

Market Power Mitigation in the UK Power Market

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Outline

- Background
 - > the industry in England and Wales
- Testing the regulator (1991-3)
- The generators' undertakings (1994-6)
- Changing the rules (1997-2002)
- Assessment



The starting point

- 12 Area Boards
 - > Regional Distribution
- Central Electricity Generating Board
 - > 400kV & 275 kV transmission
 - > 80% Coal
 - > 15% Nuclear

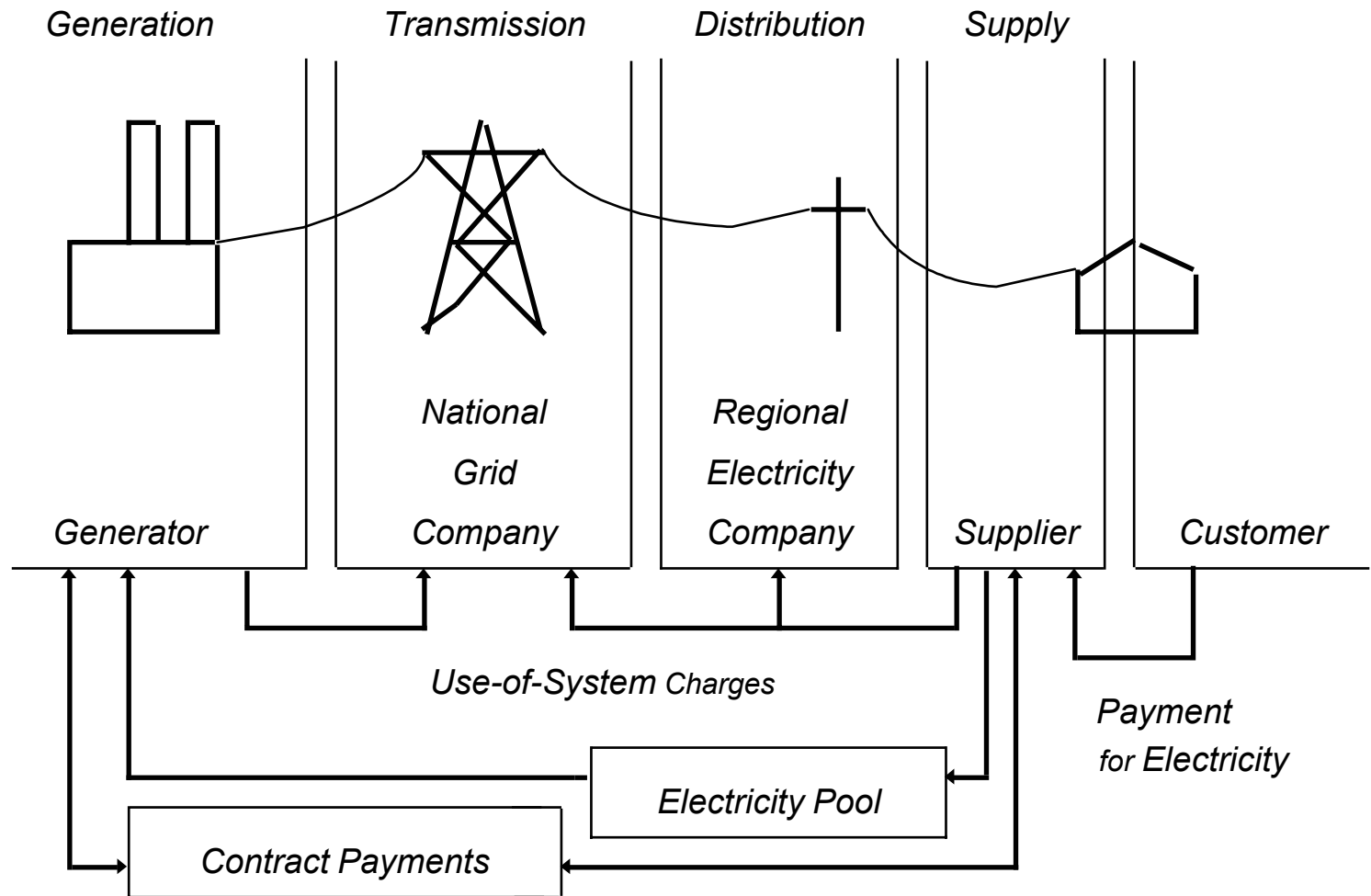


The 1990 restructuring

- 12 Regional Electricity Companies
- The National Grid Company
- National Power (50% of generation)
- PowerGen (30% of generation)
- Nuclear Electric (20% of generation)



The Electricity Industry in England and Wales

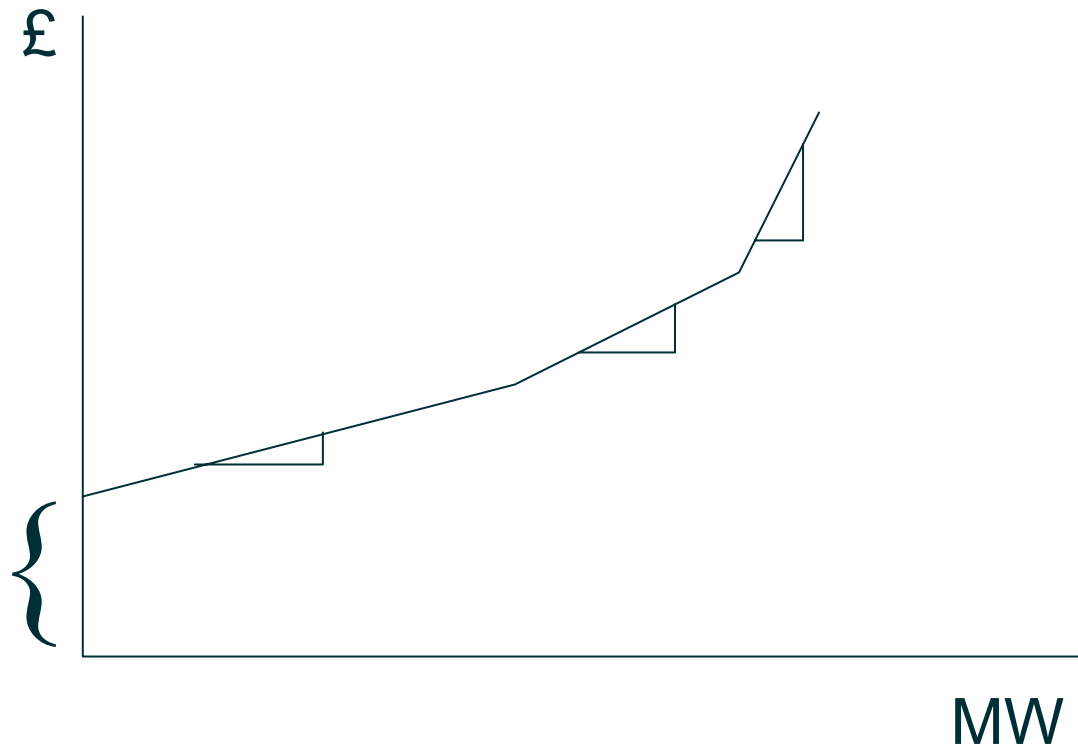


The Pool (1990-2001)

