



New nuclear projects in the UK

Keith Parker
Chief Executive
Nuclear Industry Association

Madrid
22 March 2010



About the NIA

- The voice of the UK civil nuclear Industry
- 200 members across whole nuclear sector
- 45,000 UK nuclear workers



NIA at the Labour Party Conference (2009)

NIA – membership diversity

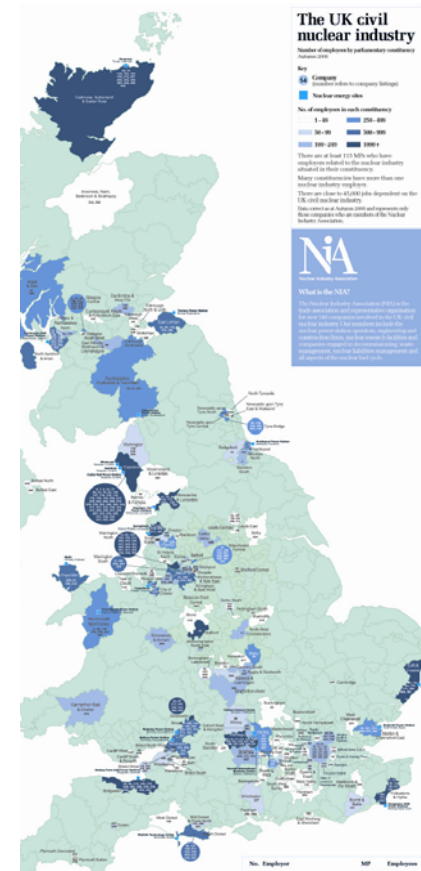
- +Utilities, contractors and vendors
- +Fuel cycle and decommissioning
- +Civil, process, design and multi-discipline engineering
- +Project management, engineering, safety case and consultancy
- +Equipment and component manufacturers
- +Legal, financial, insurance, training and agency services





Nuclear – a key employer

- Employs over 45,000 workers
- Supports another 45,000 jobs indirectly
- Central to local economy in some regions
- A skilled workforce
- Well-rewarded, long-term careers





**“We do not propose new
nuclear build...”**

**February 2003
Energy White Paper**



Decision Time

“By 2025, if current policy is unchanged, there will be a dramatic gap on our targets to reduce CO2 emissions;

...we will become heavily dependent on gas; and at the same time move from being 80/90% self-reliant in gas to 80/90% dependent on foreign imports,

These facts put the replacement of nuclear power stations, a big push on renewables and a step-change on energy efficiency, engaging both business and consumers, back on the agenda with a vengeance.”



**Former Prime Minister,
Tony Blair 16 May 2006,
CBI Annual Dinner**



Today's discussion ...

Climate change and emission worries

Security of supply

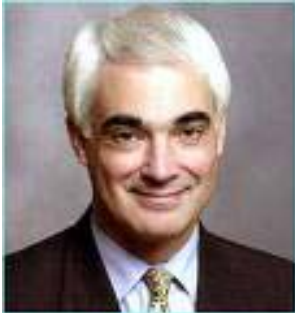
Generating gap



NIA Key events

16 Feb 07: Greenpeace Judicial Review **GREENPEACE** UK

“manifestly inadequate and unfair” - *Justice Sullivan*



23 May 07: Energy White Paper

“the provisional view that nuclear could be in the public interest” - *Alistair Darling*

10 Jan 08: White Paper & Energy Bill

“go-ahead that new nuclear should play a role” - *John Hutton*





UK government consultation

- **Regional Stakeholder meetings**
- **Deliberative consultation events**
- **4,000 consultation responses**



- **Manchester**
- **London**
- **Nottingham**
- **Cardiff**
- **Belfast**
- **Reading**
- **Edinburgh**
- **Cambridge**
- **Bristol**
- **Birmingham**
- **Leeds**
- **Nuclear Sites**



New-build key events

10 Jan 08: White Paper & Energy Bill

“go-ahead that new nuclear should play a role” - *John Hutton*
... but no Government subsidy...



