



# New Nuclear Project Delivery – Barriers and Enablers Workshop Summary

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At the Foresight Nuclear conference on 7th November 2024, Frazer-Nash Consultancy held a workshop on the “Barriers and Enablers of New Nuclear Project Delivery”.

We invited experts from the policy, planning and programme delivery areas to lead interactive discussions with our workshop attendees, which comprised of representatives from government, regulation, supply chain, research institutes, and end users.

This article summarises the discussions that took place; shining a light on the challenges we are currently facing as an industry, and the strong desire held across the nuclear sector to work together and ensure that new nuclear can succeed and thrive.



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## The current new nuclear landscape, and a future filled with potential

On 6 February 2025, the Prime Minister announced plans to “put Britain back in the global race for nuclear energy”. To facilitate and accelerate the approvals of more nuclear power plants across England and Wales, reforms to planning rules are expected to be achieved through:

- ▶ The inclusion of smaller nuclear power plants in planning rules.
- ▶ Removing the limitation on where nuclear sites can be located – the National Policy Statement (NPS) EN-6 lists eight sites in England and Wales as suitable for the deployment of new nuclear reactors. The draft NPS EN-7, published for consultation in February 2025, focuses on small modular reactors and advanced modular reactors.
- ▶ Eliminating the expiry date on nuclear planning rules, to enable better long-term planning and reduce the risk of nuclear projects timing out.
- ▶ Establishing a Nuclear Regulatory Taskforce, reporting directly to the Prime Minister, to lead improvements on nuclear regulations.

Meanwhile, numerous fission vendors are steadily progressing their plans to deploy their technologies in the UK, amidst the latest “nuclear renaissance”. With GE-Hitachi, Holtec and Rolls-Royce SMR currently undergoing Generic Design Assessment (GDA), these plans are continuing to edge closer towards realisation.

However, it’s not just the UK who are engaging with the possibility of incorporating new nuclear power as a fundamental part of their energy mix. Recent news of Czechia’s nuclear power operator, ČEZ Group, investing in Rolls-Royce SMR is only adding to the anticipation that we could soon see advanced nuclear technologies contributing to the national supply of low-carbon energy.

Alongside this, the industry’s collective enthusiasm for new nuclear deployment is partially manifesting through private ‘DevCos’, ie development companies such as Community Nuclear Power and Fylde Coast Energy. These DevCos can be an important bridge between the nuclear power plant construction project and the community in which it resides. They can also help to address a variety of challenges with successful project delivery, for example providing private finance, planning, public

engagement and local supply chain and workforce development.

As such, the pace of new nuclear projects is slowly but surely ramping up, with increasing focus in the policy, planning and programme delivery space. These aspects are all vital to the successful delivery of a nuclear project. Each come with specific barriers and enablers, which may have learnings from being tackled in previous projects, or come with new challenges currently emerging alongside the latest market developments.

## Government policy and its impact on new nuclear success - how can the public sector best support the industry to realise its aspirations?

During the workshop, the policy group discussion was led by Vivienne Daly, Head of Strategy and Industry Engagement for New Nuclear Projects and Development at Department for Energy Security and Net Zero. The discussion covered the current policy landscape, with participants reflecting that it felt like there has been notable change in the civil service since the latest general election. Fiscal events appear to be run differently, as well as there being opportunities to change processes and policies, aided by incoming ministers being receptive to new ideas, particularly in the civil nuclear space. Crucially, while direct financial interventions can make or break a nuclear project, there are certain things that only government can do, for example changing legislation and driving policy enablers.

Key points from the policy discussion revolved around the presence of a range of technologies under the broad “nuclear” umbrella, with some moving towards commercial deployment, while others amass in the “valley of death”; the gap between research and development and commercialisation which many innovations struggle to bridge. As such, these technologies need

significant support and financial backing. Although the UK government is not able to make these investments on each and every technology, they have been providing revenue support through investing in initiatives such as the AMR RD&D programme, the Nuclear Fuel Fund, the Future Nuclear Enabling Fund and the SMR competition administered by Great British Nuclear. Even though it may not often be felt by those within the process, it was acknowledged that these are some of the fastest programmes of their kind.

