Electricity Policy Research Group

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Regulatory Risk

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Eighth ACCC Regulatory Conference

The evolution of regulation

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http://www.electricitypolicy.org.uk

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Outline

- Why (and where) worry?
- Lessons from elsewhere:
  - Successes and failures
    - electricity vs rail
  - Evolution of British regulation
  - Boundary cases
    - airports, interconnectors, gas pipelines
  - Withdrawing from regulation
    - EU Communications Directive
    - mobile cal termination

Why worry?

Perceived risk from

- future access regulation, or
- tightening existing regulation

could

- deter infrastructure investment
- deter innovation
- deter facilities-based competition

Possible responses

- Regulatory protection could entrench incumbent lock-in
  – remove downside of first-mover advantage
  – shift cost to other consumers
- Regulatory protection if utility unbundles
  – works well for pipes and wires, less so for ICT?

Gas and electricity differ from rail and ICT

Franchise regulation

- Utility submits investment plan
- Regulator assesses, approves
  - possible test of consumer WTP
- Allows WACC on efficient investment cost
  - subject to dispute resolution
- Customers have to pay

Risk: deters innovative investments (AT&T cell phones)

Liberalised networks

- No franchise: no captive market to recover unprofitable investments
- Merchant investments:
  - able to take risks for rewards
  - to challenge sleepy incumbents

Risks: threat of future access regulation, predatory competition from incumbents => under-investment by entrants

Part IIIA of Trade Practices Act (National Access Regime) 2006

- Provides for regulated access to essential facility of national importance where necessary to permit *material increase* in competition in at least one other market (*whether or not in Australia*)
- 44AA Objects are to (a) promote the *economically efficient* operation of, use of and investment in the infrastructure by which services are provided, *thereby* promoting effective competition in upstream and downstream markets;

Pricing principles for access

(a) that regulated access prices should:

(i) be set so as to generate expected revenue for a regulated service or services that is at least sufficient to meet the efficient costs of providing access to the regulated service or services; and

(ii) include a ***return*** on investment ***commensurate*** with the ***regulatory and commercial risks*** involved;

Efficient infrastructure investment

- ‘Easy’: upgrade mature regulated networks
- Hard: major regulated network development
- Problematic: unregulated essential facilities

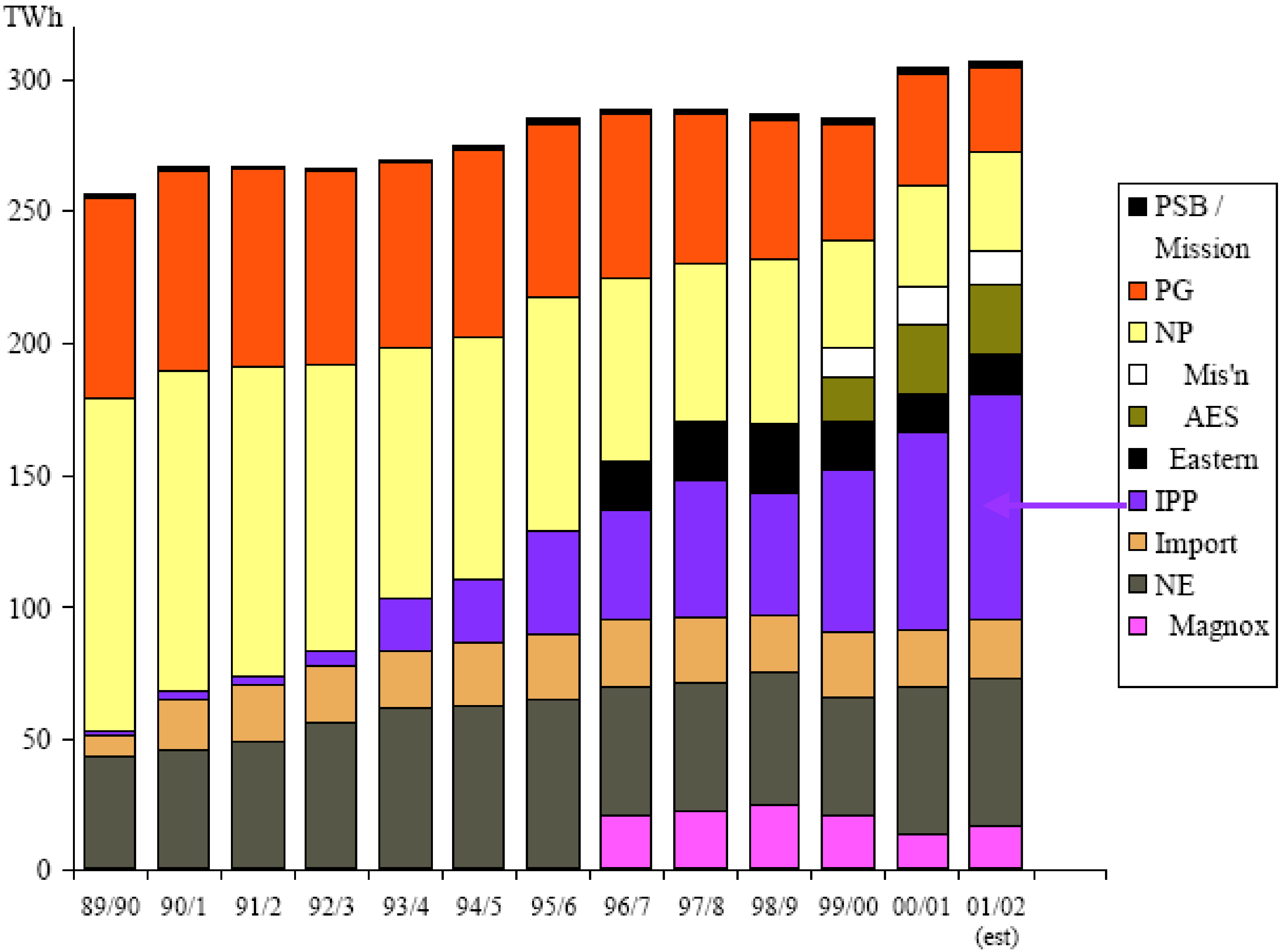
Problem: asymmetric information + abuse of market power vs regulatory inefficiency

