Legal challenges

Global Challenges in New Build Applications

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Nuclear new build in the UK

A brief history

• **January 2008:** Nuclear White Paper supporting nuclear as “part of the energy mix” (re-issued after successful Greenpeace court challenge to earlier White Paper in 2007)

• **2008-2009:** Series of Acts, Regulations and procedures introduced to streamline the licensing and consenting processes:
  - Generic Design Assessment
  - Nuclear-specific “justification” approval
  - Streamlined planning laws for Nationally Significant Infrastructure Projects
  - National Strategic Siting Assessment
  - New provisions for decommissioning funding and pre-priced spent fuel transfer

• **2007-2010:** Government auction of new build land

• **2011:** Laws for Contract-for-Difference feed-in-tariff regime passed

• **2012:** Site licence granted for Hinkley Point C

• **2016:** Number of projects under construction: 0

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What are the legal challenges?

1. Licensing and permitting challenges
   - Complexity and interdependencies between regimes
   - Lack of international standardisation – little benefit; plenty of risk
   - Unpredictability of third party challenges

2. Funding and investment challenges
   - Attracting the right investors at the right time
   - Certainty of return – the Contract-for Difference regime
   - Political and legal risk surrounding government support

3. Challenges in translating these risks into contracts
   - Allocating of risk in construction and supply chain contracts
   - Structuring consortium arrangements
1. Licensing and permitting challenges

**Complexity and interdependencies between regimes**

- Separate “justification” approval (decision in principle): a symptom of third-party challenge fear
- The introduction of GDA: a non-legal process - flexibility v certainty and predictability
- Single **Nuclear Site Licence**: De-risking future stages at the expense of getting a project started?
- **Interaction** of nuclear licensing with more political consent processes: planning and EIA

<table>
<thead>
<tr>
<th>Preparatory Phase</th>
<th>Construction Phase</th>
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<tbody>
<tr>
<td>Justification</td>
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<tr>
<td>Justification of Reactor Design</td>
<td>Satisfy ongoing licence condition hold-points</td>
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<tr>
<td>Nuclear Site Licence</td>
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<td>Generic Design Assessment</td>
<td>Nuclear site licence application</td>
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<td>Funded Decommissioning Plan</td>
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<td>Planning</td>
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<td>Strategic Siting Assessment</td>
<td>Development Consent Order (DCO) Application</td>
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<td>Environmental Impact Assessment</td>
<td>Satisfy pre-operation DCO conditions</td>
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<td>Consultation with community</td>
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<tr>
<td>Other Consents</td>
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<tr>
<td>Generation Licence</td>
<td>Nuclear Insurance</td>
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<tr>
<td>allows early site access</td>
<td>Materials handling</td>
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<tr>
<td>Preliminary site work permission</td>
<td>Grid Connection</td>
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<td>Environmental Permit</td>
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</table>
1. Licensing and permitting challenges

**Lack of international standardisation**
- The UK’s “goal based” standards
  - Theoretical flexibility v regulator culture
  - Lack of willingness of regulators to approve international designs
- Risk of gold-plating in response to issues at international plants
  - Sudden change to GDA process after Fukushima
  - Flamanville impacts on Hinkley Point C

**Unpredictability of third party challenges**
- The UK tradition of judicial review
  - Risk of challenge is high, risk of successful challenge is low
  - Objector goals: Delay; investor uncertainty; public support
  - Impact on regulator and industry behaviour
- Increasing judicial appetite to re-examine technical analysis
  - Traditionally a no-go zone
  - Increase in UK court’s willingness to explore technical areas in non-nuclear fields
- The recent Japan experience
## 1. Licensing and permitting challenges: Japan injunctions