Radically different policy frameworks were suggested as a way to trigger action and change, potentially in the form of an integrated national strategy. In particular, policy changes to enable more distributed access to government funding by smaller organisations could benefit the development of the wider sector, as opposed to larger, more established companies who will ultimately have more resource to apply for and deliver government-funded agendas.

Government roadmaps were agreed to be important to provide confidence to the industry by demonstrating demand through big policy statements, and should

address barriers such as licensing risks, financing risks and delivery risks. Having a roadmap also means producing a schedule, particularly for long lead time items such as reactor pressure vessels. This can help the industry to put in the upfront investment required to develop and accelerate their projects. Interestingly, roadmaps were seen as equally pertinent for the government as they are for nuclear vendors. At times, industry may voice frustration that government is impeding progress, however it is recognised that due diligence must be carried out on projects to ensure public funds are not wasted, and that these projects are able to deliver based on their own financial and project commitments. This is vital to building mutual trust between industry and government, and to enable true and effective collaboration.

In terms of end users, industries such as data centres and energy-intensive manufacturing are developing at lightning speed; with their corresponding demand for energy expected to outstrip the pace at which nuclear can be delivered. From a logistical perspective, connecting substantial additional capacity to the grid is expected to be a significant challenge. There is already concern about applications for new renewable energy projects having to wait up to 15 years to connect to the grid in some parts of the country<sup>1</sup>, as the volume of applications means that the National Energy System Operator (NESO) faces challenges in processing and prioritising projects in their existing queue system. Deep reforms are likely to be required to realise the ambitions of proposed low carbon energy projects across the energy landscape.

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<https://www.theguardian.com/business/2024/nov/04/renewable-energy-grid-wait-green-renewal-stellantis-warehouse-solar>



## The role of planning and Development Consent Orders

For the planning discussions, Mustafa Latif-Aramesh, Partner who specialises in nuclear infrastructure planning, interestingly started off the conversation with a request for any “horror stories” that participants would like to share. There were some quite striking examples given and lessons to be learned, particularly on how developers have historically failed to engage with communities. A nuanced education piece is necessary to better pitch and justify the long-term benefits of energy infrastructure projects, thereby maximising the opportunity to win the hearts and minds of key stakeholders and potential partners.

Requirements for environmental assessments were also recognised as burdensome and inconsistent, i.e. Hinkley Point C (HPC) has an environmental statement which is 15,000 pages, compared to that for Sizewell C, which is 30,000 pages. The length and extent of environmental assessments can be driven by the fear of judicial reviews and legal challenge, which promotes an “above and beyond” approach to documentation. This contributes to the assessment burden, as the production of substantial notes and documentation is typically seen as preferable to challenging existing processes and rulings. Alongside a lack of mandated timescales, this perpetuates the long review cycle of

required documents. The impact of this is further exacerbated by the increasing demand being placed on regulatory bodies such as the Environment Agency and Natural England.

Moreover, with respect to environmental impact assessments, there were doubts around the clarity of what is expected, and the associated timings. Typically, environmental assessors keep all intellectual property and knowledge in-house as this is fundamental to their business model. Unfortunately, this is not conducive to learning from experience or avoiding the duplication of efforts. Is there a way to incentivise developers to share data and information within a central repository, rather than reinventing the wheel for each application?

The importance of standardisation and adaptation of planning procedures to new development types was also raised. Despite the recent focus on energy security and net zero, not all major energy projects are classed as Critical National Priority (CNP) projects. CNP designation affords infrastructure projects additional protections and support from the government in the event of critical incidents, hence minimising impacts on the economy. In terms of obtaining a Development Consent Order (DCO),



there are multiple different processes which could be streamlined, decoupled and parallelised, i.e. is a full Generic Design Assessment required as a pre-requisite to starting DCO? There was also frustration that even when DCO is obtained, this is not the end of the road for planning, as other consents still need to be obtained.

Moreover, when considering a fleet approach, multiple devices would exist on one site; raising questions on whether multiple DCOs are required for the same technology. Aiming to draw attention to the many open questions on this topic, Finland have published a white paper<sup>2</sup> on the differentiation between SMR and large-scale nuclear, which could be used as a potential template for UK planning regulation.