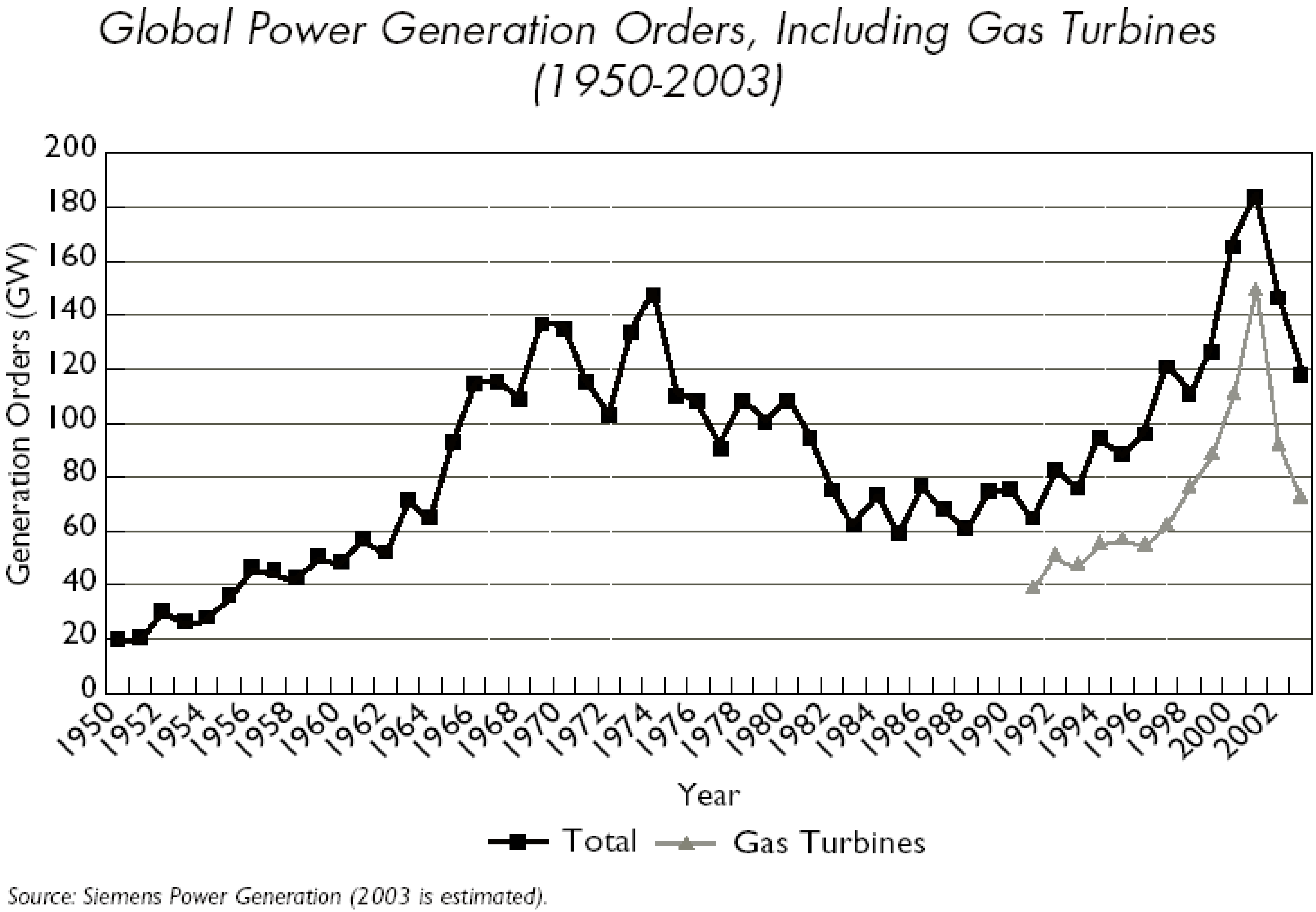
Solution: legal predictability and sanity

Successes: liberalising access

- US, UK generation investment
  - huge boom after liberalisation
    - US: 200 GW 1997-2003; from 776 -980 GW ’96-’05
  - over-investment, price collapse bankrupted companies, consumers protected
- US gas network after unbundling
  - investment OK, resilient to shocks
- Dot-com boom, ICT investment, 3G auctions
  - innovation encouraged, consumers benefit

