



North West Energy Forum

In Partnership with **Envirolink Northwest**

The Energy Review

Outcomes and Implications

2nd August 2006
Holiday Inn, Haydock



North West Energy Forum

In Partnership with **Envirolink Northwest**

Peter Jones

President
North West Energy Forum



North West Energy Forum

In Partnership with **Envirolink Northwest**

The Energy Review – what are the outcomes?

Joe Flanagan

Northwest Regional Development Agency

The Energy Challenge

Conclusions from the Energy Review

2nd August 2006

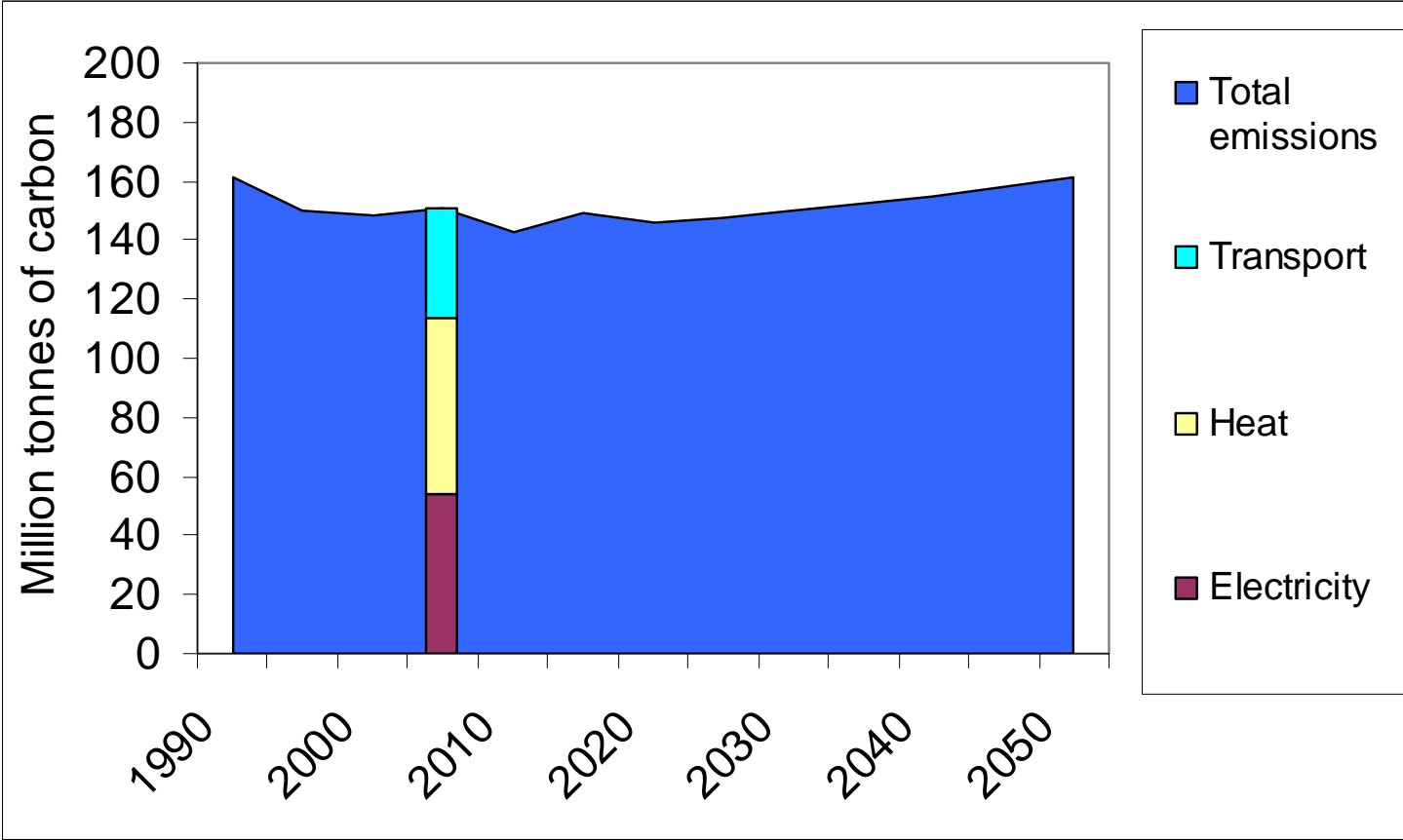


Joe.Flanagan@nwda.co.uk

Key Long-Term Challenges

- **Tackling carbon emissions**
- **Delivering secure clean energy at affordable prices, as energy import dependency grows**

The carbon challenge



Climate Change and EU ETS

- **Climate change – needs to be tackled internationally**
- **European Union Emissions Trading Scheme (EU ETS):**
 - Creates carbon price - strong incentive for more energy efficiency and investments that help reduce carbon emissions
 - But need to improve the scheme's effectiveness

Reducing demand for transport, heat, electricity

- **Raise standards for new homes, cars, products**
- **Consulting on options to drive carbon savings from large commercial sector (e.g. supermarkets)**
- **Address household sector:**
 - Incentivise energy suppliers;
 - Better billing information for consumers;
- **Government takes a lead**

