

# NIRAB and NIRO: Recommendations and the UK civil nuclear R&D landscape

Paul Nevitt Nuclear Academics Meeting, 4th September 2017



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2011		2012	2013









#### 2014

NUCLEAR INNOVATION AND RESEARCH ADVISORY BOARD

2015

2016

#### Independent advisory board

Members appointed by ministerial invitation, drawn from academia, industry, research organisations and funding bodies.

#### Established by Government in January 2014 to:

Advise Ministers, Government Departments and Agencies on priorities for UK nuclear R&D and innovation

To support the **development of new R&D and innovation programmes** to underpin energy and industrial policy

To foster greater **cooperation and coordination** across the UK research and innovation landscape

To oversee the development of a coordinated international engagement strategy

Supported by NIRO (Nuclear Innovation and Research Office)



## Context for NIRAB advice – long term aims





### **Context for NIRAB advice – Government policy drivers**



## Why is Government funding needed?









# NIRAB Recommendations for Civil Nuclear R&D



# **NIRAB recommendations for research in 5 areas**

#### **Future Fuels**

21st Century Nuclear Manufacture

**Reactor design** 

### Recycling Fuel for Future Reactors

The UK's Strategic Toolkit

Making more efficient, safer fuels of the future

Advanced materials and manufacturing - modular build in nuclear factories of the future.

Delivering the people, processes and tools to make the UK the partner of choice as the world designs SMRs and 4th generation nuclear power plants.

Cost effective technologies to deliver a secure and sustainable low carbon fuel supply.

Informing and underpinning decisions on which emerging nuclear technologies could be brought to market to give the best economic return for the UK

### **NIRAB recommendations** $\rightarrow$ **BEIS Programme**



recommended priority research

# UK Civil Nuclear R&D Landscape

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# **Funding Summary**





### **International Government Funding for Nuclear R&D**



# **Capability Summary**

#### FTE nuclear R&D personnel in the UK in 2011/12 and 2015/16

2011/12

2015/16



		2011/12	2015/16	
		FTEs	FTEs	Difference
	Industry	394	509	+115
	National Laboratory	1260	1317	+57
	University	1000	1344	+344
UK University breakdown	Staff Postdoctoral Researchers PhD Students	238 134 628	391 274 679	+153 +140 +51
	Total	2654	3170	+516



## **Capability Summary - Total**

A comparison of the research focus of FTEs involved in civil nuclear R&D in the UK in 2011/12 and 2015/16



Note: Total FTEs include Phd and postdoctoral researchers

### **Capability Summary – University staff**



FTEs and geographical spread of UK university staff involved in civil nuclear R&D





### **Capability Summary - Universities** PhD

FTEs and geographical spread of PhDs and postdoctoral researchers involved in civil nuclear R&D in the UK

Postdoctoral researchers

#### A comparison of UK university civil nuclear R&D research focus (FTEs) in 2011/12 and 2015/16



# **Summary and Conclusions**



**Contact details** 

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