Entry of IPPs into the GB Electricity Pool

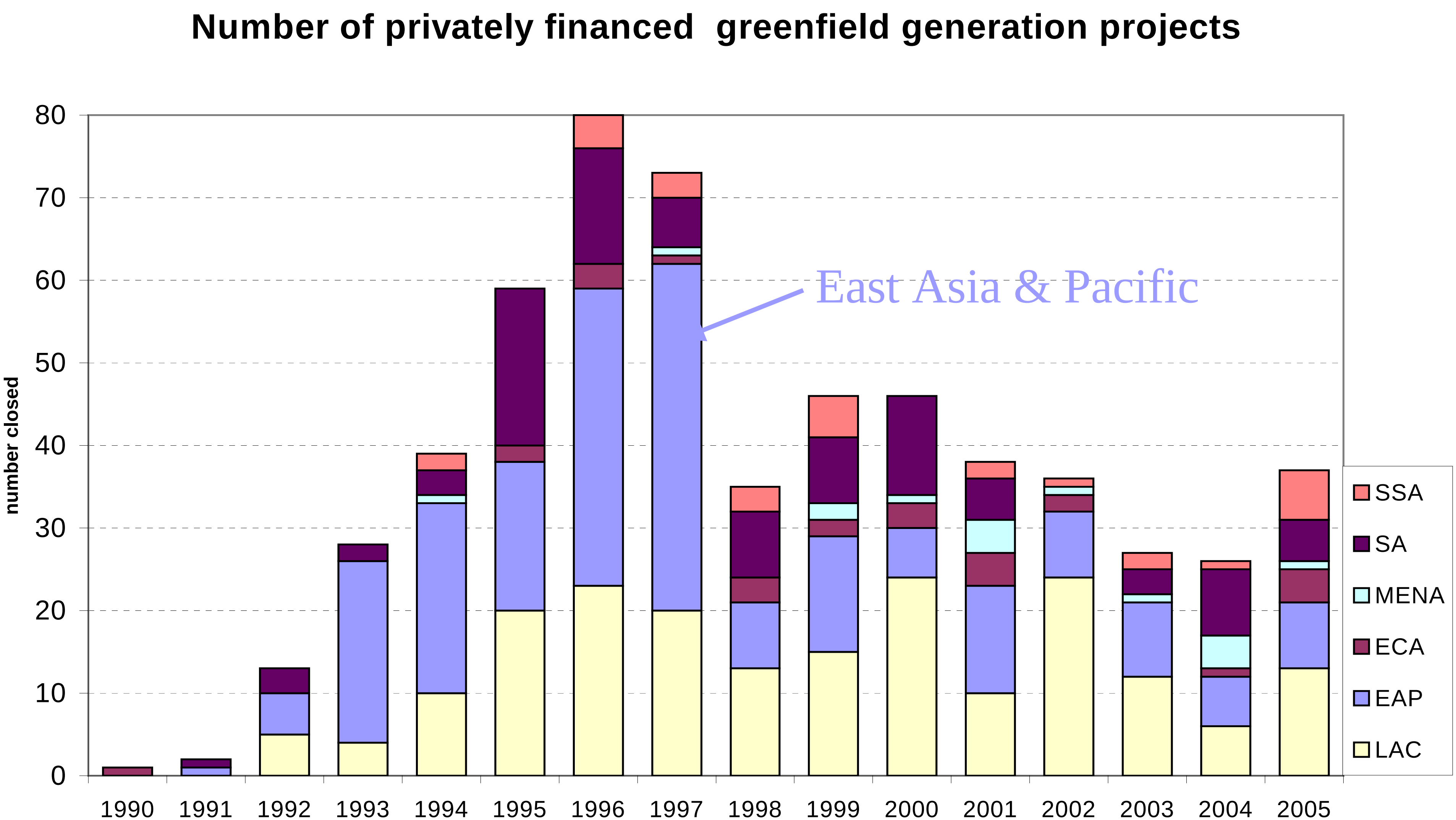



Global Power Generation Orders, Including Gas Turbines
(1950-2003)
Generation Orders (GW)
200
180
160
140
120
100
80
60
40
20
0
1950
1952
1954
1956
1958
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
Year
Total
Gas Turbines
Source: Siemens Power Generation (2003 is estimated).

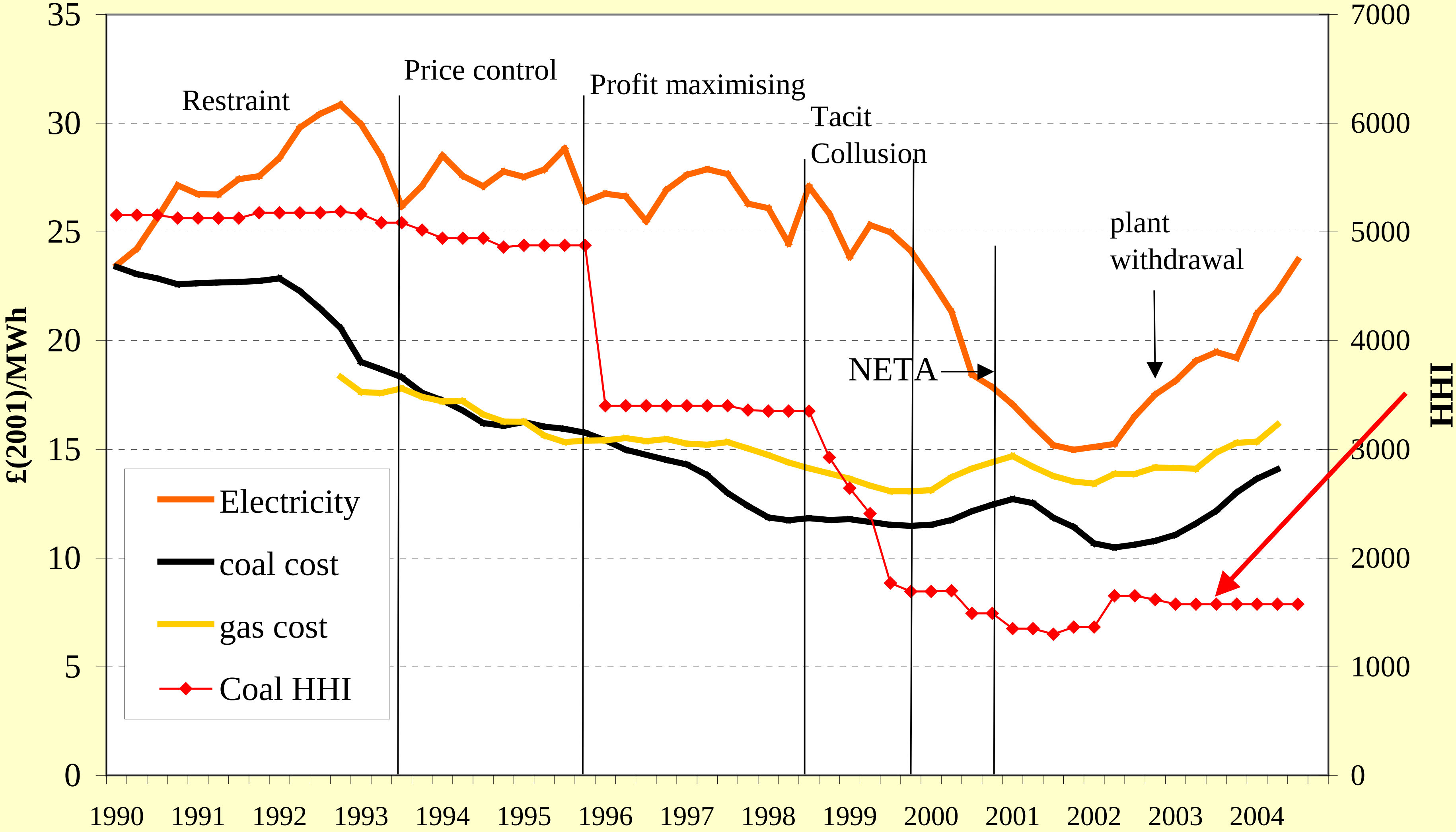
Failures?

