

**Bechtel Nuclear Power Co. Ltd.**

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**For the Attention of the Economy, Trade and Rural Affairs Committee**

I am Ivan Baldwin; I lead Business Development for Bechtel's Nuclear Power business for the UK and Europe. Bechtel is a privately owned company that has been delivering nuclear power plants since the 1950s and has operated in the UK for over 70 years. We worked with customers to build the first nuclear plants in the United States, India, Spain, South Korea, and China and up until the development was ceased in 2020, we were the delivery partner to Horizon on the Wylfa Newydd development in Ynys Môn.

I appreciate the opportunity to provide evidence to the Economy, Trade and Rural Affairs Committee and would like to thank the committee for inviting me to share information on the critical role of nuclear energy in Wales.

In my evidence, I will highlight the importance of nuclear energy to Wales' carbon reduction goals and outline the many regional benefits that new nuclear developments could bring to Wales.

**What potential economic impact could new nuclear developments in north Wales have on the regional economy?**

New build nuclear projects are valuable contributors to national and regional economies, bringing unprecedented economic benefits and multi-generational opportunities to people in nearby communities.

In the UK, the civil nuclear sector is a vital job creator and economic contributor. More than 77,000 people are directly employed by the nuclear industry and 211,000 jobs are provided in an indirect capacity adding £6.1 billion to UK GDP<sup>1</sup>. As was the case when Wylfa and Trawsfynydd were operational in Wales, worldwide, nuclear power plants serve as the economic backbone for communities in which they operate, serving as engines for job

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<sup>1</sup> 2023, *Delivering Value: The Economic Impact of the Nuclear Industry*, Nuclear Industry Association

creation. From a regional perspective, construction of a new nuclear plant can provide thousands of well-paying jobs. For example, in the United States, Bechtel recently completed the first new nuclear plant to deliver electricity to the grid in over a generation, through the delivery of two Westinghouse AP1000 reactors at Plant Vogtle, Georgia. At its peak, the Plant Vogtle project provided more than 9,000 construction jobs and is anticipated to provide more than 800 permanent, high paid jobs for decades.

New nuclear power developments in Wales, such as the AP1000 technology, would create highly paid careers for thousands of people, as these are jobs with an average of £102,300 GVA per worker<sup>2</sup>.

If supported, deployment of advanced nuclear reactors could be significant drivers of regional economic growth. Wales currently has a substantial opportunity to be a world leader in the development of advanced nuclear and SMRs, a global market which could be worth hundreds of billions of pounds<sup>3</sup>.

In the advanced nuclear and SMR market, Bechtel is the engineering and construction partner to the Bill Gates-backed TerraPower, delivering the Natrium Demonstration in Kemmerer, Wyoming USA. Reinvigorating a retiring coal power community, one reactor and energy system, is estimated to produce 2,000 jobs during the peak construction period and will require an additional 250 employees to operate the plant upon its completion. Replacing the former coal plant will drive economic growth back into the region, delivering high-paying jobs and increasing local tax revenues.

U.S. Energy Secretary Jennifer Granholm is quoted as saying:

*"The energy communities that have powered us for generations have real opportunities to power our clean energy future through projects just like this one, that provide good-paying jobs and usher in the next wave of nuclear technologies."*

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<sup>2</sup> 2023, Jan: *Delivering Final Value Report*, NIA

<sup>3</sup> 2023, *British nuclear revival to move towards energy independence*, Gov.UK

In Wales, the sites of Wylfa and Trawsfynydd are located in rural communities, like Kemmerer. New nuclear, in Wales, through highly paid job creation, skills and training development opportunities would be an economic driver, helping to address regional inequality. The industry's employment is also over indexed in local authorities where labour market participation is currently low and employment growth is predicted to be slow over the next decade. In providing job opportunities where they are most needed, the industry is proven to help reverse regional inequality.<sup>4</sup>

The economic potential for advanced nuclear and SMRs is expected to continue to grow as their smaller scale and standardised designs can lead to cost savings in manufacturing, construction, and maintenance. The modular nature of technology enables phased deployment, reducing upfront capital costs and allowing for incremental capacity expansion based on demand making it an excellent consideration for Wales in addition to proven large-scale reactors.

