

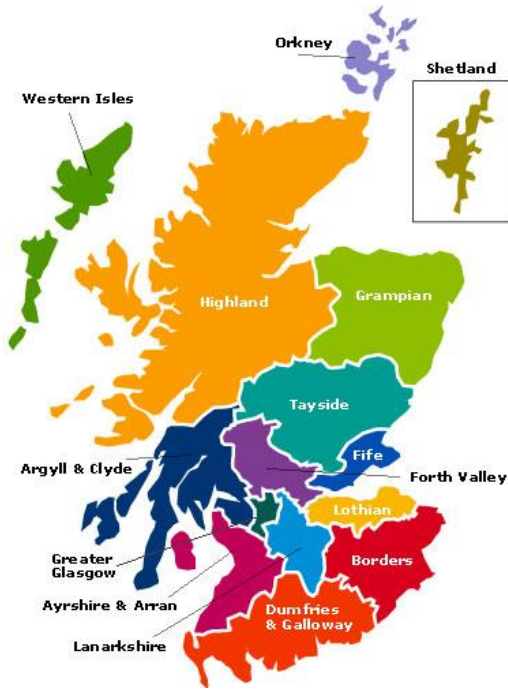
How is Scotland responding to a changing climate?

Research perspectives



Today

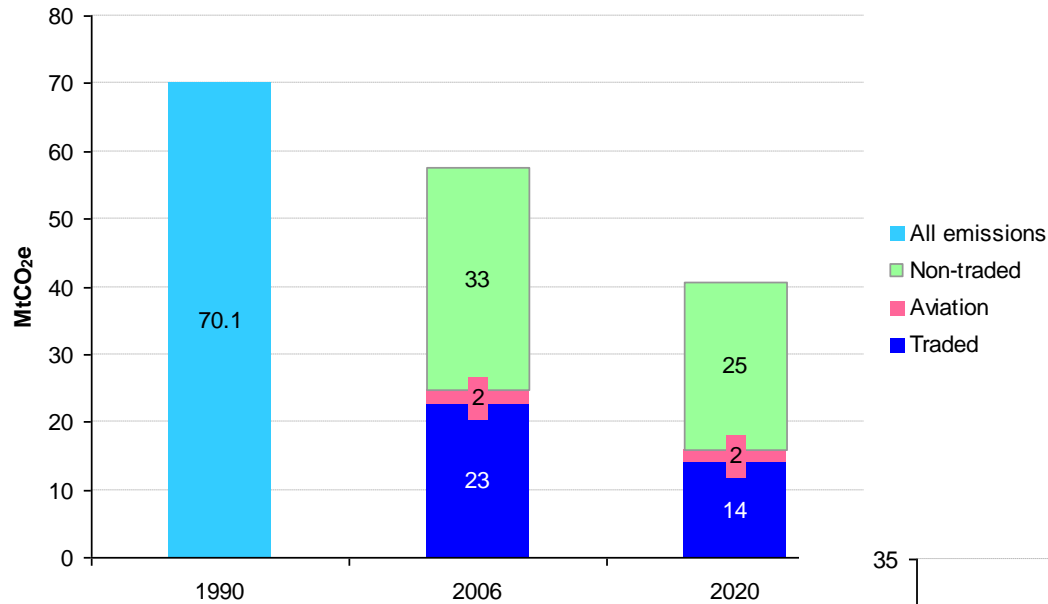
- What do current mitigation/adaptation policy & commercial drivers require of researchers?
- What is being done in Scotland - & elsewhere - to support these drivers: networks and programmes?
- How can we improve on joining up research efforts and uptake of research?
- Why does Scotland have very poor levels of business innovation and enterprise start ups, despite the presence of a very strong research base? What is the secret of delivering innovation?



Policy Drivers

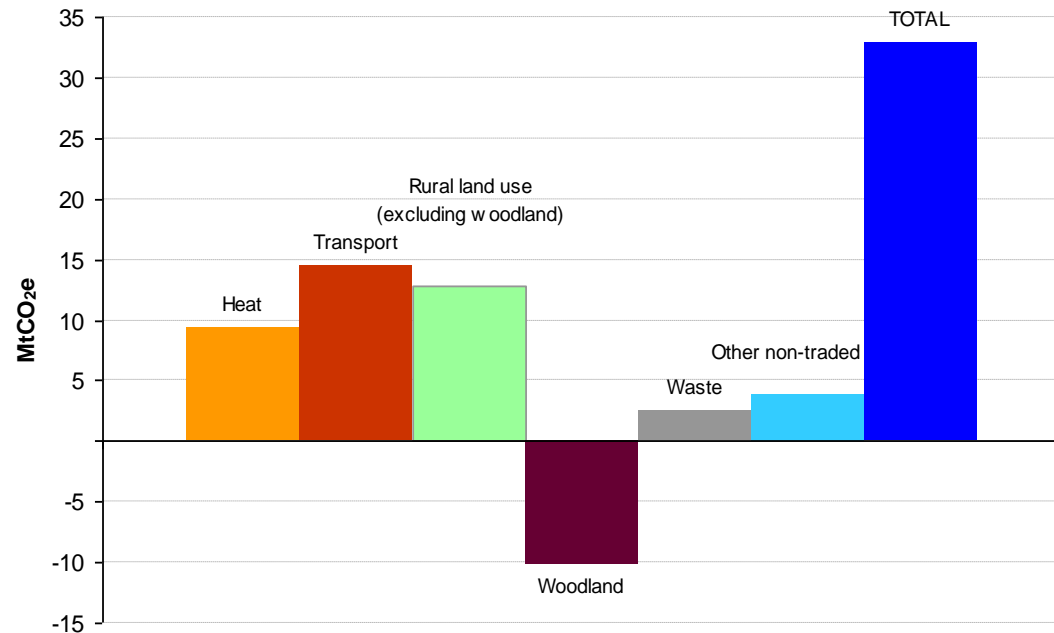
- Climate Change (Scotland) Act 2009
 - (Statutory) Report on Proposals & Policies (March'11)
 - Adaptation Framework: Sector Action Plans (ongoing)
 - Land Use Strategy
- Renewable Energy policy pledges: 20% total energy by 2020
 - 100% gross electricity consumption (currently 80%)
 - 11% heat consumption
 - 10% transport consumption
- Other relevant:
 - Scottish Forest Strategy (25% land cover)
 - Flood Risk Management (Scotland) Act 2009

