
Progress with The Energy Policy Review: A Perspective

OIES Seminars

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What the White Paper Said

Reality Dawns

An alternative 20:20 Vision

UKEWP refocused energy policy away from a UK driven liberalisation agenda...

GOALS AND POLICIES

1. Reduce CO2 emissions by 60% by 2050

- Reduce amount of energy we consume
- Central to future market and policy will be emissions trading
- Raise efficiency standards in home appliances and housing
- Encourage low carbon fuels and renewables through grants and subsidy

2. Maintain reliability of energy supplies

- Right infrastructure / regulatory systems in UK and liberalisation of Europe
- Pursue regional stability and economic reform in producing areas
- Promote understanding of markets and conditions for FDI in producing areas
- Forward prices will signal the need for investment
- Improve contingency planning in dealing with major incidents

.... towards an EU driven multifaceted agenda

GOALS AND POLICIES

3. Promote competitive markets in UK and beyond

- Raise rate of sustainable economic growth
- Support business and competitiveness through reliable / affordable energy
- Encourage firms to innovate, reduce cost, deliver better goods and services
- Use market based instruments to deliver policy goals
- Work with business to prepare them for the low carbon economy of the future

4. Ensure that every home is adequately and affordably heated

- Reduce poverty by lowering prices and raising social security payments
- Improve quality of housing stock via insulation and energy efficiency grants

UKEWP relied on carbon trading and **uneconomic/unproven** technology...

ENERGY SYSTEM IN 2020

1. More diverse than today
2. Much of our energy will be imported from or through the single market
3. Grid will balance supply of large plants including **offshore wave, tidal and wind**
4. Market will need to handle intermittent supply with backup capacity
5. More local generation from **biomass, waste, wind, tidal**, feeding local networks
6. More microgen from **CHP, fuels cells, photovoltaics**, and surplus sold to main grid
7. Energy efficiency will reduce overall demand even as new demand comes on
8. New homes will achieve low or **zero carbon emissions**
9. Many buildings will **reduce demand** with **solar** heating

.... while policy on **existing** technology was passive or assumed it would close down

ENERGY SYSTEM IN 2020

10. A large part of energy mix will be **gas**
11. A smaller role for **coal** possibly linked to **CO2 capture and storage**
12. Existing **nuclear** plant will all be closed and new plant subject to a later decision
13. Greater role for **fuel cells** using **hydrogen** from non-carbon electricity
14. In transport more **hybrid vehicles** and low carbon **biofuels**
15. Public service vehicles and private cars will increasingly use hydrogen
16. By then **nuclear fusion** will be at an advanced stage of research
17. People will be more aware of climate change and reducing carbon emissions
18. Carbon content will be a differentiator as cost of carbon is reflected in prices

During summer recess it appears a major shift in position has quietly begun ...

A SHIFT IN EMPHASIS OR A MAJOR RETHINK?

“Britain's future energy mix will be dominated by **gas power** generation with **nuclear power** likely to make a comeback and **renewables only playing a limited part**”

“I wouldn't put much money on there being much of a **coal generation** element by 2015.”

“The emergence of **carbon trading** will slightly penalise gas, but it will punish coal, and it **could begin to favour nuclear**“

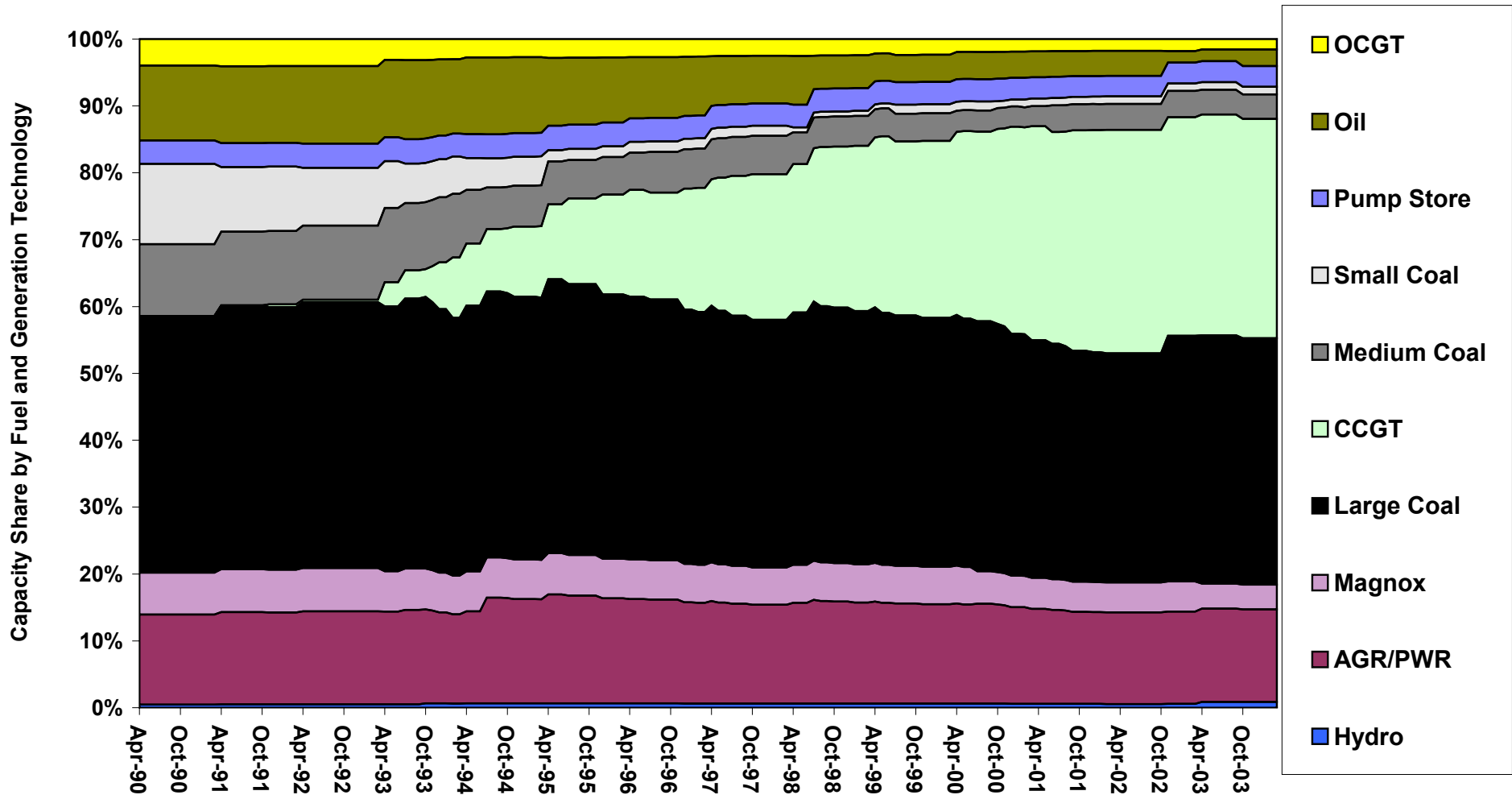
“Renewables will be limited -- nuclear will come back”

