

Sellafield - key to Britain's energy future

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Aerial of site

The nuclear Industry and Sellafield is "strategically important for UK PLC" John Hutton DBERR Secretary of State, July 2007

New dawn for the UK's nuclear industry

- Government committed to new nuclear generation
- Sellafield has been and will continue to be at the heart of the nuclear industry
- Sellafield can play a key role



Two key challenges

- Climate change
 - 2007: HMG set target to cut the UK's CO2 emissions by 60% by 2050
- Energy security
 - Estimated that the UK will import 90% of its gas by 2020

New nuclear power stations

- Nuclear industry supplies a fifth of the UK's electricity (69 billion kWh in 2006)
- 9 of 10 nuclear power stations are due to close over the next 20 years
- Consultation on planning for new nuclear stations underway
- So a question of where and when new nuclear power stations will be built



Calder Hall

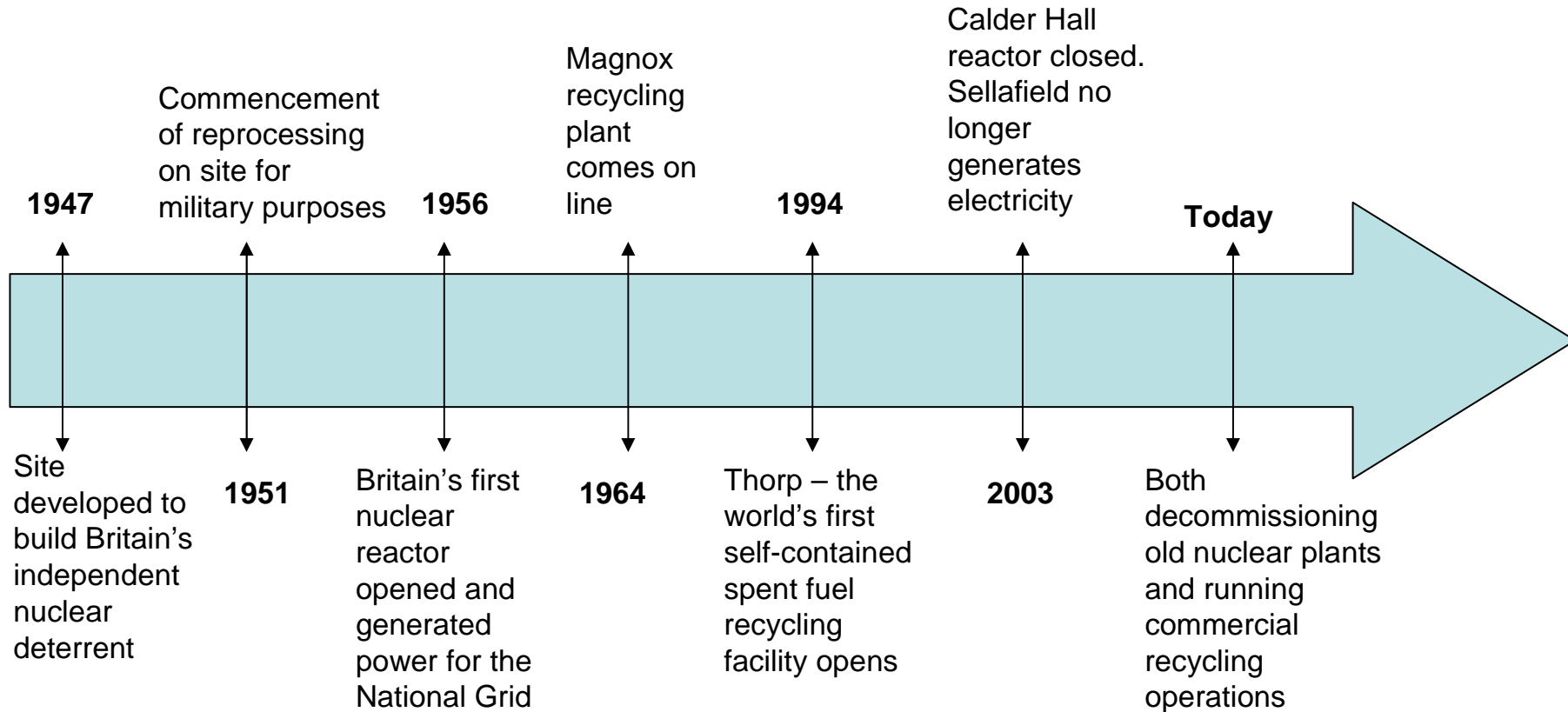
New nuclear power stations: key issues

- Where will the nuclear power stations be?
- What will be the source of their fuel?
- What will be done with the nuclear waste?
- Is “nuclear” safe?

