Legal and regulatory issues around developing CCUS projects

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The next 20 or so minutes…and then time for questions

1. CCUS globally and nationally
2. Capture, Transport, Storage and Usage – the jigsaw puzzle
3. Legislating for CCUS in the UK
4. Example: risk allocation on full chain CCUS
5. Lessons learnt from full chain CCUS model
7. Example: risk allocation on a split chain CCUS project
8. Questions and discussion
CMS at a glance

> 6,000 staff
> 3,400 lawyers
> 880 partners

Top rankings in 2016 M&A League Tables (by deal count)
#1 Europe (Bloomberg, Thomson Reuters)

Acritas Sharplegal Top 20 Global Brand Ranking

#3 Global (Bloomberg up to USD 500m)

EUR 1.01bn turnover for 2015

Ranked 3rd most global law firm in the Am Law 2016 Global Top 100

19 practice and sector groups working across offices

Operating in 59 cities across 38 countries

Personal, not CMS views...
CCUS globally

Source: Global CCS Institute
CCUS projects – the numbers are growing…

[Diagram: Carbon Capture Utilization and Storage in Numbers]

Sources: Global CCS Institute, IEA, EPA

Poll: In your view the most significant barriers to commercial scale CCUS projects developing in the UK are?

A) Technological

B) Legal

C) Commercial

D) Other
Global and national commitment to addressing the impacts of climate change

Legal commitment to net zero by the UK – June 2019
(some caveats)
CCUS – the jigsaw puzzle
UK has some of the most developed CCUS legislation in the world
Pause: What other reasons would you suggest for why there are no commercial scale CCUS projects in the UK to date?
Ultimately the question for risk allocation is….

....(especially if there are problems)
Example – risk allocation on a full chain CCUS project

Key:
Points of interface risk:
• Capture boundary to onshore pipeline
• Onshore to offshore pipeline
• Offshore pipeline to store
• Store

Source: Global CCS Institute
Impact of legal/commercial risks on cost of project

Table 1: Relationship between perceived risk and the cost of debt

<table>
<thead>
<tr>
<th>(A) RISK TYPE</th>
<th>(B) PROBABILITY</th>
<th>(C) CONSEQUENCE</th>
<th>(D) RISK RATING</th>
<th>(E) RISK PREMIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lending rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-chain</td>
<td>HTR</td>
<td>5</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Policy and revenue</td>
<td>HTR</td>
<td>4</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Storage liability</td>
<td>HTR</td>
<td>2</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Leakage</td>
<td>GPR</td>
<td>2</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Standed asset</td>
<td>GPR</td>
<td>2</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Project financing</td>
<td>GPR</td>
<td>1</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Political risk</td>
<td>GPR</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Market design &amp; regulatory</td>
<td>GPR</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social acceptance</td>
<td>GPR</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Construction</td>
<td>GPR</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Operating and performance</td>
<td>GPR</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Legal system</td>
<td>GPR</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Administrative risk</td>
<td>GPR</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>High risk</td>
<td></td>
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<tr>
<td>Lending rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk premium</td>
<td>11%</td>
<td></td>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: Global CCS Institute
Learning from the past: 2015-2020 CCUS policy updates

- **2015**: Industrial Strategy
  - Nov 2017

- **2016**: Clean Growth Strategy
  - Oct 2017

- **2017**: CCUS Action Plan
  - Nov 2018

- **2018**: Business Models Consultation
  - July 2019

- **2019**: COP26 Postponed

- **2020**

**DEMO 2** ends

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CMS Firm
### Business models considered by BEIS in July 2019

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power CCUS</strong></td>
<td>Dispatchable CfD, Standard CfD, Hybrid CfD, Regulated Asset Base, Cost Plus Open Book. CCUS Certificates, Cap and Floor</td>
</tr>
</tbody>
</table>
| **Industrial CCUS**      | *No BEIS preferred business model*  
GfD, Tradeable CCS certificates plus obligation, Cost Plus Open Book                                                            |
| **Hydrogen Production**  | *No BEIS preferred business model*                                                                                                               |
| **Transport & Storage**  | Regulated Asset Base, public and privately owned entity, Cost Plus Open Book, Waste sector type contractor, Hybrid                           |
| **Power CCUS**            | Dispatchable CfD, Standard CfD, Hybrid CfD, Regulated Asset Base, Cost Plus Open Book. CCUS Certificates, Cap and Floor                      |
| **Industrial CCUS**      | *No BEIS preferred business model*  
GfD, Tradeable CCS certificates plus obligation, Cost Plus Open Book                                                            |
| **Hydrogen Production**  | *No BEIS preferred business model*                                                                                                               |
Example – risk allocation on a split chain CCUS project

CaptureCo Shareholders – Senior Lenders – CaptureCo Shareholders

CaptureCo – Senior Lenders

CfD Funder Direct Agreement – Finance Documents

CfD Counterparty (gov. owned)

CaptureCo – T&S Funder Agreement

CaptureCo – T&S Funder Agreement

T&S Fee payments made to T&S Co. Storage - ?

Electricity Grid Connection Agreements

T&S System

National Grid

Facility

Power Purchase

Power Purchaser(s)

Electricity generated

T&SCo
Poll 2: How far does the revised split chain business model enable the development of commercial scale CCUS projects developing in the UK?

A) Most of the way
B) Some of the way
C) Little of the way
D) Don’t know / no opinion
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