

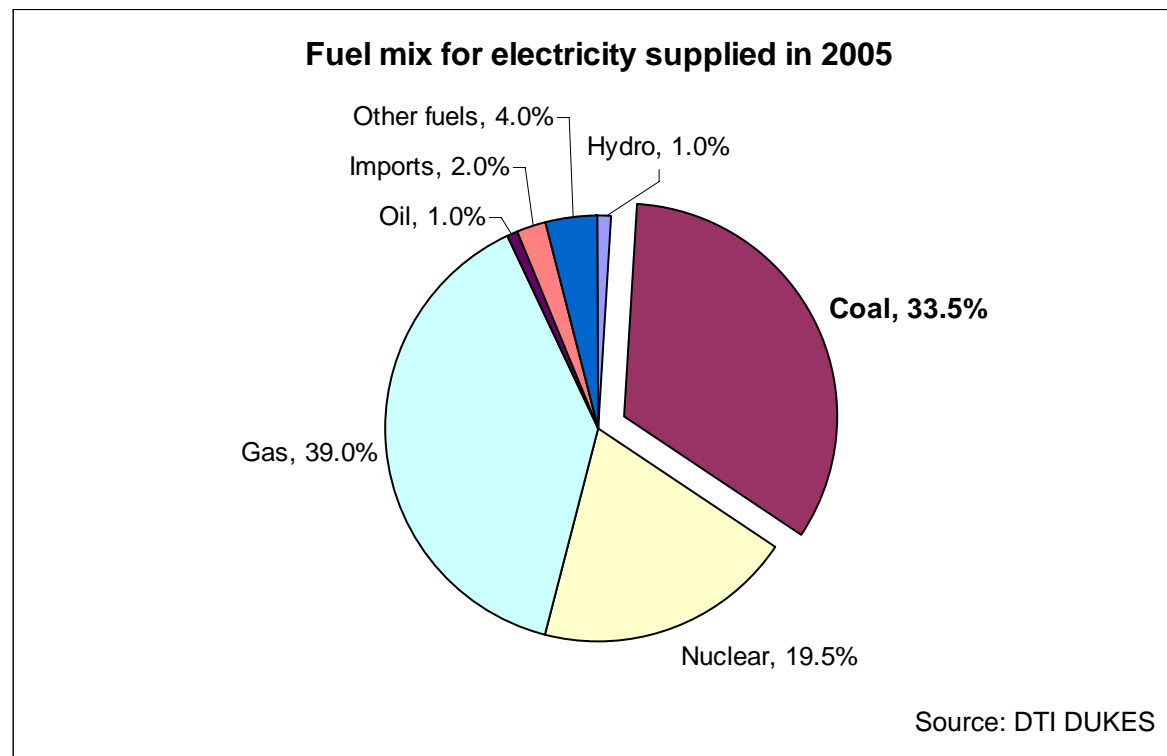
The role of coal in electricity generation

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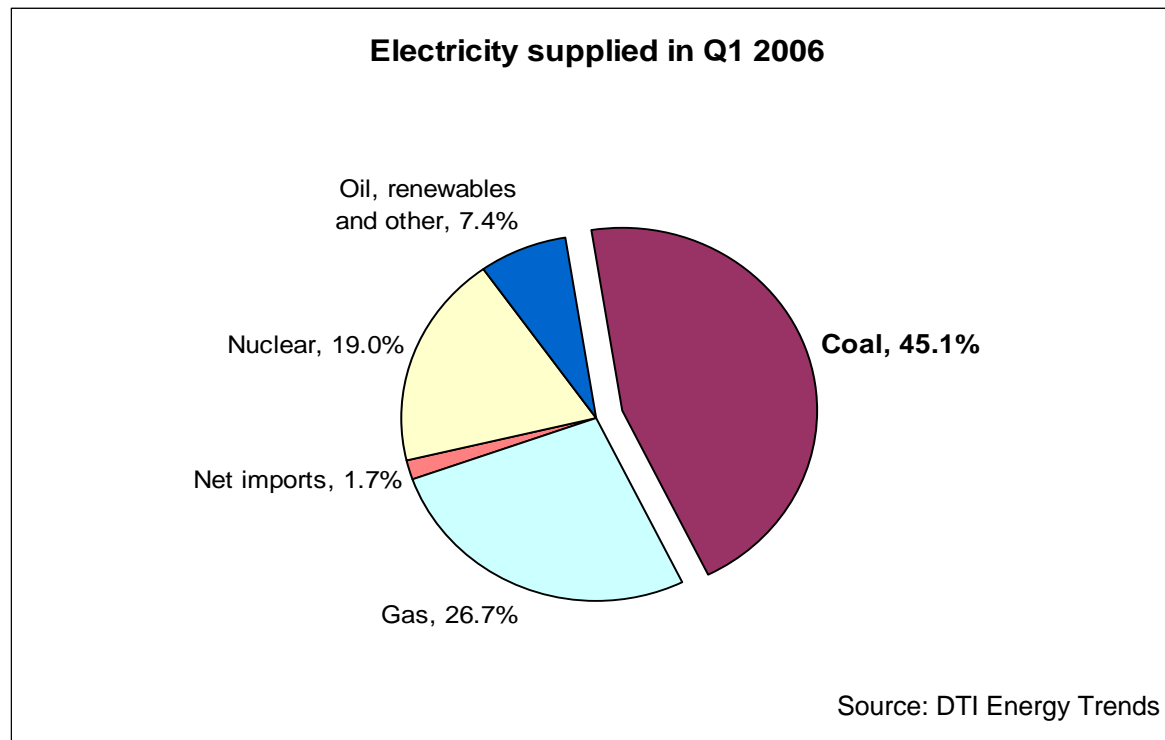
The role of coal in electricity generation