<table>
<thead>
<tr>
<th>Courts not willing to intervene</th>
<th>Courts willing to intervene</th>
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</thead>
<tbody>
<tr>
<td><strong>16 April 2013: Osaka District Court</strong></td>
<td><strong>21 May 2014: Fukui District Court</strong></td>
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<tr>
<td>• Rejected an application for an injunction to shut-down of Ohi 3 and 4, on the basis of an argument that control rods to halt operations would not go into the reactors in time in a strong earthquake simultaneously involving 3 active faults in the region</td>
<td>• Imposed an injunction against Kepco restarting Ohi 3 and 4, which were undergoing safety assessments by Japan's Nuclear Regulation Authority (NRA) prior to restart.</td>
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<tr>
<td>• The court said it did not recognise a specific danger, and that the Ohi plant meets safety standards</td>
<td>• The Court sound that the plant is sited near several active seismic faults and is not adequately protected against earthquakes.</td>
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<tr>
<td><strong>6 April 2016: The Fukuoka High Court</strong></td>
<td><strong>09 March 2016: The Otsu District Court</strong></td>
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<tr>
<td>• Rejected an application for an injunction to the shut-down Sendai 1 and 2, based on residents’ claim that new safety regulations set by the NRA in July 2013 were too lax to protect the Sendai plant from earthquakes and volcanoes.</td>
<td>• The court ruled that the safety of the units cannot be guaranteed, despite the NRA saying they meet revised safety standards.</td>
</tr>
<tr>
<td>• The judge ruled in April 2015 that, according to the latest scientific knowledge, the new safety requirements are adequate and that the plant is at no specific risk.</td>
<td>• Imposed a temporary injunction against the operation of Kepco’s Takahama 3 and 4</td>
</tr>
</tbody>
</table>
2. Funding and investment challenges

Attracting the right investors at the right time: Planning the project timeline
• Interdependencies between licensing and investment milestones require strategic planning
• Consortium agreements need to align with key licensing stages
  - **Certainty:** To harness the increased certainty from the grant of key approvals, as pre-conditions to major investment decisions/commitments
  - **Resources:** To ensure parties commit to provide the necessary resources to facilitate the completion of licensing phases – both expertise and finance
  - **Risk:** To ensure that liabilities and duties are not triggered until the consortium is adequately resourced and committed – and to create an exit plan

Certainty of return – the Contract-for Difference regime
• Contract for Difference regime introduced to provide certainty of electricity pricing over the long term
  - Based on actual predicted project cost
  - Adds additional complexity to management of licensing risk
• Backed by Infrastructure Guarantees for debt finance

Political and legal risk surrounding government support
• Public scrutiny of “value for money” proposition
• State Aid challenges at EU level
2. Funding and investment: Current status of UK New Build

**Nuclear consortia**
- Private, and not just utility driven: Reactor vendors driving cross-disciplinary
- Competing requirements:
  - Flexibility to attract investment – v – stability to secure nuclear site licence
  - Attracting early investment to fund siting and consenting – v – deferring funding commitment until regulatory milestones are met
- “Licensable entities” being grown organically, in a competitive market for skills and resources

### Reactor Technology

- **AP1000**
  - Justified
  - Phase 4 of GDA

- **UK ABWR**
  - Justified
  - Phase 2 of GDA

- **EPR**
  - Justified
  - GDA finalised

### Utilities and Sites

- **NU’GEN**
  - Moorside
- **HORIZON NUCLEAR POWER**
  - Heysham
  - Wylfa
  - Oldbury
  - Bradford
  - Sizewell
  - Hinkley Point
- **EDF**
  - Hartlepool

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2. Funding and investment: Current UK project status

<table>
<thead>
<tr>
<th>Consortium creation and site selection</th>
<th>Project design, licensing and consenting</th>
<th>Construction</th>
<th>Commissioning and operation</th>
<th>Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop the operating entity</td>
<td>Incorporation and consortium agreements</td>
<td>Develop human resources</td>
<td>Operational governance</td>
<td></td>
</tr>
<tr>
<td>Siting</td>
<td>Select site</td>
<td>Land option</td>
<td>Early site works (preliminary planning permissions)</td>
<td>Exercise lease</td>
</tr>
<tr>
<td>Consents</td>
<td>Site design, EIA and consultation</td>
<td>DCO</td>
<td>Licensing hold point and DCO condition clearance</td>
<td>Maintain compliance</td>
</tr>
<tr>
<td>Technology, contracting and procurement</td>
<td>Select technology</td>
<td>Procurement</td>
<td>Contract placement</td>
<td>Decommissioning contracts</td>
</tr>
<tr>
<td>Construction and operation</td>
<td>Grid connection agreements</td>
<td>Further components</td>
<td>Operation and maintenance</td>
<td>Decommissioning</td>
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- Moorside
- Wylfa
- Hinkley Point