Jan 2009: EDF Energy complete takeover of British Energy

Jan 2009: E.ON and RWE announce joint venture



Jan 2009: Iberdrola announce agreements with Scottish and Southern Energy and GDF Suez

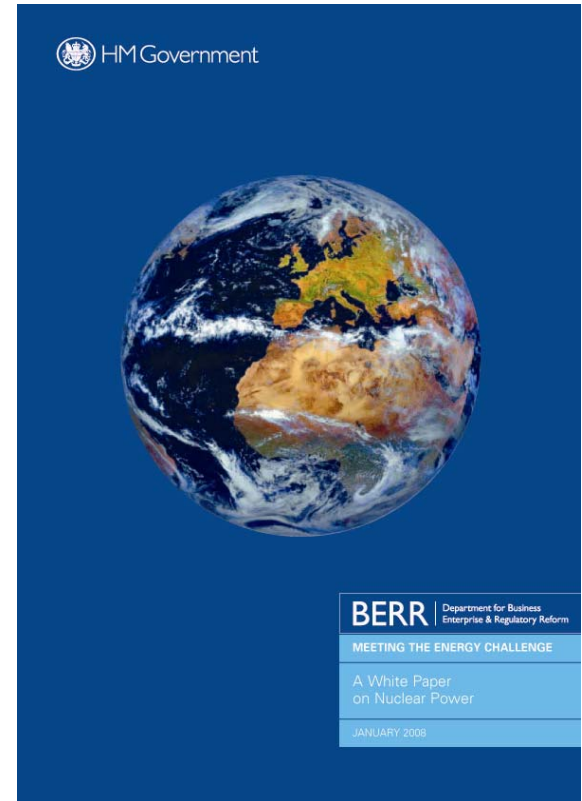
NIA No subsidy

“new legislative provisions setting out a funding mechanism that requires operators of new nuclear power stations to make sufficient and secure financial provision to cover their full costs of decommissioning and their full share of costs of waste management”

Nuclear White Paper, 2008

“The funding arrangements should ensure that the prospect of the operator’s liabilities having to be met in whole or in part from public funds is remote at all times”

Nuclear White Paper, 2008





UK Government backs private investment in UK nuclear

- “Given the challenge of climate change and energy security, it is right to embrace nuclear power as one of the technologies that can serve us in the future. Today’s announcement marks an important step on the path to new nuclear power becoming a reality.”
- 5 January 2009 – On the sale of British Energy to EDF Energy



Ed Miliband, Secretary of State
for Energy & Climate



Lord Mandelson



- "Completion of this takeove represents not only a £12.5 billion investment in the UK by EDF but, in opening the way for new nuclear build, should provide many billions of pounds more opportunity for the UK supply chain."





