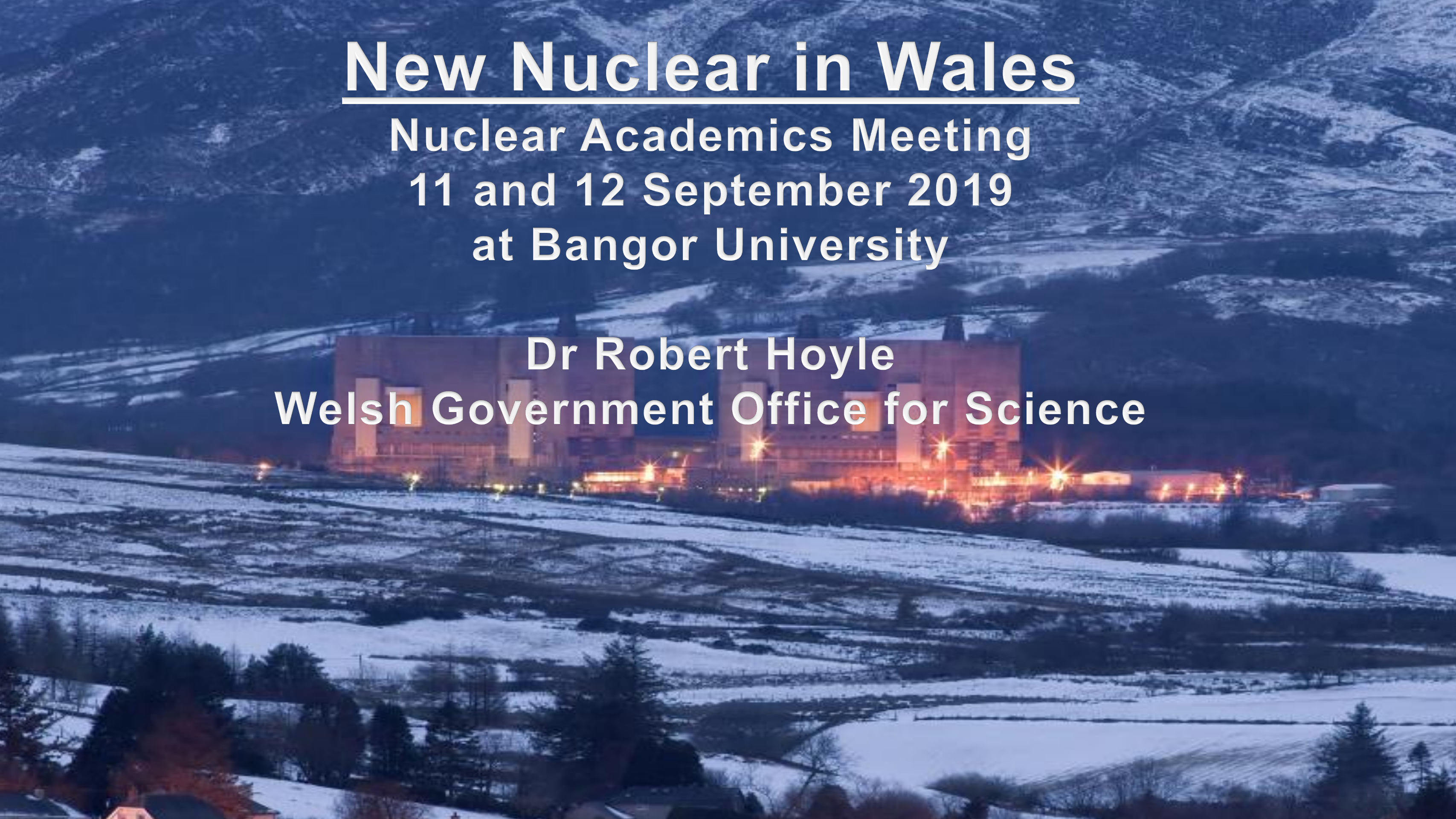


New Nuclear in Wales

Nuclear Academics Meeting
11 and 12 September 2019
at Bangor University

Dr Robert Hoyle
Welsh Government Office for Science



WELSH GOVERNMENT REMIT

- Devolved Government since 1999 led by the First Minister (Mark Drakeford, AM), Cabinet and 60 member elected Assembly, currently with a working majority with two additional members;
- Schedule 7 to the Government of Wales Act 2006 defines the scope of the Assembly's legislative competence to make Assembly Acts. The Schedule categorises 20 broad areas of policy responsibility devolved to the Welsh Government;
- Economic development in Wales is one area – including supply chain development, skills and export; also, local R&I support directly from WG and indirectly through HEFCW;
- We have full planning powers to consent new nuclear up to 350MW from 1st April 2019 - of relevance to potential for R&D, advanced technologies, small modular reactors etc.



OUR AMBITION FOR NUCLEAR

We are striving :-

- To cement Wales' position at the heart of the UK nuclear renaissance and establishing ourselves on the nuclear world stage - exploiting decommissioning and future new build project opportunities;
- To grow the supply chain and assist an increasing number of Welsh companies to demonstrate global expertise in nuclear, assisted by Fit4Nuclear, F4N Plus, Wales Nuclear Forum, supported by Welsh Government;
- To raise Wales' profile as a place where **nuclear research and development** is supported and where investments are made in top class facilities – e.g. Sêr Cymru team at Bangor and nuclear thermal hydraulics (detailed work underway currently by UKAEA);
- To maximise opportunities for inward investment, providing high quality employment opportunities, increasing exposure of our indigenous supply chain to best practice from outside Wales and creating new opportunities for collaboration.

*Our vision for the nuclear sector supply chain in Wales aims **by 2030** to see upwards of **10,000** high quality jobs created and **50** Welsh companies recognised as being globally competitive, nuclear sector businesses– genuinely placing Wales at the heart of the UK nuclear industry'*