- IPPs in developing countries?
  - Enron's Dabhol: contract terminated, plant shut, Maharashtra short of 2,100 MW for 6 years
  - 47% of African distribution projects now not operational
- NETA changed the GB wholesale electricity market
  - prices collapsed, companies bankrupted
  - caused by interventions or delayed competition?
  - Risky to rely on sustained imperfect competition?
- Railtrack: forced into administration?

Collapse of East Asian investment



Did NETA cause GB price collapse or was competition the cause?



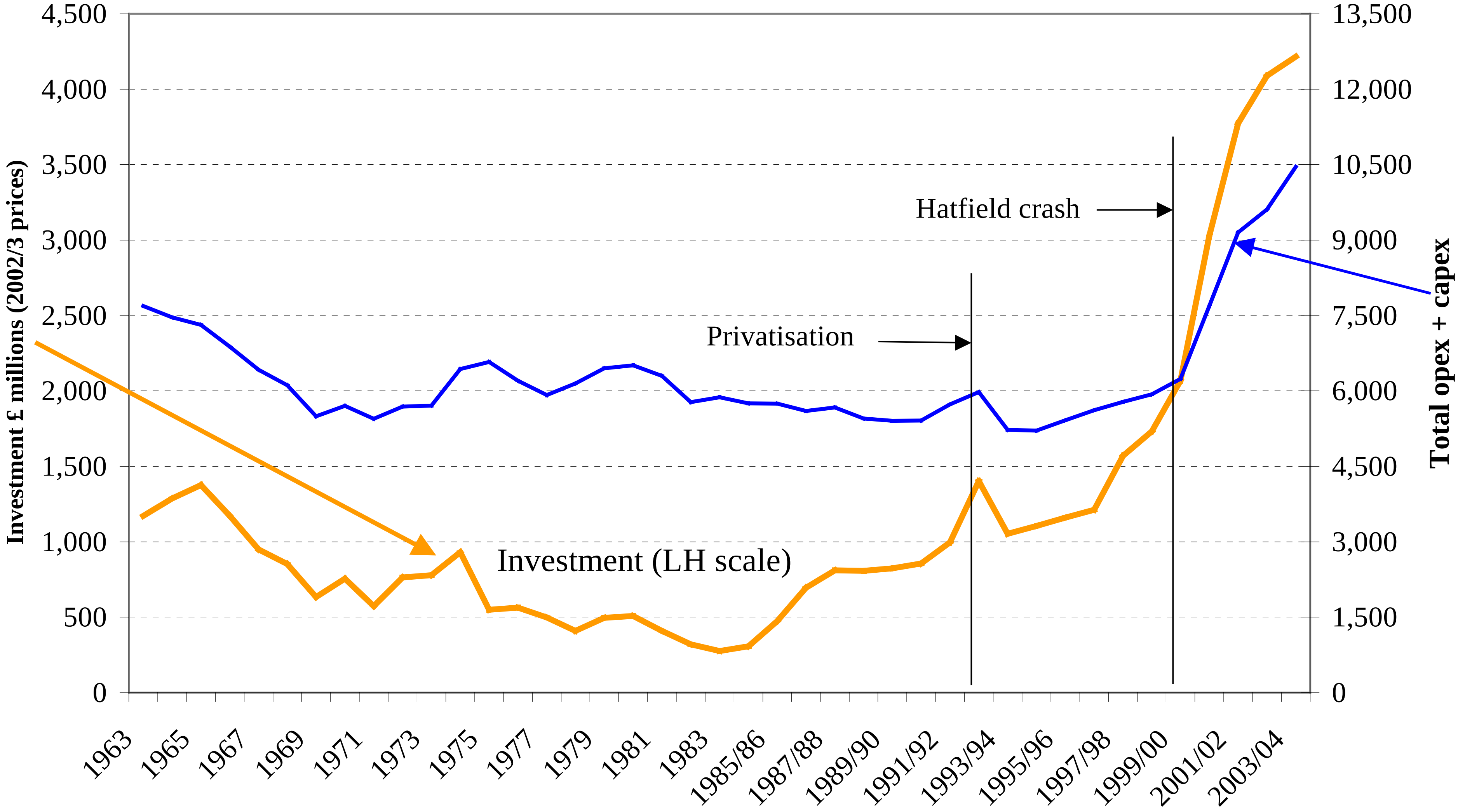
Railtrack - opportunism?