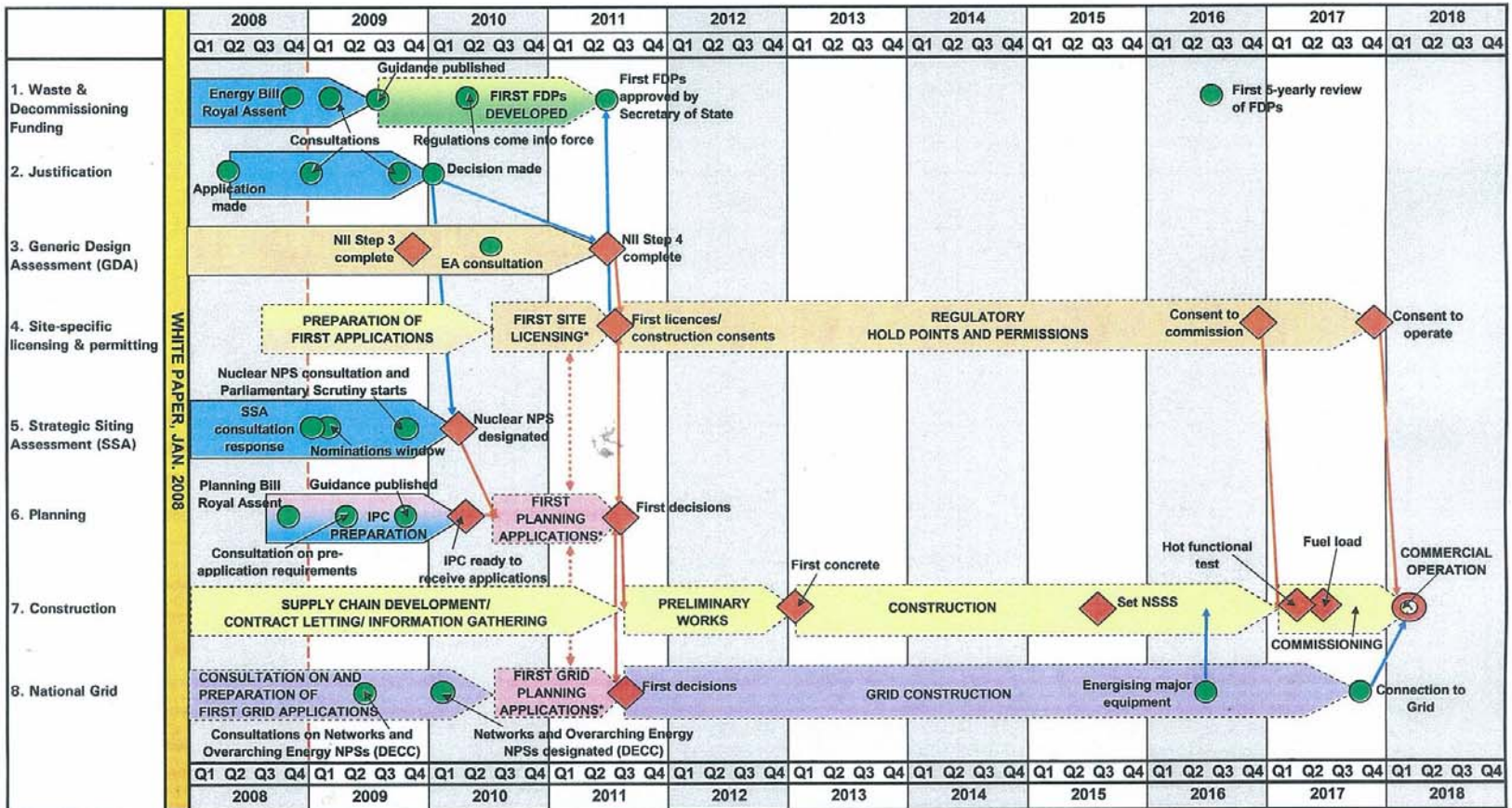
NDA land-disposal process: “The auction”

- NDA sells potential new build sites to the private sector:
- E.ON and RWE jointly buy land at Wylfa and Oldbury
- EDF buy more land at Bradwell
- Iberdrola/GDF Suez/SSE buy land at Sellafield

Secretary of State Ed Miliband:

Alongside EDF Energy’s firm plans, the RWE and E.ON joint venture plans announced today take the total declared plans for the first phase of new build to 12.4 gigawatts, greater than our existing, but ageing, nuclear capacity.





KEY:

- Government
- Nuclear Liabilities Financing Assurance Board (NLFAB)
- Regulators
- Operators
- Infrastructure Planning Commission (IPC)
- National Grid
- Milestone
- Critical path
- Project-specific activity

INDICATIVE TIMELINE FOR FIRST NEW NUCLEAR POWER STATIONS

- ACRONYMS:**
- EA Environment Agency
 - FDP Funded Decommissioning Programme
 - NII Nuclear Installations Inspectorate
 - NPS National Policy Statement
 - NSSS Nuclear Steam Supply System

NOTES:

*The way in which the site licensing and planning processes inter-relate, and the timing of applications, will impact on the timing and duration of these phases: all assumptions here are given for illustrative purposes only.

IMPORTANT:

All timings given in this plan are indicative only. In particular, whilst the plan, and the 2008 White Paper on the Future of Nuclear Power, indicated first commercial operation occurring in 2018, the Government is committed to enabling nuclear new build as soon as possible, and will look for opportunities to accelerate timescales where possible.

This is a living document and subject to change. This version was current as of: **JANUARY 2009**



Industry needs clarity and predictability on...

Planning

Government:

- Planning Act 2009
- National policy statements
- Sites
- Infrastructure Planning Commission



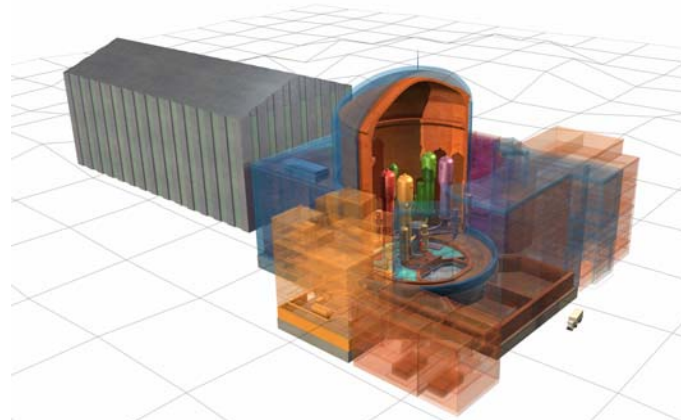


Industry needs clarity and predictability on...