Martin O'Neill, Chairman of the UK Parliament's Trade and Industry Select Committee. 29 September 2003

Reality Dawns

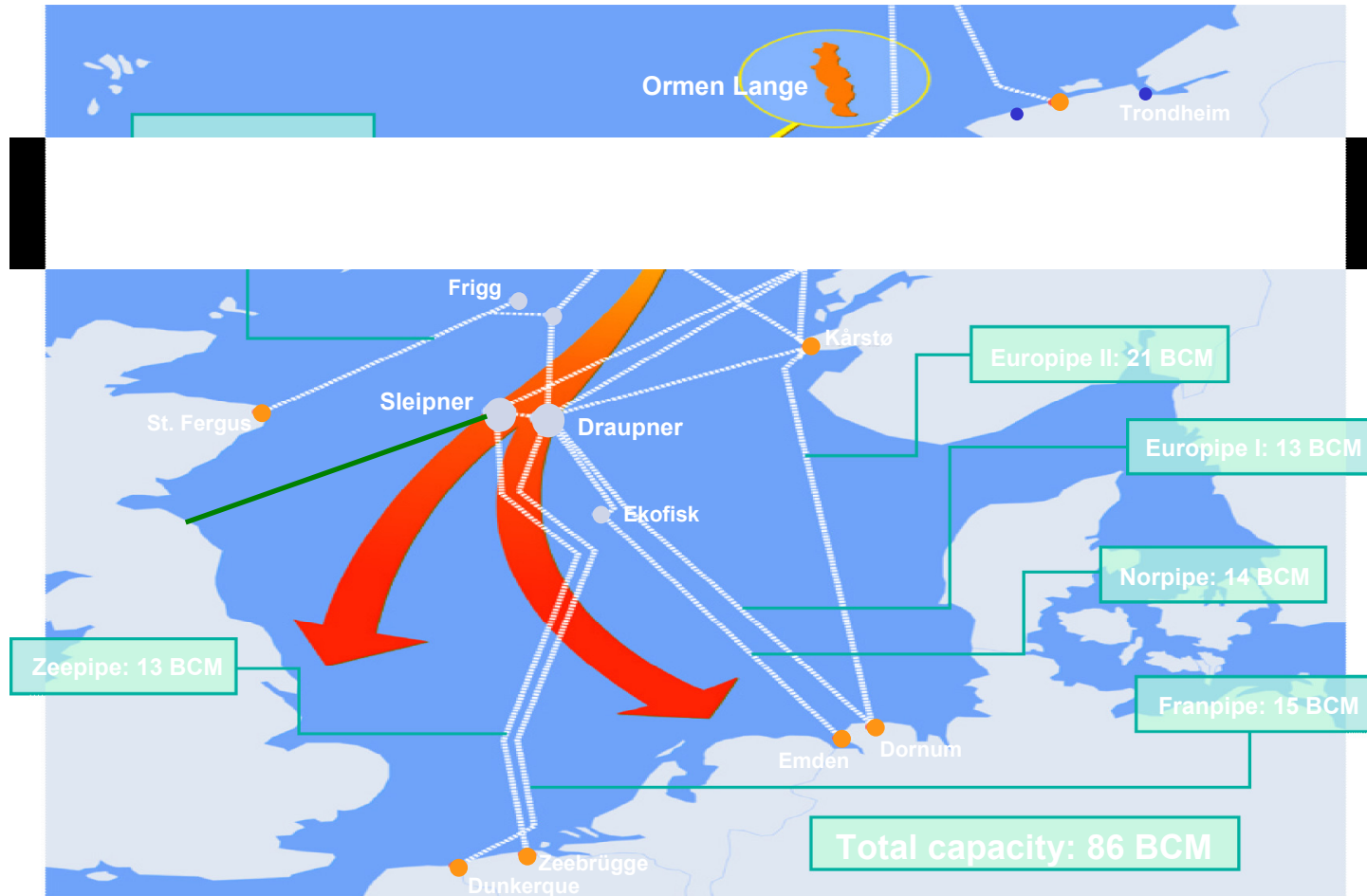
Gas has been the subject of much Parliamentary debate and questions of late...

GENERATION TECHNOLOGY CAPACITY SHARE IN ENGLAND & WALES (Apr 1990 – Mar 2004)



...BP Amoco objections have just been brushed aside to get Ormen Lange pipeline built...