- Hatfield crash - 4 dead

$\Rightarrow$ network replacement - massive disruption

- track costs underestimated
- recent price control inadequate
- put into administration by Govt.
- Network Rail emerges as a PPP
  - Re-nationalisation without public control?

British Rail Investment (constant prices)

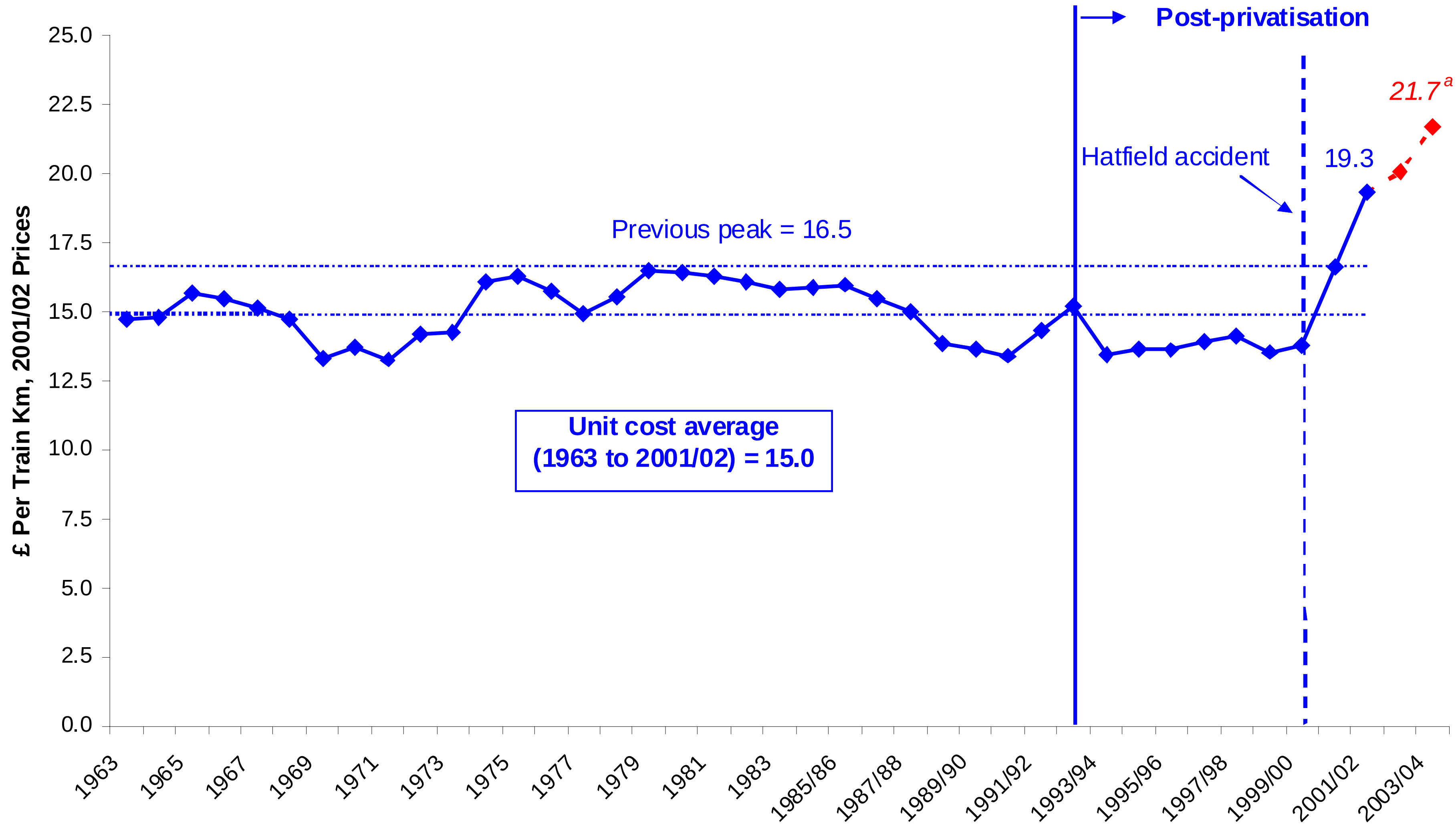


Source: A Smith

Regulatory or political risk?

- Regulator was willing to increase revenue to cover higher revealed costs
- Political pressure forced Railtrack CEO to accept administration without asking regulator
  - concerns over corporate manslaughter?
  - illegal to trade insolvently
- But investment continues apace
  - Government pays but cannot control!

Rail Industry Cash Costs per Train Kilometre



(a) Note: preliminary estimates for 2002/03 and 2003/04 are based on rises in Network Rail costs since 2001/02. Other industry costs are assumed constant in real terms, as data is not yet fully available beyond 2001/02. See Smith (2004), Institute for Transport Studies Working Paper, no. 585; also forthcoming in the Journal of Transport Economics and Policy.

Source: A Smith

RPI-X regulation

- intended to mimic competitive market
- originally designed for BT to provide better incentives than RoR (Littlechild)
- high powered incentives if price delinked from future cost

Problems with quality and credibility - would it deliver investment?