Licensing

Generic Design Assessment:

- The assessments are being carried out by regulators working for HSE and the Environment Agency.
- GDA is a complex rigorous process – it will take around [3.5 years to complete](#)
- A staged process – the assessments get increasingly detailed as they progress through a series of milestones, reducing the financial risks for potential operators.
- Regulators get involved with designers at the earliest stage, where they will have most influence
- Separates design issues from specific siting issues
- Work of nuclear regulators in other countries to be taken into account





Industry needs clarity and predictability on...

Long term carbon market

- A strong market for carbon
- Recognises low-carbon output
- Commercial driver for decarbonising the economy
- Not a subsidy





Industry needs clarity and predictability on...

Waste...

- CoRWM advice accepted by government
- Process in place towards Geological Repository
- White Paper on Managing Radioactive Waste Safely – June 2008

The image shows the cover of a white paper titled 'Managing Radioactive Waste Safely'. The cover has a green background and features six circular inset images: a large industrial facility with a white dome, a worker in a yellow shirt and red cap handling materials, a worker in a blue lab coat and glasses working in a lab, a yellow forklift in an industrial setting, a worker in a blue lab coat and glasses working in a lab, and a yellow vehicle in a large industrial facility. The title 'Managing Radioactive Waste Safely' is written in white on the right side. Below the title, it says 'A Framework for Implementing Geological Disposal' and 'June 2008'. At the bottom, it states 'A White Paper by Defra, BERR and the devolved administrations for Wales and Northern Ireland'. The logos for the Welsh Assembly Government, BERR (Department for Business Enterprise & Regulatory Reform), the Department of the Environment (www.dem.gov.uk), and Defra (Department for Environment, Food and Rural Affairs) are at the bottom.

Managing Radioactive Waste Safely

A Framework for Implementing Geological Disposal
June 2008

A White Paper by Defra, BERR and the devolved administrations for Wales and Northern Ireland

Welsh Assembly Government
BERR | Department for Business Enterprise & Regulatory Reform
Department of the Environment
www.dem.gov.uk
defra
Department for Environment, Food and Rural Affairs



Industry needs clarity and predictability on...

Back-end costs

Industry will pay 'full share' of waste management costs:

- The costs of extra capacity
- A contribution towards overall cost

Fixed price for waste

- Not a subsidy
- Gives long-term stability
- Significant risk premium

Finland



Closure dates for nuclear fleet

Hartlepool	2014
Heysham 1	2014
Hinkley Point B	2016
Hunterston B	2016
Dungeness B	2018
Heysham 2	2023
Torness	2023
Sizewell B	2035