ORMEN LANGE PROJECT



Source: Norsk Hydro

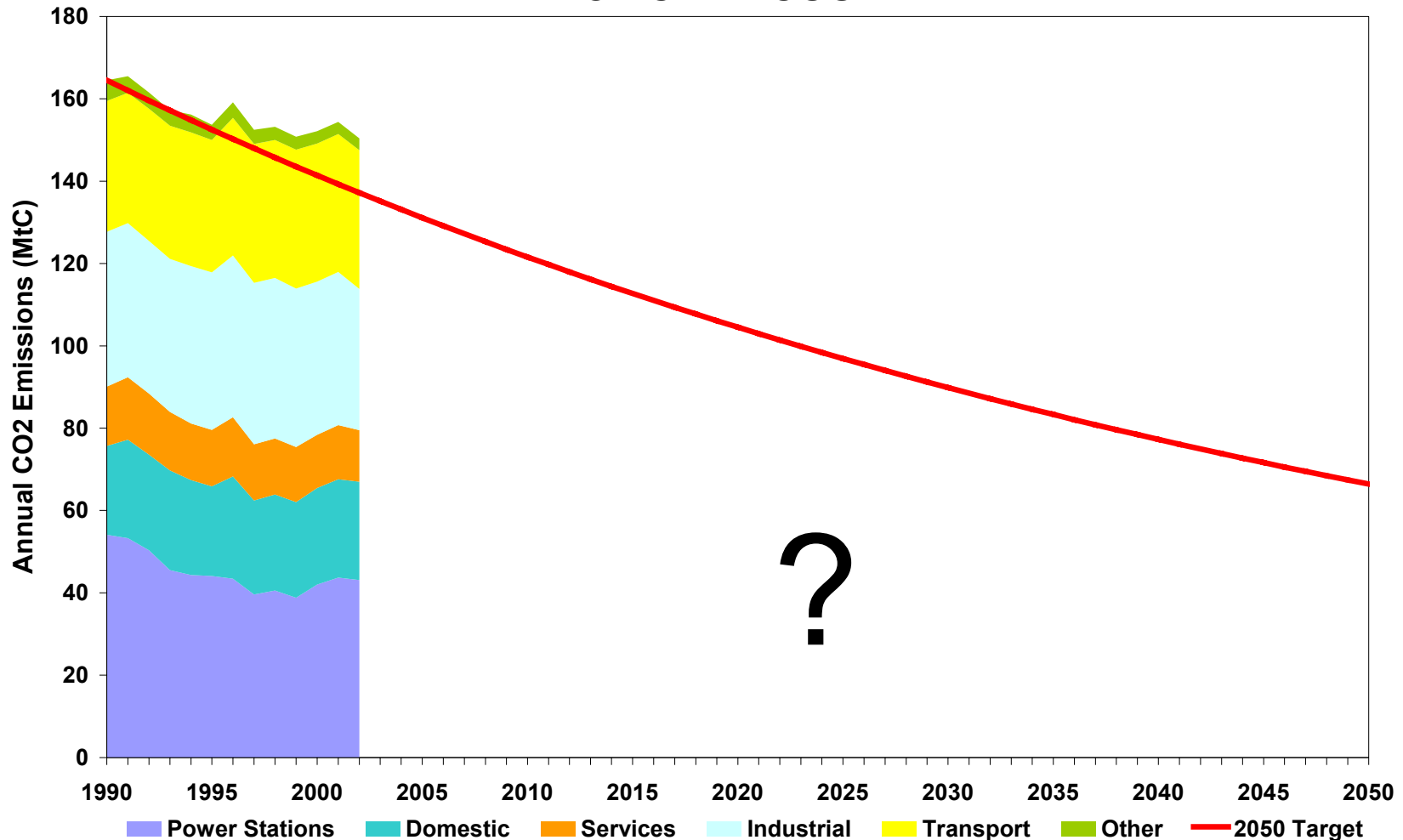
... and electricity security a high priority after NYK, London, Sweden, Italy blackouts

BRITISH ENERGY HEADLINES

- 28 Aug 02** **British Energy drained by low prices-minister**
- 01 Sep 02** **British Energy ponders US sale**
- 06 Sep 02** **Nuclear firm British Energy begs for bailout**
- 07 Sep 02** **British Energy shares suspended as company warns of insolvency**
- 08 Sep 02** **Ministers offers £410 million loan to British Energy**
- 09 Sep 02** **British Energy falls almost 80 pct after LSE lifts trading curbs**
- 26 Sep 02** **Ministers extend loan to British Energy and increase it to £500m**
- 18 Sep 03** **Government sets deadline on British Energy restructuring**
- 22 Sep 03** **Nuclear plants may get new lease of life**
- 02 Oct 03** **British Energy rescue complete subject to approval by parties and the EU**
- 03 Oct 03** **Ministers switch on to winter power fears**

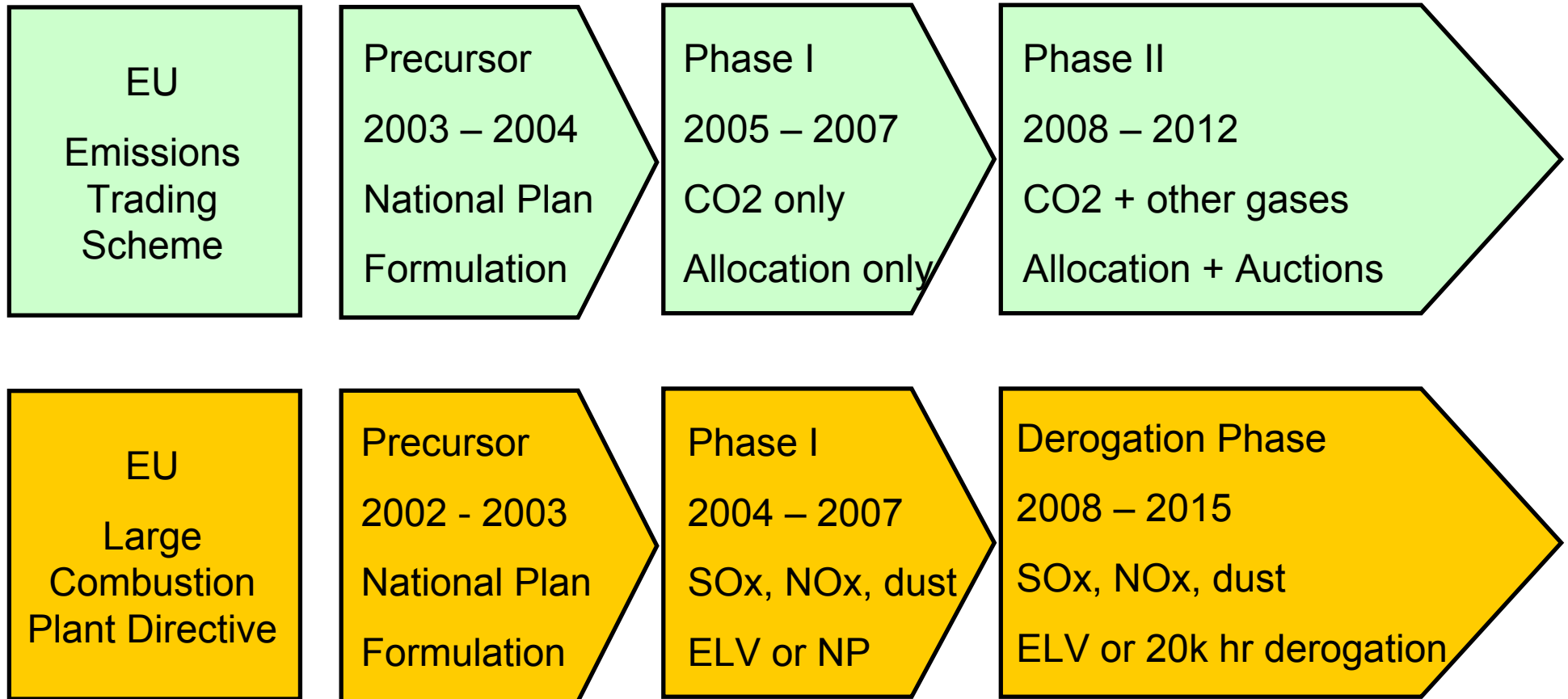
To get back on 2050 target track CO2 emissions must fall 35% from 1990 level by 2020

A POLICY VACUUM



Right now DEFRA is designing the UK mechanism for EUETS and LCPD ...