British experience

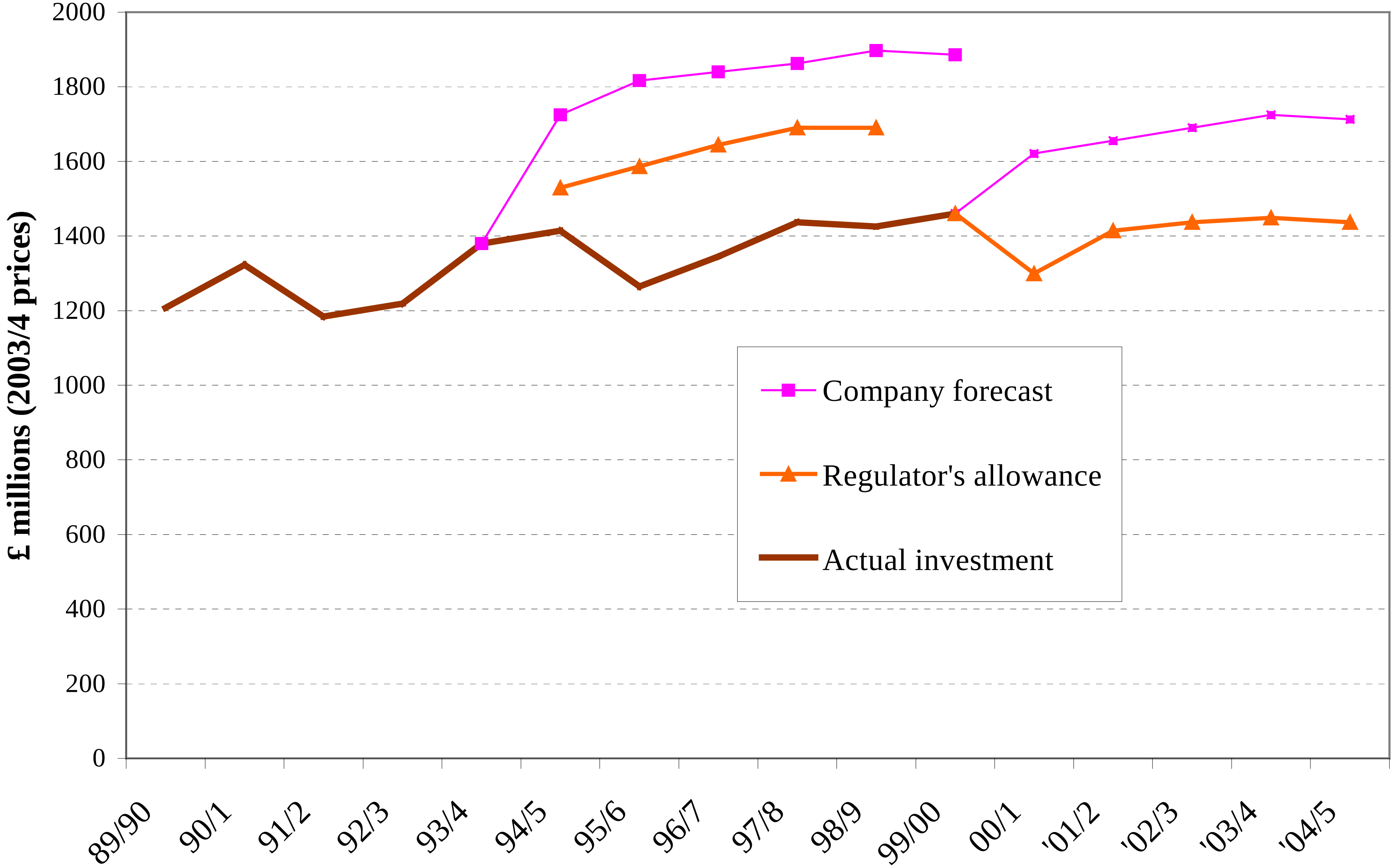
- Gas, electricity, water: early investments readily financed
  - issue was predicting efficient cost to allow
- Telecoms: easy to finance investments
  - hard to determine access prices
- Mobile - competitive, initially unregulated
  - CPP supports excessive access charges
- Rail: large increase in investment
  - hard to judge value of track investment

Evolving regulatory certainty

- Networks subject to RPI-X & ***quality*** standards
- Well defined methodology for setting P_o, X:
  - RAB, WACC, financial adequacy, benchmarking
  - works well when investments obviously needed
  - problematic for speculative investments