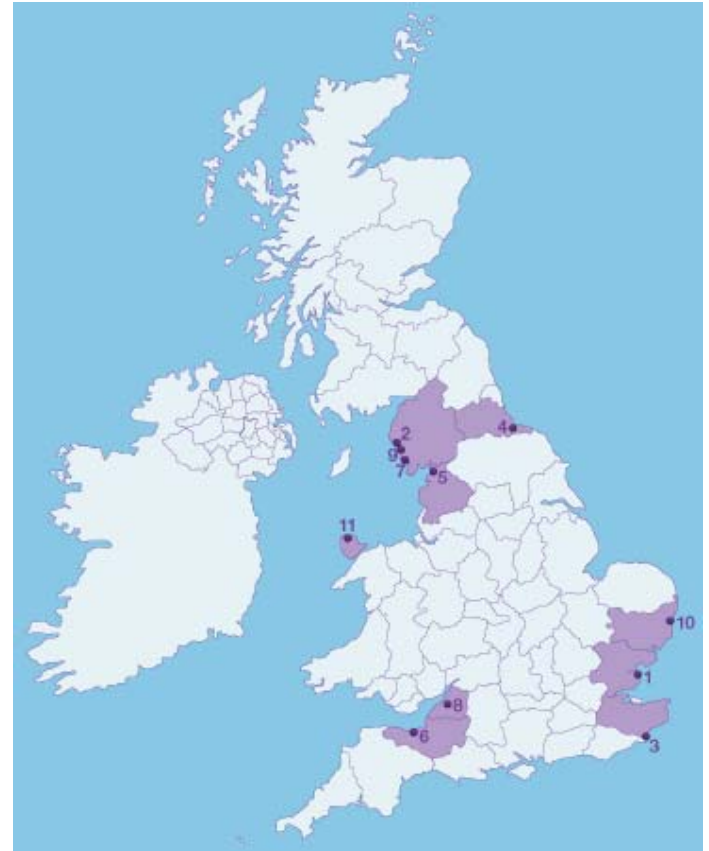




Strategic Siting Assessment

List of nominated sites:

1. Bradwell, Essex, NDA
2. Braystones, Cumbria, RWE npower
3. Hartlepool, Durham, EDF Energy
4. Heysham, Lancashire, EDF Energy
5. Hinkley Point, Somerset, EDF Energy
6. Kirksanton, Cumbria, RWE npower
7. Oldbury, Gloucestershire, the NDA and Eon
8. Sellafield, Cumbria, NDA
9. Sizewell, Suffolk, EDF Energy
10. Wylfa, Anglesey, RWE npower and the NDA



More information at :www.nuclearpowersiting.decc.gov.uk



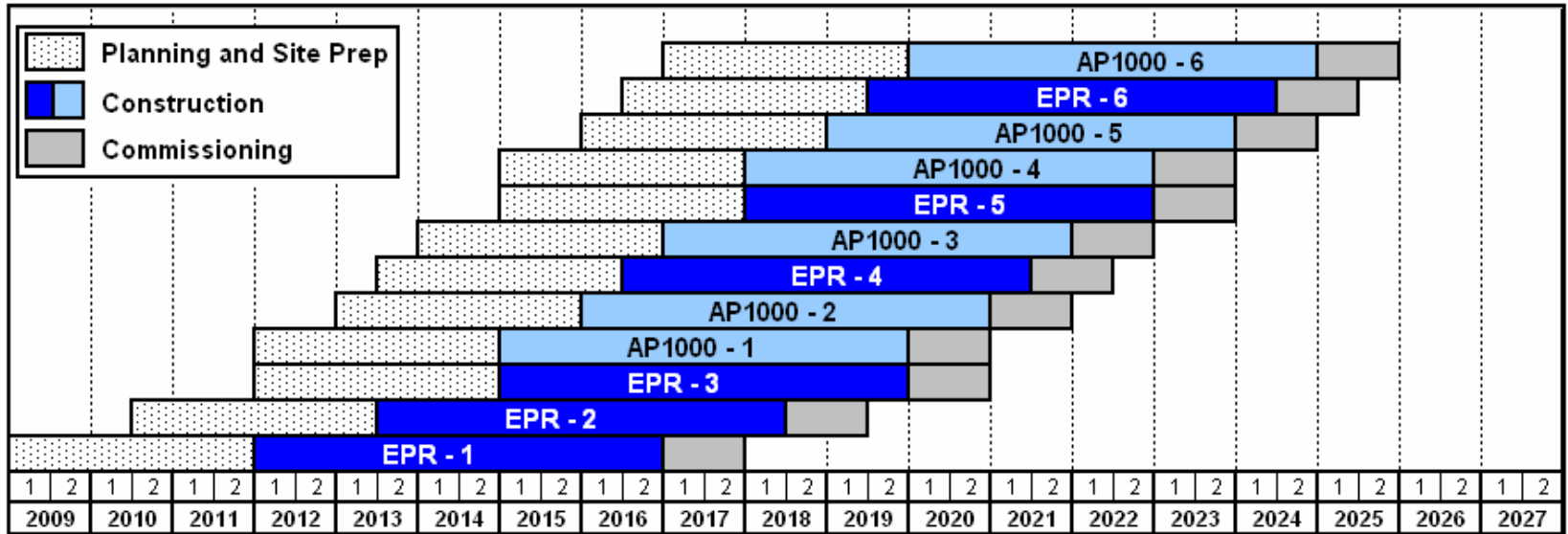
New Build Plans for UK

- **EdF E** 2 x 1600 MW EPRs for Hinkley Point
2 x 1600 MW EPRs for Sizewell
1st operating 2017, 4 by 2025
second tranche to follow
- **Horizon Nuclear Power (RWE/EoN)**
6000 MW operating by 2025
Technology to be decided in 2010
1st plant operating 2019
- **GDF Suez/Iberdrola/S&SE**
Technology to be decided