EU EMISSIONS TRADING SCHEME AND LARGE COMBUSTION PLANT DIRECTIVES

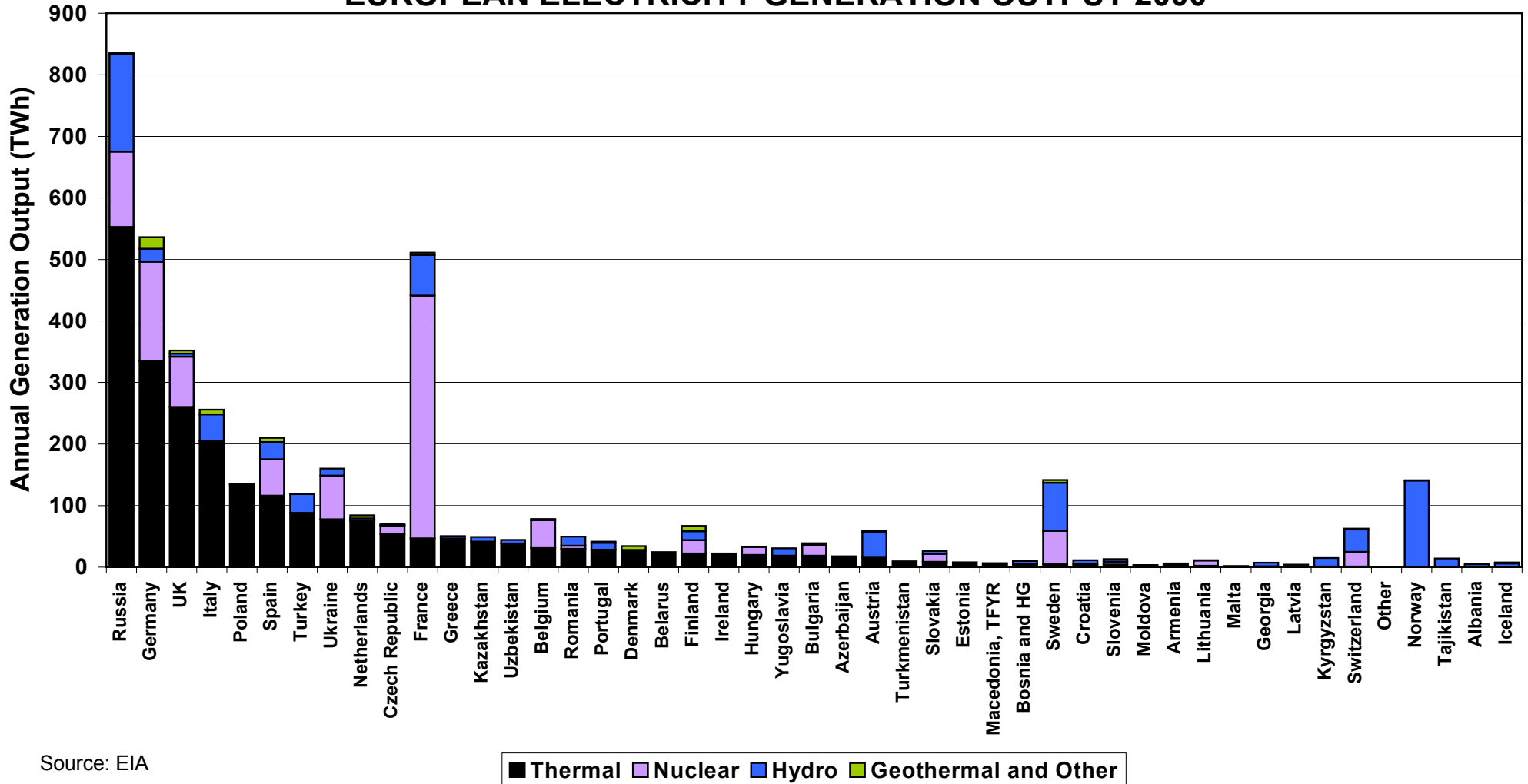


Source: EIA

Reality Dawns

... with 75% of CO2 reductions coming from closure of coal fired power stations...

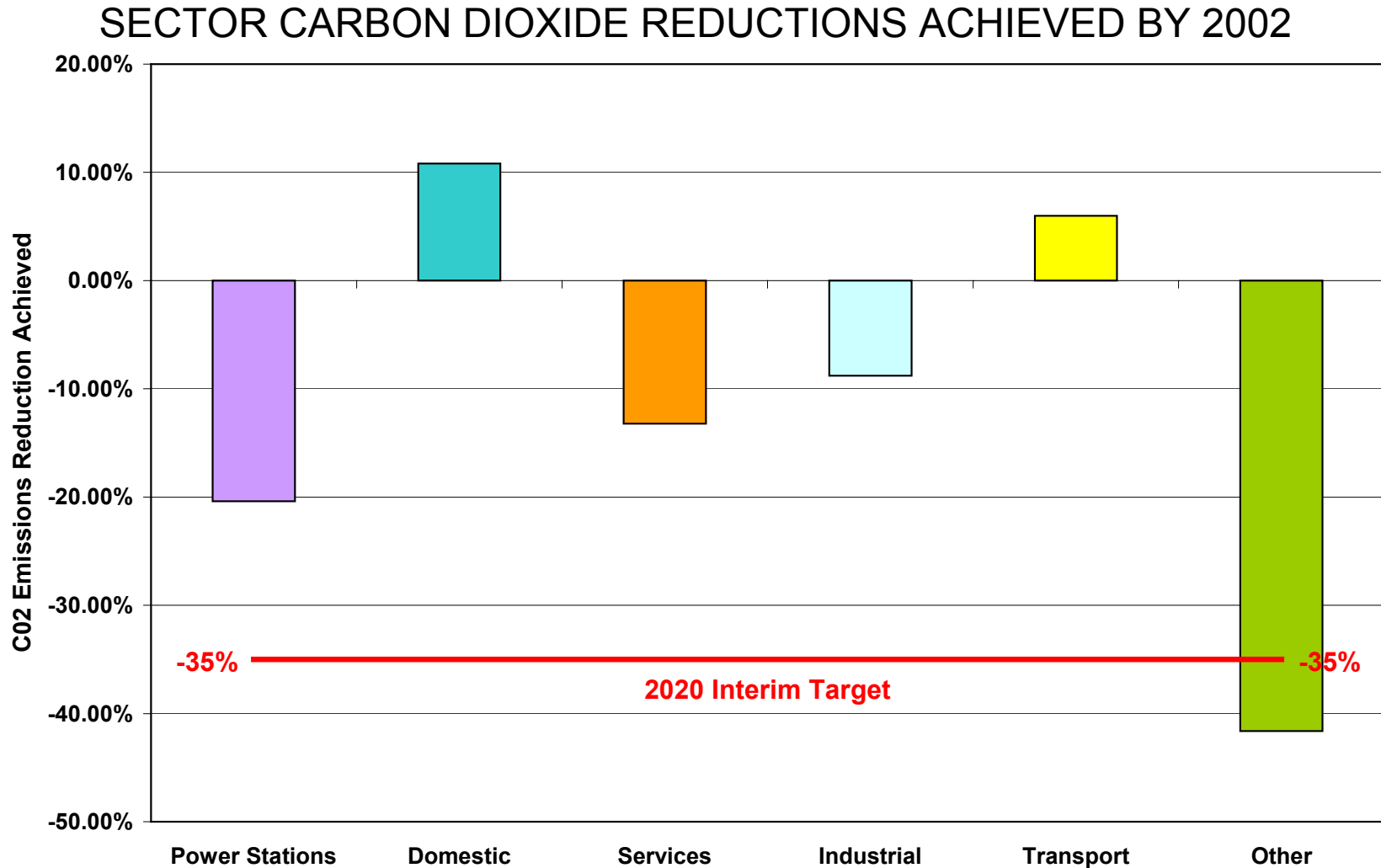
EUROPEAN ELECTRICITY GENERATION OUTPUT 2000



