

14 The Regulated Industries

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The year 1990 marked a watershed in the transition from a government nationalised industry sector to one of regulated utility industries operating in the private sector. Those industries which remain nationalised are the exception rather than the rule. The privatisation of ten water and sewerage companies in December 1989 and twelve regional electricity companies in December 1990 not only altered the balance between the private and public sectors, but ushered in a new set of regulatory offices to join those regulating British Gas, British Telecom and the airport company BAA. This chapter therefore looks in detail at electricity and water in 1990, reviews more briefly some developments in telecommunications and gas, and ends with a critique of some of the key policy issues affecting regulation and competition.

Nationalised industries

The scale of the change for the nationalised industries has been enormous. The 1990 Public Expenditure White Paper (Cm 1021)¹ listed 22 nationalised industries in 1984/85 with external financing limits (EFLs)² of £3.9Bn and capital expenditure plans of £4.6Bn for that year. This was reduced to eight by 1992/93 with an EFL of £1.5Bn, representing a sizeable reduction in the call on public expenditure. On the other hand by January 1990, 29 state industries had been sold, covering some 800,000 employees, and aggregate cash proceeds to the government had been £27.7Bn. By the end of 1990, this had been increased by the second tranche of proceeds (£1.5Bn) due in July 1990 from the sale of water authorities, and the receipt of the first tranche (£2.2Bn) of the sale in December 1990 of former area electricity boards.

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The Chancellor of the Exchequer's 1990 *Autumn Statement*³ predicts that privatisation proceeds will be maintained at £5.5Bn a year until 1993/94. This will include the subsequent instalment payments from water and electricity privatisation, due in 1991, and from electricity in 1992. The electricity generating companies and the Scottish electricity industry are also due to be sold in 1991. The government has maintained its intention to sell the remaining 49% stake in British Telecom (BT), to privatise British Coal and to prepare British Rail for the private sector if possible after the next election.

The major contributors to the EFL for the remaining nationalised industries are British Coal, British Rail and London Regional Transport. Their EFLs had to be significantly increased in the 1990 White Paper over that of 1989 by some £1.75Bn for the years 1989/90 to 1991/92, and the 1990 *Autumn Statement* has increased them again, both to finance higher investment in public transport and to recognise the costs to British Coal of new supply contracts with the electricity generating companies. The accidents in recent years affecting British Rail and London Transport have added to the political pressure to increase funding. Their EFLs in the *Autumn Statement* are shown in Table 14.1.

Regulated utilities

The regulated utility industries which had been privatised by the end of 1990 were:

Industry	Economic Regulator	
	Office of:	
British Gas	Gas supply	(OFGAS)
British Telecom	Telecommunications	(OFTEL)
Water Companies	Water Supply	(OFWAT)
Electricity Companies	Electricity Regulation	(OFFER)
BAA	Civil Aviation Authority	(CAA)

The major privatisation in 1990 was electricity, described more fully below.

The electricity share issue

In preparation for privatisation the electricity supply industry (ESI) was extensively restructured on 31 March 1990. The Central Electricity Generating Board was broken up into four successor companies:

National Power	- }	
PowerGen	- }	Generation
Nuclear Electric	- }	
National Grid Company	-	Transmission

Nuclear Electric will remain in the public sector supported by specific obligations on the regional electricity companies (RECs) to take its electricity until the end of 1998. The additional cost will be financed by a *fossil fuel levy* imposed on the industry, partly to ensure a diversity of energy sources.

The twelve RECs (formerly area electricity boards) distribute and supply electricity to domestic, commercial and industrial consumers. They also retail electrical appliances, provide electrical contracting services and, in some cases, generate electricity. The RECs wholly own the National Grid Company (NGC) through National Grid Holding plc with each REC owning between 5.4% and 12.5% of the shares.

Distribution is the core business of the RECs, and as a separate business RECs sell electricity as suppliers. In setting tariffs and contracts they aim to pass the costs involved in the purchase and sale of electricity on to their customers and to make a small operating profit. Because of competition not every user to whom an REC distributes will also be a supply customer.

The flotation on the stock market of the RECs took place in December 1990, while National Power and PowerGen are expected (at the time of writing) to be sold in February 1991. The vertically integrated Scottish ESI (where generation and supply are kept together within each of the two non-nuclear companies) is expected to be sold later in 1991.