- Day-ahead auction
 - > based on cost-minimising algorithm “GOAL”
 - > System Marginal Price
 - > Capacity Payment
 - > Uplift
- Adjustments on the day “paid as bid”



A bid in the Pool

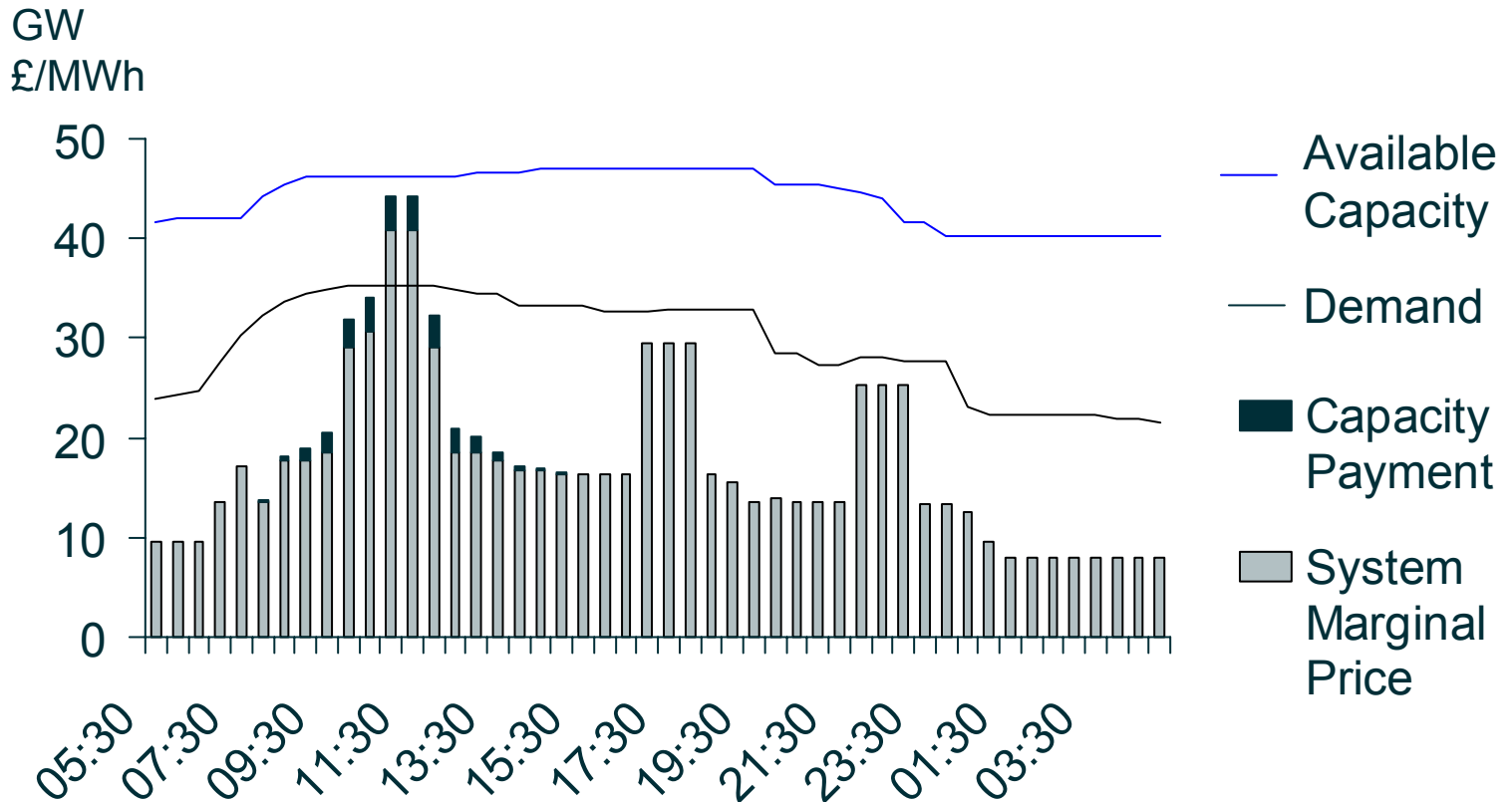


plus
“Start-up price”
“MaxGen price”
48 availabilities
ramp rates
maximum load
minimum load
etc ...