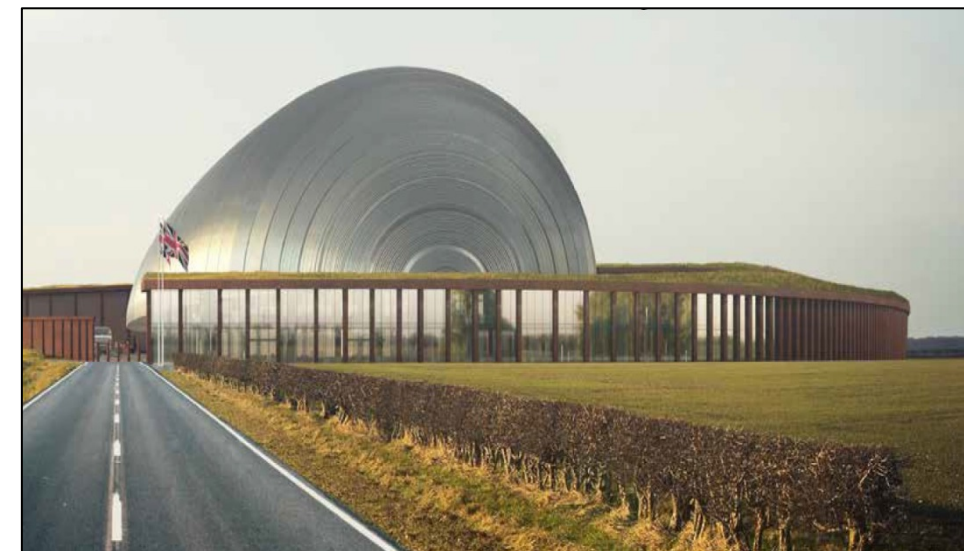


MS-Parc (Menai Science Park), Anglesey



Site Developments to promote first deployments e.g. at Trawsfynydd

- Nuclear Sector Deal announced at **Trawsfynydd** – UK Government is “actively” looking at sites where the new breed of small reactors could be located in future;
- Potential opportunities for a Foak SMR/AMR, R&D potential etc. – preparatory work already undertaken by Snowdonia Enterprise Zone to demonstrate site suitability, on lake cooling potential and transport of abnormal indivisible loads;
- Currently - 6 LWR technology vendors in exploratory discussions and workshops with ONR regarding the merits of their initial designs. One, possibly two to enter GDA in 2-3 years time?
- Welsh Government reviewing policy options for Ministerial consideration. Can a ‘Site Development Fund’ be established to anchor development at Trawsfynydd? Work in Progress.



SUPPLY CHAIN TAILORED SUPPORT

We believe Wales has unique characteristics making it a leading area for new and first-of-a-kind deployments :-

- Land available in public ownership – Nuclear Decommissioning Authority (NDA) at both Trawsfynydd and Wylfa (Horizon site is adjacent to the Magnox site);
- Land adjacent to current Nuclear Licensed Site e.g. the Horizon site is adjacent to the existing Magnox site, Trawsfynydd has adjacent land;
- A nuclear savvy workforce – decommissioning of former Magnox site will continue into mid-late 2020s;
- Supportive community – benefits of new nuclear in providing long term, high quality jobs is locally acknowledged following decades of successful nuclear site operations.

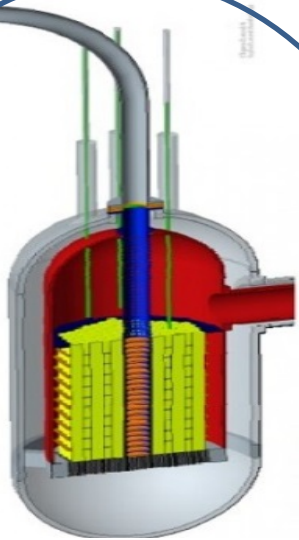
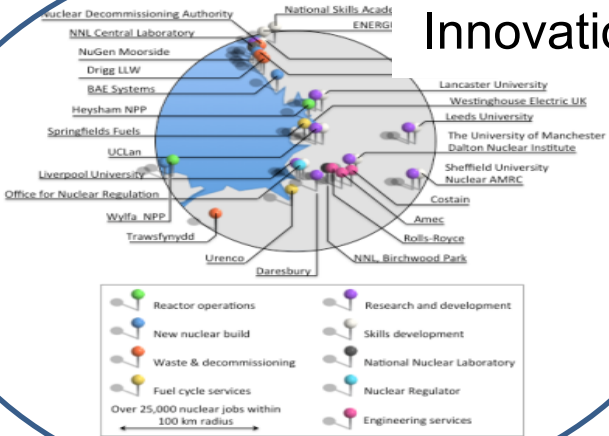