Source: EIA

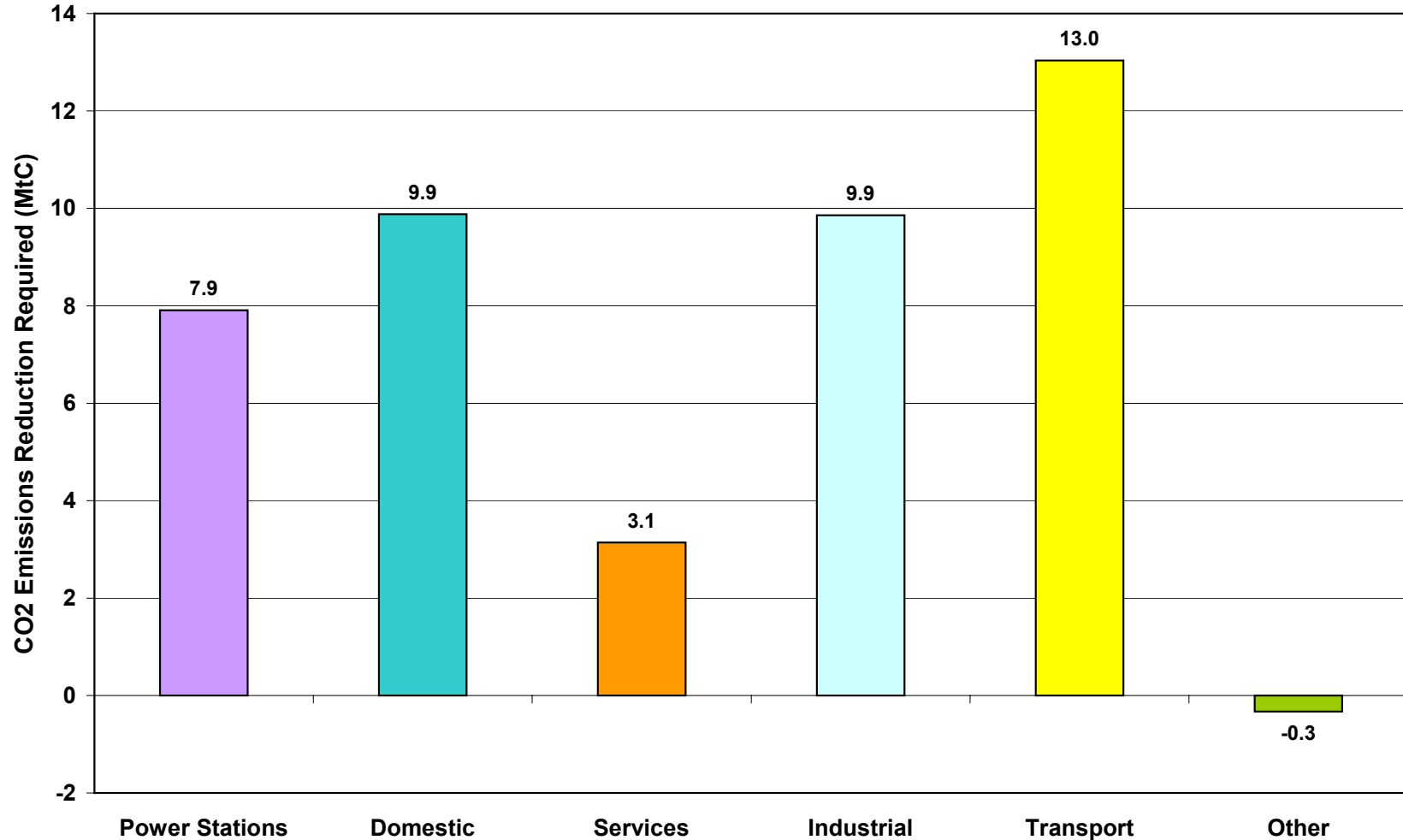
■ Thermal ■ Nuclear ■ Hydro ■ Geothermal and Other

... but Domestic and Transport emissions are caused by voters so reductions difficult



Electricity and Industrial sector will trade CO₂, increase efficiency, or shut plant down...

