Control Your Risk Without Risking Your Control

Andrew Livingstone
Pete Thomson

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Control Your Risk Without Risking Your Control

Biggest risks for Operators wanting to decommission assets are:

(1) Long term liability for leakage
(2) Obtaining cost surety
Control Your Risk Without Risking Your Control

“Your proposal is innovative. Unfortunately we won’t be able to use it because we’ve never tried something like this before.”
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What experience has also shown us is that the majority of Oil & Gas projects run over time and on cost

Table 1: Summary of findings on 58 projects reviewed (see notes in Appendix 1)*

<table>
<thead>
<tr>
<th>No Projects</th>
<th>Capital cost at FDP (£ billion)</th>
<th>Average delay (months)</th>
<th>Average cost growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Already started up</td>
<td>38</td>
<td>13.5</td>
<td>10</td>
</tr>
<tr>
<td>Under execution</td>
<td>20</td>
<td>25.5</td>
<td>13</td>
</tr>
</tbody>
</table>

* Lessons Learned from UKCS Oil and Gas Projects 2011-2016
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3. Transfer the responsibility for risks and cost to the supply chain...
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... but can Operators relinquish the control?
Commercial Models

Greater Operator Cost Surety

BHGE Oilfield Equipment & Services

Personnel & Equipment

Integrated Services

Limited Liability Turnkey

Limited liability

Full operational liability

Full Turnkey

Defined by Risk Matrix

Limited value add for customer vs traditional

Greatest value add for customer

Increased Supplier Risk

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Commercial Models

Key
- Inflows
- Outflows

BHGE Decom Project Vehicle
- Funding Commitment
- P&A Output
- Specification
- Programme Level Incentives

Funding
Commitment
P&A Output
Specification
Programme
Level Incentives

RSR Decom Assets
- Assets A
- Assets B
- Assets C

Tax rebate

Greater Operator Cost
Sensitivity

Governments
Decom Liability

Key
- Insurance for
  covered risks
- Incentivised contracts

Project Insurance

Supply Chain

Inflows
Outflows
Commercial Models

Set annual budget

Duration

- Ability to defer payments
- Potentially linked to ‘tax rebates’
- Field dependant
Managing Risk in Execution
Governing Factors

The Contract

Well Abandonment Standards

Well Examination Scheme
So what control is required?

**Written Standards per field**

- UK Oil & Gas Guidelines
- BHGE’s Best Practice document
- Operator Policies
- Basis of Design (if available)
- Government regulations

**Barriers:**
- Definition of a Barrier
- Barrier materials
- Positioning in the wellbore
- Length
- Number of barriers required
- Previously abandoned legs
- Verification of Barriers
- Use of pre-existing annular cement
- Environmental (near surface) Barriers

**Effecting the Barrier**
- Section milling
- PWC
- Emplacement techniques
So what control is required?

Delivery of Execution Structure
So what control is required?

Licensing & Operatorship
Selection of rig, vessel and services
Well Abandonment Gate Process

- Appraise & Initial Design – project focussed
- Detailed Design, Execute & Closeout – well focussed

Busy but very important phase
Cost estimating

Deterministic or Probabilistic?
## Risk & Mitigation Strategies – Standard TK Contract

<table>
<thead>
<tr>
<th>Risk</th>
<th>Impact</th>
<th>Mitigation Strategy</th>
<th>Contracts</th>
<th>Mitigated Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution</td>
<td>Oil spill contingency plans. Early engagement with regulatory bodies.</td>
<td>Incl. as &quot;Operator Obligation&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather</td>
<td>Schedule control (summer). Known anchoring conditions. Au. Weather data contingencies (time/cost).</td>
<td>FM clause capping liability to 30 consecutive days.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Response</td>
<td>Service provider contract</td>
<td>Incl. as &quot;Operator Obligation&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component Conditions</td>
<td>ROV inspection. Deep dive inspection records.</td>
<td>Unforeseen well bore and seabed conditions clause – Day rate clause for scope outside of agreed obligations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-OEM Long Lead Procurement</td>
<td>Procure contingency equipment from other operators. Early contracting strategy</td>
<td>Incl. as &quot;Operator Obligation&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Force Majeure events</td>
<td>Schedule control (summer). Early and ongoing engagement with governing bodies. Additional contingencies built into model for hazardless</td>
<td>Force majeure clause incl. acts of governmental bodies, severe weather conditions, access, information, tools, material, and approvals necessary to permit Contractor. Group to timely perform the required activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Macondo Effect&quot;</td>
<td>Clear planning and execution of operational mitigation strategies based on actual operational outcomes. In-house operational experience in managing critical execution areas.</td>
<td>LOL - B2B with supply chain for individual scopes. Wellbore and seabed conditions clause triggering day rate.</td>
<td></td>
<td></td>
</tr>
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BHGE Turnkey

Building solutions... Invested in outcomes... ‘all risks’ capability
Time to change things around....