

その他セッション「文科省原子力研究開発事業について 廃炉国際共同研究を中心に」

Outline of MEXT competitive funds for nuclear technology
- International Collaboration on Decommissioning -

The UK's National Nuclear Laboratory Ltd (NNL)
'Needs Based' Research in the UK

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The UK's National Nuclear Laboratory (NNL) plays a central role in the co-ordination of UK nuclear research and development and maintains close links with academia and industry. NNL support Government in safeguarding the UK's nuclear skills and capabilities and provide advice on key strategic decisions (Figure 1).

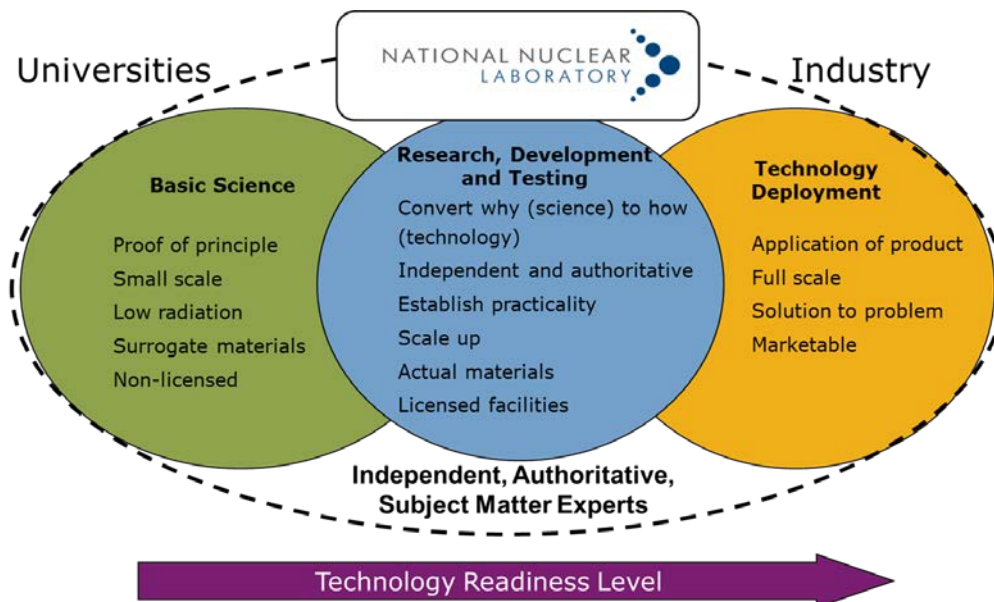
Uniquely for a national lab, the NNL is an government owned company, and operate on a commercial basis. Customer-funded work is delivered with a strong commercial focus enabling NNL to generate an operating surplus that is subsequently re-invested in research, skill-building and facilities. This in turn helps to further the UK's strategic capabilities and develop expertise, thus supporting our Government mandate to develop and maintain a range of internationally recognised subject matter experts.

Figure 1: Linking Academia and Industry - The Role of NNL Ltd in the UK



This role allows the NNL to take technologies from low technology readiness levels up to pilot project and application in the industry (Figure 2). This means that the focus of NNL's work is on 'Needs Based' research, where advances in technology and linked with the needs of the industry to provide fit for purpose solutions (Figure 3).

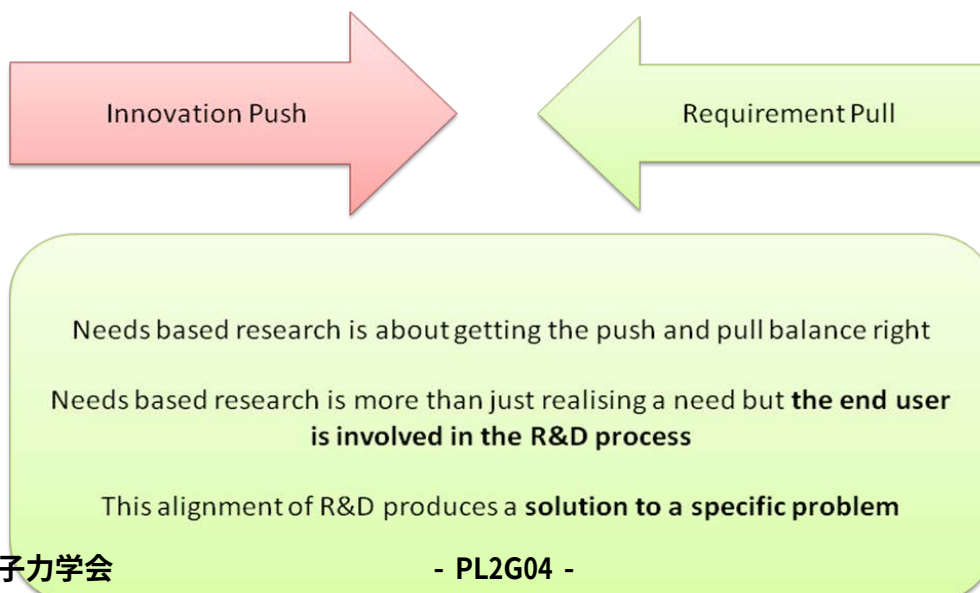
Figure 2: NNL - Linking Academia and Industry



This process, which uses the principles of 'innovation push' and 'requirement pull' drives the work of the NNL.

A large proportion of NNL's business is focused on waste management and decommissioning activities for Nuclear Decommissioning Authority owned sites and NNL has key facilities which are co-located on both the Springfields and Sellafield sites. At Sellafield, this co-location facilitates a specific emphasis on applied R&D to support and technically underpin the plants and processes on the site. A deep historic understanding of the site and its operations enables NNL to work in partnership with Sellafield Ltd to address even the most difficult of technical challenges. The Sellafield site is NDA's largest and most complex decommissioning challenge and therefore is a major focus of both the NDA and NNL's work.

Figure 3: Needs Based Research



NNL operates world class facilities ranging from inactive to highly active facilities. NNL operates a hot cell facility which supports the ongoing operations of nuclear power plants through post irradiation evaluation. This same facility supports decommissioning through characterisation and processing of highly active material including damaged fuel and fuel debris. This facility has been designed to accept a wide range of transport flasks making it one of the most flexible hot laboratories in the world with unique technical and operational experts at the helm.

Inactive and active laboratory scale work is performed through to full scale work. The operational 'know-how' from our full scale operations is harnessed and fed into the laboratory scale R&D programmes to provide practical solutions.