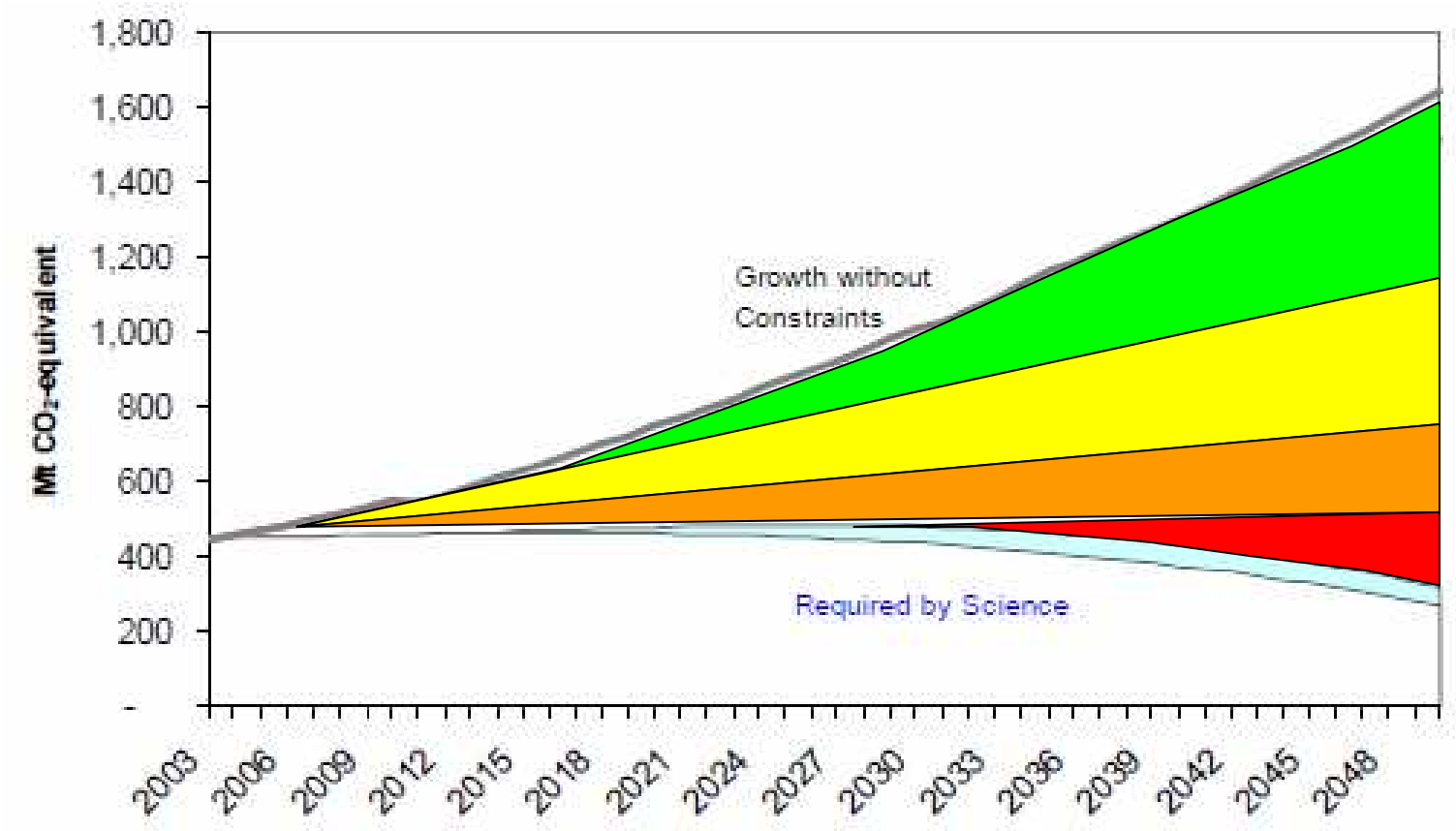
Tom Birch
International Institute for Environment and Development

Mitigation Technology and Policy: From strategy to deployment - likely social and economic effects

RSA's Long Term Mitigation Strategy



Option 1 – Start Now

- Closes 43% of gap between scenarios
- Measures which save money over time
- Win-Wins
- Industry and vehicle efficiency
- Some move away from coal generation to nuclear, renewables and “clean coal” (Carbon Capture and Storage, CCS)

Option 2 – Scale Up

- Closes a further 21%
- Extension of Start Now options past the zero net costs point – will require outside resources
- Includes transition to “zero carbon” electricity by 2050

Option 3 – Use the Market

- Closes a further 8%
- Market based options
- “escalator” tax on carbon
  - Initially R100/tonne
  - Rises to R750/tonne by 2040
- Subsidies for renewable energy
  - Example Solar Water Heaters

Option 4 – Reach for the Goal

- 28% of gap still remains in 2050
- Options that cannot be costed now but are expected over period
- Examples
  - New energy sources e.g. Hydro from Congo
  - Significant changes in social behaviour – how and where people live, work, relax.

Carbon Capture and Storage

- AKA “Clean Coal”
- Energy required to capture, liquefy, transport and store CO2
- Energy requirements increase 30%-40%
- Increased equipment investment required per Kwh
- Estimates of effects on price of electricity vary but doubling is rough estimate

Nuclear Power

- Fundamentally different investment and operating costs to coal.
- Cost profile makes nuclear unattractive option for the private sector
- LTMS assumes 27% by 2050
- Consider sourcing of:
  - Very high grade concrete
  - Sufficient nuclear engineers to design and build
  - Sufficient nuclear technicians to operate, maintain, inspect
- Many other countries are currently planning a large and rapid expansion of nuclear generation.
- Cost over-runs very common

Renewable Energy

- Examples include:
  - Hydro
  - Wind turbines
  - Solar Water Heaters
- Renewable energy often intermittent and/or uncertain
- Cannot supply base load to maintain grid
- Can supply proportion of energy needs
- Wide scale renewable energy generation likely to increase price of electricity

What must mitigation policy achieve

- Develop mitigative capacity within the economy
- Direct mitigative capacity to achieve mitigative action
- Make mitigation investment happen
- AND do all this in the context of poverty reduction and sustainable development

Policy to support mitigation

- Government intervenes:
  - to make firms pay for the carbon they emit
  - to subsidise renewable technologies
  - to support the development of new industries

How much will mitigation cost?

- Price estimate can be worked out for today but prices change over time
- Price estimate becomes more uncertain as it project further into the future
- Prices for mitigation likely to rise:
  - Global demand for mitigation technology rapidly increases
  - Supporting industries may not have the capacity to fulfil demand

Indirect Mitigation

- If mitigation technologies are to be deployed rapidly they will require inputs from many different industries
- Rapid deployment may be limited by availability of inputs – e.g. construction materials, labour with sufficient education/training
- To achieve mitigation quickly governments may have to intervene to promote development of these input industries.

Social impact of mitigation

- Mitigation will raise the price of goods (electricity)
- This will feed through to the prices that consumers face
- Price impacts likely to disproportionately effect the poor
- Price impacts will not stop at borders
- Makes poverty harder to address

Take homes

- Mitigation has an (opportunity) cost
- Mitigation raise the price of goods
- Mitigation will have wide ranging economic and social effects and probably disproportionately effect the poor
- These effects will not only occur in the mitigating country
- Direct mitigation policy is not sufficient to deploy technologies rapidly
- Policy will also have to address the dislocating effects of mitigation as well as promote industries to deploy mitigation.

Thank you

Questions

?

Contact:
tdkbirch2@googlemail.com