Day Ahead Schedule

7 July 1995

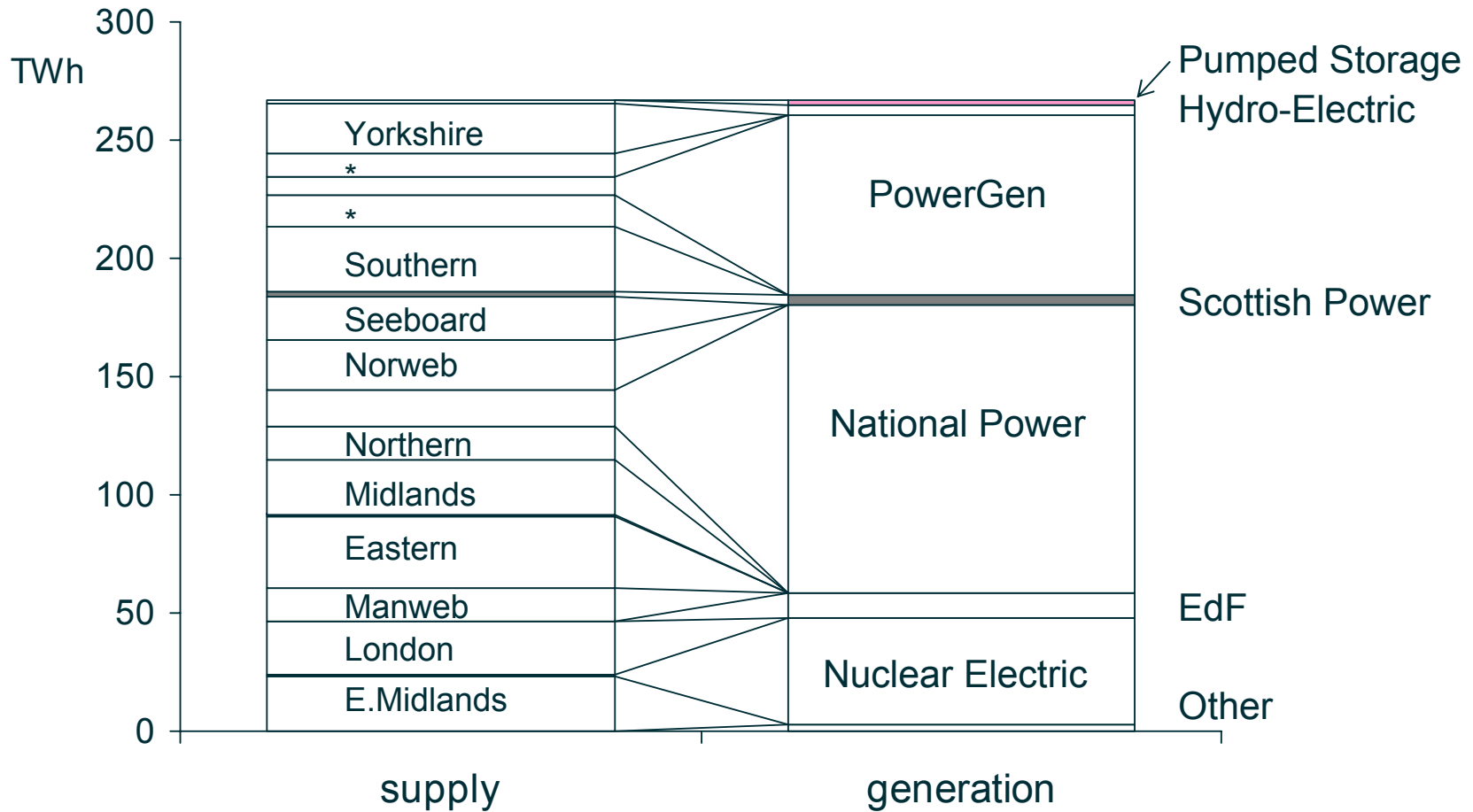


Regulation

- Generators had licences – contracts that could only be changed by agreement or after a reference to the Monopolies and Mergers Commission (now Competition Commission)
- At first, licences contained little “economic” regulation of generation
- Regulator also had powers under the Competition Act – make references to MMC



Supply and Generation in England and Wales, 1990

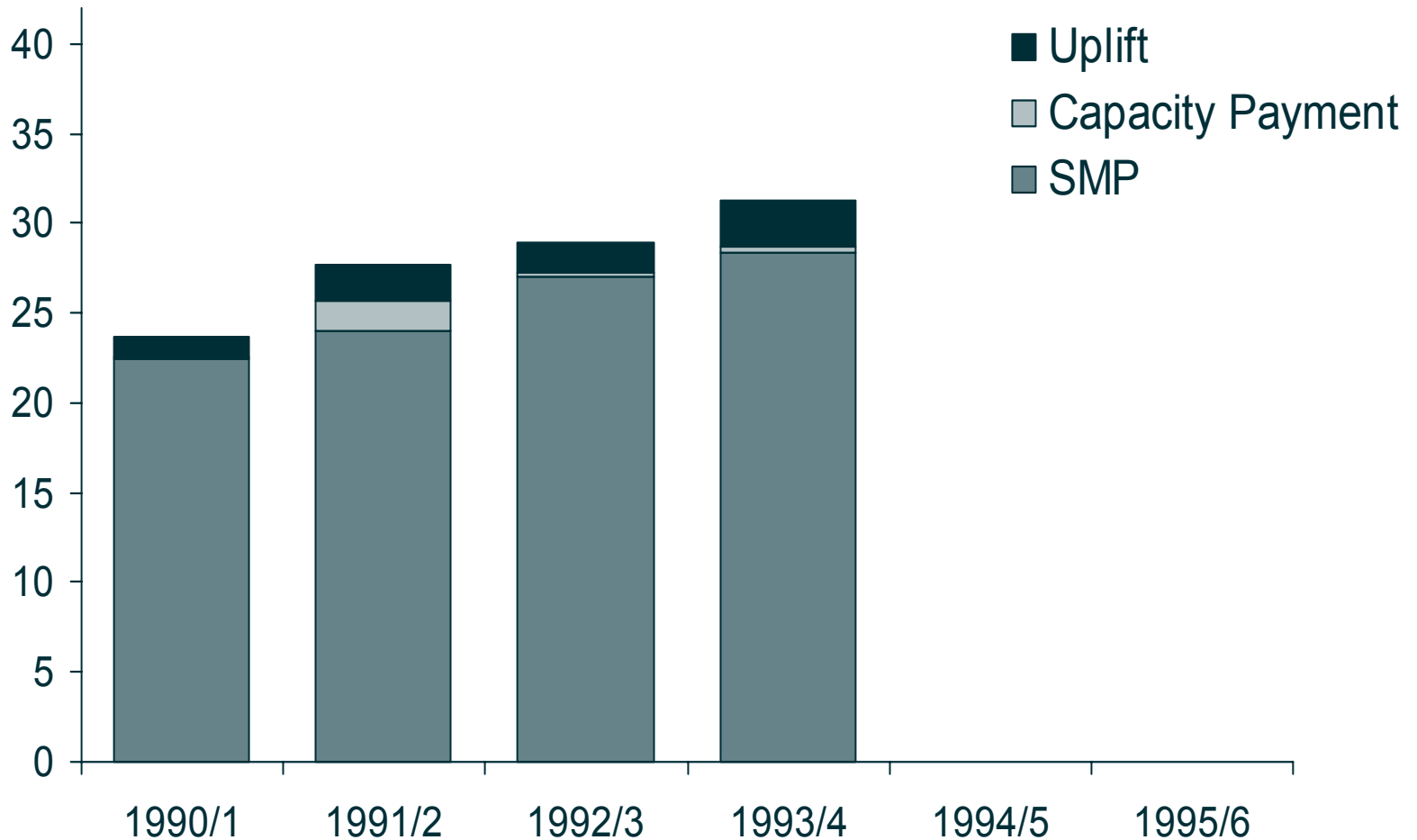


RECs' supply based on turnover * Swalec is below Yorkshire; SWEB is above Southern



E&W Electricity Prices

£/MWh
(99/00)



Testing the regulator (1991-3)