The government's offer price per £1 share was 240p. This is payable in instalments of:

100p	5 December	1990
70p	22 October	1991
70p	15 September	1992
<hr/>		
240p		
<hr/>		

The sale was massively oversubscribed (over ten times) and at 8 January 1991 the shares were trading effectively at premiums of between 17% and 27% on the full offer price. The short-term gains made by people who sold immediately after flotation were considerably higher and gave rise, as earlier privatisation share offers had done, to political controversy.

Table 14.2 sets out the REC's market capitalisations and yields based on the offer price. It then shows the market prices and effective premiums. The total proceeds of sale were £5,181.5M, based on expected investment yields of between 8% and 9%. The current trading premium represents around £1Bn which, it could be argued, the government has forgone in setting the offer price as low as 240p.

Competition

One key objective of privatisation was to introduce competition. The structure of the ESI has been developed to facilitate this in the generation and supply of electricity. Transmission - the bulk transfer of electricity at high voltages through the national grid - and distribution - the transfer from the national grid across local distribution systems to consumers - remain natural monopoly services, given that it would be uneconomic to duplicate such capital intensive networks.

The transmission and distribution networks are the link in the new market in trading electricity between generators and suppliers. Competition has been secured by providing open access both to the NGC's transmission system and to the distribution systems of the RECs on the basis of non-discriminatory terms and price-regulated charges. Generators - including, it is hoped, new private generators - compete to supply electricity into the grid (and therefore are not price regulated) and suppliers of electricity compete to supply electricity to the con-

sumer using the grid to achieve that. The RECs can become involved in the generation of electricity and generators can also seek to supply consumers direct. RECs can supply customers outside the boundaries of their predecessor electricity boards, thereby breaking down regional supply monopolies in the longer run. Competitors to the RECs in their own areas are known as 'second tier' suppliers.

Regulation

The economic regulation of the industry has been vested in Professor Stephen Littlechild, as Director General of Electricity Supply (DGES), and he is also responsible for the supervision and enforcement of the licences which every supplier is obliged to have. His primary duties are to:

- Secure that all reasonable demands for electricity are satisfied (this is a broad duty relating to the capacity and operation of the total industry; the legal obligation to ensure security of supply, which was previously placed on the CEEB, now rests with the RECs);
- Ensure that all license holders are able to finance their licensed businesses;
- Promote competition in the generation and supply of electricity.

The second condition dramatically reduces the risk for investors in the industry. Other duties include the protection of the consumer, the promotion of economy and efficiency by licence holders and promotion of efficient use of electricity.

Electricity prices

The key features of the new electricity market and regulatory system reflect:

- the need for an orderly development of competition; and
- the physical characteristics of electricity supply.

The former requires transitional monopoly protection and therefore other companies will not be allowed to compete at lower prices. Con-

sequently, price controls are also required to protect the consumer. The latter requires market pooling and settlement arrangements between generators and suppliers, for two reasons. First, with an integrated system it is not practicable to trace electricity from a particular generator to a particular supplier. Second, it is not practicable to store electricity in large quantities. Electricity generated is therefore pooled to meet demand. Electricity is bought and sold at prices established every half-hour and the components of price include a marginal cost element, a capacity element and an uplift to reflect in part the requirement for reserve and the maintenance of a stable, integrated system. The NGC is responsible for bringing in generators to meet demand on the basis of a *merit order* of prices and availability. Those generators offering the lowest prices would generally be used first.

In this way - and assuming there is control over cartels developing between generators - there is no requirement for direct regulation of generators' prices. The price of generated electricity may rise or fall over time depending on the market conditions and the technological factors which underpin the real costs of supply.