Sellafield is key to solving these issues

Animation

Sellafield: from a military site to a commercial business



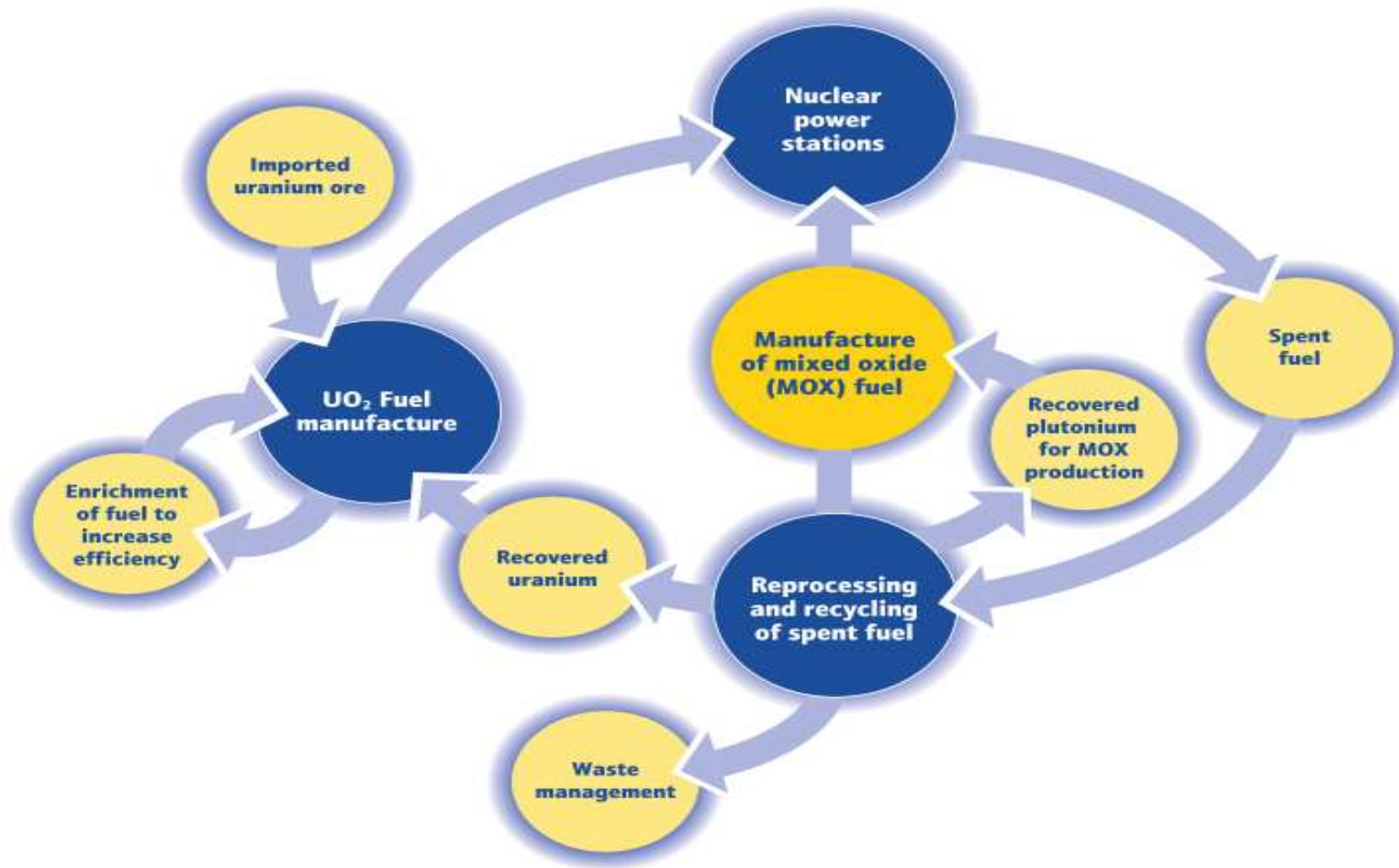
Our business today

- Site owned by the Nuclear Decommissioning Authority, operated by Sellafield Ltd.
- Financials
 - Expenditure in 2008-9: £1.3bn
 - Revenue in 2008-9: £811m
- Competition for a new Parent Body Organisation (PBO) to operate Sellafield is underway
- Successful bidder to be announced in summer
- New PBO should be in place by the end of November 2008

Our operations

- Magnox – recycles spent fuel from older nuclear reactors such as Calder Hall and Wylfa
- Thorp – thermal oxide reprocessing plant – recycles spent fuel from advanced gas cooled reactors (AGRs) in the UK and light water reactors from around the world
- SMP – Sellafield MOX plant. Fuel fabrication of mixed oxide fuel

How the fuel cycle works



Recycling: the benefits

- 1 tonne of fuel = approx 700,000 barrels of oil.
- Unlike fossil fuels this can be recycled
- Reduce UK stocks of uranium and plutonium
- This stockpile could fuel three 1,000 MW reactors for 60 years.

Our Expertise

- Largest concentration of nuclear expertise in Europe
 - recycling operations
 - reactor operations
 - transport
 - fuel manufacture
 - health physics
 - decontamination
 - decommissioning
 - manage and package waste
 - store waste

Sellafield: potential

- Possible site for new nuclear power station
- Significant source of nuclear fuel – large quantities of plutonium and uranium stored safely and securely on site.
- In the vicinity of a possible site for a repository for higher level nuclear waste
- Possible site for new commercial recycling investments

Britain's energy future: the solutions

- Where could nuclear power stations be?
Sellafield
- What could be the source of their fuel?
MOX, produced at Sellafield
- What could be done with the nuclear waste?
Deep geological disposal
- Is “nuclear” safe?
Yes