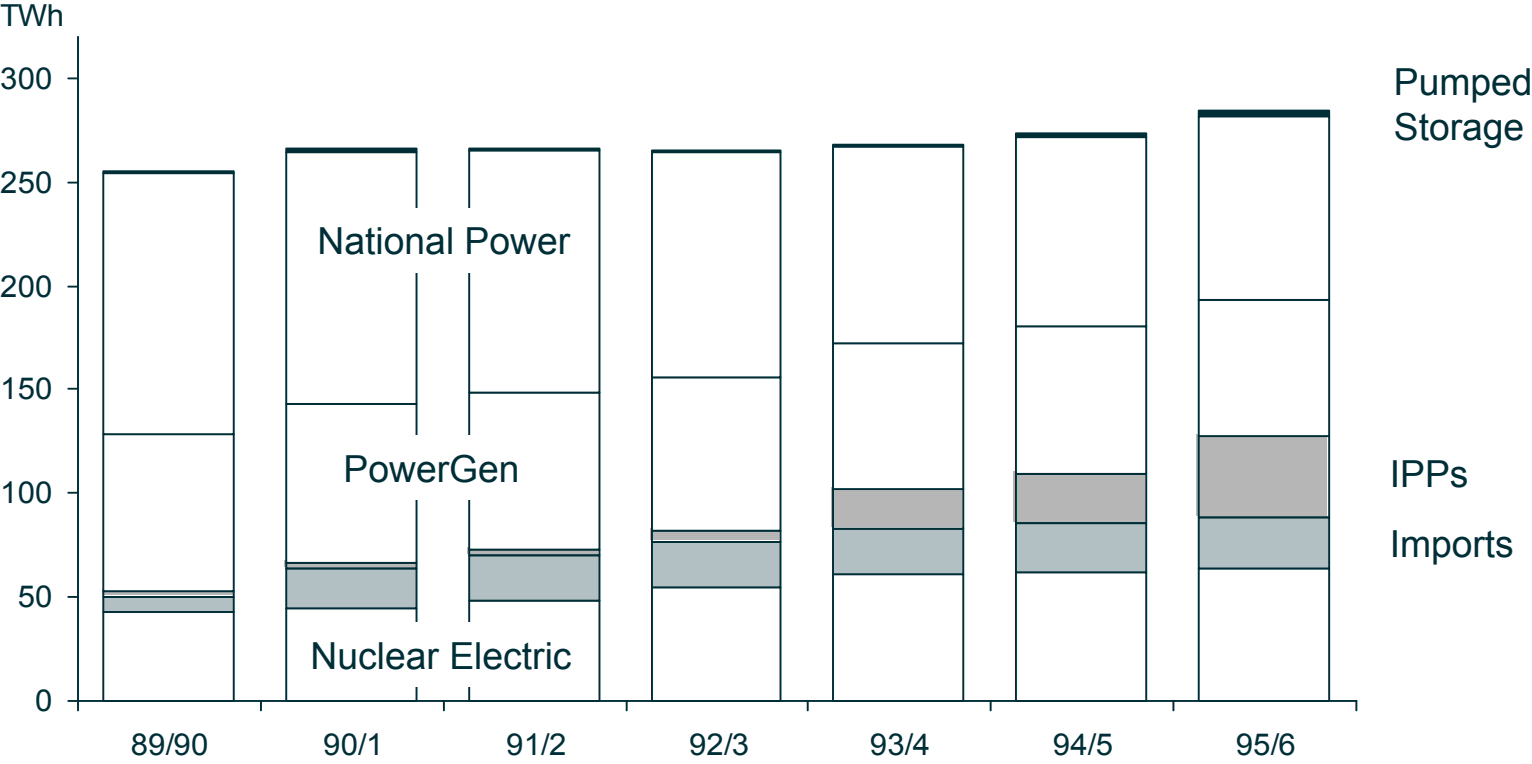
- Pool Price Inquiry (December 1991)
 - Pool Rules changed on Capacity Payments
 - Condition 9A (Availability)
- Constrained-on Plant & Gas Turbine Reports (1992)
- Review of Pool Prices (December 1992)
- Pool Price Statement (July 1993)



References to the MMC



Generation in England & Wales



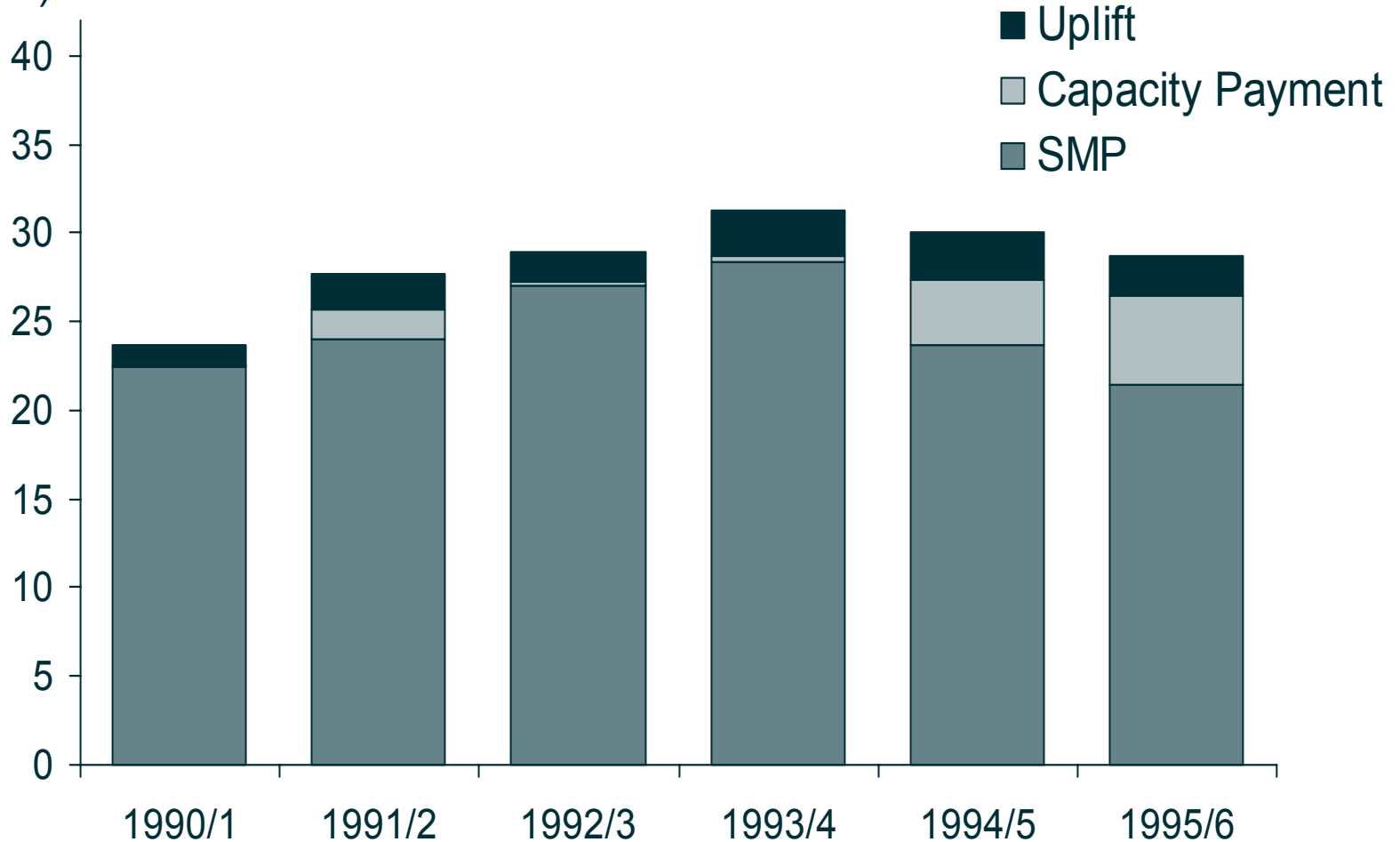
The Generators' Undertakings (1994-6)

- Divest 4 GW & 2 GW of plant
 - Increase “mid-merit” competition
 - Leased by Eastern (a REC; later TXU)
- Bid at 2.4 p/kWh (time weighted) and 2.55p/kWh (demand-weighted) for 2 years
 - Prices slightly too high in 1994/5, outages were exceptional circumstances