Price regulation relates, therefore, to transmission, distribution and supply. The price control requirements for each are as follows, with each REC required to run distribution and supply as separate businesses:

REC functions

- | | |
|---------------------|---|
| 1. distribution (d) | $RPI + X_d$ |
| 2. supply (s) | $RPI + X_s + Y$
plus subsidiary price control for the franchise market |

NGC function

- | | |
|---------------------------|-------------|
| transmission via grid (g) | $RPI + X_g$ |
|---------------------------|-------------|

The formulae allow average prices per unit supplied to be increased by the change in the RPI between the Octobers of the forthcoming and

current financial years, plus an X factor. The X factors for supply and transmission are for the time being set at zero, which effectively holds prices constant in real terms. For distribution, however, they range between nought and 2.5, reflecting the need for real increases in prices to finance such factors as different capital expenditure requirements. The Y term in the overall supply control formula enables the costs incurred in the purchase and delivery of electricity to be passed through to the consumer where they are largely outside the control of the RECs or have been regulated elsewhere. These include:

- Electricity purchase costs, including direct pool purchase costs and associated net costs of contracts for differences;
- Transmission charges by NGC;
- Distribution charges by RECs;
- Settlement system charges;
- Fossil fuel levy.

It is important to note that each REC charges its *own* supply business for distribution services and that in addition to providing non-discriminatory access to its own network it may not discriminate in favour of its own supply business. The RPI - Xs component covers, therefore, only the profit and supply businesses own costs not passed directly into prices through the Y factor. Second tier supply is not price-controlled, although where an REC is involved it falls within the overall supply price control.

Transitional protection

Although these arrangements are intended to promote competition in the generation and supply businesses, the complexity of the industry, the need for time to adjust to the new market conditions and the requirement for initial stability in order to secure investor confidence has meant that protection has been given to the companies in various respects for transitional periods. These include:

- RECs have the sole right (or franchise) to supply almost all premises in their areas until 30 March 1998⁴. This sole right does

not extend however to large industrial users;

- In the non-franchise market, National Power and PowerGen are restricted until 31 March 1998 from meeting jointly more than a specified percentage of the applicable annual demand in any REC's area. The percentage is 15% until 31 March 1994 and 25% until 31 March 1998⁵;
- Initial values of X in the price control formulae have been established for a period. Reviews by the DGES are expected to take place with effect from:

Distribution:		31 March 1995
Supply:	overall control:	31 March 1994
	subsidiary control	
	on franchise market:	31 March 1993

- Licencees have to be given at least 25 years notice of termination by the government and not before 31 March 2000.

Risk

RECs will be supplying electricity on fixed tariffs and contracts, but will be buying almost all of their electricity through the pool arrangements described earlier. Prices are variable and RECs have therefore sought to limit their exposure to pool prices by entering into *contracts for differences* with the generators, and so spreading their risks. A fee is payable to the generators in return for payments by them to the suppliers when the pool prices exceed certain levels. These contracts provide greater income certainty for the generators and stability over time for the suppliers in setting tariffs. Under the average price control formula (the basket), there is also the ability to correct for errors in forecasting either the movement in the RPI or the distribution of sales within the basket.

The significant factors in the profitability of the REC's business will be first, the ability to control costs and manage the capital expenditure programme and second, the growth in loads over and above those forecast in the setting of the values of X_d by the government on privatisation. It is the distribution business rather than the supply business

which is expected to make the major contribution to real earnings growth of the RECs. Profits on the supply business may be more variable, and particularly while experience of the pool market and contracts for differences is gained. The initial set of contracts for differences expire on 31 March 1993.

Outlook for regulation

The DGES's policy was set out on his first annual report⁶ but it was updated in a pre-privatisation statement on 17 October 1990. Highlights of that statement include:

- Recognition that the subsidiary price caps on franchise customers may have to be relaxed if, in the new and uncertain market, costs increase for RECs through unavoidable circumstances. This reflects the obligation on the DGES to ensure the companies can finance their operations adequately;
- Reinforcement of the intention to issue new second tier supply licences (*i.e.* the competitors to the RECs in their own areas) to all credible suppliers;
- Prior notice that price control reviews will have regard to companies cash flow, prospective efficiency savings and the rate of return required by the market;
- Working to ensure the introduction of meters which can determine, in greater detail, the quantities of electricity supplied to individual customers. This enables tariffs to reflect better the costs of supply at different times and has advantages both for competition and efficiency. Similar sentiments arise in respect of introducing more cost-related charges for the use of NGC's transmission system;
- The intention to set realistic but challenging standards of performance, supported by Codes of Practice. There will be compensation payments to consumers where standards are not observed, ranging from £10-£50. Guaranteed standards will include the time taken to achieve various tasks, the proper provision of information and the keeping of appointments.