Wylfa – potential
deployments of
large or small
reactors



Deeside Advanced
Manufacturing Research
Institute - including nuclear

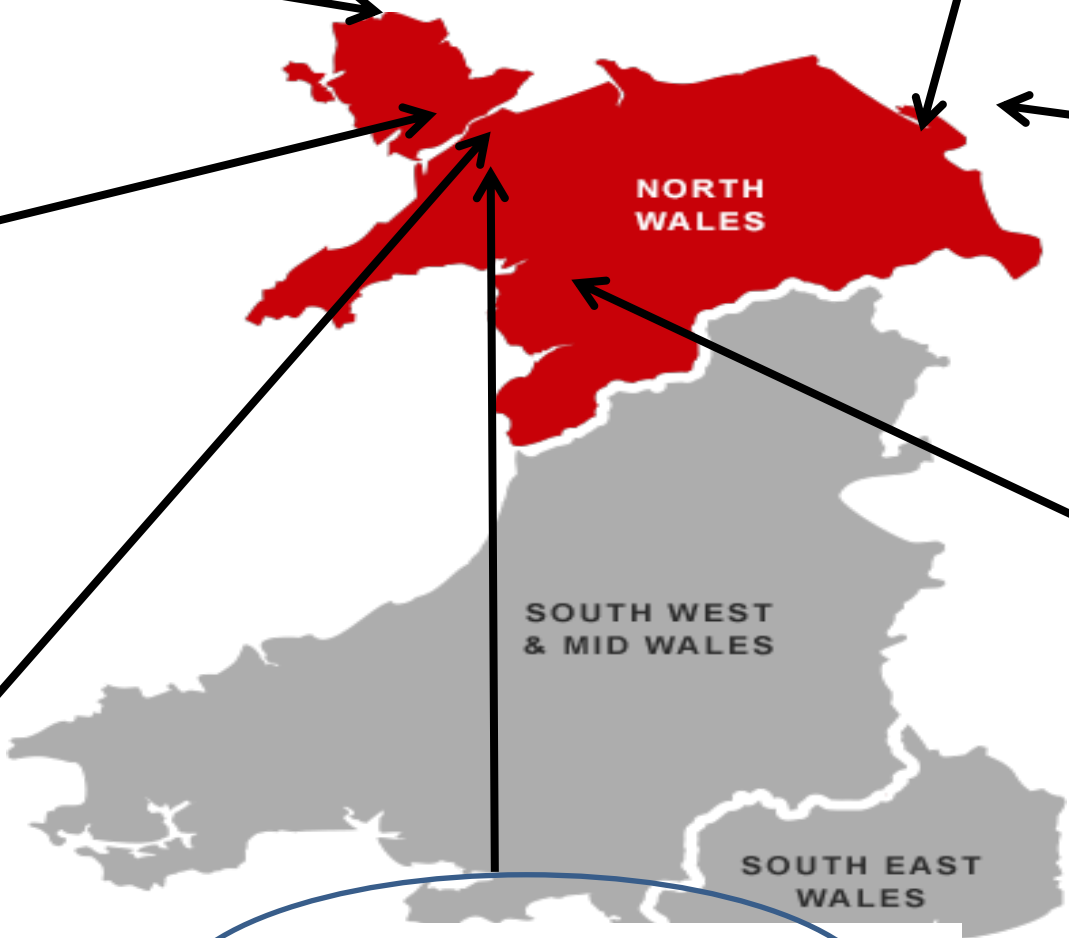
North West
Nuclear Arc
Science &
Innovation Audit



Menai Science Park M-SParc, UK
National Nuclear Thermal Hydraulics
Facility, up to £50M (£20M WG)



Bangor University - Nuclear
Futures Institute, two Ser
Cymru Research Chairs, £5M



BWR Research Hub and
Network – Hitachi Bangor
Imperial



Trawsfynydd - Small
Modular Reactors,
Advanced Modular
Reactors, Research
Reactor, Medical
Radioisotopes Reactor

**The Nuclear Opportunites – North
Wales leading the UK in new nuclear
technology and deployment**

Cross cutting nuclear-related R&I utilising existing and new capability and infrastructure -

- Control and safety critical systems R&I, especially under start-up and shut-down transients and fault conditions requiring computer modelling and virtual systems.
- Accident tolerant fuels – design and materials - R&I Ser Cymru team at Bangor
- Sensors and instrumentation for extreme environments R&I – Bangor and across Wales (e.g. using Compound Semiconductors)
- Structural integrity, automated and remote inspection R&I – TWI and UWTSd and Swansea University, robotics at other universities SU, AU, CU;
- R&D into modularisation of manufacture and build, especially for SMRs and AMRs – various sites in Wales, particularly Deeside.
- Research Reactor and Medical Isotopes Reactor ?
- Water, cooling fluid and corrosion materials chemistry. The water cooled and other fluid cooled reactor designs will all require materials and chemistry R&I.

