Is Trident Influencing UK Energy Policy Part 1

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This article is part of a two-part series discussing Britain's Trident nuclear programme and the influence it may be having on the country's energy policy. Read part 2 here.

Following a majority vote of 355 in the House of Commons in July 2016, the UK Government took the key decision to renew the Trident nuclear weapons system. Yet the issue remains controversial, with a wide variety of aspects persistently under scrutiny. At the forefront are debates over the costs of Trident renewal, which range from £31 billion (for the lowest estimates of submarine build costs alone) to over £200 billion when lifetime costs are considered.

With a host of other ethical, technical and strategic issues also abounding, controversy around UK nuclear weapons policy has intensified in recent years and months, including on the future vulnerability of nuclear submarines, the growing influence that the Atomic Weapons Establishment (AWE) has over university research, the malfunction of a Trident missile test, and Theresa May's decision to withhold this information from parliament ahead of the July 2016 vote. Not for the first time, support for Trident has come into tension with democratic transparency and accountability.

In this two-part article we focus on another non-military sector in which developments may be strongly – but nearly invisibly – conditioned, by ambitions to renew UK strategic nuclear weapons capabilities. The issue here is a widely identified 'puzzle' in UK energy policy – the persistent intensity of UK Government enthusiasm for what is actually in energy terms the seriously under-performing option of civil nuclear power. Based on official defence policy

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documents, it seems clear that UK commitments to nuclear energy are significantly influenced by pressures to sustain the skills and expertise perceived to be necessary for the country's naval nuclear propulsion programme. Crucially, these military connections remain almost entirely unacknowledged in energy policy literatures. The implications thus extend beyond military and energy policy alone, to raise questions about British democracy more widely.

The 'puzzle' of UK energy policy

In September 2016, after many years of setbacks, the decision was finally taken by UK Prime Minster Theresa May to give the green light for the construction of Hinkley Point C (HPC) nuclear power station in Somerset. This £24.5 billion initiative, largely financed by French and Chinese state-owned firms, constitutes one of the largest single infrastructure investments in British history. The announcement came less than a year after enactment of a "new direction" in UK energy policy, withdrawing support from several renewable and energy efficiency schemes and entrenching commitments to nuclear power. The relative scale and intensity of this British nuclear enthusiasm is a point of growing curiosity among international observers. Al Gore is "puzzled" by this and he is not the only one.

Official UK rationales for these persistent nuclear commitments are indeed puzzling. As government analyses have repeatedly shown, nuclear power is far from being the most favourable low carbon UK energy option. Britain is blessed with what the Department for Energy and Climate Change called "the best wind, wave and tidal resources in Europe". Official figures repeatedly show HPC to be more expensive than comparable tranches of energy from wind and solar power. Arguments over the value of "base load" generation are repudiated by

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the National Grid. With nuclear construction times also massively longer and relative costs dropping radically for renewables, the mismatch looks set to exacerbate by the time HPC comes online.

Originally set for completion by Christmas 2017, HPC is now unlikely even to have started construction by then. Associated plans for a massive 16 GWe programme of new nuclear power by 2025 look even less likely. With UK renewable energy capacities in the meantime burgeoning despite a relative dearth of official support, energy security arguments would logically also favour a switch towards these "Cinderella options" to fill the gap left by nuclear delays. Yet, as prospects for resolving underperforming nuclear plans get ever more distant, increasingly favourable renewable projects remain paradoxically ever more threatened by cut-backs, leading to serious problems in that sector. Taken at face value, these patterns are difficult to explain.

The comparative weakness of UK civil nuclear

Looking at key international comparators, our research has illuminated these anomalies in more detail. The scale of the planned 16 GWe UK "nuclear renaissance" relative to the existing size of the national energy system, is unsurpassed anywhere in the world. With global investments in non-hydro renewables outstripping nuclear and fossil fuels combined, authoritative observers – including a UN Chief Scientist – argue that the world is moving in one direction (towards a renewables future), whilst the UK is moving in another. As a country with an unrivalled record of success in industrial policy, Germany offers a particularly compelling contrast. Despite hosting one of the best-performing nuclear industries in the world, the German Energiewende (energy transition policy) aims entirely to phase out nuclear power by 2022. Why should

a country like the UK, with a far more attractive renewable resource and a far less competitive nuclear industry, persist in the reverse strategy?