Emission standards generally are being improved within the European Commission Framework Directive on air pollution and enforced by HM Inspectorate of Pollution (HMIP). This will take place over the next 10-15 years based on best available emission control technology but subject to avoiding excessive cost⁷. Where further obligations increase electricity supply prices, RECs will be able to recover the costs from customers. The DGES has commissioned a study of the environmental impact of renewable energy sources and his belief is that energy efficiency can 'go hand in hand with a competitive and privatised industry', not least because of competition by energy management companies.

Water companies

The ten former regional water authorities were successfully privatised as *water and sewerage companies* in December 1989. The government marketed the nominal £1 shares at £2.40 each, yielding £5.239M from all instalments. The shares rose immediately to a substantial premium and continued to do well throughout 1990. The effective premium early in 1991 on the fully paid price ranges between 30% and 48% (see Table 14.3). This, taken with the substantial premium resulting on electricity privatisation (see above), remains a controversial element in the pricing of privatisation share sales. The government has proposed that methods will be adopted in the sale of the electricity generators which enable the tax-payer to benefit from the actual market demand e.g. sales by 'back-end tender' to institutional and overseas investors and retaining a proportion of the shares for a period. The back end tender works by allowing institutions to bid for a proportion of stock in the light of demand and market movements after Impact day (the first day of trading on the stock market in the new shares).

Consolidated results for 1989/90 show improvements on the prospectus forecasts. Table 14.4 summarises the profit and turnover figures for 1989/90 and the interim results for 1990/91. The lower current market yields (see Table 14.3) reflect the buoyant demand for the shares. There is little to compare these figures with, as yet, because the results for 1989/90 are a hybrid of pre- and post-privatisation periods and the interim results for 1990/91 can only be compared with

pro forma calculations for 1989/90, not with actual performance while operating in the private sector. The core regulated businesses remain overwhelmingly the predominant factor in the consolidated results since the water and sewerage companies have not yet diversified very far.

Income

One element of the increase in turnover is the ability of the companies to raise their prices in real terms in line with the regulatory formula (RPI+K), introduced on privatisation. The positive K factors set for the next ten years reflect the major increase in capital investment required both to bring the existing infrastructure up to a fully maintained standard and to comply with rising European water quality standards, and other environmental improvements. Over the decade, this investment will amount to £24,585M for the new water and sewerage companies, together with £2,110M for the smaller '*water-only*' companies which already existed in certain areas of the country.

Table 14.5 shows the relevant K factors (which represent the potential real increase in charges above inflation), and the change in average household bills over 1989/90. They reflect the very real cost to consumers of complying with higher environmental standards over the next ten years. To date there have been no applications for 'cost pass through' by the companies. These are amendments to K made by the Director General of Water Supply (DGWS), Mr Ian Byatt, in order to cover changed legal requirements, such as increased environmental standards over and above those known at privatisation. This may reflect an understanding with the DGWS because slippage in capital programmes has left companies with substantial cash reserves. Note that the K factors for the 29 water-only companies were in many cases heavily front-loaded to bring them on to a comparable basis.

Diversification

On privatisation, the water and sewerage companies emphasised the distinction between the regulated core business and their freedom to develop commercially in other directions. Success in diversification is an important indicator to them of their ability to be seen as more than

just public service businesses operating in the private sector and with the suspicion that not much may have really changed. All four ways of diversifying - organic growth, new business start-ups, acquisitions and joint ventures have been adopted, but it is too early to judge the actual success of many of the initiatives that have so far been taken. Generally, start-ups are quite risky because of the lack of management experience, and acquisitions because of the potentially large amount of money involved.

Table 14.6 gives examples of the range of developments. Diversification has its risks: Severn Trent ran into difficulties in trying to acquire the Caird Group. Its bid had to lapse and the interim results for 1990/91 have had to show an extraordinary item write-off of around £10M for the difference between the cost of the current 29.9% holding and its market value. An innovative move into a complementary business was Welsh Water's purchase of 9.955% of South Wales Electricity's shares for £16.78M; a total investment of £30.92M when the part payments fall due⁸.

