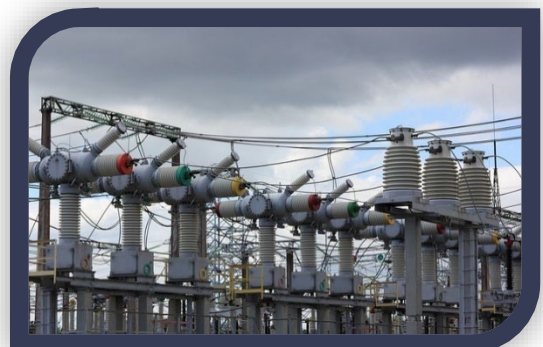


# Addressing the UK's Nuclear Talent Shortfall: Strategies for Securing the Future of Energy

As the United Kingdom strives to cement its status as a global leader in nuclear energy, it faces a daunting challenge: a projected shortfall of 120,000 skilled professionals by 2030. This anticipated deficit threatens not only the timely completion of crucial projects such as Hinkley Point C and Sizewell C but also the UK's ambitious energy transition goals. Nuclear power is central to achieving net-zero emissions and securing a stable, low-carbon energy future, highlighting the urgency for the sector to address this talent crisis effectively. Failure to act strategically could see the UK **fall behind** in the global energy race, undermining both energy security and economic growth potential.

A significant part of the problem lies in the ageing workforce. Neil Longfellow, former Executive Director at Sellafield, notes that over **40% of nuclear professionals are over 50**, with many incentivised to retire early due to attractive pension schemes. To counteract this trend, Longfellow proposes measures to encourage extended careers and phased retirement options, including additional benefits or bonuses for those who remain in the workforce beyond the typical retirement age and the option for gradual reduction of working hours through **phased retirement programmes**. He also advocates for strengthening apprenticeship schemes and graduate sponsorships to nurture a new generation of skilled workers, alongside increased support from UK Government Investments (UKGI) for critical facilities like Springfield and Sellafield.

Along with this approach, John Warden, former CEO of the Nuclear Institute, suggests a broader strategy of recruiting talent from other **high-tech sectors** such as aerospace and rail. These industries, renowned for their rigorous safety standards and complex engineering demands, could provide a valuable pool of skilled professionals. Although cross-industry recruitment could introduce fresh perspectives to the nuclear sector, it requires substantial investment in specialised training. According to the Engineering Employers' Federation, adapting aerospace engineers for nuclear roles might cost up to **£10,000 per individual**, covering intensive courses on nuclear-specific safety protocols, regulatory compliance, and technical skills unique to nuclear operations.



Equally crucial is making the nuclear sector a compelling career choice. Chris Gear, former CTO of GKN, stresses that competitive salaries are essential for attracting and retaining top talent. "To draw in and keep the best professionals, the industry must offer

salaries that reflect the high level of expertise required for advanced roles,” advises Gear. He suggests that salaries in the nuclear sector should be **10-15% higher** than those in comparable high-tech industries. Establishing such a salary framework, along with investing in professional development, could require upwards of £50 million. This investment would cover salary increases as well as fund comprehensive training programmes and career advancement initiatives.

Strengthening partnerships between academia and industry is also vital. Alistair Smith, CEO of Nuclear AMRC, highlights the need for educational curricula to align with the specific needs of the nuclear sector. “By tailoring curricula to address specific technical requirements and emerging trends within the sector, educational institutions can better prepare a workforce for modern nuclear energy projects,” asserts Smith. With only **30%** of graduates from nuclear-related courses entering the sector, better alignment between academic training and industry needs is crucial. Establishing specialised training hubs and providing funding for targeted educational programmes could help bridge this gap.



Diversity and inclusion represent another strategic advantage that could enhance the sector’s resilience and innovation. Hannah Jenkins, Managing Director of EDF Energy, points out that a diverse workforce brings varied perspectives that drive creativity and problem-solving. “Building a diverse workforce is not just a moral imperative but a strategic advantage, as it fosters innovation and effective problem-solving,” Jenkins asserts. EDF Energy’s outreach, mentorship, and inclusive recruitment practices illustrate that diversity

can significantly boost productivity and decision-making quality. Scaling these strategies nationally requires targeted efforts to address **systemic barriers and biases**, supported by government-led initiatives and industry-wide standards.