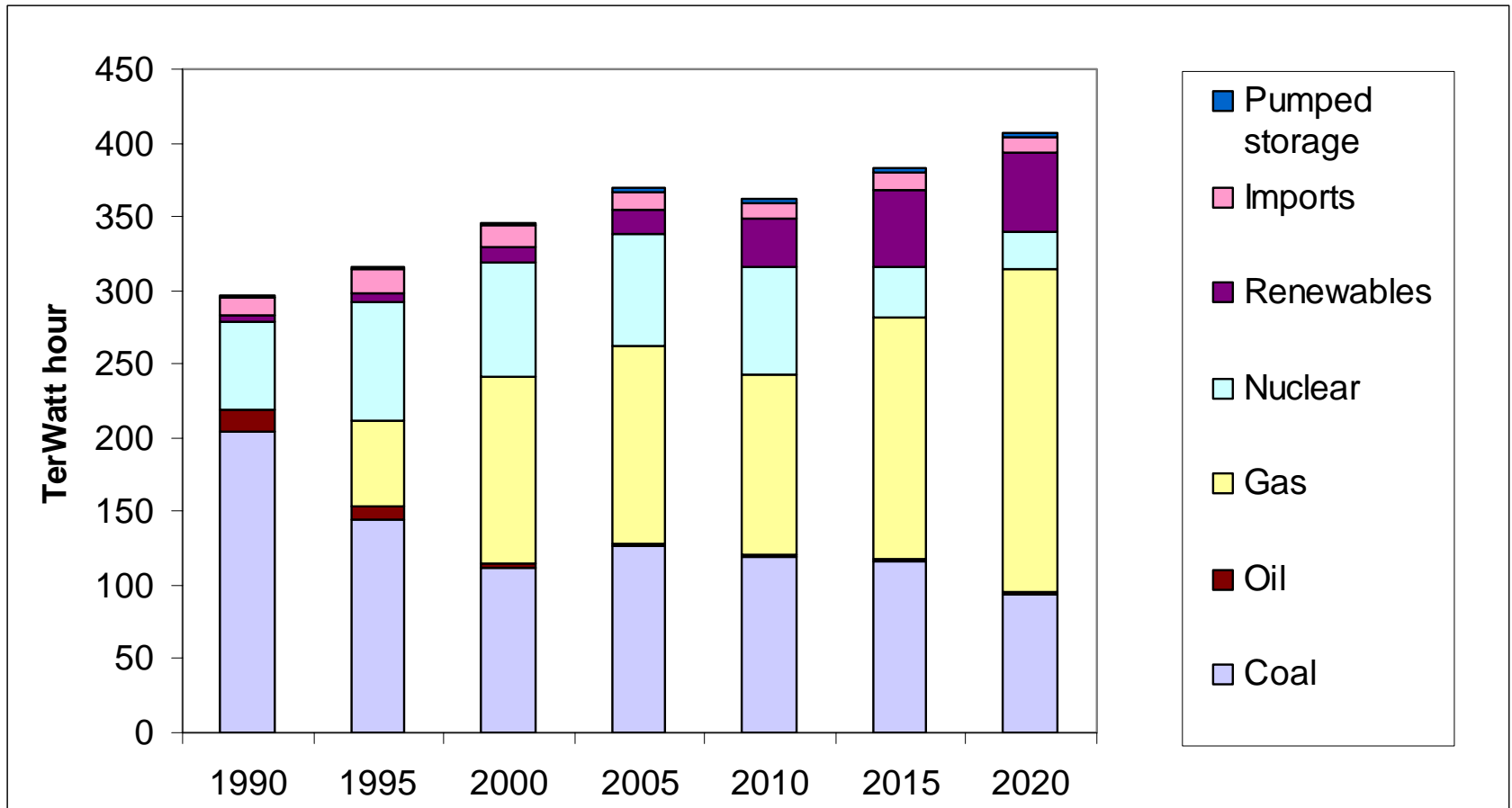
Tackling carbon on the Supply Side – Transport, heat and distributed energy

- **UK will depend on fossil fuels for vast majority of our transport & heat in medium term (oil >90%, gas >70%)**
 - Transport innovation strategy
 - Increase use of biofuels in road transport (RTFO)
- **Removing barriers to/ incentivising microgeneration**
 - Planning
 - Requiring energy suppliers to buy back surplus electricity
- **Fundamental review with OfGem of the barriers and incentives to distributed energy including Combined Heat and Power**

Tackling carbon on the Supply Side – Electricity

- **Need up to 25GW of new capacity over next 15-20 years – around third of today’s existing capacity.**
- **Opportunity:**
 - low carbon investments, banks carbon savings for 20-40 years;
- **Risk:**
 - for each new unabated fossil fuel plant, lock in higher carbon emissions for 20-40 years

Do nothing – A less diverse electricity generation mix



Clarifying the framework to reduce uncertainty

- **Set out Government's position on:**
 - Carbon price and EU ETS
 - Nuclear new build
 - Renewables and the Renewables Obligation
- **Improve energy market information**
- **Improve planning process for all large scale electricity projects**

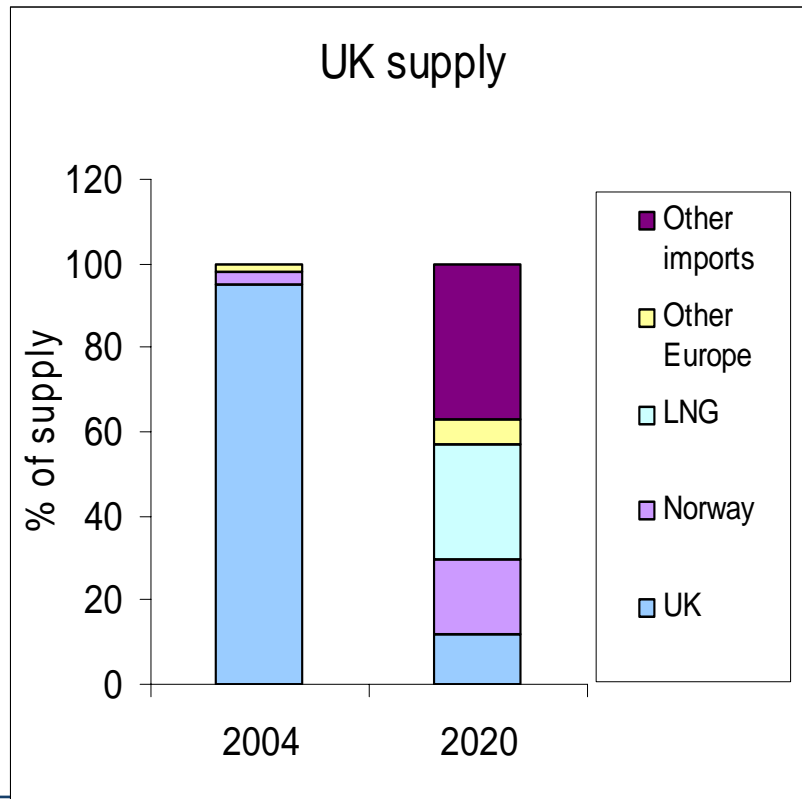
Removing barriers so nuclear can play a role – lowering carbon and diversifying electricity mix

- **Clear Government statement on national need for nuclear power**
- **Pre-licensing**
- **Strategic site assessment**
- **But for private sector to initiate, fund, build and operate any new plants.**
- **Developers to make secure arrangements for decommissioning and (full share of) waste costs**

Renewables and cleaner coal

- Renewables:
 - Strengthen Renewables Obligation towards 20%
 - Consult on restructuring RO to encourage emerging technologies
 - New funding through Environmental Transformation Fund
- Coal production and cleaner coal
 - Coal Forum
 - Further examine cost effectiveness of carbon capture and storage demonstration – PBR statement

Risks from increased reliance on gas as domestic production declines



Risks:

- **Political**
- **Insufficient investment**
- **Ineffective markets**
- **New infrastructure**
- **Long supply chains**

Proposals: Security of supply

International action

- **Promote open, transparent and competitive markets**
- **Strengthen international contingency arrangements**

Action at home

- **Improve North Sea investment framework**
- **Use less energy**
- **Improve investment framework for energy infrastructure including a streamlined planning process**
- **Better energy market information**
- **Consult on options for improving gas security of supply**

Review proposals and other recent steps deliver:

Annual carbon savings of 19-25 MtC in 2020¹

- 6-9 MtC from energy efficiency
- At least 8 MtC from EU ETS
- 2-3 MtC from transport measures
- 1-3 MtC from cleaner electricity
- 2-3 MtC from tighter building regulations