TONNAGE OF CARBON DIOXIDE REDUCTIONS REQUIRED 2002 - 2020



... but DTI effectively admits no real progress in Services, Domestic, Transport sector

PROGRESS ON DELIVERING THE WHITE PAPER

SERVICES/ DOMESTIC (Energy efficiency and CHP)

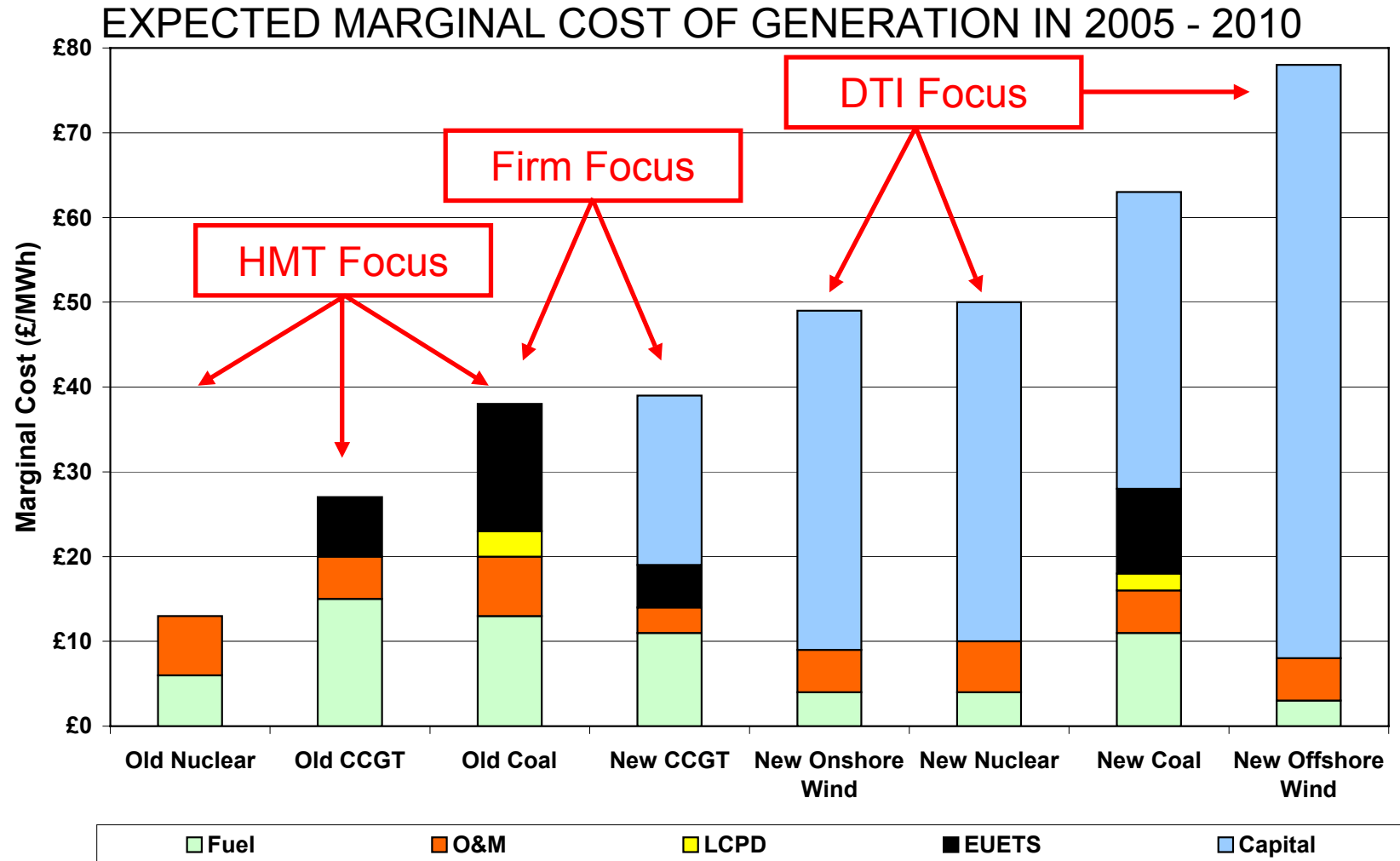
- Defra has announced a budget of £ 268 m for spending on energy efficiency and fuel poverty programmes in 2003/04 – **£10 for each home or business address!**
- Working party to establish how to create an effective market in energy services has been set up to provide initial advice by 30 Sep and final advice by 31 Dec 2003;
- a Better Buildings Summit to improve energy efficiency will be held on 21 Oct 2003;
- Ministers started talking to the industry on heating aspects of building regulations.

TRANSPORT

- an ultra low carbon car competition was launched on 29 April 2003.

Source: www.dti.gov.uk/energy/sepn/index.shtml#del_wp

Renewables lobby admit value of carbon not be enough to cover cost of renewables build