Policy issues in 1990

The privatised utility industries are regulated because of their monopoly position. For some of the industries there is the prospect of deregulation as competition is established; others, such as water, may be judged to be natural monopolies where it is more important to promote efficiency within long-term regulation. The key issues in 1990 concerned: effective competition, yardstick competition, and environmental issues.

Effective competition

Earlier privatisations have been criticised on the grounds that they were concerned more with maximising proceeds to the Exchequer than with promoting effective competition in the longer run. Achievement of competition and non-discrimination in British Gas (BG) has been improved now that published gas price schedules for contract customers have been introduced following a Monopolies and Mergers Commission report in 1988. BG has also given an undertaking not to purchase more than 90% of natural gas on offer to it from producers in

the two years to 31 May 1991, in order to give access to others. However, progress has been slow and BG has been told by Mr McKinnon, the Director General of Gas Supply, that he intends to promote competition through reducing the barriers to access to natural gas supplies by competitors. The gas transmission network will also be made more available to competitors. Unless competitors can command some 30% of the gas market by 1993, it might be necessary to consider restructuring the gas industry on the lines of electricity, with a separate grid company.

BG is well placed to take advantage of the lower environmental costs of gas as an energy source, and new markets will open up as electricity generators look to gas as an alternative to coal. Nevertheless the core gas supply business is limited in its growth potential in Britain and BG is diversifying into exploration and production, as well as expanding internationally. The company's main financial results are shown in Table 14.7.

British Telecom's statutory duopoly with Mercury Communications is being reviewed, following the publication of a consultation paper⁹ by the Department of Trade & Industry in November 1990. In the consultation paper, the government announces its intention to end the duopoly, the purpose of which was to protect the development of Mercury and to ensure an orderly transition to a competitive market for at least seven years after privatisation in 1983.

Other key proposals include:

- Progressive introduction of 'equal access' to the trunk network;
- Introduction of a price cap on BT's international services;
- Allow cable operators to provide independent voice telephony;
- Maintain the current price control arrangements until 1993;
- Maintain the separation between fixed link and mobile operators.

The government has often stated that proposals like these are subject to the test of whether more effective competition would arise in practice. It is no use if liberalisation achieves cut-throat competition in which no-one but BT survives. This policy can be contrasted with BT's statement¹⁰ that it welcomes further competition, but in an open mar-

ket in which it has freedom to adopt commercial pricing policies within the bounds of the price cap implied by RPI-X. That would mean abandoning protected market niches for developing competitors to BT. BT's judgement appears to be that regulation has become intrusive, and it has been calling for the regulators to be 'predictable, reasoned and consistent'. Mercury would prefer to maintain the duopoly until its market share has increased substantially (to at least 20%).

A key component of achieving effective competition is control of discriminatory pricing. Otherwise, a monopolist can thwart the development of competitors by cross subsidisation, thereby creating a barrier to entry because market prices are held below cost.

A major part of the regulators' work is therefore concerned with tariff structures. An important development in November 1990 was the publication by OFWAT of a consultative document¹¹ on paying for water. Central to this debate is the question of water metering because under the previous charging systems, using rateable values, there was no incentive on consumers to conserve water. The issue becomes more important as the real value of water charges goes up, due to the cost of environmental improvements. Rateable values are being phased out and therefore a new charging base has to be chosen. Unfortunately the choices over water metering are not straightforward; the cost of installing meters is very high while the marginal cost of supplying water is relatively low. There are also equity and affordability issues surrounding what is a fundamental necessity, particularly where large families are involved.

Yardstick competition

Water and electricity companies are regional monopolies and for the first time regulators have the opportunity to compare performance more directly between like businesses. The price control formula (RPI minus X) which has been generally adopted in all the regulated industries after privatisation is intended to give due incentive to efficiency (because efficiency gains can accrue to the company, given revenue is fixed and protected) but there is still a need to consider whether or not companies could improve their performance. This is particularly

important in the context of the periodic reviews of the price formula by the regulators. Reviews are necessary because the initial forecasts may have proved wrong, and experience of the formula in the interim may have shown that it needs amending. One problem is the test of achievement which is applied. If the rate of return on assets over the period is calculated, and the subsequent price cap adjusted simply to take away what may be seen as excessive returns, then there may be little incentive on management to improve efficiency.