¹ numbers do not sum exactly due to rounding

...and improve energy security

- **Our measures reduce projected 2020 gas consumption by 11 – 17% by:**
 - Reducing energy use
 - Encouraging low carbon electricity generation
- **And improve the framework for investment to deliver timely investment of the right type.**

Prices

- **Global risk of high energy prices**
- **We are responding by:**
 - Promoting competitive markets here and abroad
 - Helping the market work better
 - Encouraging energy efficiency to lower bills
- **Fuel poverty**
 - Need to better target existing support; and
 - work with energy companies and others to keep under active review effectiveness of current measures

Next Steps

- **Consultations, including:**
 - Energy saving on households
 - Emissions reductions from commercial and public sectors
 - Planning for household microgeneration
 - Gas security of supply
 - Policy framework for nuclear new build
 - Changes to the Renewables Obligation
 - Planning (gas, large scale electricity)
- **Coal Forum**
- **Distributed Generation: Foresight and HMG/OFGEM studies**
- **Energy White Paper around turn of year**



North West Energy Forum

In Partnership with **Envirolink Northwest**

Implications for the North West Nuclear Industry

Dr Paul JA Howarth
Dalton Nuclear Institute

Nuclear Energy in the NW

Dr Paul JA Howarth

Director of Research, Dalton Nuclear Institute

2nd August 2006

The Dalton Nuclear Institute



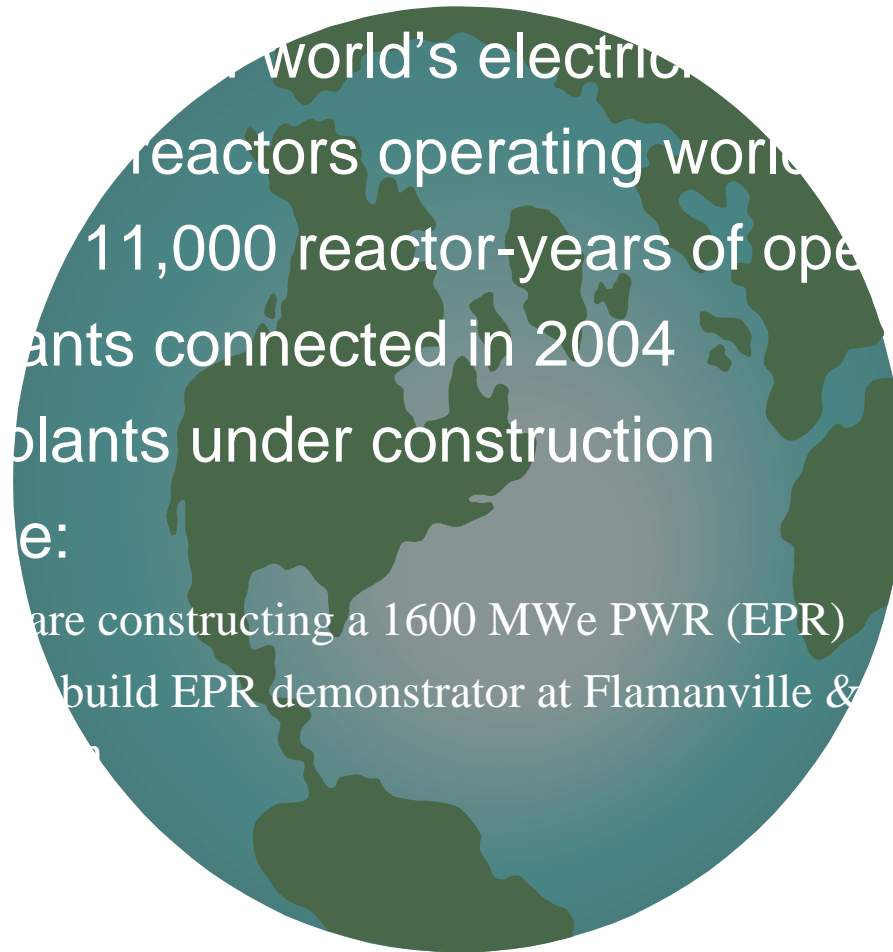
Vision to become a world leading centre for education & research on nuclear technology

Activities cover full nuclear lifecycle with research portfolio of ~£30m

To act independently & authoritatively on advising government & industry on nuclear related issues

Nuclear is not the Answer!

**A balanced and diversified mix of fossil,
renewables & nuclear is the answer!**



the world's electrical grid

100 reactors operating worldwide

11,000 reactor-years of operation

100 plants connected in 2004

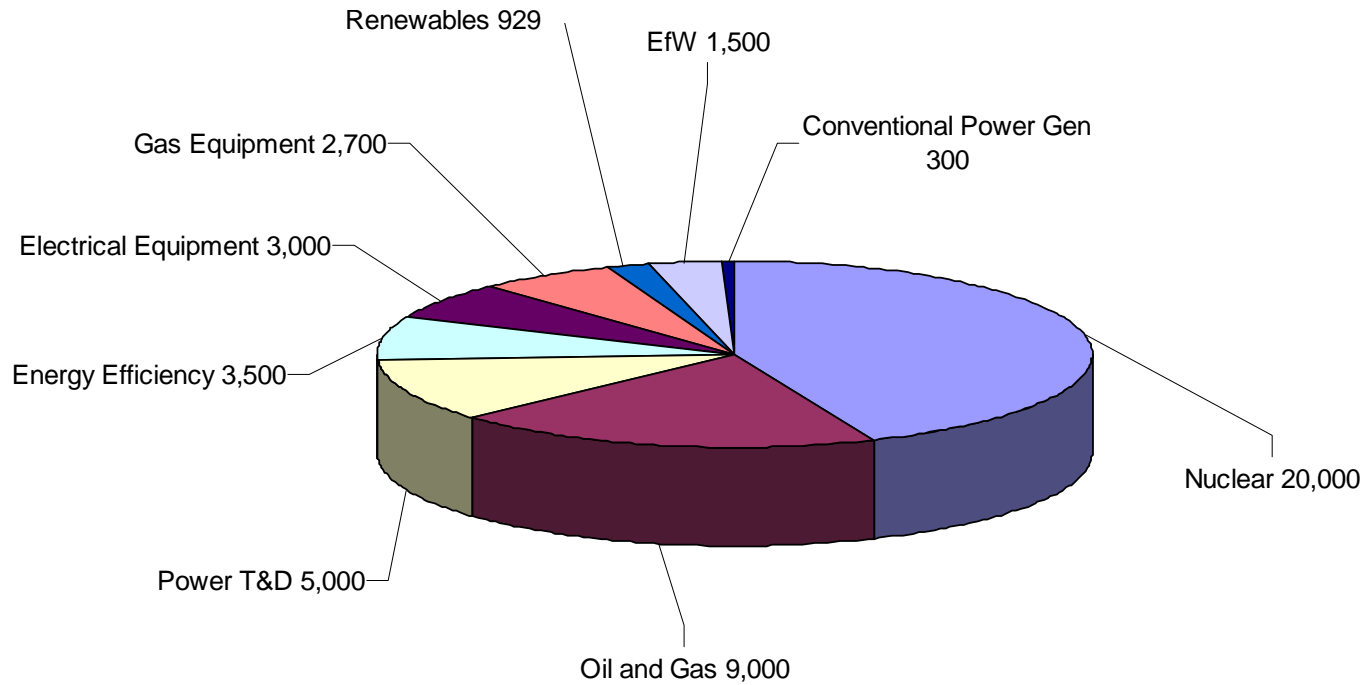
10 plants under construction

100 e:

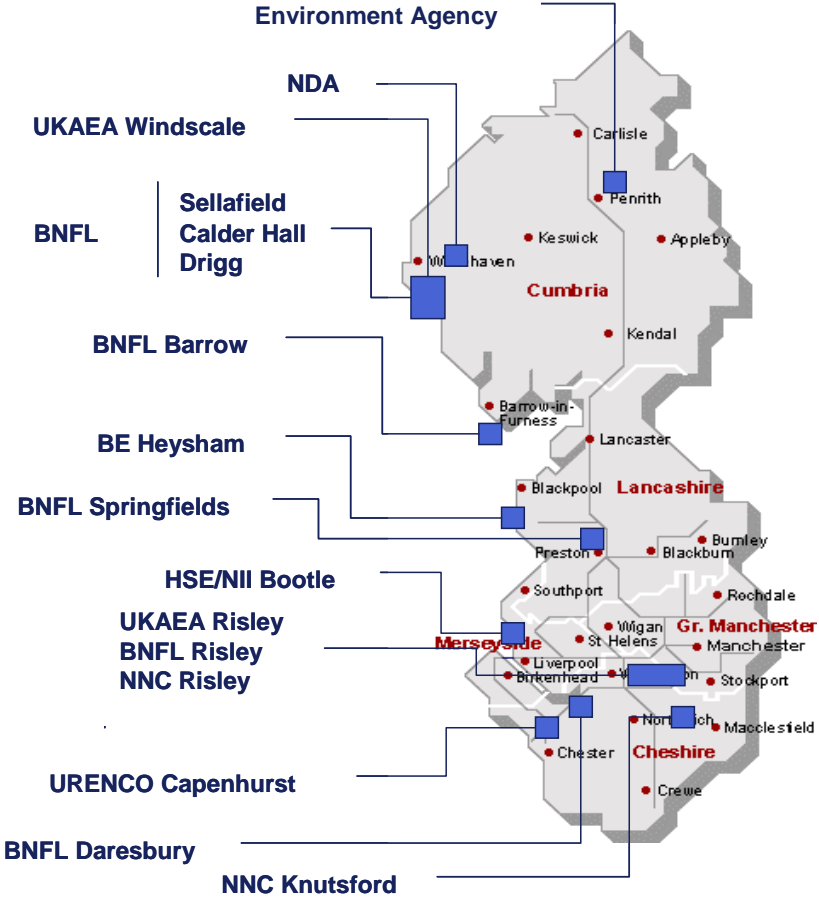
100 are constructing a 1600 MWe PWR (EPR)