### **What can be done to ensure that any new nuclear projects maximise local employment and local or Wales-based supply chains?**

At every project, Bechtel seeks to leave a positive and sustainable legacy. This requires making sure that when our work is done, the communities that we serve are better for it. The civil nuclear sector draws upon a vast and complex network of skilled workers and supply chains. Thousands of skilled workers and hundreds of suppliers will be needed for any new nuclear build. Our experience has proven that engagement with local talent and suppliers to fill that void is crucial.

For instance, partnered with Westinghouse, Bechtel has been selected as the engineering and construction partner to deliver Poland's first new nuclear power plants, and we intend for our workforce to be composed of largely local Polish workers and suppliers. We have recently opened an office in-country, to build our relationship with the local community and to develop a strong nuclear workforce and supply chain. Bechtel has launched talent acquisition efforts at universities and through online advertising. Our procurement teams have held

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<sup>4</sup> 2023, Jan: *Delivering Final Value Report*, NIA

several suppliers' forums in Poland, providing step-by-step instructions on how potential vendors can apply to be a supplier through our Digital Supply Chain portal.

With 70 years of nuclear experience, delivering over 76,000MW of nuclear power capacity, Bechtel has stayed at the forefront of nuclear innovation. As at Vogtle, Kemerrer, and now in Poland, if Bechtel participated in new nuclear projects in Wales, we would share our knowledge with the communities we deliver new nuclear projects for, to ensure a legacy of capability that would live long beyond the project.

### **What challenges could current skills shortages pose and how can these challenges be overcome?**

The civil nuclear sector in Wales has a long history of delivering innovation and investment, creating high skilled jobs, and providing low carbon power across the nation. Today, in the absence of new nuclear developments in Wales, many Welsh nuclear professionals and supply chain companies are serving the Hinkley Point C project in Somerset. As such, for new developments, there is a nuclear skills base that can be built upon along with the teams of people managing waste and decommissioning at the retired Wylfa and Trawsfynydd sites.

The world is experiencing a nuclear renaissance with numerous countries committed to new nuclear projects and many others now adopting new nuclear power policies. This is already placing significant demands on the availability of skilled people and is compounded by the parallel demands of other safety critical infrastructure sectors. Skills shortages adversely impact project schedule and cost, causing delays to the availability of low carbon, secure power, as well as increasing costs to taxpayers and investors.

To overcome the challenges posed by skills shortages, the most crucial point is to proceed without delay on plans for new nuclear developments, it is early movers that will secure the available talent, not to mention the capacity of the technology companies. The incubation of a new nuclear development offers the time to plan for nuclear skills at the local level, this can include working with technical colleges to invest in apprenticeships and in cross-skilling professionals from declining sectors. It is imperative that Wales builds a strong workforce to meet new nuclear demands, the renaissance of nuclear power is a generational opportunity

to drive innovation, boost productivity and reduce costs on future deployments of the technology.

Independent experts in major project delivery, often stress the importance of appointing highly experienced engineering and construction companies, referred to as master builders. Having worked with customers to build over 150 nuclear power plants globally, Bechtel harnesses the benefits of lessons-learned knowledge transfer, and we have made it a priority to learn from the lessons of past projects and apply them to current ones. Knowledge is passed throughout the workforce, increasing innovation and productivity as trainees share their new skills with colleagues, improving the skills and competences throughout the labour force. Relevant to Wales, this skills training and the passing on of new knowledge and competencies would provide a capability base for the incoming nuclear workforce generation.

The longevity and highly skilled nature of nuclear technology, provides significant opportunities for apprenticeship programmes across a broad range of disciplines, offering something for everyone in society, including both STEM and non-STEM occupations. The nuclear sector has always been committed to investing in its future workforce. At Bechtel our apprenticeship program enables students to work while learning. Time on the apprenticeship is split between developing on-the-job technical skills and knowledge and carrying out formalised off-the-job-training, enabling students to gain a nationally recognised qualification. This combination of world-class on project training and academic study leads to a highly competitive workforce.

## **Close**

In conclusion, I believe this evidence demonstrates the positive benefits of building upon the civil nuclear sector in Wales. Beyond the appreciable regional economic benefit to Wales, today's nuclear energy value proposition lies in its generation of carbon-free electricity, ability to provide dispatchable power that complements other sources, its low land-use requirements, and its low transmission requirements relative to distributed sources.