

A **new deal** for **nuclear**



**It's time to develop a fresh
vision that will realise
the potential of the UK's
civil nuclear industry**



Civil nuclear power has the opportunity to drive the future economic success of the UK. Alongside providing low-carbon, secure energy at home, the industry's highly-skilled UK expertise brings growth opportunities around the world.

But uncertainties are casting a shadow. Brexit, developing new technology, securing investment and providing the skills our industry needs are all challenges that need an active government. This is not about a return to the past, but a modern, proactive industrial strategy that can allow UK nuclear to prosper.

It is time for a **new deal for nuclear** to:

- ▣ **deliver new nuclear generation as part of a balanced energy mix**
- ▣ **champion UK nuclear innovation and expertise as pivotal in any plans for growth**
- ▣ **secure the skills we need to succeed**
- ▣ **ensure any policy provides a voice for the industry and the workers at its heart.**

The UK is a world leader in nuclear power generation, research, engineering, waste management and decommissioning. We launched the world's first civil nuclear engineering programme and can lead the next wave of technological advances. Our highly-skilled workforce, many of whom are Prospect members, are the envy of other countries.

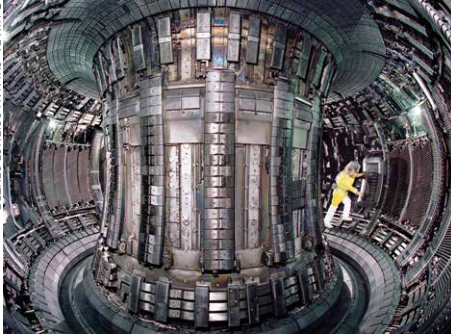
The challenges are great, but there are opportunities if the UK seizes them.

It is time for action and for a plan to turn government ambitions into practical support to drive innovation and growth.



Uncertain times for nuclear

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Culham Centre for Fusion Energy in Oxfordshire operates Europe's largest fusion device. More than 40 laboratories and 350 scientists and engineers from all over Europe contribute

Brexit

The government decision to withdraw from the European Atomic Energy Community (Euratom), which has allowed the UK to share nuclear materials and expertise with Europe and the rest of the world for decades, places major projects at risk.

The government must negotiate new agreements with international partners and establish a new inspection regime approved by the International Atomic Energy Agency (IAEA).

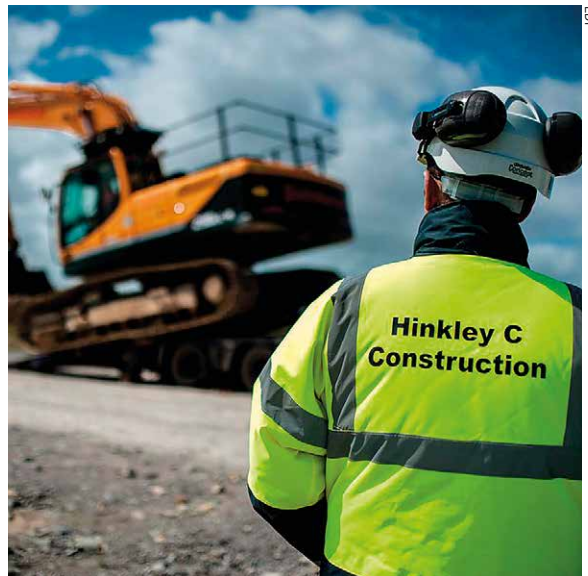
Euratom-administered research funds, of which the UK has been a net recipient, must be replaced.

Lack of leadership

The absence of clear direction from the government on the future of the UK nuclear sector has created uncertainty for workers and potential investors. The lack of a strong champion for UK nuclear puts at risk its ability to compete globally.

New build delays

The programme of new reactors has been beset by delays, problems and setbacks. The Hinkley Point C project is moving ahead, but a question mark hangs over the Moorside project in Cumbria as a result of the Westinghouse bankruptcy. Delays and uncertainty could derail the entire new build programme, jeopardising billions of pounds of potential investment and tens of thousands of new skilled jobs.



