Trends and issues in energy and carbon policy

2013 Sydney Symposium on Carbon Capture
16 October
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Our vision is a resilient Australia, prospering in a zero-carbon global economy, participating fully and fairly in international climate change solutions.

- Independent research organisation established in 2005
- Focus on whole-of-society solutions to climate change
- Funded primarily by philanthropic support (approx 80%)
- Workstreams are international accountability, economic transformation and societal leadership
We have used over half the global carbon budget of 1 trillion tonnes (IPCC, 2013)

**Figure 8.3** Global energy-related CO$_2$ emissions by scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Probability of &lt;2°C</th>
<th>Probability of &lt;4°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Policies Scenario</td>
<td>2%</td>
<td>17%</td>
</tr>
<tr>
<td>New Policies Scenario</td>
<td>6%</td>
<td>63%</td>
</tr>
<tr>
<td>Efficient World Scenario</td>
<td></td>
<td>70%</td>
</tr>
<tr>
<td>450 Scenario</td>
<td>45%</td>
<td>93%</td>
</tr>
</tbody>
</table>

IEA WEO 2012, derived from Regelj, Meinshausen and Knutti, 2012
Many ways to reduce emissions from energy

Maximise carbon productivity = decarbonise energy supply + boost energy efficiency

- Decarbonisation: long-term investment signal
  - Carbon price (tax or ETS)
  - Emission performance standard (portfolio or technology specific)
  - Support for low emission technologies (R&D, subsidies)
  - Removal of subsidies for fossil fuel production/consumption

- Energy efficiency
  - Supply: maximise productivity of supply infrastructure (esp electricity)
    - Cost-reflective pricing – time-of-use, externalities, reduce ‘smearing’
    - Regulation
  - Demand: achieve desired outcome at minimum energy use
    - Appliances, equipment, vehicles – performance standards
    - Processes – reporting, disclosure requirements, incentives
    - Structures – building codes, urban planning

Not just energy sector but economy-wide changes
Global action: carbon markets are spreading

Prices (October 9 market close):
EUA (June 2015): AUD 7.54
CER (June 2015): AUD 0.87
EUA (June 2016): AUD 8.15
CER (June 2016): AUD 0.99
NZU (spot): NZD 4.20
ACCU (spot): AUD 22.70
Calif. (spot) USD 12.90
RGGI (spot) $2.77

Global action: renewable energy policies

Source: REN21, 2013
Global action: results are mixed

**Successes**
- Carbon markets functional, cheaper than expected to cut emissions (and caps/targets too lenient)
- Emerging carbon markets learn from others’ mistakes
- Fast growth in renewable energy investment
- Costs coming down, new technologies spreading

**Weaknesses**
- Low carbon prices fail to drive needed transformation and risk lock-in of polluting infrastructure (or costs of stranded assets later)
- Reliance on RE support, esp where technology-specific, is less efficient and hard to get right
- Plethora of policies without strategic framework increases costs, creates conflicting signals
- Vocal opposition to carbon markets, selected technologies
- Some technologies not getting needed support – eg CCS

Source: REN21, 2013
China: ‘all of the above’

This year:
7+ pilot ETSs
$US 375 billion for RE and EE
Closure of inefficient energy/industry
Cuts to coal consumption in Beijing, Shanghai, Guangzhou
Targets to reduce air particulates by 10-25%
Carbon tax as well as national ETS?

Chongqing pilot – expected to include industry, possibly land sector
United States: regulation

- Emissions reduction target: 17% below 2005 levels by 2020
- Economy and emissions standards for vehicles (23km/litre by 2025)
- Emission standards for new power plants (proposed: 450-500kg CO₂/MWh)
- Emission standards for existing plant (proposal 2014)
- SCC revised up to $12-129 (2020)
- CCS: 3 large projects started this year, more to come
- States: California-Quebec, RGGI carbon market; RE and EE targets
Carbon and energy policies

Trends in carbon policies
• Carbon pricing is spreading
• Heavy reliance on other policy mechanisms
• Countries motivated by additional/other benefits
• Mixed results so far (for various reasons)
• China and the US taking over from Europe in driving progress

What does this mean for CCS?
• Lack of domestic policies to achieve needed pathway for development and deployment
• Advances in North America may help build credibility
• EPS rather than ETS?
• BECCS - renewable technology and one of the future not the past
The Climate Institute

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