In addition to fostering diversity, adopting skills-based hiring practices can further strengthen the sector. By focusing on the specific skills and competencies required for roles rather than traditional qualifications or background, companies can tap into a broader talent pool. This approach ensures that hiring decisions are based on practical abilities and potential, rather than pre-existing biases, thereby enhancing both diversity and capability within the workforce. Skills-based hiring not only aligns with the drive for inclusivity but also promotes a more adaptable and skilled workforce that is well-equipped to meet the evolving challenges of the industry.

Mid-career programmes can also play a pivotal role in addressing the talent shortage. By providing opportunities for professionals from other fields to transition into the nuclear sector, these programmes can quickly infuse the industry with experienced individuals who already possess valuable skills and knowledge. Initiatives such as targeted retraining and certification courses can help mid-career professionals adapt their existing expertise to meet the specific demands of the nuclear industry. These programmes not only help bridge the immediate skills gap but also offer a pathway for career growth and development, making the sector more attractive to a broader range of

professionals. By investing in mid-career transitions, the nuclear industry can leverage the experience and expertise of individuals from diverse backgrounds, enhancing its overall talent pool and resilience.

Addressing the nuclear sector's talent shortage may seem daunting due to the variety of potential solutions proposed by industry experts. However, a clear and effective strategy can simplify this challenge by coordinating multiple approaches. To manage the substantial financial investments required, such as those for competitive salaries and tailored training programmes, the following strategies can be implemented:

- **Public-Private Partnerships:** Companies and Government bodies can collaborate to pool resources, sharing the financial burden through public-private partnerships.
- **Dedicated Fund:** Establishing a dedicated fund to support cross-industry recruitment and training can help distribute costs more equitably.
- **Incentives for Apprenticeships and Graduate Sponsorships:** Offering incentives for companies to invest in apprenticeships and graduate programmes can further offset individual costs, making the sector more attractive to new talent.

While these solutions require upfront expenditure, they offer long-term benefits in terms of **job creation, economic growth**, and enhanced **energy security**.

Furthermore, enhancing the sector's appeal through better alignment with educational institutions and active efforts to **increase diversity and inclusion** can create a more robust talent pipeline. By integrating academic training with industry needs, educational institutions can better prepare graduates for careers in nuclear energy, thereby reducing the skills gap. Diversity initiatives, while requiring investment in outreach and support programmes, can also broaden the talent pool and drive innovation. Overall, the feasibility of overcoming the sector's challenges hinges on strategic investments, effective collaboration between stakeholders, and a clear, coordinated approach that addresses both immediate and long-term needs. With committed efforts and substantial financial backing, the nuclear sector can navigate its current challenges and secure a skilled workforce to support its future ambitions.



In addressing its talent shortfall, the nuclear sector can also draw on successful precedents from other industries. The aerospace sector, for example, faced a significant skills shortage in the early 2000s due to an ageing workforce and rapid technological changes. It responded with:

- **extensive apprenticeships**
- **strong industry-academic partnerships**
- **substantial investments in training**

The Aerospace Growth Partnership in the UK effectively bridged the skills gap by aligning educational curricula with industry needs and promoting aerospace careers through outreach and incentives. Similarly, the renewable energy sector has demonstrated how comprehensive workforce development programmes, such as specialised training centres and accredited courses, can address workforce shortages. The wind energy sector's emphasis on clear career pathways and industry-standard training has helped maintain a steady influx of skilled professionals.

The technology sector also offers valuable lessons in cross-industry talent recruitment and adaptation. By attracting professionals from fields like telecommunications and software development and investing in customised retraining programmes, the tech industry has successfully tackled its skills shortages. Companies like IBM and Google have onboarded individuals from diverse technical backgrounds by investing in targeted training and providing clear career progression opportunities. By adopting similar strategies—creating robust industry-academic partnerships, investing in specialised training programmes, and offering attractive career pathways—the nuclear sector can also address its current talent gap.