Construction and commissioning timeline

Based on 16GWe approximation model

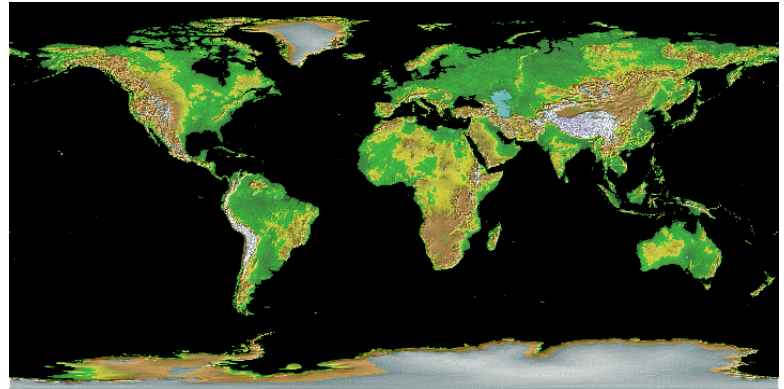


Source: Cogent
SSC



Global supply chain opportunities

- New build programmes will adopt an alliancing approach
- Top level global alliances being formed:
 - Likely to cascade down the supply chain in form of alliances/sub-contracts
 - Substantial opportunities in UK and overseas





Global supply chain opportunities / partnerships

Vendors have agreements with companies including:

- Rolls-Royce
- BAE Systems
- Doosan Babcock
- Sheffield Forgemasters
- Balfour Beatty





Scarcity of equipment

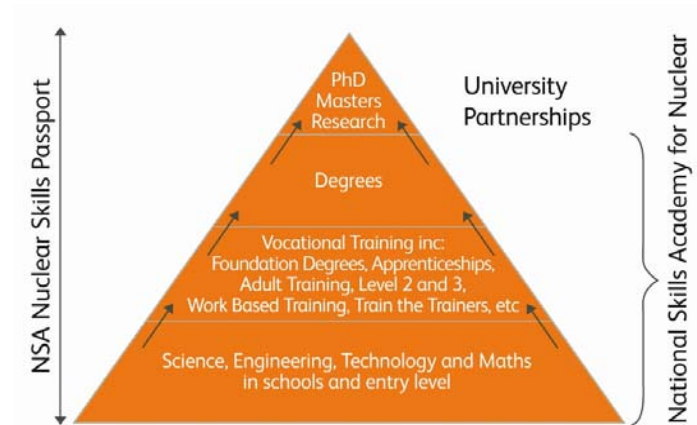
- Very large forgings
 - Turbo/generators
 - Reactor pressure vessels & steam generators
- Suppliers
 - Currently Japan Steel Works
 - Doosan Heavy, Korea, extending its capability
 - Sheffield Forgemasters, UK, to invest in 15000 tonne press





Training & recruitment

- Government
- Universities & colleges
- Training boards
- Contractors





UK – manufacturing the nuclear future

•The government has backed:

•A UK nuclear centre of excellence

“promote the development of cost-effective civil nuclear technology” – *Cabinet Office*

“promote wider access to civil nuclear power across the world” – *Cabinet Office*

•Nuclear Advanced Manufacturing Research Centre

“combines the knowledge, practices and expertise of manufacturing companies with the capability of universities” - *BIS*





NIA – linked to the heart of government

- NIA will work closely with the OND to roll out a ‘supply chain development programme’ – a 2 year programme starting this year with the aim of strengthening and promoting the capability of the UK supply chain



Ed Miliband, Secretary of State
for Energy & Climate

NIA nuclear supply chain development programme

- Sectoral and regional `awareness raising` events
- Full range of opportunities in UK and abroad
- Information on requirements e.g. quality accreditation, and business support
- Meet the clients and how to engage
- Showcase exhibition of UK nuclear capability



Energy Minister Mike O'Brien who spoke at the programme's opening conference in Derby, March 2009