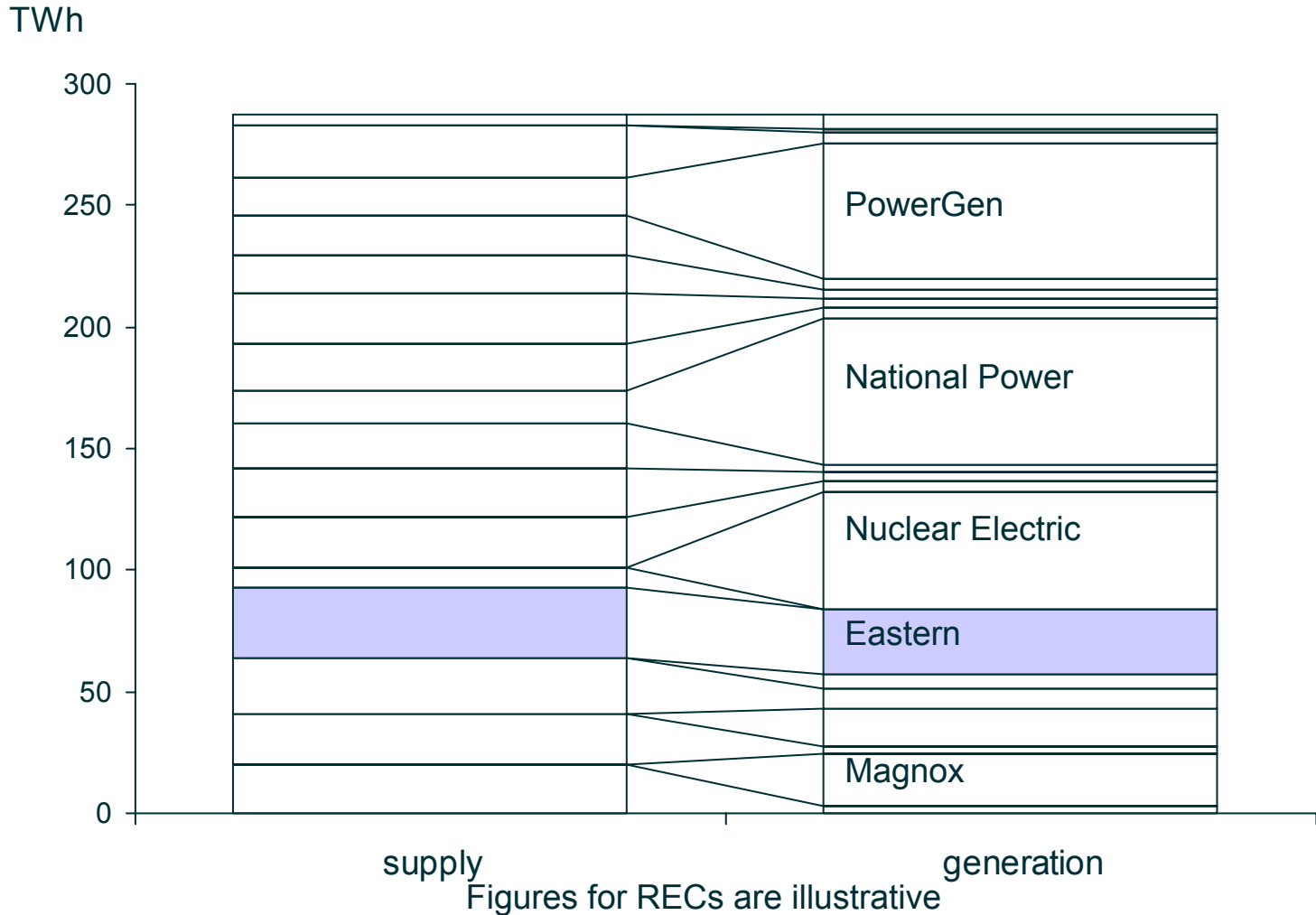


E&W Electricity Prices

£/MWh
(99/00)



Supply and Generation in England & Wales, 1997/98



Changing the Rules (1997-2002)

- Labour elected in 1997
- Coal contracts to be renewed in 1998
- Volumes expected to fall - gas-fired entry
- Moratorium on new stations “to help” coal
- Reviewed Electricity Trading Arrangements



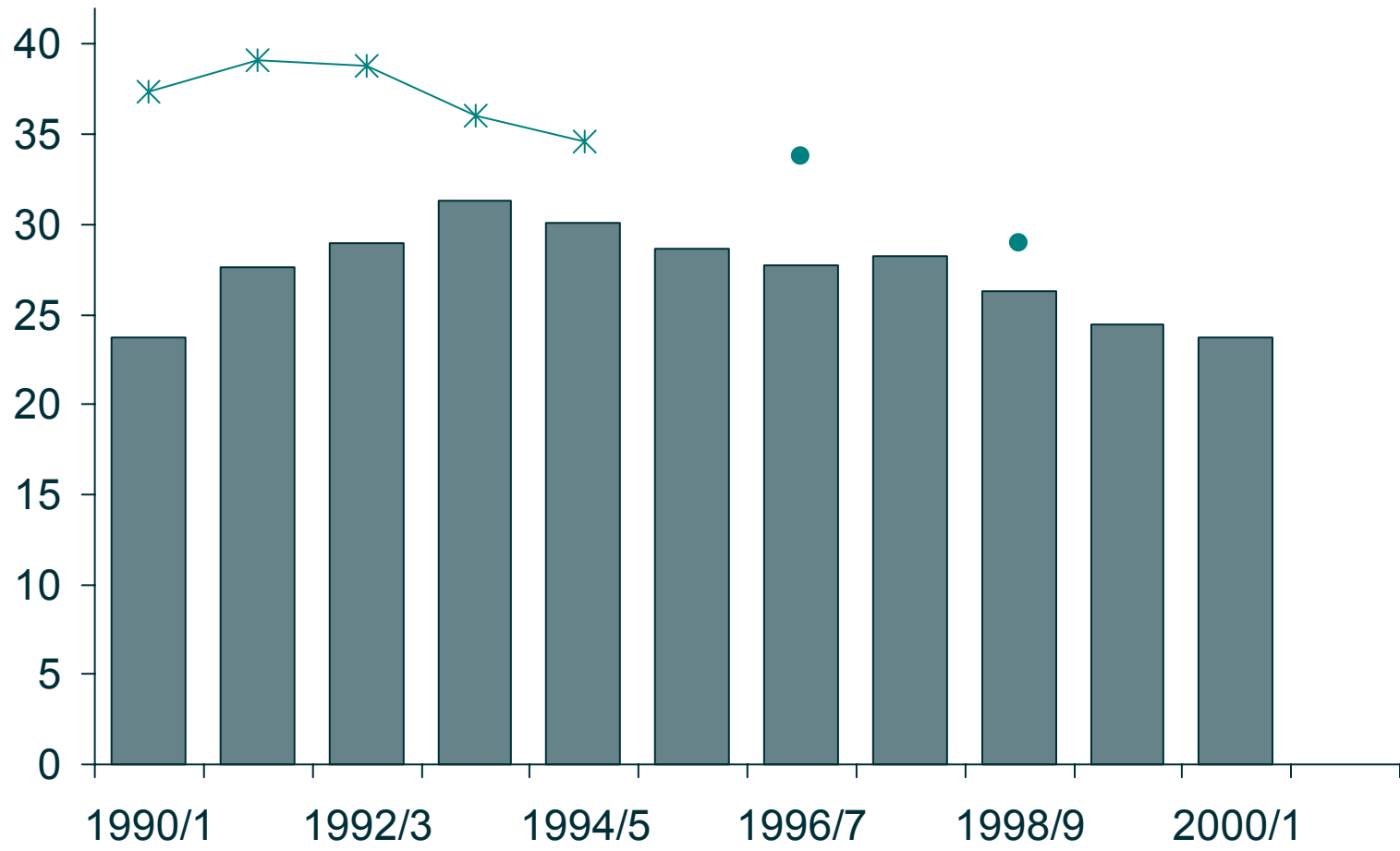
The Pool's Faults

- Hard to change rules
- Rules were complex
- Compulsory market
- Uniform-price auction enhanced market power (?)
- “Discriminated against coal”