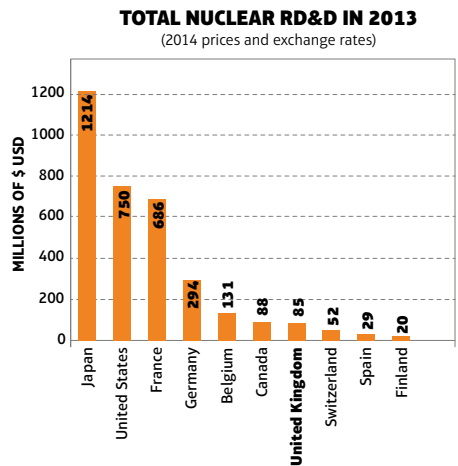
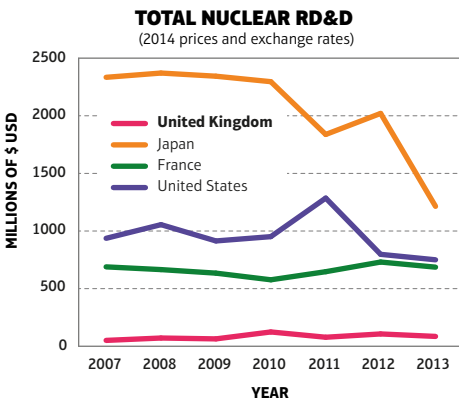
EDF

Small modular reactor competition

A global race is on to develop the next generation of factory-produced small modular reactors (SMRs). Global competitors are developing new designs, but the UK design competition has stalled and the government has yet to announce when it will resume – putting at risk the UK's ability to compete in a fast-changing global market.

R&D funding shortfall

Despite a strong history of nuclear research and development, UK spending lags behind other countries, threatening its position as a global leader in nuclear technology.



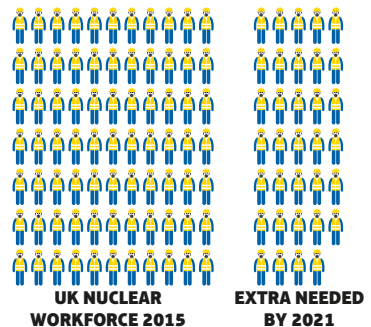
Source: IEA (2017), "RD&D Budget", IEA Energy Technology RD&D Statistics (database). DOI: <http://dx.doi.org/10.1787/data-00488-en>. (Accessed on 21 June 2017)

A May 2017 report by the House of Lords highlighted the serious shortfall in UK nuclear research funding relative to other major nuclear powers. Brexit is likely to exacerbate this.

Growing skills gap

The competing pressures of an ageing workforce, an ambitious programme of expansion and the impact of Brexit on foreign skilled workers risk a serious skills shortfall unless prompt action is taken.

The Nuclear Energy Skills Alliance estimates that the total UK nuclear workforce will need to grow from 77,880 in 2015 to 111,280 in 2021, an increase of 43% in just six years.

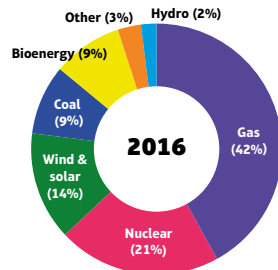


A global leader

Powering Britain

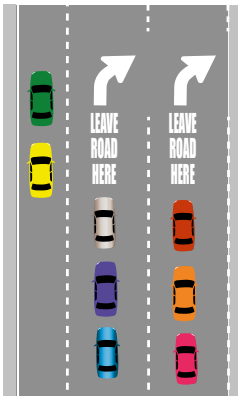
Nuclear power is central to Britain's ability to keep the lights on and plays a crucial role in the UK energy mix, providing around one-fifth of needs.

WHERE THE UK'S ELECTRICITY COMES FROM



Source: National Statistics, Energy Trends, March 2017

In 2015, use of nuclear power in the UK avoided **49 million tonnes of CO2 emissions** – equivalent to taking around **three in four of Britain's cars off the road**



Clean power

Nuclear power accounts for around half of all low-carbon electricity in the UK, and nuclear generation allowed the UK to avoid 49 million tonnes of CO2 emissions in 2015. Expanding safe, reliable and cost-effective nuclear generation will be critical to the UK's ability to meet its climate goals.

High-skilled jobs

The nuclear sector is a major UK employer, providing more than 65,000 jobs, many in high-skill STEM fields, as well as apprenticeships and graduate training for 3,000 people.

More than 60 years of expertise

The UK is home to the world's first civil nuclear programme and opened the first commercial-scale civil nuclear reactor at Windscale in Cumbria in 1956.

Cutting edge research

The UK has some of the most advanced nuclear research facilities in the world. The JET laboratory at Culham, Oxfordshire, is the world's largest and most successful fusion research facility. Given adequate resources, the UK has the capacity and the expertise to be a global leader in developing next-generation clean energy technology.



SIXTY YEARS OF EXPERTISE: *Downreay became the first fast reactor in the world to provide electricity to a national grid in 1962*

Decommissioning knowledge

The UK has a wealth of expertise in nuclear decommissioning. It is perfectly placed to compete for clean-up business, estimated to be worth £250bn globally. Decommissioning work in the UK generates more than £1.7bn of business per year for UK plc and over 21% of it with SMEs.