100 build EPR demonstrator at Flamanville &

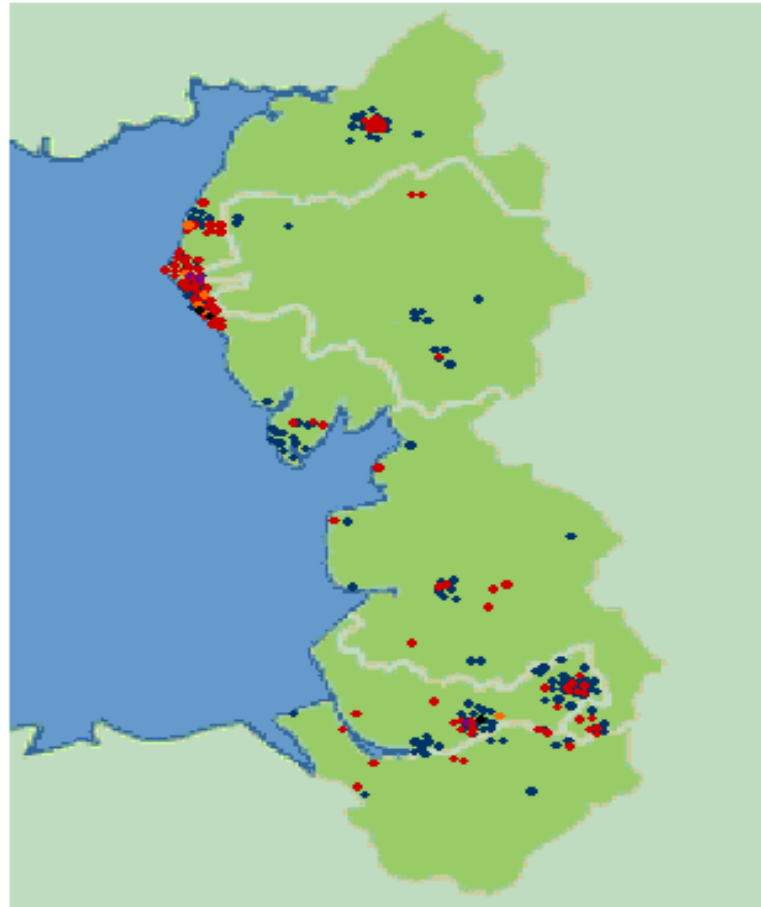
Employment in the NW Energy Sector



Nuclear Sites in the NW



The Supply Chain

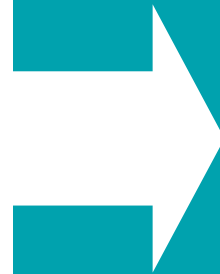


- Tier 1
- Tier 2
- Tier 3

Nuclear Industry in the NW

MANCHESTER
1824

The University of Manchester
Dalton Nuclear Institute



Reactors

Fuel Cycles

Decommissioning

Waste Disposal

Fusion

**Homeland
Security**

Naval Propulsion

**Dalton's
Centres**