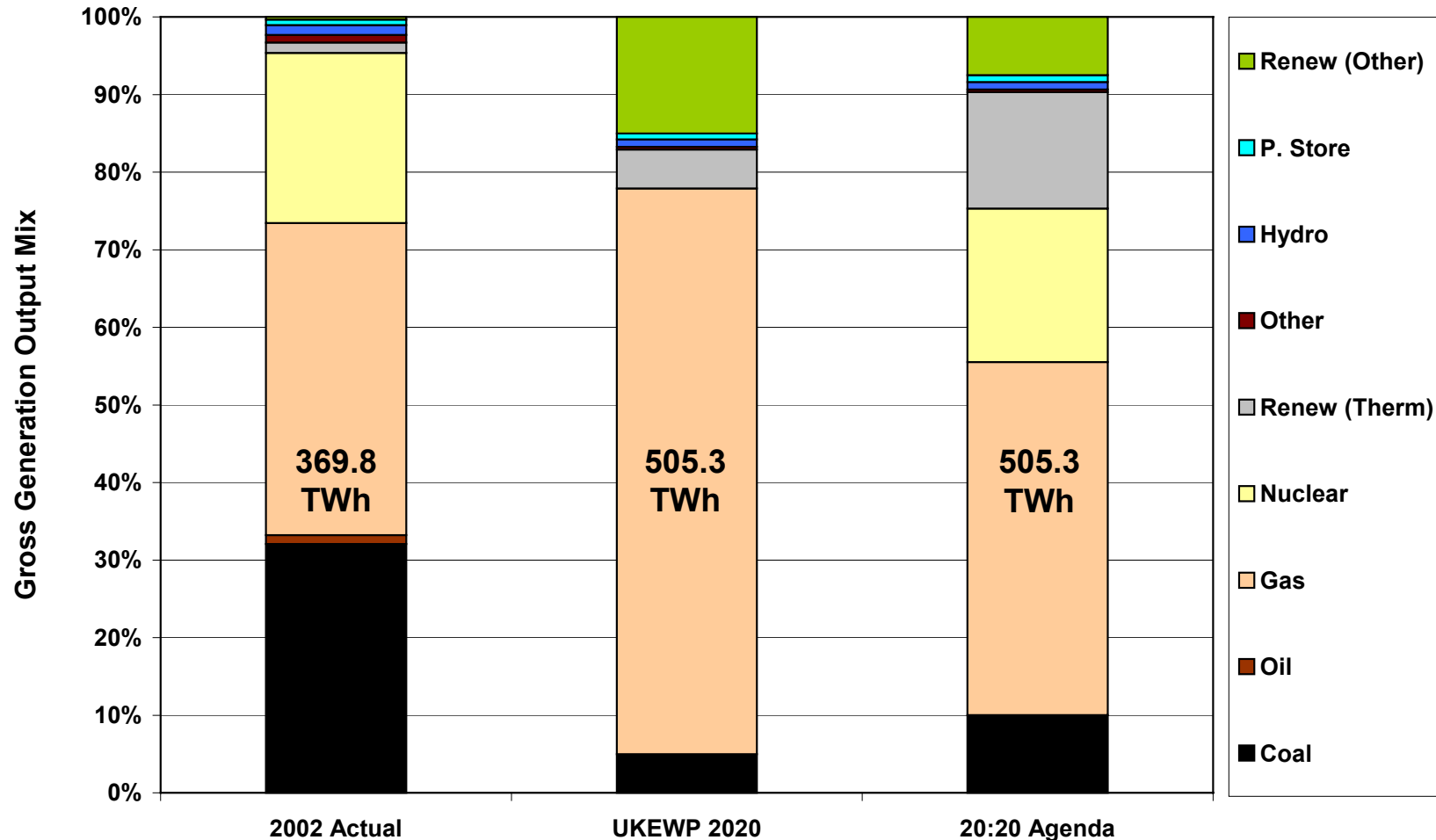


Source: Author's own estimates. See also www.oxfordenergy.org Oxford Energy Comment "UK Offshore Wind Generation Capacity: A Return to Picking Winners"

An Alternative 20:20 Agenda

Energy security will increase if DTI stops 'picking winners' and lets price direct investment

GENERATION OUTPUT MIX

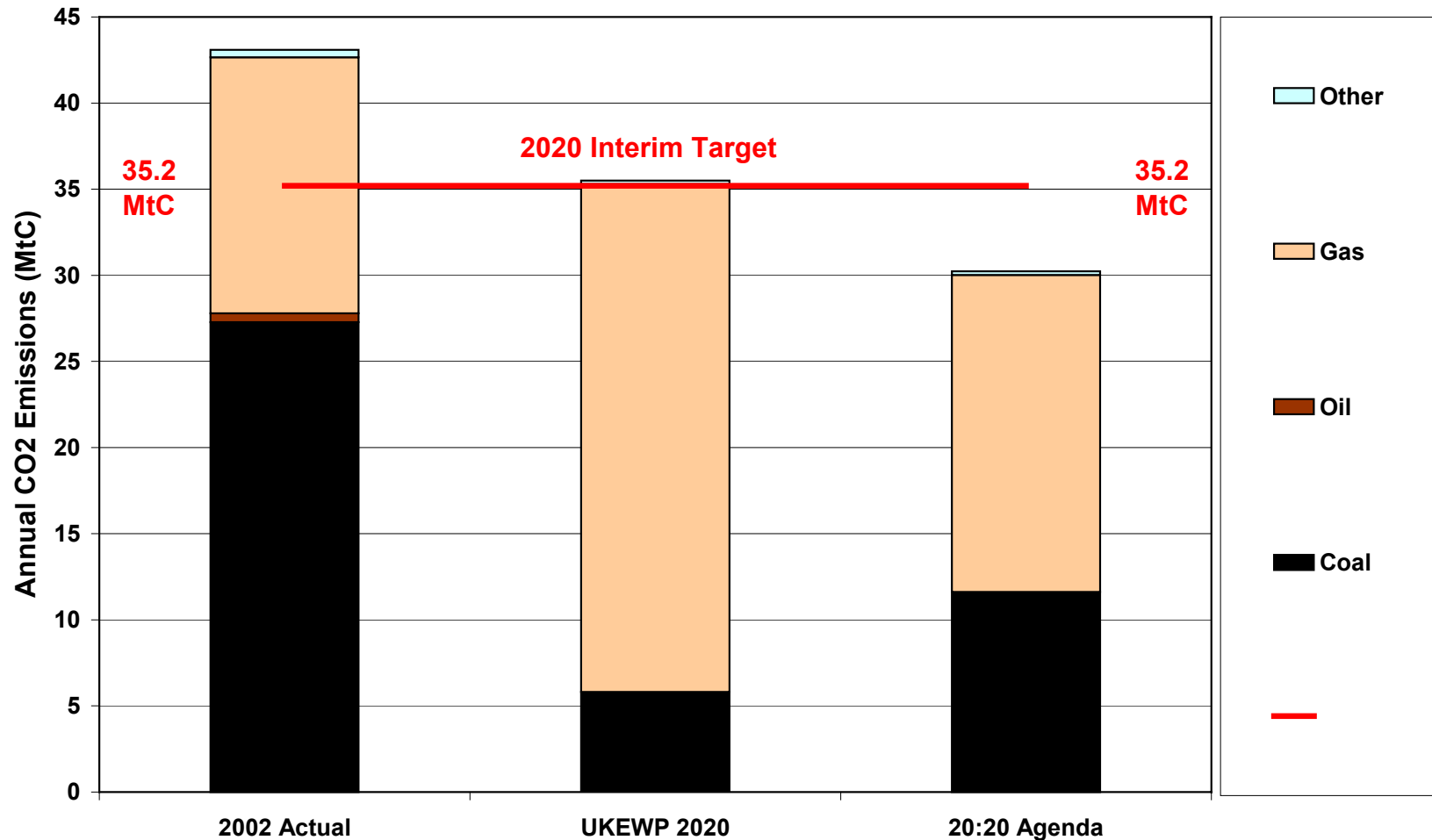


Source: Author's own estimates applied to Digest of UK Energy Statistics Table 5.6 Electricity Fuel Use, Generation and Supply www.dti.gov.uk/energy/inform/energy_stats/electricity/

An Alternative 20:20 Agenda

Electricity CO2 reduction greater with 20% nuclear or growth slows to 0.75% p.a.