Launch of SC@nuclear website

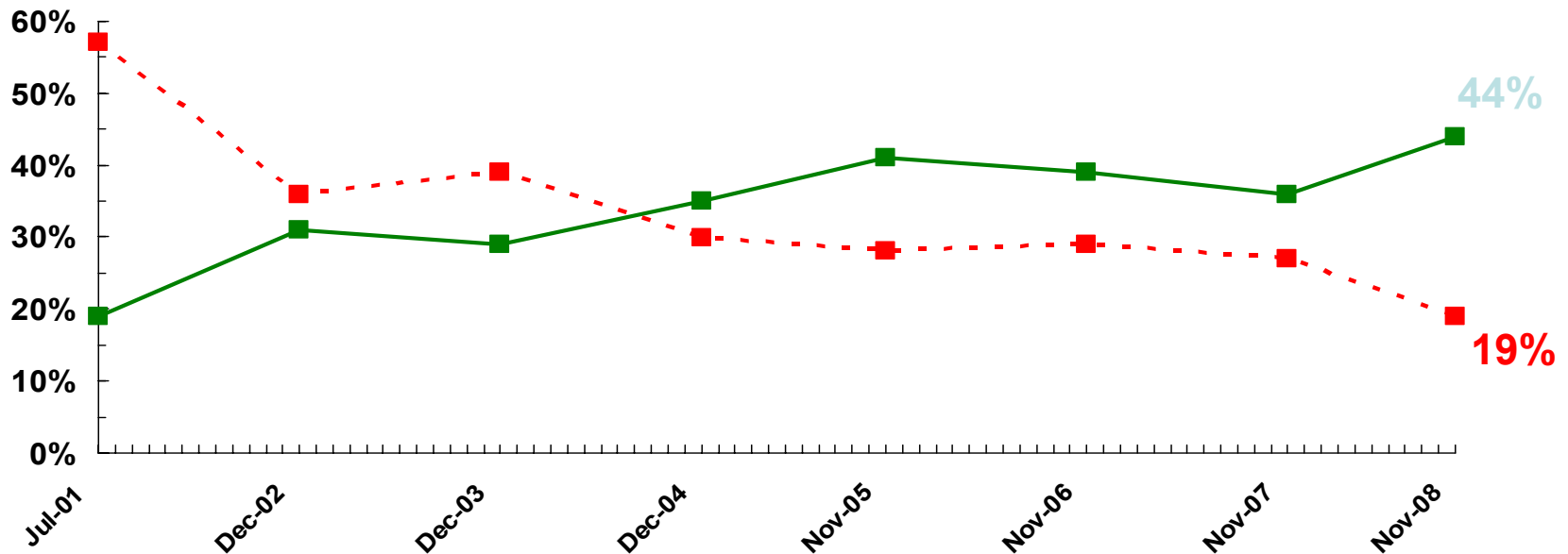
The screenshot shows the SC@nuclear website homepage. At the top left is the NIA logo (Nuclear Industry Association). To its right is the SC@nuclear logo with the tagline "Manufacturing's Nuclear Future". Below the logos is a search bar and the date "Monday 05 April 2009". A navigation menu on the left includes links for Home, About SC@Nuclear, Get Involved, Future Events, Download Documents, Links to Pathways, Photos, Steering Committee, Business Support, Contact Us, Press Releases, and Accreditation. The main content area features a "Welcome to the NIA's Nuclear Supply Chain Website" header, followed by a paragraph about SC@nuclear's mission to raise awareness and promote supply chain opportunities. Below this are three columns: "SC@nuclear - A Video Message" with a video player, "Useful Documents" listing UK Compatibility Reports and Recommended Bidders for Nuclear Laboratory, and "Partner Organisations" featuring logos for AREVA, one NORTH EAST, and Westinghouse. A footer section contains the text "Improving the UK's Nuclear Supply Chain" and copyright information for 2009.