Radiochemistry

**Materials
Performance**

**Radiation
Sciences**

**Reactor
Technology**

**Engineering
Decommissioning**

Waste Disposal

Social Sciences



Reactors

Fuel Cycles

Decommissioning

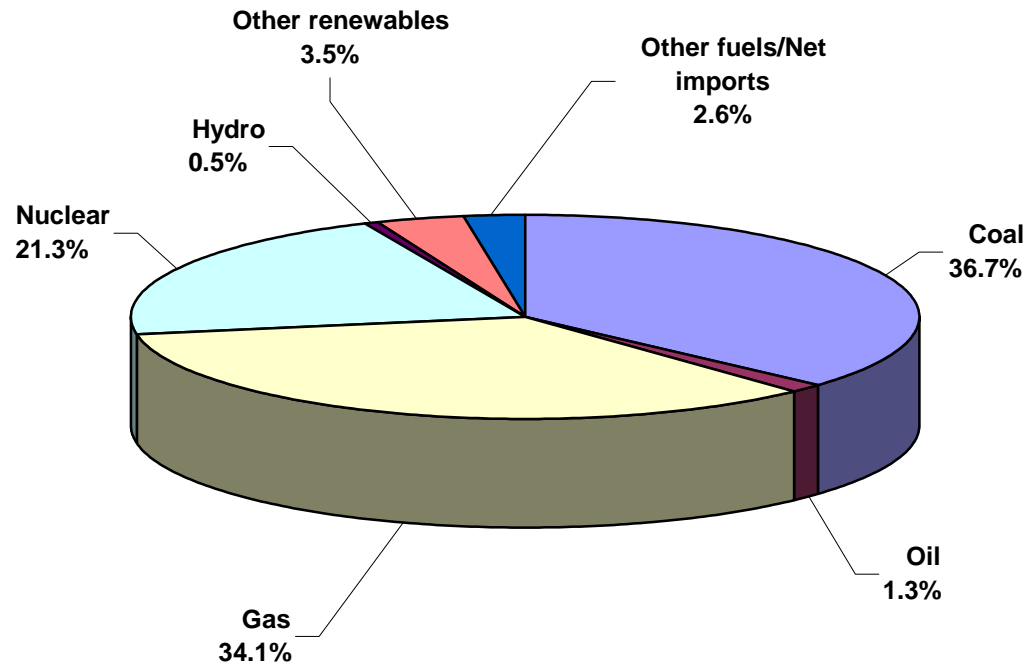
Waste Disposal

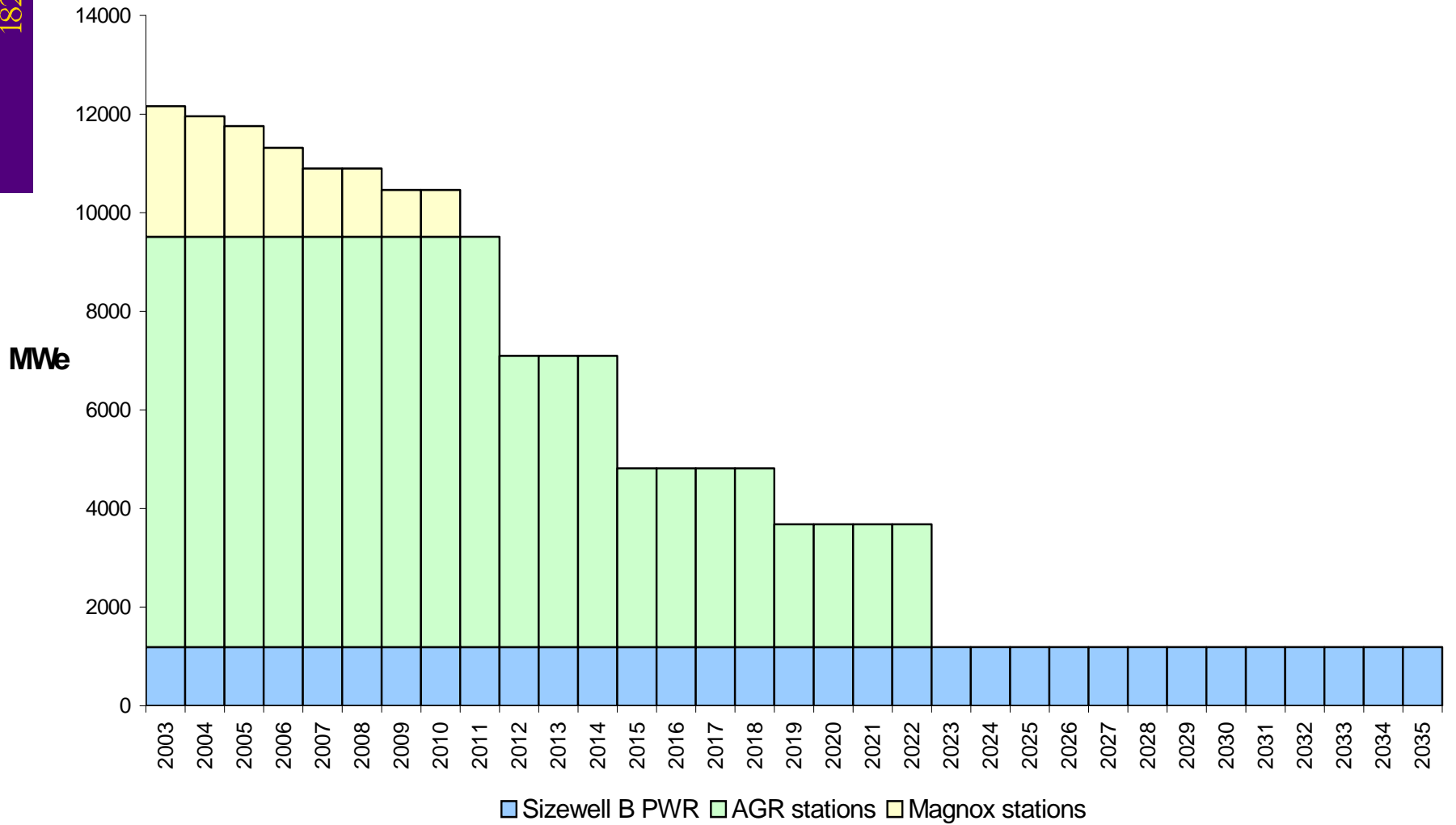
Fusion

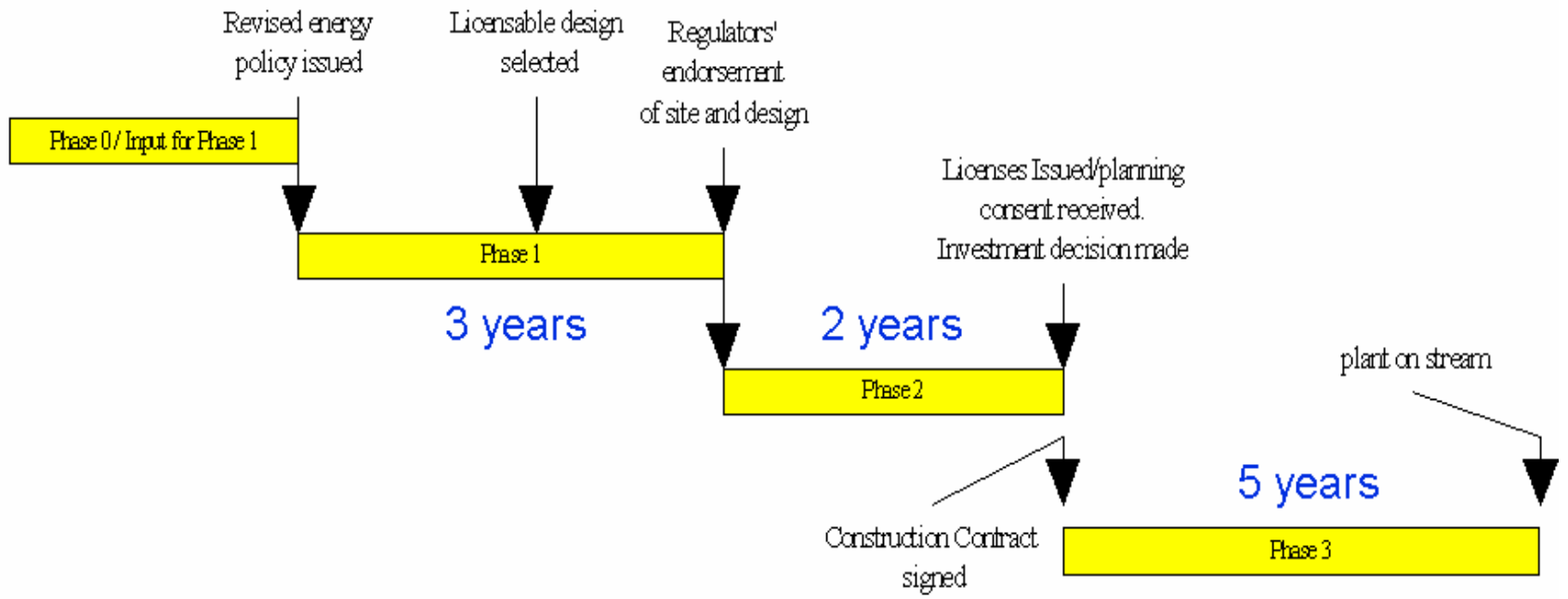
**Homeland
Security**

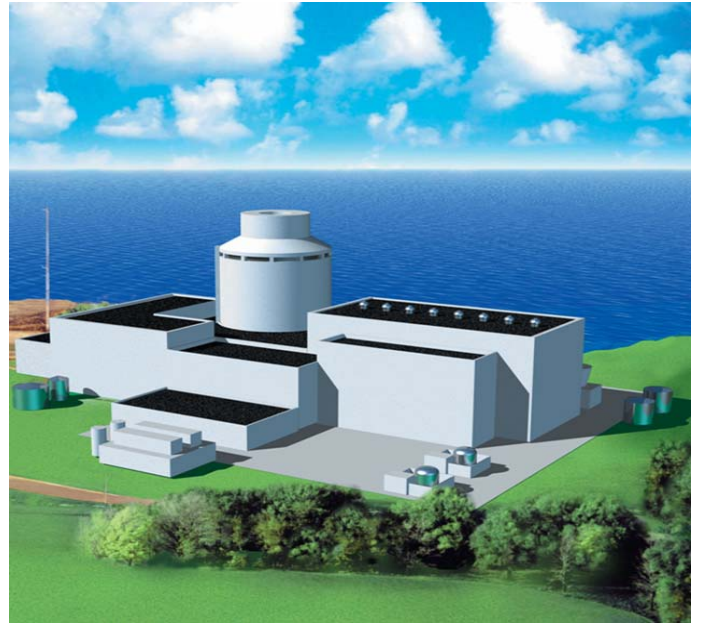
Naval Propulsion

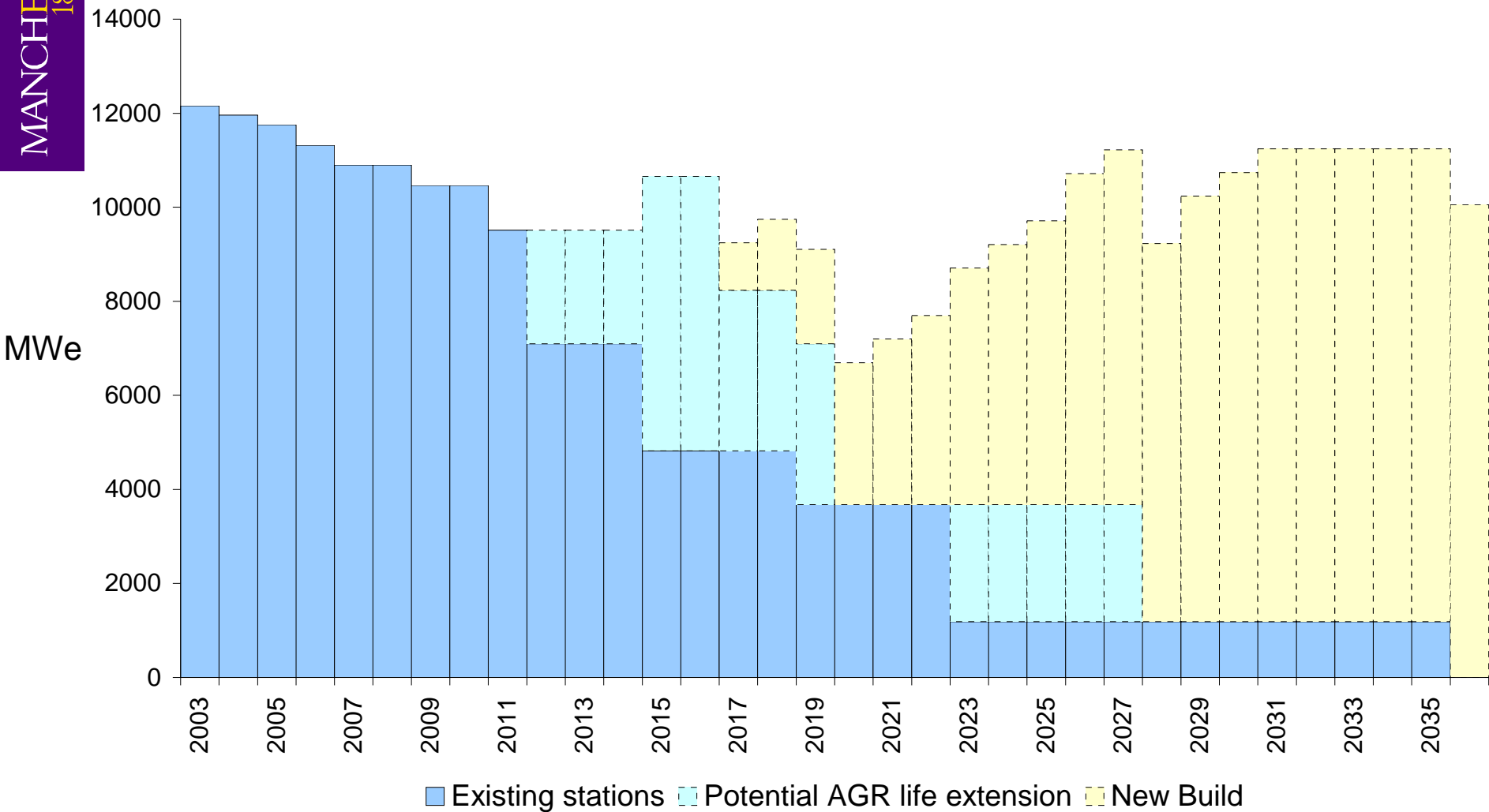
New Build?