- Coal remains one of the principal fuels used for electricity generation
- Share of coal in overall capacity has fallen but capacity still at around 30GW
- In 2005, coal supplied 33.5% of electricity in the UK:



Importance of coal for security of supply

- Rising gas prices over the later part of 2005 led to a preference for coal
- Generators used much more coal in Q1 of 2006 partly because gas prices rose higher and partly because of concerns over secure gas supplies (DTI Energy Trends)



- Large Combustion Plants Directive (LCPD)
 - Single largest impact on UK coal-fired generation fleet
 - Sets strict limits for SO₂, NO_x and dust emissions
 - Stations can opt-in or opt-out of compliance
 - Of a total installed coal-fired generation capacity of 29.3GW, 20.7GW have opted in and 8.7GW opted out
 - Stations that opt out are allowed to run 20,000 hours between 1 January 2008 and 31 December 2015 before closing
 - Stations that opt in will have to fit Flue-Gas Desulphurisation (FGD) equipment in order to comply with SO₂ limit values
 - To fit FGD to all the units opted into the LCPD will cost around £2.1bn

LCPD opted-in coal-fired capacity

Installation	Operator	Opted-in capacity (MW)
Drax	Drax Power	3960
Eggborough	British Energy	2000
Cottam	EDF Energy	2000
Ferrybridge	SSE	1000
Fiddler's Ferry	SSE	2000
Ratcliffe	E.ON UK	2000
Rugeley	International Power	1000
West Burton	EDF Energy	2000
Longannet	Scottish Power	2304
Aberthaw	RWE npower	1500
Kilroot	AES	520
Uskmouth	Uskmouth Power	393
TOTAL		20677

Installation	Operator	Opted-out capacity (MW)
Ferrybridge*	SSE	1000
Didcot A	RWE npower	2000
Tilbury*	RWE npower	1520
Kingsnorth*	E.ON	2000
Ironbridge	E.ON	1000
Cockenzie	Scottish Power	1152
TOTAL		8672

* This capacity will be wholly or partially replaced by new coal-fired generation

Other ongoing issues:

- Regulatory framework and market for CO₂ post-2012
- Fitting Selective Catalytic Reduction (SCR) for NO_x control post 2015
- Implementation of Habitats Directive
- Regulation of coal combustion by-products, e.g. PFA
- Revision of the Ambient Air Quality Directive and National Emissions Ceiling Directive (CAFÉ Programme)
- UK Implementation of the Water Framework Directive

Supercritical coal (Plant operates at higher steam temperatures and pressures, thus achieving greater thermal efficiency, often up to 45%):

- E.ON Kingsnorth 2x 800MW units + capture ready
- RWE npower Tilbury project 1000MW + CCS (feasibility study)
- Scottish & Southern Ferrybridge project 500MW + capture ready

IGCC (Integrated Gasification Combined Cycle; functions like a combined cycle gas turbine with hydrogen, derived from the gasification of coal, as fuel):

- E.ON Killingholme project 450MW + CCS (feasibility study)
- Powerfuel Hatfield project 900MW + CCS
- Progressive Energy Technology/Centrica Teesside project 800MW + CCS