www.nuclearsupplychain.com

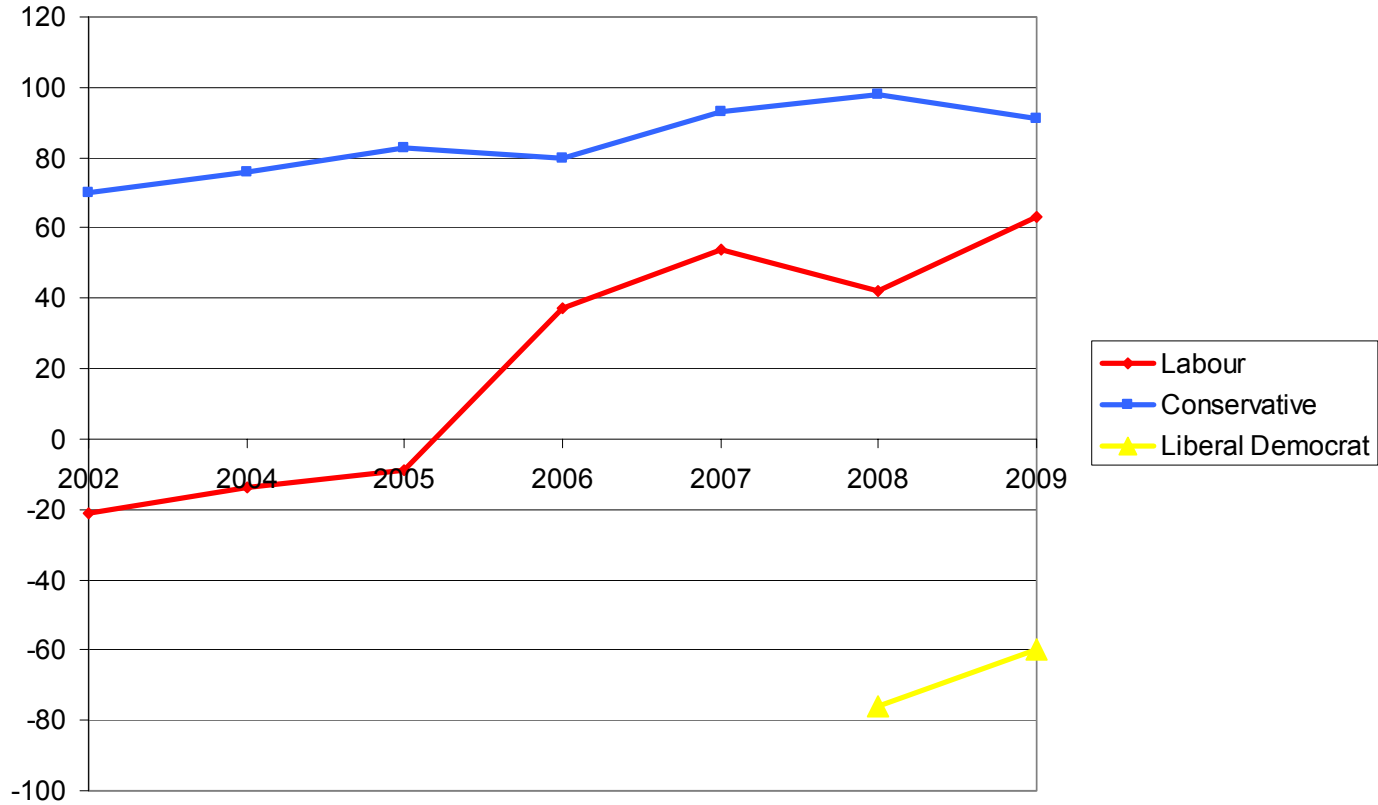
www.niauk.org

The public response

Q To what extent would you support or oppose the building of new nuclear power stations in Britain TO REPLACE those that are being phased out over the next few years? This would ensure the same proportion of nuclear energy is retained.



Net MP Support for new build



Labour:

Have led the way on the nuclear renaissance and developed the policy framework. No subsidy.



Conservative:

Favourable to nuclear new build. No subsidy.



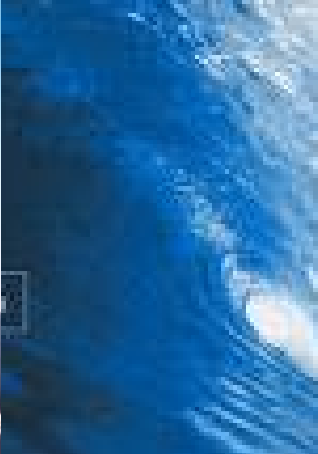
Liberal Democrats:

Deeply divided on energy policy. Official policy anti-nuclear, but notable supporters remain.





Nuclear – part of the solution



www.niauk.org



www.niauk.org