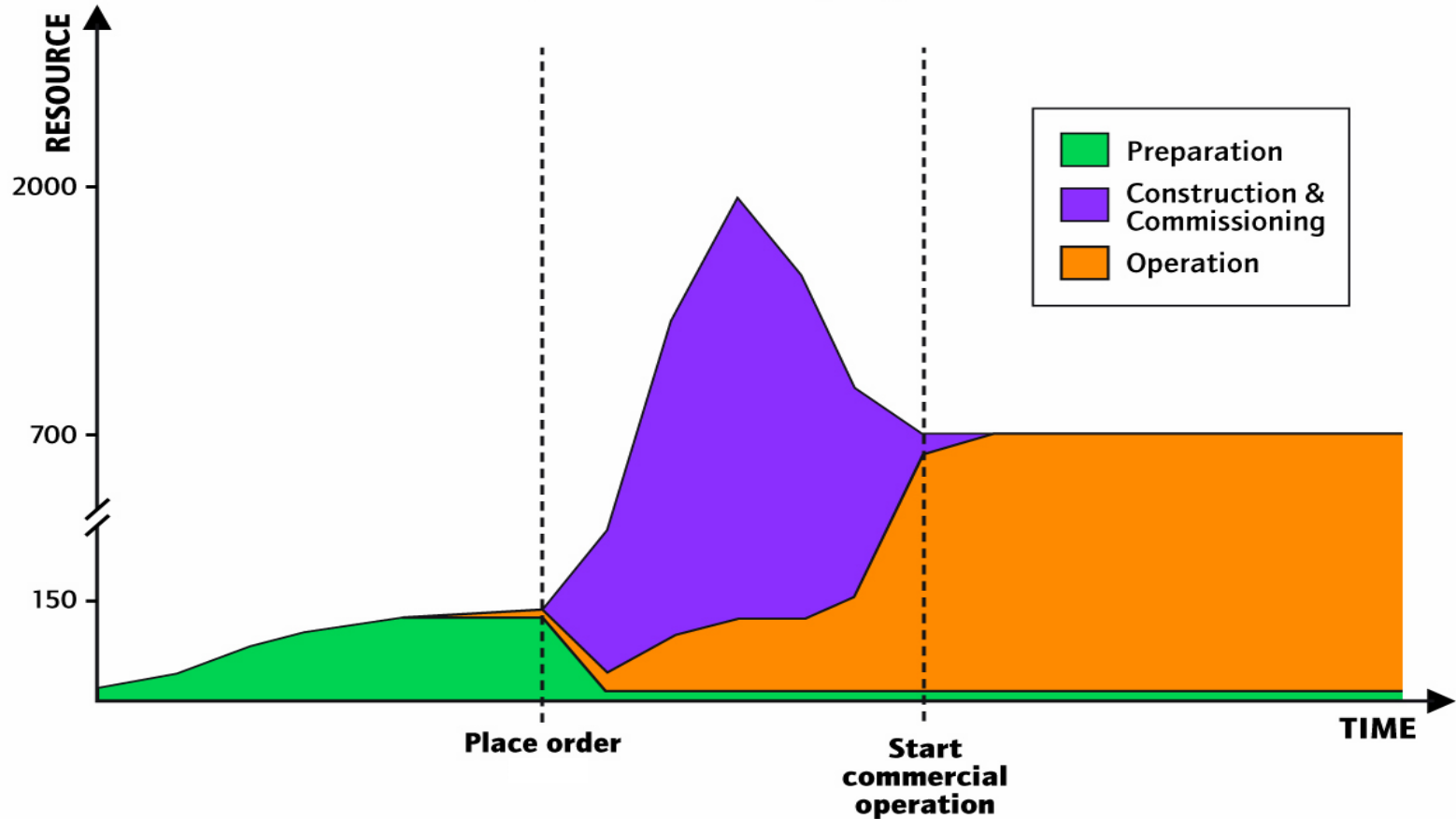


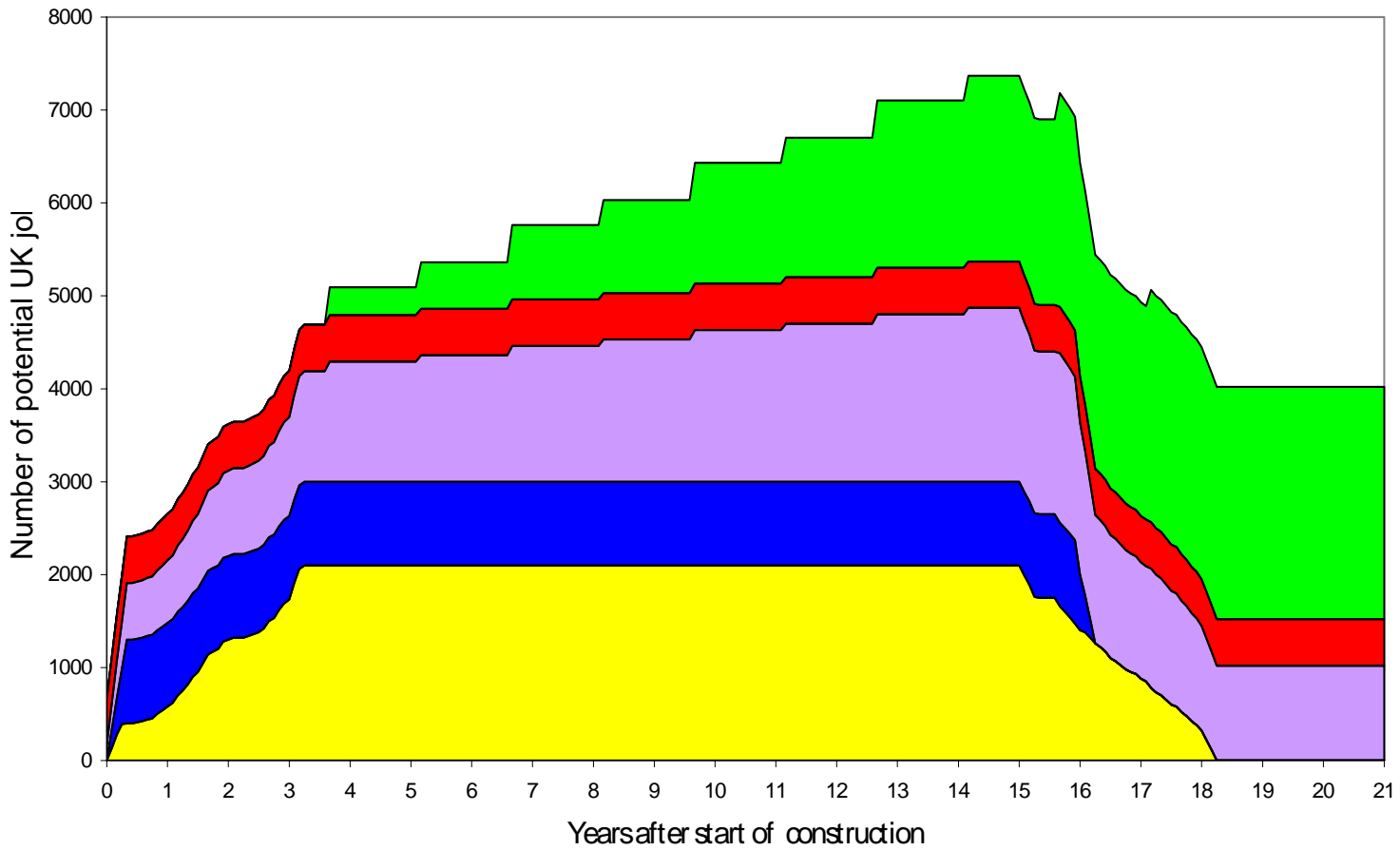




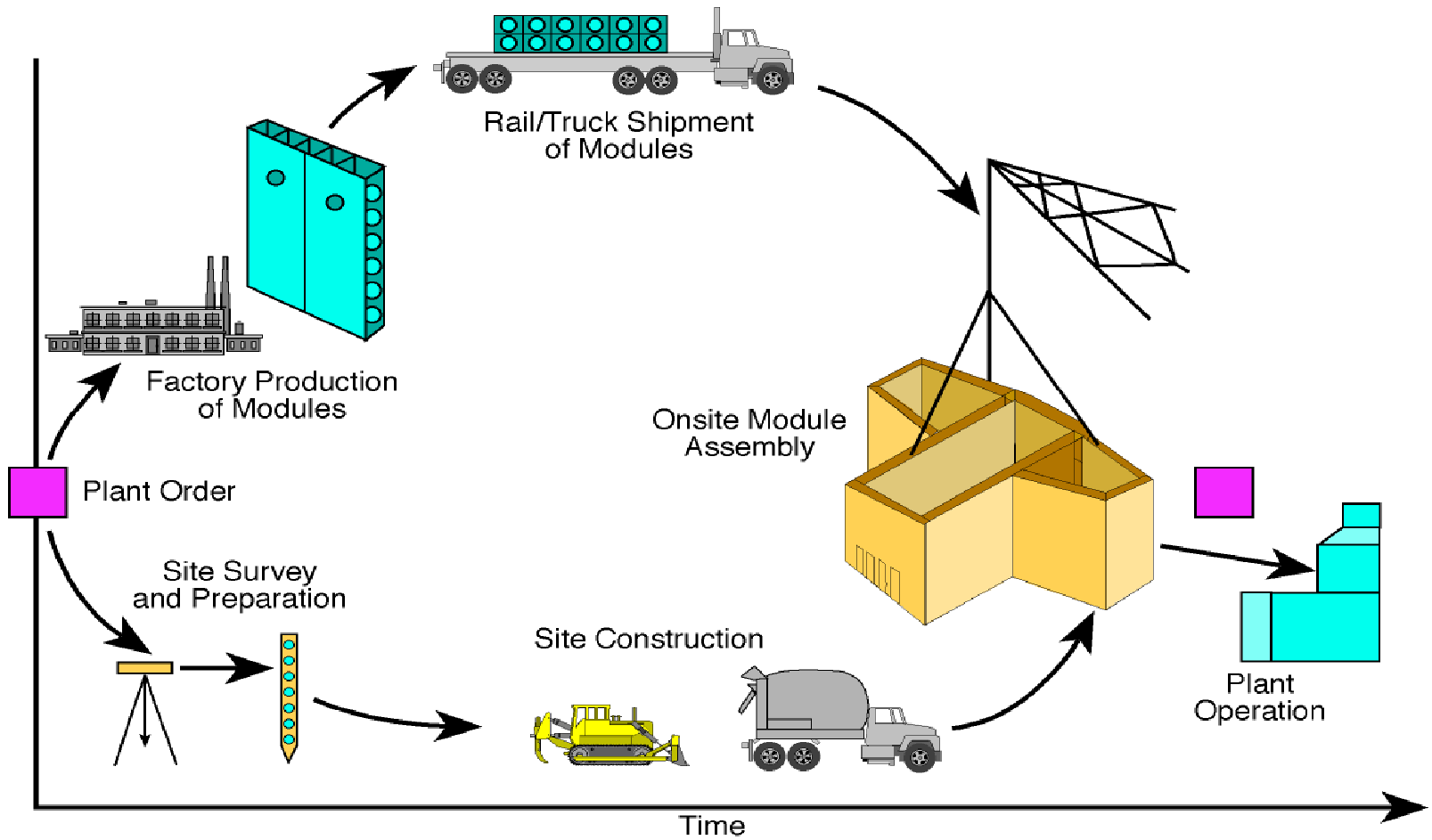


Illustrative resource profile for deployment of first twin unit





■ Construction jobs ■ Potential UK manufacturing jobs ■ Total all indirect jobs ■ Head Office Jobs ■ Operational jobs at sites

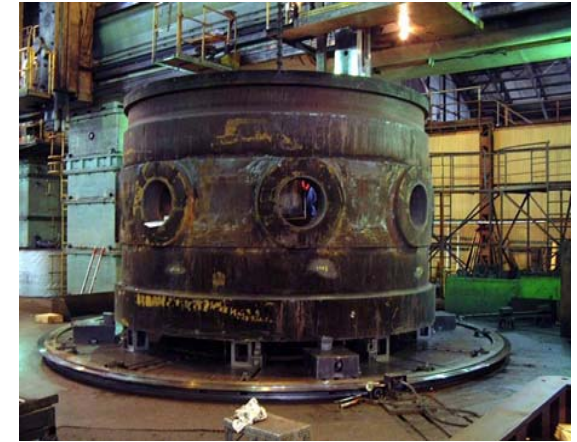




Casting



Forging



Machining



Machining



**Non-destructive
testing**



Next Steps



North West Energy Forum

In Partnership with **Envirolink Northwest**

Implications for the North West Renewables sector

Chris Shearlock
Envirolink Northwest



North West Energy Forum

In Partnership with **Envirolink Northwest**

Summary and Panel Discussion

Nick Jenkins

North West Energy Council



North West Energy Forum

In Partnership with **Envirolink Northwest**

Panel Discussion

Panel members

- Nick Jenkins, North West Energy Council (Chair)
- Joe Flanagan, NWDA
- Warren Richards, Dalton Nuclear Institute
- Chris Shearlock, Envirolink Northwest
- Sarah Manader, Tyndall Centre



North West Energy Forum

In Partnership with **Envirolink Northwest**

Close