Our research also finds that conventional theories concerning innovation and technological transitions predict, on the basis of economic and industrial considerations, Britain (not Germany), would be most expected to phase out nuclear power. Germany was a leader in nuclear innovation with German companies leading in reactor construction projects around the globe. The UK no longer has the industrial capability to construct new conventional civil nuclear reactors. German nuclear reactors have traditionally been some of the best performing in the world, while (as noted by the Environmental Audit Committee), the UK performs badly in international comparisons. The history of UK nuclear power is replete with a number of historic failures including the "major blunder" of the Advanced Gas-cooled Reactor (AGR) programme, a 15 GW new build programme announced in 1979 where only one reactor was built, and the "financial collapse" of privatised nuclear signalled by the bailing out of British Energy.

Factors that may explain why British and German policies have pursued such counter-intuitive trajectories go well beyond energy-specific issues – involving (for instance) the relative strengths of democracy in the two countries. Disembedding an entrenched industrial system like nuclear power requires enormous political leverage. This is difficult to achieve without strongly democratic institutions and wider capacities for vigorous critical debate. German levels of participation, subsidiarity, civic responsiveness and central accountability are repeatedly rated in international surveys to surpass corresponding qualities of democracy in the UK.

The UK as a military nuclear power

There is, however, another key difference between these two countries which arguably helps explain this pattern: the two countries' contrasting enthusiasm for military nuclear capabilities. Although it hosts US air-launched nuclear weapons under NATO nuclear-sharing agreements, Germany has no apparent commitments or ambitions to develop its own nuclear-armed or nuclear-powered military capabilities. Conversely, the UK has retained a remarkable industrial and technological infrastructure for maintaining a 'continuous-at-sea-nuclear-deterrent' since the late 1960s. Even a cursory familiarity with UK politics shows how essential this capability is perceived to be, under a particular post-colonial vision of an 'outsized power' that 'punches above its weight' on the world stage.

This cherished feature of elite UK national identity comes at significant cost. Nuclear-powered submarines are a particularly burdensome element of these ambitions. With their stealth, range and robustness viewed as essential to the military credibility of strategic nuclear weapons, these are among the most complex and demanding of manufactured artefacts – each comparable in complexity to the space shuttle. Yet security sensitivities preclude much of the kind of specialist outsourcing of production that is routine in other industries, as made explicit in the (still current) 2005 Defence Industrial Strategy. So despite a diminishing, ever more globally-integrated manufacturing base, Britain must somehow finance exclusive national capabilities in this most demanding of areas.

With the sensitive nature of the military nuclear sector, obviously limiting opportunities directly to cover these costs through exports, it is becoming ever more difficult to maintain the national reservoirs of specialist expertise, education, training, skills, production, design and regulatory capacities

necessary to sustain UK nuclear submarine infrastructures. It is here that even second- and third-tier roles for British submarine industry firms in parallel supply chains for civilian nuclear power, could make all the difference. Perhaps it is a particular militaristic vision of national prestige on the world stage, then, that might help explain why the UK Government is evidently so relaxed about the otherwise insupportable additional costs of civil nuclear power?

Here, further illumination may be found in another UK energy policy puzzle: the Blair government's unexplained 'U-turn' on nuclear energy policy where the technology went from being declared "unattractive" in 2003 to being firmly back on the agenda in 2006 in one of the most abrupt policy turnarounds in UK history. It is during this period that the obscure imperatives around national submarine capabilities come to the fore.

We explore this critical juncture in Part 2.

Image credit: Defence Imagery/Wikimedia.

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