### **What Is Happening Internationally?**

International examples offer further insights. The United States has leveraged the **Nuclear Energy University Program** to align educational outputs with industry needs, creating a steady pipeline of trained professionals. France has developed specialised training programmes and strong industry partnerships to address workforce gaps, while South Korea's approach includes both national talent development and international collaboration. These examples underscore how targeted policies, investments, and strategic partnerships can effectively tackle workforce shortages in the nuclear sector. By adapting these successful models to the UK context, the nuclear industry can develop a robust strategy to attract, train, and retain the talent needed to meet its ambitious goals and maintain its leadership in global nuclear energy.

In addition to these international models, the experience of countries with established nuclear programmes highlights the importance of **proactive and adaptive strategies** in workforce development. For example, Canada has successfully implemented programmes that integrate practical training with academic education, ensuring that students are job-ready upon graduation. Japan's emphasis on continuous professional development and certification for nuclear operators has helped maintain high safety and efficiency standards. Moreover, Finland's commitment to long-term planning in education and industry collaboration has enabled it to build a resilient workforce capable of supporting its ambitious nuclear projects. By incorporating elements from these global success stories, the UK can enhance its approach to addressing the talent shortfall, creating a dynamic and future-proof workforce that is well-equipped to drive the nation's nuclear energy ambitions forward.

In addition to these strategies, lessons from decommissioning sites also offer valuable insights. Decommissioning projects, such as those at Sellafield and Dounreay, have developed robust processes for managing a skilled workforce in challenging environments. The expertise gained from these projects in areas like waste

management, regulatory compliance, and project management can be leveraged to address current workforce shortages. Incorporating best practices from decommissioning experiences—such as comprehensive training for new and existing staff, effective knowledge transfer, and the development of specialised skill sets—can enhance the sector’s ability to address its talent shortfall. By applying these lessons, the nuclear industry can build a more resilient and adaptable workforce capable of meeting both its ongoing and future challenges.

With the UK Government now poised to make a substantial investment in the nuclear sector, there will be an unprecedented opportunity to implement these critical workforce strategies. The planned funding boost, potentially reaching billions of pounds, will target key projects like Hinkley Point C and Sizewell C, driving technological innovation and enhancing infrastructure. This significant financial support will not only accelerate these essential projects but will also provide a rare chance to **reform** the



sector’s approach to workforce development. By aligning this substantial public investment with targeted initiatives such as upgrading training facilities, expanding apprenticeships, and fostering cross-industry recruitment, the Government will lead a transformative strategy to address the talent shortfall. This **unique alignment** of financial backing and strategic focus will offer a timely opportunity to tackle the skills gap comprehensively, ensuring the nuclear sector is well-positioned to build a **revitalised and future-proof workforce**.

In conclusion, addressing the UK’s projected shortfall of 120,000 skilled nuclear professionals by 2030 demands a **multifaceted and strategic approach**:

- Enhancing apprenticeship schemes;
- Strengthening graduate sponsorships;
- Integrating talent from high-tech industries—despite financial and training challenges;
- Strengthening academia-industry partnerships;
- Investing in specialised training programmes;
- Offering competitive salaries and clear career pathways are equally vital;
- Promoting diversity and inclusion through targeted outreach and inclusive practices can further enhance sector resilience and innovation

By drawing lessons from international models and committing to these comprehensive measures, the UK can effectively **mitigate the talent crisis, reinforce its position as a global leader** in nuclear energy, and **secure its energy future** in alignment with net-zero emissions targets.

## **Moloney Search**

As our 30<sup>th</sup> Anniversary approaches we have invested in a team that source, track and spend time with the best nuclear, energy and industrial talent across the UK. As technology and policy is changing so rapidly, the talent market is having to change too and having access to an extensive network is an unparalleled asset for bringing in the right people through an organisation who are flexible, innovative, and keen to embrace and drive change.

Recent clients in this space include, Nuclear Restoration Services, UK Atomic Energy Authority, Sellafield, The Dounreay Nuclear Site, Topaz Marine, Viridor, First Quantum Minerals, Network Rail and DUQM in Oman. We have placed diverse senior leadership across these organisations. We also target specific graduates and post graduates technicians in our early careers practice.

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