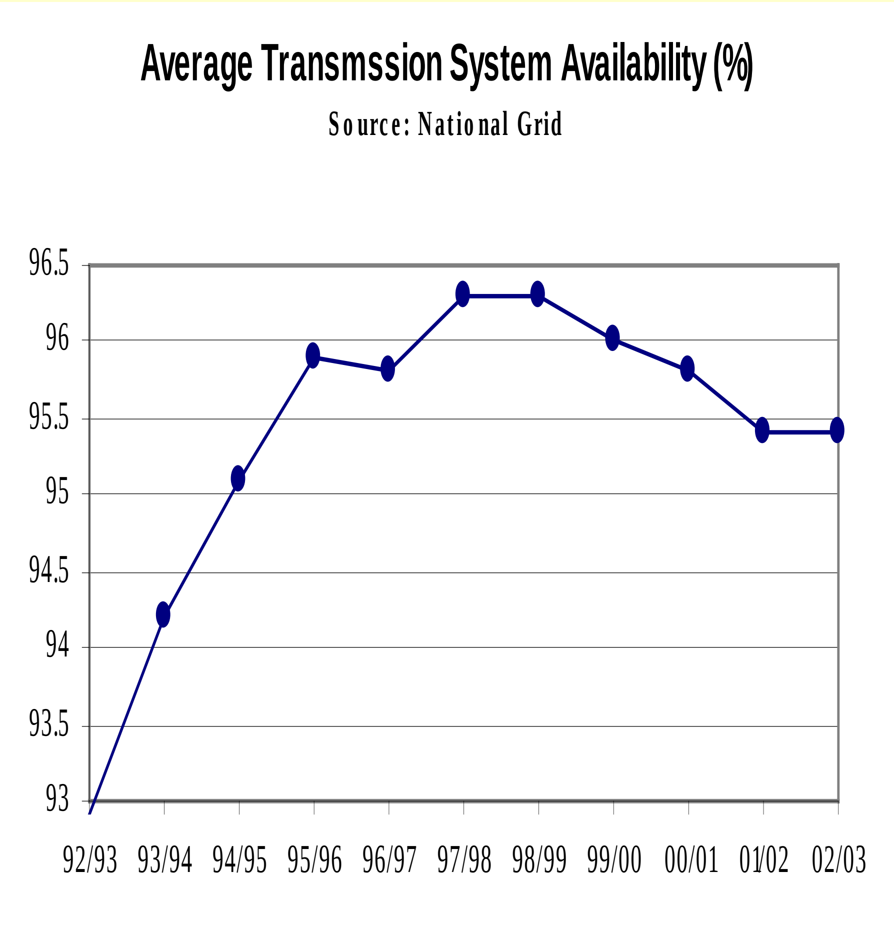
  => remove from cap (but for how long?)
- Regulatory commitment + appeals process
  - Control changed by agreement, agreement over-ruled only if in the public interest

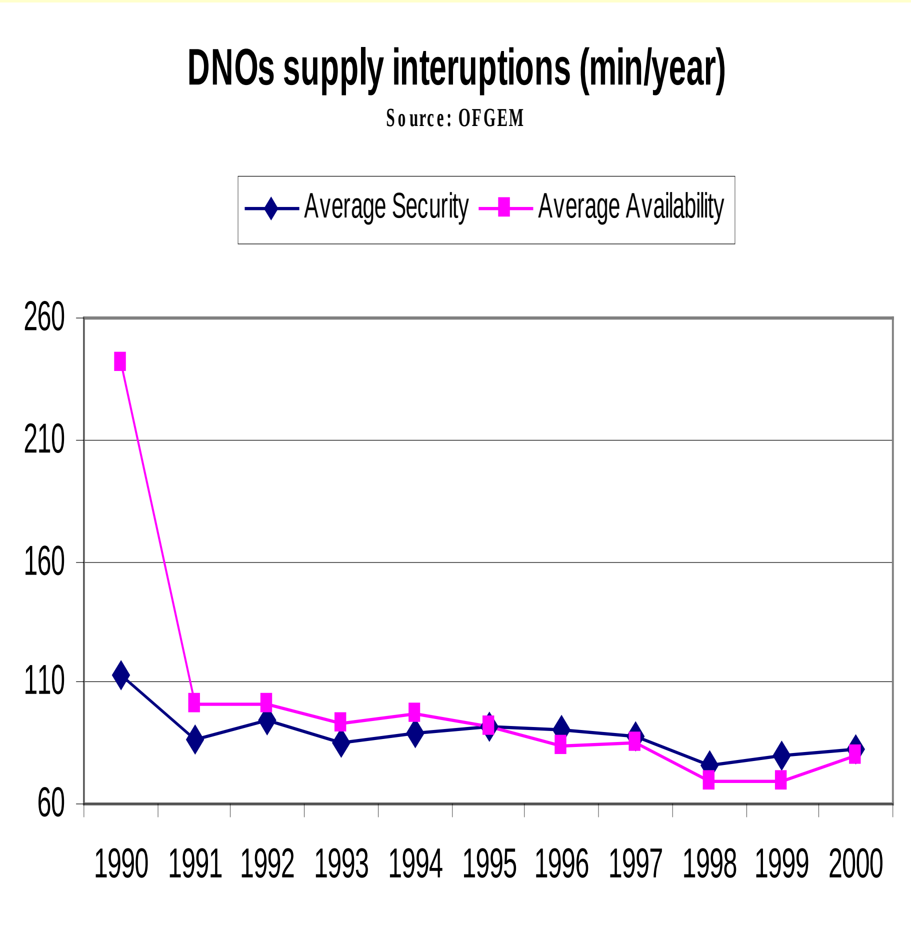
British Electricity Distribution Investment



Source: Green

T & D Reliability





Airports - not all regulated

- Each airport faces varying competition
- Regulator ill-equipped to forecast demand
- How to set charges and assess efficient plan when expansion exceeds control period?
  - Pre-funding aligns with scarcity pricing
  - "constructive engagement" with users
  - separate price control for each London airport
  - consider removing price control from Stansted: competes with unregulated Luton

User engagement

- encourage private agreements with well-informed users?
  - Can work (e.g. airports)
  - harder if users benefit differently
    - and if objectives differ (e.g. low cost airlines vs incumbent airlines)
  - What about refusal to negotiate?
  - Or if agreements facilitate tacit collusion?