Yardstick competition (or comparison) gives regulators the opportunity to understand the potential improvements available and the contribution to profits from different sources. This may then yield a way of maintaining the incentive structure over the review periods and deciding on an equitable distribution of efficiency gains between consumers and shareholders, judged against what might have been the case if a perfect market was operating. Standardising, however, for the multiplicity of factors which may affect costs in different regions will be a major technical factor in the effective use of yardstick comparators. The loss of comparators caused concern at OFWAT when a merger¹² of three water companies was proposed in 1989.

Environmental costs

The tripartite institutional arrangements for the regulation of the water industry - with the National Rivers Authority (NRA) and the HMIP regulating water quality and resources and OFWAT as the economic regulator - came under strain in 1990 with a major dispute over the costs and benefits of environmental improvements. The NRA intends to enforce standards rigorously and on the basis of absolute compliance, rather than compliance for a percentage of the time. Given the real increases in water prices already faced by consumers to meet existing standards, the DGWS has called for any new standards and procedures to be fully costed before implementation. This has touched on the wider question of the benefits to be attributed to incremental improvements in water standards. No doubt the right answer is that no policy change should be considered in isolation from its cost; the question will be whether the current institutional arrangements militate against this.

Conclusion

1991 will be an important year for regulated utilities. The policy on effective competition in British Gas and British Telecom will become clearer, there will be an MMC report on BAA and the realities of the new market in electricity supply through the pool will become evident. There are considerable uncertainties in this and the difficulties faced by Nuclear Electric early in 1991, in securing contracts for the supply of electricity, are indicative of difficult times ahead.

The record of the regulators to date has been pro-active and their commitment to the development of effective competition and the protection of the customers interest has been sustained. There have been few suggestions of British regulators having been 'captured' by their industries, although the ability of companies to withhold sufficient information makes judgements on matters such as discriminatory pricing more difficult, and will be a continuing issue. It will be some years yet before any of the industries can argue the case for deregulation because there is fully effective competition.

Notes

1. H M Treasury, *The Government's Expenditure Plans 1990/91 to 1992/93* (Cm 1021), HMSO, 1990.
2. External Financing Limits (EFL) are constraints on the annual net borrowing by nationalised industries from central government; in other words, they set limits on the cash transfers between the government and the industries, and hence on the demands which the industries make on the Public Sector Borrowing Requirement. Before the advent of privatisation, certain industries (including electricity) had a *negative* EFL, meaning that they were net contributors to the Exchequer rather than *vice versa*.
3. H M Treasury, *Autumn Statement by the Chancellor of the Exchequer*, HMSO, 1990.
4. The main protection from competition afforded to RECs lasts until 31 March 1994 and applies to sales below 1MW annually. For the following five years up to 31 March 1998, the ceiling is 100kw. Thereafter, all customers will be able to contract with any second tier supplier.
5. Some relaxation of these figures is allowed among RECs in northern England and South Wales.
6. See Office of Electricity Regulation (OFFER), *Annual Report, 1990*.
7. For a discussion of what constitutes 'excessive' in this context, see Chapter 15, below.

8. The rationale of this is the potential economies of scale for businesses which dig trenches, have major billing operations and run area depots.
9. Department of Trade & Industry, *Competition and Choice: Telecommunications policy for the 1990s - A Consultative Document* (Cm 1303), HMSO, 1990. See also *Competitive markets in telecommunications: serving customers*, British Telecom, 1990.
10. *Servicing Telecommunications Customers* (BT's response to the government's consultative document - Cm 1303), British Telecom, 1991.
11. *Paying for water - A time for decisions* (A debate led by the Director-General of Water Services), OFWAT, 1990.
12. The merger, of the so-called 'three valleys' water-only companies, was allowed through by the Monopolies & Mergers Commission after OFWAT was satisfied that there would be substantial operating savings, and that these would be passed on to the customer.

Other references

The Regional Electricity Companies share offers, contained in the main prospectus and mini-prospectus.
Annual Report 1989, OFWAT, 1990.
Corporate Plan 1990/91, National Rivers Authority, 1990.
H₂O Prospectus, November 1989 (the water share offers).
Water Charges 1990/91, Water Services Association, 1990.
Water Facts 1990, Water Services Association, 1990.