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3. Contracting challenges - legal anatomy of a UK nuclear project

CONSTRUCTION AND SUPPLY ARRANGEMENTS

REACTOR SUPPLIER/EPC CONSORTIUM

SUPPLY CHAIN

DIRECT SUPPLIERS

EPC Contract

Supply chain contracts

Direct supply contracts

FUEL SUPPLY CHAIN

FUEL SUPPLY CHAIN

CONSORTIUM ARRANGEMENTS

Shareholders Agreement

INVESTOR

INVESTOR

INVESTOR

OPERATOR

OFFTAKER/GRID

Oftake Arrangements

CfD COUNTERPARTY

Contract for Difference

WASTE TRANSFER COUNTERPARTIES

Waster transfer contracts

INDEPENDENT NUCLEAR DECOMMISSIONING FUND

Funded decommissioning arrangements

LANDLORD

Lease

LAND ARRANGEMENTS

NUCLEAR NEIGHBOUR

Construction and supply arrangements

Cooperation arrangements

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3. Contracting challenges: regulatory risk in consortium agreements

<table>
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<tr>
<th>Stage</th>
<th>Consortium agreement considerations</th>
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<tr>
<td><strong>Securing a site and characterising its suitability</strong></td>
<td></td>
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</table>
  • Land option (and government strategic siting commitments)
  • Land purchase costs / Lease premiums and obligations
  • Site characterisation (including risk from works; grid connection; workforce; exit planning; legacy liability from site characterisation works?)
  • Making the site suitable (e.g., legacy nuclear neighbour contamination) |
| **Building a “licensable entity”** |  
  • Committing stable, consistent expertise (the right mix of investor expertise; exit restrictions; investor secondment obligations)
  • Ensuring corporate governance meets regulator’s standards (independence; stability; expertise – intelligent customer status) |
| **Selecting and certifying a reactor design** |  
  • Technology competition processes
  • Justification
  • Design certification – costs; timing |
| **Securing a reliable supply chain** |  
  • Ensuring supply chain is capable of meeting regulator expectations
  • Ensuring delivery (e.g., early long-lead items) is committed to be made at the right time
  • Securing a main contractor, or means to coordinate project delivery |
| **Developing relationships with stakeholders** |  
  • Ensuring enough stability, early design and planning for meaningful community engagement
  • Strategy for engagement with regulators
  • Making and supporting licence and permit applications (and defending legal challenges) |
3. Contracting challenges: regulatory risk in construction contracts

**Risks associated with grant of licence approvals**

- High level licensing risks: pre-licence early works and long lead items
- Risk of new/changes to requirements arising out of the licensing process
  - Requirements for design change
  - Additional justification (eg, demonstration of the quality of components, materials and as-built works)
  - Requirements for particular working methods (manufacture, construction and/or commissioning)

**Risk of delay**

- Continual ONR oversight, supervision and intervention into supply chain operations
- Extensive use of “hold points” where work cannot proceed without ONR approval: significant scope for schedule overruns

**Practical consequences of constructing in a nuclear environment**

- Nuclear safety has priority: quality supervised closely by regulator and non-negotiable
- Requirement for operator to retain control – “intelligent customer” status: limited ability for Suppliers to work ‘at risk’
- Operator and ONR control limits supplier ability to manage internal processes
- Limited ability for parties to agree substitutes and compromises
- Normal management techniques to control time and cost are not available: risk of significant cost and schedule overruns