Will RAB unlock the government's nuclear ambitions?
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UK’s record with ambitious nuclear programmes

- Previous 2 UK government attempts to launch a large programme of new capacity failed
- Thatcher’s 1979 programme of 1 reactor order per year for 10 years resulted in 1 new reactor, late & over-budget
- Blair’s 2006 programme of 16GW of new capacity online by 2030 will result in 3GW (Hinkley) of capacity. Will it be complete by 2030? It is 80% over-budget & 3-4 years late with 5 years of construction for more problems to emerge.
- Delays & cost increases had nothing to do with ‘red tape’, opposition, unnecessary planning processes, regulatory delays
- The failure was down to high costs, commercial risk & problems with nuclear technology
- In both cases, more than a decade was wasted before the programmes collapsed, not because of government decision but because the market was unwilling to invest
- In both cases, the programme was based on a grossly inflated forecast of electricity demand. In 2006, government expected electricity demand to grow by 15% by 2021, it fell by 15%

RAB

- Relies on attracting institutional investors such as pension funds. RAB used for Thames Tideway & Heathrow T5, but Sizewell is an order of magnitude more expensive & more complex. TT is still going wrong

- Would you be happy if your pension fund was exposed to the risk of cost & time overrun, & poor reliability in a nuclear project? RAB will only attract investors if a minimal proportion of the risk falls on them. If risk falls on them, the project is unlikely to be ‘investment grade’

- Investors will not want to be the crash test dummies for new technologies so if the RR SMR is to proceed, the only feasible owner is UK government until & if the technology is well proven

- If the RAB model is so attractive, why is it not being used for offshore wind?

RAB

- EDF & government say RAB will reduce nuclear costs by reducing finance costs
- Nuclear construction costs are always quoted as ‘overnight’ costs & exclude finance charges during construction. Finance charges may double the overall cost
- RAB might reduce finance charges in 2 ways both paid for by consumers.
- Consumers will pay the finance charges in construction as a surcharge on their bills
- If under RAB, all the risk of cost & time overruns is passed to consumers so investors get their guaranteed return no matter how badly things go, the interest rate to the financiers of the plant will be lower
- But consumers will be signing a blank cheque. They will be paying the risk premium

RAB

- Consumers won't know the price of power until the plant is operating & the cost known, & the price will vary according to reliability

- Government estimates of the surcharge costing £1/month had a serious error

- BEIS used the estimate of real interest to calculate the surcharge. They should have used the nominal interest rate, i.e., the real rate plus inflation. This exposes the risk to consumers of fluctuations in inflation and international interest rate

- If the actual monthly cost is £2/month and 4 plants are under construction, the addition to bills becomes substantial

The Johnson Programme

- 24GW (equivalent to 8 stations) of new nuclear capacity by 2050, first investment decision 2023/24 (Sizewell), 2 more by 2029, 1 in 2030 - which sites, which technologies?

- BEIS says 13-17 years from investment decision to first power & cost will be 20-100% more than the estimate at investment decision.

- So Sizewell on-line 2036-2040 costing £26-43bn, next stations not complete before 2042-2046

- The BEIS estimates are realistic. Hinkley will take about 13 years from investment decision to first power & is about 50% over-budget with 5 years of construction for more delays & costs to materialise

- But Johnson's target was decarbonising electricity by 2035, Labour Party says 2030 & National Grid Co says 2032-34

- So new nuclear will be too late to save CO_2 it will just be expensive power crowding out cheaper, less risky energy efficiency programmes (these have important welfare benefits) & renewables

The Johnson Programme

- The sales pitch for the Johnson programme is that: new designs will be cheaper, safer & easier to build; learning, standardisation & replication will reduce costs; red tape will be cut, the planning process streamlined & the opportunities for frivolous objections removed
- But this has been promised for the past 50 years in UK & elsewhere & it has never happened.
- New designs have got evermore expensive, difficult to build, new safety challenges appear - the 2011 Tsunami & now Ukraine conflict with nuclear power stations in the frontline of conflict
- Learning, standardisation & replication have not reduced costs. Real costs & delays increased over time in France
- Red tape, opposition, obstructive regulation & planning have never been the cause of delays & cost overruns.
- If a facility is going to be around for up to 200 years from the date of start-up, shouldn't we take extra care about choosing sites?

Conclusions

- The Johnson programme will fail with, at most, 1 expensive white elephant built.

- Another decade of time & resources will be diverted away from projects that are more cost-effective, low-risk & with fewer sustainability question marks & that will speed up decarbonisation of the electricity sector

- The need for reliable base-load plants is a fallacy. We don't have reliable base-load nuclear now. National Grid Company does not see any need for reliable base-load plants. Do we know better than them?