MAGNOL



The British nuclear decommissioning industry generates more than

£1.7bn of business per year for UK plc and over

21% is spent with SMEs.

Engine of economic growth

The nuclear sector contributes billions of pounds a year to the UK economy and exports £700m worth of nuclear goods and services.

Opportunities for expansion and jobs growth abound. Estimates suggest the global market for new nuclear projects over the next decade could be worth almost a trillion pounds, with the market for new small modular reactors worth £250bn–400bn alone.

£700m Annual exports of nuclear goods from UK

£250-400bn Market for small modular reactors

£1 trillion Global market for nuclear projects over next decade

Securing the future

These are Prospect's recommendations for the successful growth of the UK's civil nuclear industry.

1 Prepare for life after Brexit

The UK must begin immediate preparation for the post-Brexit landscape. Government must ensure that our ability to trade legally in nuclear materials and expertise is not jeopardised by Brexit. It must put in place a robust alternative framework of agreements and a new inspections regime in time to avoid serious harm to UK nuclear. Plans should include:

- a. A commitment not to terminate Britain's Euratom membership until an appropriate alternative framework is in place. No deal is not an option and would potentially leave the UK in violation of international law.**
- b. The government, in consultation with key industry stakeholders, should draw up plans for a comprehensive framework to replace Euratom membership. This will be a complex, drawn-out process so it is critical to proceed quickly but carefully to make sure UK nuclear has the legal and commercial safeguards it needs to succeed.**
- c. The government must immediately commit to replacing Euratom funding for UK nuclear research facilities – Euratom membership has allowed the UK to be a net beneficiary of such funding. Critical, world-leading research projects will depend on maintaining these income streams.**

2. Government must lead

UK nuclear needs clear leadership from government. Years of uncertainty and inconsistency have exacerbated investor uncertainty, inhibited long-term planning by stakeholders and left nuclear workers unclear about their futures. Clear and consistent signals are crucial, and should include:

- a. A clear commitment to, and adequate support for, the nuclear new build programme. This is essential to address future energy needs and to meet climate targets. The industry needs to know government is committed to seeing it through to completion.**
- b. A comprehensive nuclear sector deal with a strong voice for workers. Britain's nuclear industry is a prime example of a sector that will benefit from a comprehensive industrial strategy, developed with key stakeholders, which must include the trade unions.**

- c. A commitment to fund and support new nuclear technology and to reactivate the small modular reactor design competition. The government needs to put in place the resources and support to allow UK businesses to compete successfully in the lucrative global market for new nuclear technology.

3 Address the skills challenge



The government must act now to tackle the nuclear skills gap. Over the next decade, the sector will need to recruit tens of thousands of workers to replace an ageing workforce and to meet the requirements of the new build programme.

We also need an approach to skills, training and workforce development that retains existing expertise and experience, gives all nuclear workers a chance to realise their potential and enhances the diversity, accessibility and inclusivity of the workforce, especially at senior grades.

- a. The government should immediately begin consultation with industry stakeholders to develop a comprehensive assessment of workforce requirements. Identifying critical areas of skill shortages will be the first step in averting a crisis.
- b. The government should consult stakeholders to ensure that training and development programmes are properly designed to meet the specific needs of UK nuclear. A proliferation of programmes has created confusion, and

a streamlined system is needed that takes account of the specificities of the sector.

- c. A comprehensive training and development programme needs adequate funding. The government must ensure there is appropriate funding to meet the industry's needs.**
- d. The government must ensure that the free movement of specialist labour is not jeopardised by the outcome of Brexit negotiations – the process must not place barriers in the way of industry's ability to find the skilled labour it needs.**

4. A UK nuclear champion

UK nuclear urgently needs an industry champion. Decades of experience and expertise have primed UK nuclear businesses to take advantage of a wealth of new global economic opportunities.

A dedicated advocate is needed to help market this expertise and to win new business in a highly competitive global market and to make the case domestically for greater investment in nuclear.

- a. The government, in consultation with industry stakeholders, including unions like Prospect, should commit to establishing a new independent body. This should support the industry in taking advantage of business opportunities abroad and building public support for nuclear at home.**

An appropriately-resourced industry champion could help the sector become a growth and jobs engine for the economy in a period of rising economic uncertainty.





Prospect is the largest union in the nuclear sector, representing thousands of specialists, managers and professionals.

We are calling on the new government to urgently address the implications of Brexit, tackle the skills challenge and invest in new build to secure a strong future for the vital nuclear industry.

www.prospect.org.uk/joinus

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