Policy Drivers: CC (Scotland) Act (2009)



Scottish targets

- 41MtCO₂e in 2020
- 14 MtCO₂e in 2050



Commercial drivers



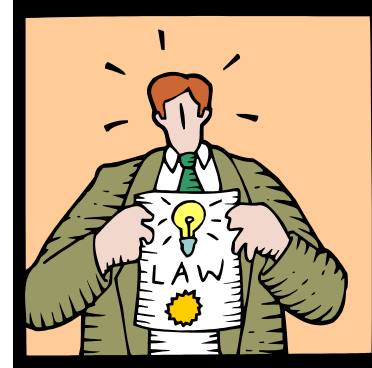
Input costs of commodities

Market opportunities:
\$243 billion invested in clean tech in 2010

- Global distributed clean power: \$59.6b*
- China clean power investment: \$51.1b*
- Global government R&D: \$21b*
- Corporate clean energy R&D spending: \$14.4b*
- Public market investments for clean power generated \$17.4b*
- Asset financing: \$127.8 billion*

What do these drivers require of researchers?

- Cultural change
“policy / business relevance”



- Thematic focus
“..more social science”

- Outward facing
“what do people want?”



What (research) is being done in Scotland?

- University-led
 - Research Pools: ETP; SIRE; ScotCHEM; SAGES, SICSA..
 - Research Council Programmes: UKERC, etc
- Government-led
 - ERDF: SEGEC, ECCC, CIC, BTH, etc
 - TSB: KTNs, KTPs, Innovation Centres
 - Centre of Expertise on Climate Change / Water / Animal Health
 - Behaviour Change research
- Business-led: Industrial Partnerships
 - Iberdrola / ScottishPower Advanced Research Centre
 - ScottishPower Academic Alliance
 - Rolls-Royce University Technology Centre
 - Scottish and Southern Energy Research Centre
 - National Grid Research Framework Partner

How can we join up our efforts better?

- Better communication between overlapping networks!
- Research & innovation systems: aligning interests of business, policy and researchers
 - Strathclyde TIC / ECCC / ETP KE pool
- Skills
 - Cross-institutional DTCs / Masters Programmes
- Cultural
 - ~~“My institution is better than your institution” ...~~
 - “Pure research is better than applied research” ...

Why so good at research and so poor at innovation?

- “Outstanding research base”
- Some good examples of innovation...but, “systemic failures” (BERR) leading to low levels of enterprise formation and low levels of innovation (particularly in SMEs) in Scotland
- Yet, to deliver low carbon targets and social resilience to climate change requires excellent research to be translated into action [“making good ideas real”]
- Cultural / Skills / Information-People exchange
- Two examples: ECCC & SG CoE CC

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NETWORKS

Projects & research

We are currently have 14 projects on the spanning 9 separate disciplines involving 10 academic institutions

>> [Carbon Management](#)

>> [Decarbonising Energy](#)

>> [Carbon Accounting](#)

>> [Carbon Finance](#)

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Our partners



**Hub for building
partnerships & info
exchange**

**Equip with
Professional skills**

**Enhance
Innovation**

Scottish Government: Centre of Expertise on Climate Change

- “...an exciting multi-million pound initiative which is being established to improve the delivery of effective climate change and low carbon research data, information and knowledge to the Scottish Government, as well as other partners.” The work of the Centre is ambitious, and is designed to stimulate innovative thinking in support of policy development and implementation.”
- Structure:
 - Workstreams: Adaptation / Mitigation / Risk & Uncertainty
 - Coordinated by Core Directorate [Andy Kerr, Pete Smith, Iain Gordon, plus workstream leaders]
- Action Plans – from 30 June 2011

Questions for delegates

1. Answering policy-driven questions requires better interaction between social science and science / engineering. How do we support the research community to bridge this gap?
2. What are the critical steps for Scotland to improve its rates of innovation ["making good ideas real"]?
3. How do we minimise overlap between the multiple mitigation & adaptation research projects/programmes in Scotland? Who is best placed to coordinate?