E&W Wholesale Prices

£/MWh
(99/00)



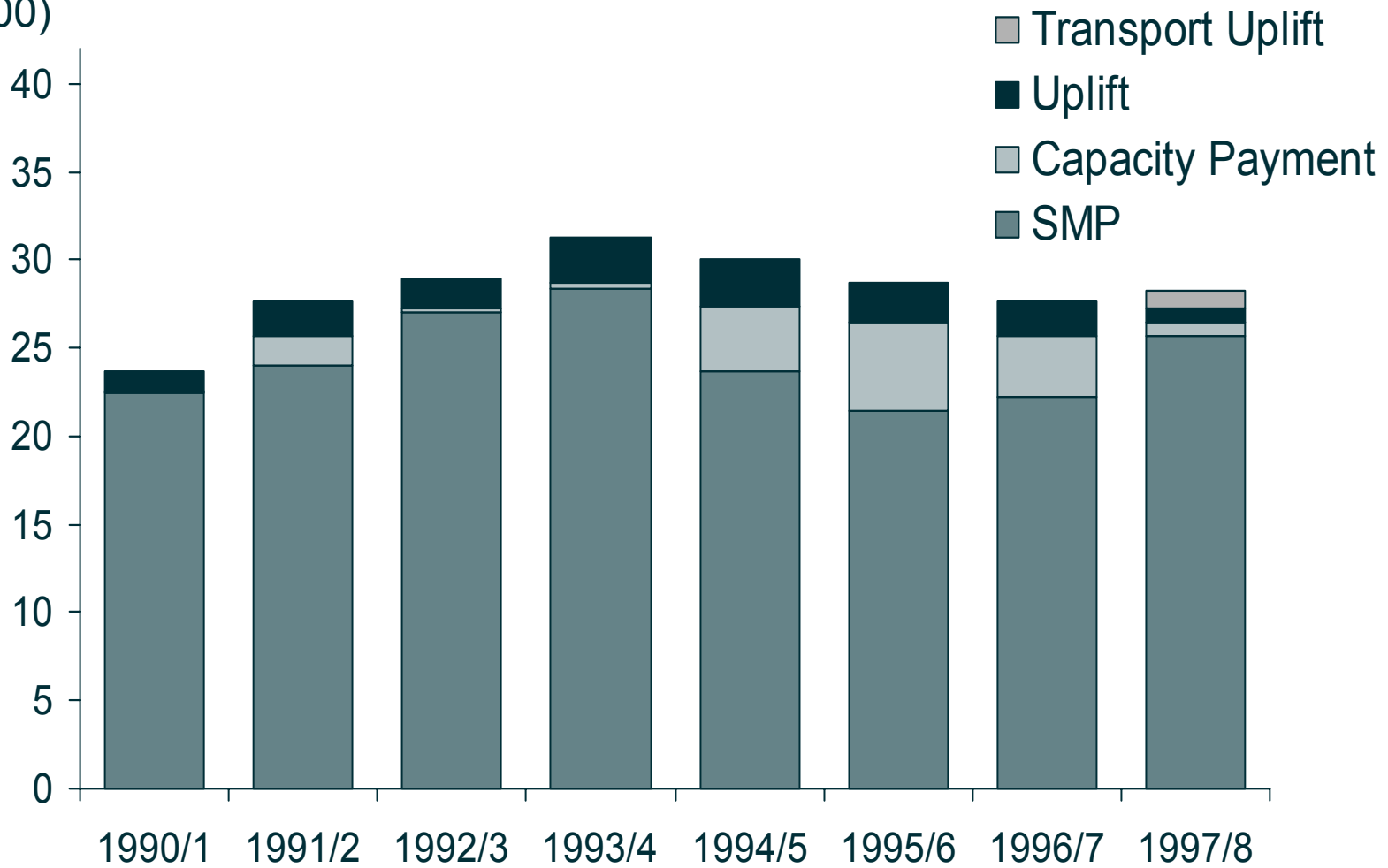
The New Electricity Trading Arrangements

- Bilateral trading wherever possible
 - > Forwards and futures markets
 - > Day-ahead power exchanges (3 at first, now 1)
 - not part of the NETA programme
- NGC runs a Balancing Mechanism
 - > matches generation with demand
 - > sets prices for imbalances



E&W Electricity Prices

£/MWh
(99/00)



Further divestitures

- “No justification” for SMP increases in 97/8
- PG and NP divested 4 GW each in return for permission to buy RECs
 - (further sales later)
- “Spikes” caused concern in early 1999
- July 1999 price increases the last straw



Market Abuse Licence Condition

- Prohibit abuse of substantial market power
 - (differs from EU/UK concept of dominance)
- Rejected by two generators, referred to Competition Commission
- Commission decided not to impose it
 - no problems pre-NETA
 - could not predict problems post-NETA