Competition policy needed to prevent abuse

Merchant transmission investment

- Hard to get regulators to think cross-border
  - US fails to invest in transmission
- Project may be risky
  - hard to justify charging other consumers
  - risky to investor if high profits clawed back by regulation, but losses not compensated

=> exempt from regulation for period

Increasing EU cross-border capacity

- New investment can be exempted from rTPA
  - if investment enhances competition
  - for maximum of 15 years? (up to NRAs)
  - ***but*** not exempt from Art 6.3 (must offer), 6.4 (UIOLI)

$\Rightarrow$ UIOLI could reduce profitability of IC

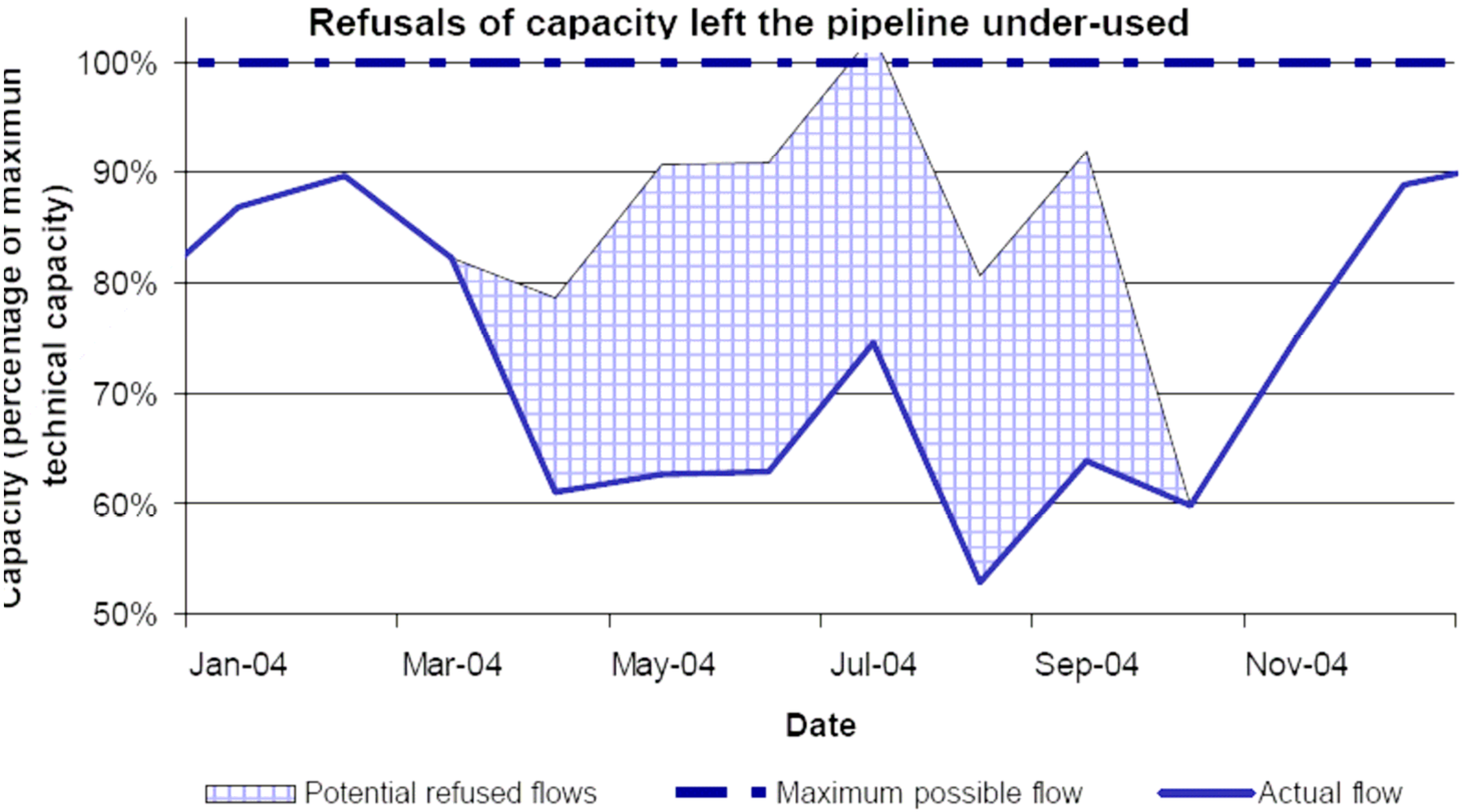
withholding can enhance price differences, profits

$\Rightarrow$ Could aversely affect whether built or what size

Gas pipelines

- Typically built with long-term ToP contracts
- Investment financed on guaranteed revenues
- Maturity and liberalisation shift balance from securing investment to efficient use
- evolution via nTPA to rTPA resisted
  - US demonstrates gains from unbundling
  - EU Energy Sector Inquiry finds refusal to supply

Transit pipelines deny access



Source: Energy Sector Inquiry 2005/2006 fig 27

Withdrawing from regulation

- where promoting competition feasible
  - objective is to ***replace*** regulation if possible
  - but regulators/politicians wary of downside risks
- Oftel advocated facilities-based competition
  - even if it raised costs by 20%

  => local loop unbundling costly, penetration rose
- withdrew from regulating fixed line
- EU moving to competition remedies

EC Communications Directives

- markets effectively competitive where no operator has Significant Market Power (SMP)
- NRAs can only impose ***ex ante*** regulation if
  - market review finds SMP that is likely to persist
- regulation must be
  - ***justified*** in relation to Directive's objectives
  - ***appropriate, necessary, proportionate***

=> regulation to mimic competition?

- ***But benefits must exceed regulatory costs***

Mobile call termination

- Initially unregulated:
  - – dynamic market, MNOs not making profits
  - – mark-up on termination subsidises handsets
- under Calling Party Pays no competition in market for termination => SMP => regulate!

=> Lengthy dispute on how to set the mark-up

Receiving Party Pays or bill-and-keep removes need for regulation

Conclusions on Regulatory Risk

- Inevitable for essential facilities
- Vexatious claims to bolster dominance or to seek better negotiating position?
- Objective: restrain abusive market power ***and*** regulatory inefficiency/opportunism
  - encourage user agreements, regulatory holidays
  - clarity, case law, precedent, guidelines and benchmarking to reduce opportunism
  - trusted dispute resolution procedures

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Private investment in electricity in developing countries