2002 ACTUAL VERSUS 2020 FORECAST CO2 EMISSIONS FROM ELECTRICITY



Source: Author's own estimates applied to Digest of UK Energy Statistics Table 5.6 Electricity Fuel Use, Generation and Supply www.dti.gov.uk/energy/inform/energy_stats/electricity/

An Alternative 20:20 Agenda

Transport CO2 emissions will only fall if car marginal commuting cost exceeds train cost

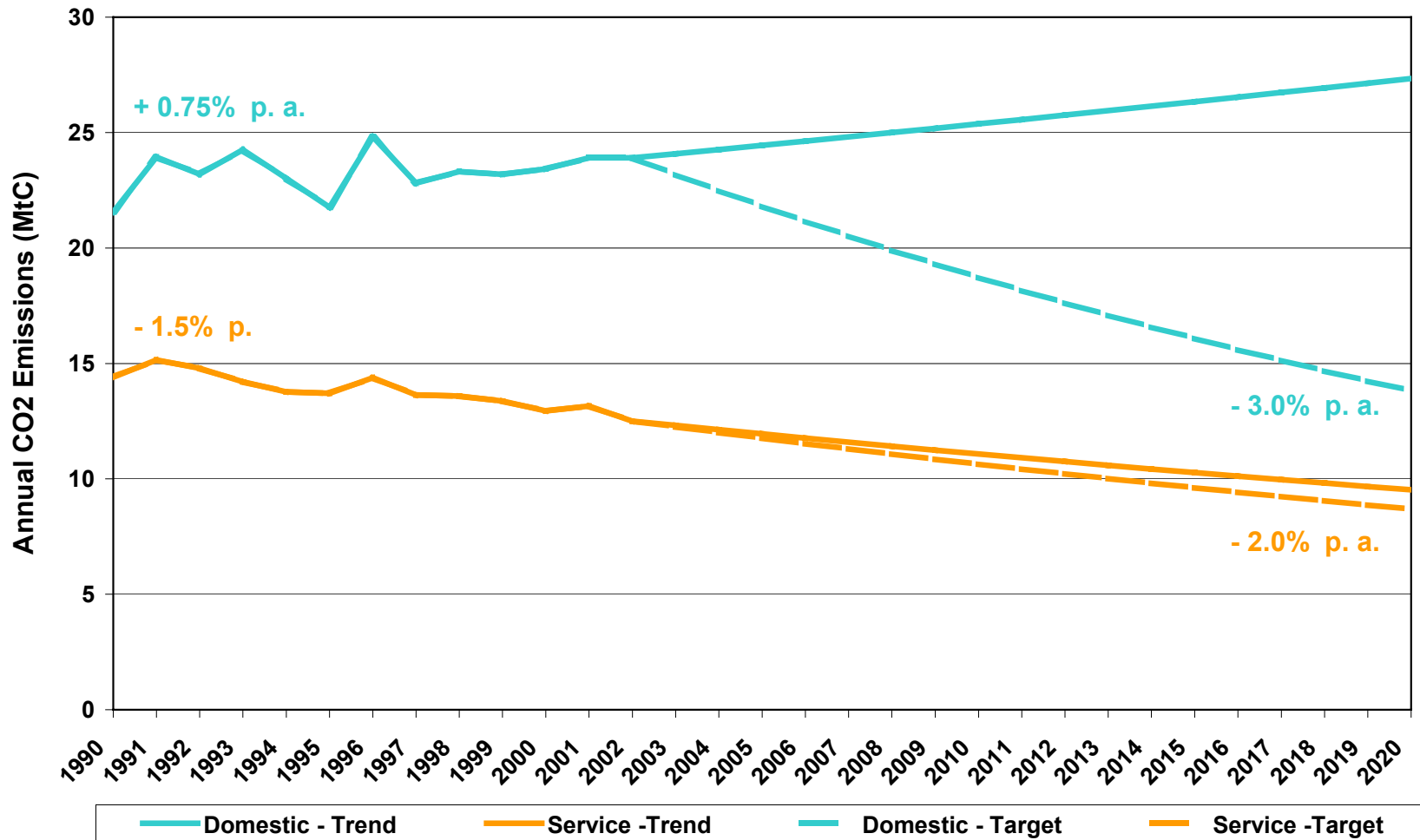
MARGINAL DAILY COMMUTING COSTS OXFORD - LONDON

Oxford - London Return Journey	Train	Car	Car
	Peak Return + Zone 1 Pass	Commuter 2003	Commuter 2020
Railway Charge	£17.50	£0.00	£0.00
Motorway Toll	£0.00	£0.00	£20.00
Congestion Charge	£17.00	£5.00	£10.00
Fuel	£0.00	£1.30	£1.30
Fuel Tax	£0.00	£4.25	£0.00
Office Parking	£0.00	£0.00	£10.00
SR Marginal Cost	£34.50	£10.55	£41.30
Season Ticket	-£18.70	£0.00	£0.00
Insurance	£0.00	£1.15	£1.15
Road Tax	£0.00	£0.30	£0.30
Maintainence	£0.00	£1.50	£1.50
Depreciation	£0.00	£3.00	£3.00
Capital Cost	£0.00	£0.40	£0.40
LR Marginal Cost	£15.80	£16.90	£47.65

An Alternative 20:20 Agenda

Domestic / Service CO2 emissions will only fall if property is made more energy efficient

DOMESTIC + SERVICE SECTOR EMISSIONS TREND AND TARGET



Poverty will increase if EUETS/LCPD effect not offset with changes to tax/benefit system

FUEL POVERTY

1. There is no such thing as fuel poverty – only poverty itself!
2. Eliminate VAT, RO costs, fuel duty before introducing emissions taxes
3. Mandate minimum emission standards for social and ‘low cost’ housing
4. Stamp duty rebate on all private house sales where emissions standards met
5. Increase fuel component of benefits and pensions
6. Prevent market abuse in retail energy sector using new competition powers
7. Do NOT load the cost on the energy industry or impose a retail price cap

These issues go far beyond the UK and similar debates will be had elsewhere

OECD IMPLICATIONS

1. Hard decisions on how to trade-off between security, competition and environment
2. Security is now the dominant theme with environment and competition subsidiary
3. Existing technologies will deliver medium term goals – not emerging technologies
4. Market designs may be modified or reinvented to create a ‘price signal’ for security
5. Politicians are being pressed for subsidies to counter perceived ‘market failures’
6. Swing back to central planning by proxy through formerly independent regulators

John Bower is a Senior Research Fellow at the Oxford Institute for Energy Studies which is an independent research charity affiliated to Oxford University and dedicated to advanced research in the social science aspects of energy. John joined OIES in November 2001 and his research interest is in the emergence and evolution of integrated cross-border electricity and gas markets. Specifically; the development of efficient pricing and investment mechanisms for energy, transmission capacity, and emissions.

Before joining the OIES, John completed his PhD at London Business School and his previous career was in the commodity industry. His experience ranges from energy trading, at Marc Rich & Co, to risk management consultancy, with Coopers & Lybrand, advising commodity traders, producers and processors in base metal, precious metal, 'softs' and energy markets. Immediately prior to his PhD he was Global Controller Metals/Commodities at Deutsche Morgan Grenfell.



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