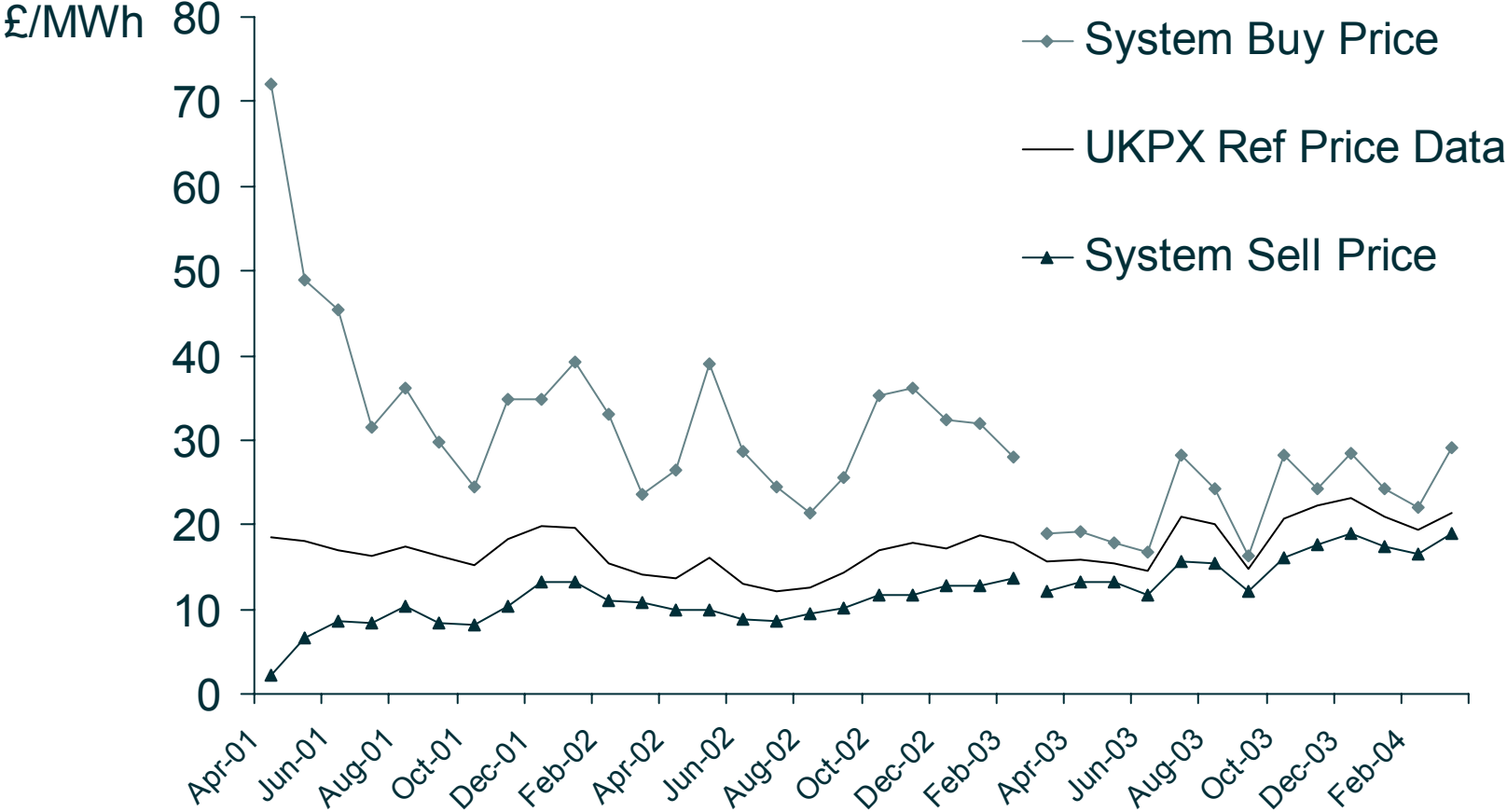


Market Power after NETA

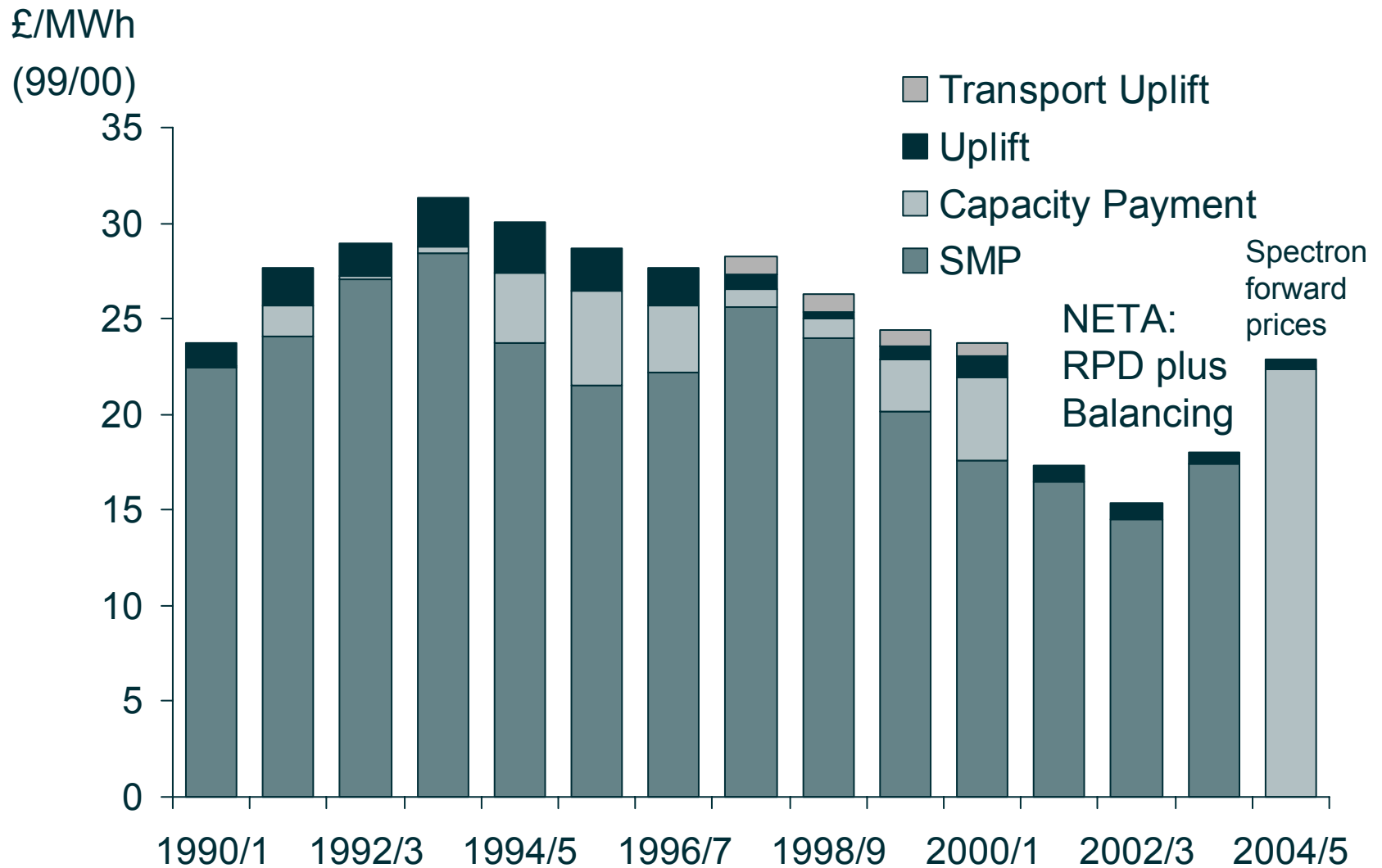
- Prices were much lower (until recently)
- Market rules much easier to change
 - > Gate closure reduced from 3½ to 1 hour before real time
 - > “Neutral” price used for “helpful” imbalances
- Restrictions on self-supply lifted
 - > Partly because competition had developed
 - > Partly because they were unenforceable
- Ofgem now views the market as competitive



