Future of infrastructure financing

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Public vs. private

- WGA: average cost of government borrowing is around 2.5%, compared with 7% to 8% for private finance projects
- Government can reduce investor cost of capital by sharing project risk
- NAO is neutral: Although private finance is more expensive, benefits (e.g. risk transfer; commercial disciplines; short-term cash flow) can outweigh the higher cost
• Our 2017 report found government had not considered alternative financing options
• We provided illustrative analysis of strike price impact of different financing models
This is an illustrative analysis rather than feasibility assessment

- Not assessed feasibility of different models
- Not assessed whether they would comply with HM Treasury guidance or State Aid clearance
- Some models have not been used for nuclear
- All other variables kept constant (e.g. 35-year contract). In reality different financing options would result in wider changes to contractual arrangements.
- Choice of government discount rate matters (i.e. 2% vs. 6%) – we’ve used both in these scenarios
HPC-style deal (CfD)

Private investors bear no risk (taxpayers or consumers bear all risks) → Some risk shared → Private investors bear all risk

<table>
<thead>
<tr>
<th>Strike price (£/MWh)</th>
<th>Risk-free investment (equivalent to return on gilts)</th>
<th>Social time preference rate used to appraise public investments</th>
<th>EDF return on HPC (revenue risk shared with consumers)</th>
<th>Department estimated private return required</th>
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- Strike price at BEIS electricity wholesale price projections (March 2016)
- Strike price at HPC financial model electricity wholesale price projections
Public-private partnership

[Graph showing the relationship between strike price (£) and share of the project owned by government (%), indicating lower and higher government risk with associated costs of capital.]
Engineer, procure and construct (Turnkey)

![Graph showing Strike price (£) vs. Investors’ return (%) with lines indicating Government’s cost of capital at 6% and 2%.](graph.png)

- **Strike price at BEIS electricity wholesale price projections (March 2016)**
- **Strike price at HPC financial model electricity wholesale price projections**
Regulated asset base

- Strike price at BEIS electricity wholesale price projections (March 2016)
- Strike price at HPC financial model electricity wholesale price projections
- Consumers' contributions during construction (total nominal payments to investors)
Regulated asset base – impact on bills

![Graph showing levy on bill per year per household (nominal) (£)](image)

- **Investor return 7%**
  - 2010: £0.13
  - 2011: £0.23
  - 2012: £0.48
  - 2013: £0.76
  - 2014: £1.00
  - 2015: £1.36
  - 2016: £2.00
  - 2017: £2.90
  - 2018: £4.08
  - 2019: £5.52
  - 2020: £7.35
  - 2021: £9.54
  - 2022: £11.83
  - 2023: £13.47
  - 2024: £14.82
  - 2025: £15.61

- **Investor return 9%**
  - 2010: £0.16
  - 2011: £0.30
  - 2012: £0.82
  - 2013: £0.98
  - 2014: £1.28
  - 2015: £1.76
  - 2016: £2.57
  - 2017: £3.73
  - 2018: £5.25
  - 2019: £7.10
  - 2020: £9.46
  - 2021: £12.27
  - 2022: £15.21
  - 2023: £17.31
  - 2024: £19.08
  - 2025: £20.07
Economics of nuclear projects

1. High upfront outlays;
2. Long time until revenues are generated;
3. Unique requirements for funding decommissioning

For EPR projects there is additional technology risk

Project financing is more expensive
Government borrowing costs are low...
...But overall debt levels are high

- 61% increase in debt since 2009-10
- Debt worth 72% of government’s total assets in March 2016
Thames Tideway Tunnel is an example of a project using the RAB model

- Thames Water consumers are already contributing to the cost – investor required return is lower (2.497%)
- There is also a wider Government Support Package:
  - Equity if costs overrun more than 30% (or closure/compensation)
  - Government lending if capital markets disrupted
  - Indemnity for uninsurable risks (e.g. damage to property)
  - Compensation for discontinuation
  - Offer to purchase construction company if it falls into administration

It’s not just about investor returns during construction.
Comparing TTT to new nuclear

- Difference in technology risk
- Who regulates a new nuclear RAB? How do they decide which costs are allowable?
Previous government projects show risk transferred to private sector often comes back...
Concluding thoughts

• Cost of capital makes a big difference to the cost of projects – particularly nuclear
• But it’s not all about the cost
  • Risk transfer
  • Commercial disciplines
  • Cash flow/budgetary considerations
• We’ve said the government should do more to consider the alternative options than it did for Hinkley Point