<sup>2</sup> <https://www.julkari.fi/handle/10024/139290>

## To what extent can project and programme delivery impact deployment?

The third and final discussion on programme delivery was led by Paul Pearson, Director Nuclear within KBR's Projects and Programmes business. To set the scene and give a sense of the scale of the industry, it was claimed that there are more nuclear technology vendors than there are car manufacturers! Yet, there are millions of cars around but comparatively fewer nuclear power plants. Many nuclear vendors have great ideas at various Technology Readiness Levels (TRLs), but the "valley of death" affects their ability to deliver the product to the market, as the technologies struggle to bridge the funding gap between receiving investment from research institutions or private sectors. When technologies do manage to overcome the hurdle of commercialisation, there can be challenges around trying to progress the project while the design is still immature. Design changes made during programme delivery can be a persistent issue, hence it was suggested that design repeatability could add more confidence to delivery dates; providing more assurance to off takers such as data centres.

From the perspective of data centres, construction typically occurs in phases, with the power demand being increased in intervals.

Historically, the limiting factor to building new data centres was obtaining the land on which to build, however it is now the fibre connection and power supply. It was reiterated that the pace of nuclear power deployment doesn't seem to be able to keep up with the expected demand from data centres, which require a good degree of certainty around when power is expected to be available. This outlines the criticality of the nuclear supply chain standing up support with efficient, effective programme delivery to serve what is going to become an increasingly influential stakeholder in the sector.

Moreover, the Prime Minister's announcement on 6 February 2025 referenced opportunities to co-locate new nuclear technologies with energy-intensive industry such as data centres. This signals increasingly strong intent by the government to expedite new nuclear deployment as the energy demand from new end users is forecasted to grow.

Overall, the key factors for successful project delivery were agreed to comprise:

- ▶ Having a capable delivery team, covering Nuclear Island, Conventional Island and Balance of Plant aspects. Collecting high quality project data and reporting is key. Ensuring the customer is a key part of the feedback loop also encourages effective learning from experience and continuous improvement on future projects.
- ▶ Good risk management to balance programme and technical risks, and fully consider the impact of delays (particularly regarding the return on investment timescale). Projects can often be delayed because the initial estimate was optimistic, which satisfies project approval requirements but is not necessarily based on the best engineering judgement. Similarly, strong interface management is important to mitigate against project teams and organisations working in silos.
- ▶ Implementing the correct contracting method, with project incentives structured correctly to encourage partners to work collaboratively. New Engineering Contracts (NECs) could apply a “pain/gain” mechanism which enables the risk/reward to be shared between the contractor and the employer for a target cost contract. For example, if project costs exceed the target cost, the excess (i.e. “pain”) is allocated between the employer and the contractor. If the project comes in under cost then the “gain” is similarly allocated, which could better align the interests of both parties.
- ▶ Stability of government policy, for example protecting nuclear policy for 10 years or longer. In terms of the lifecycle of a nuclear power plant from concept to delivery, there are likely to be changes of government and subsequent policy. Therefore, clear direction and commitment is needed from the government to provide the surety that drives private investment – could guarantees be provided in a similar way that subsidies have been applied for the wind energy industry?

## How do we get there?

At the end of the workshop, reflections were made by Sukhbinder Singh, Business Manager for Government Nuclear at Frazer-Nash. Sukhbinder joined the nuclear industry in 2009, at the time of another supposed "nuclear renaissance". During his early career, three new nuclear power plants were coming through the GDA process, yet we ended up with just one, which was "not quite a renaissance"! If we don't get the current projects right in the next 5 years, we will struggle to get public backing for nuclear power projects in the future – this might be our last chance of a true renaissance and for industry to deliver on its potential. We need to persevere within our respective roles and contribute to our shared goal of wanting to see nuclear happen – making it happen, instead of passively assuming that it will.

It was clear that everyone participating in the workshop had the energy and desire to deliver new nuclear, whether it was from the perspective of seeing innovation come to fruition or to power their data centres. As an industry, we often speak about the benefits of nuclear, but there will be no benefits if we do not deliver! We must harness this collective energy, and each do our part to ensure we deliver nuclear successfully, together.

If you'd like to find out more about the services which Frazer-Nash offer across the nuclear lifecycle, please contact [newnuclear@fnc.co.uk](mailto:newnuclear@fnc.co.uk).

