability to pay**
- Understanding of the **opportunities** and costs of mitigation
- Understanding costs/risks of **moving at different speeds**

Equity - Global spatial evidence – firms' location decisions

Evidence from spatial location studies

- Rich evidence base
- US state and global cross-border activity following differential application of environmental policies
- Instrumental variable panel studies
- Relocation rare - only on margin
- Different sectors in different regions face different vulnerabilities

Firm's location decisions depend on:

- access to markets; access to raw materials; access to skilled labour; access to technology; fiscal incentives; political stability, legal jurisdiction; infrastructural networks
- carbon costing of the kind suggested is a small factor

Equity - Opportunities & benefits from moving early

Opportunities to set standards, technologies, regulation, markets

- Case study analysis: **early-moving** can gain market share:
 - Shell/BP; Toyota/Honda; GE all v carbon exposed
 - Developing world producers too - Wal Mart and China
 - New world wines
- **Losers shout louder....**potential winners are potential

Financing opportunities

- Benefits from **selling credits**: CDMs, programmes, benchmarking
- **Official financing** to leverage private funds
- Benefits from **new technology** transfer, demonstration
- But - **macro modelling** of flows needed

Equity - Business opportunities huge

The scale of **new technologies, services and products** required to shift to a low carbon economy is vast

Most of this will need to be **delivered by the private sector**

Clear, credible and long term **policy framework**:

- Market mechanisms (carbon prices)
- Universal standards and metrics for carbon accounting/disclosure
- Smart, energy efficiency programs
- Incentives for accelerated investment in low carbon technologies
- Avoided deforestation, land use change and waste

Meeting climate goals means new industries in energy efficiency, renewables and smart systems for power, buildings and transport

Part Three

Implementation and institutions

Implementation & institutions

Need to put principles to work in the run up to the UNFCCC COP in Copenhagen in 2009 and guide national governments

Three key phases of implementation:

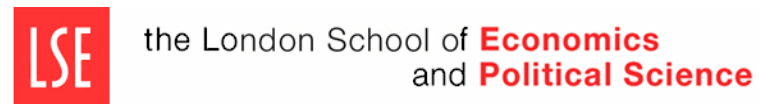
1. **Copenhagen 2009**: determine international targets; establish developed country caps; set developing country responsibilities
2. **2010-2020**: build effective and cooperative institutions on finance and technology as a basis for establishing developing country caps. Coordinate heterogeneous measures: credibility, leadership, trust
 - **Positive environment for action** not negative penalties
3. **post-2020**: all countries form part of an international cap-and-trade system and adhere to technological agreements

Institutions: long-term yet flexible, not overly prescriptive, reflecting and responding to the current world community, promoting trust

Conclusion

- We understand the **urgency and scale** of action required
- We are in a much better position now to use our **shared understanding** to agree on what goals to adopt:
 - The response must be carefully designed to harness the power of markets: any solution must be **effective, efficient and equitable**
 - Developed countries must take the lead but developing countries must supply the long-term solution
- We know that the **technologies and economic incentives for effective action are available**, or can be created
- The right policy framework, founded on a global commitment, can mean a future of **market dynamism, entrepreneurship and creativity**

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