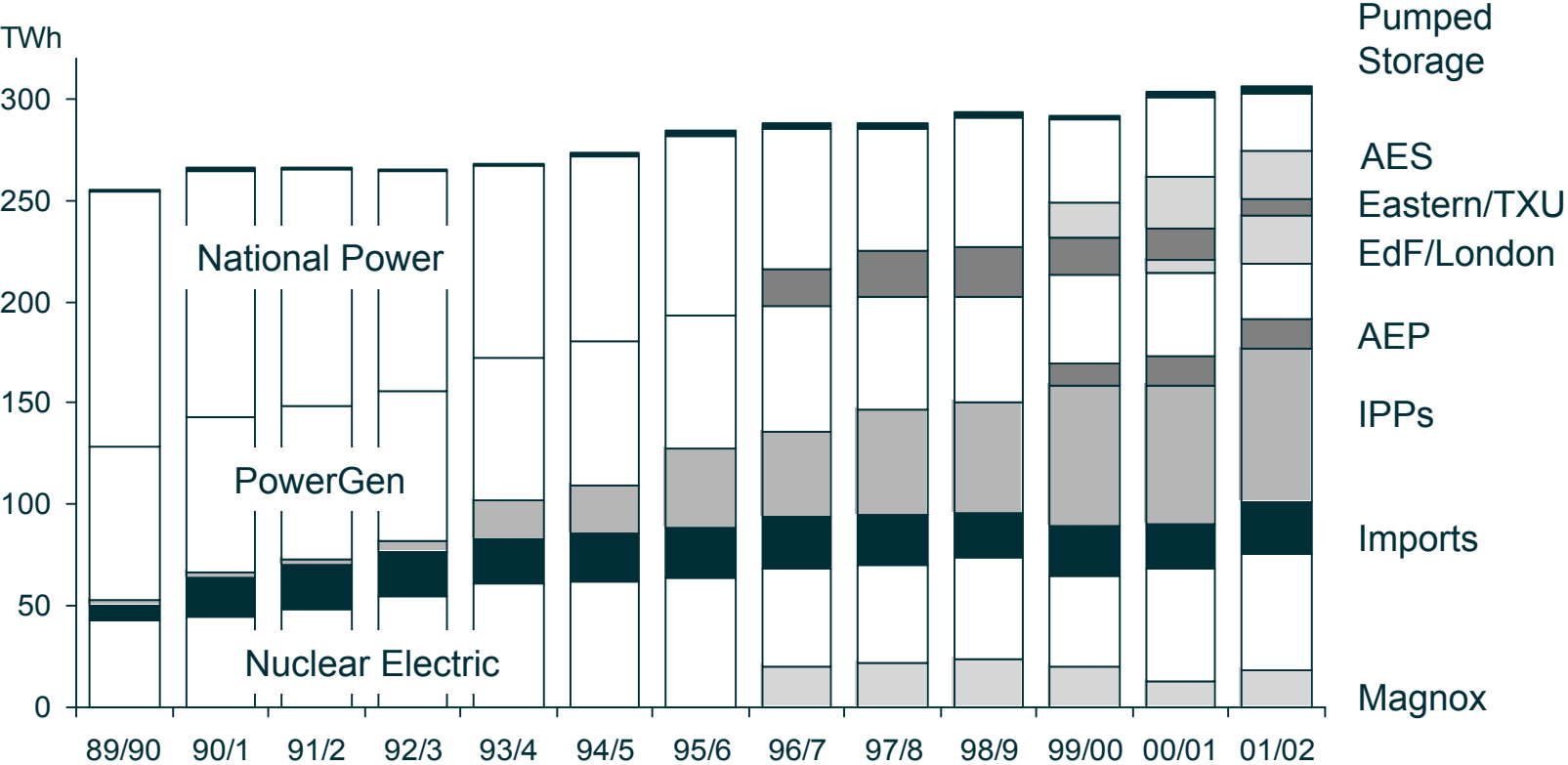
Mean Electricity Prices



E&W Electricity Prices

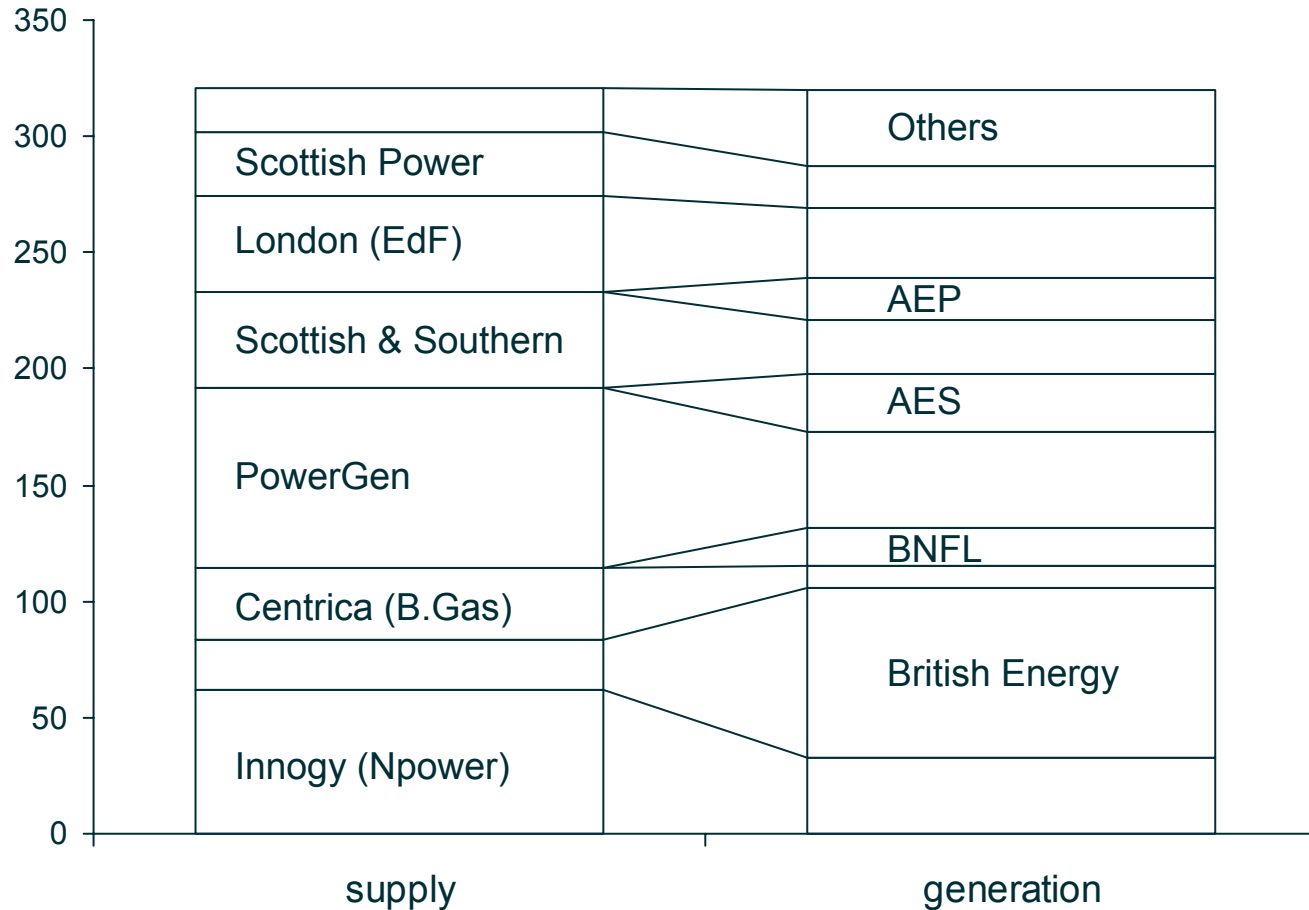


Generation in England & Wales



Supply and Generation in Great Britain, 2003

TWh



(2001/2 estimates, adjusted for mergers by EdF, Innogy and PowerGen)



Assessment

- Generators had too much market power at first - did not use all of it (Wolfram)
- Regulator used threats to control them
- Used (individual) power in 97/8 (Sweeting)
- Tacit collusion in 1999 (so prices stayed up)
- Competitive behaviour in 2000 (prices fell)



The future

- Prices were very low - rules or structure?
- Should not fall “in anticipation of NETA”?
- Is there a gap between a position of dominance and a fully competitive market?
- Need to be able to change rules easily
- Contracts affect incentives to raise prices
- An unconcentrated market is best





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E&W Electricity Prices

