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Introduction

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The four papers in this collection were presented at the BSHS meeting on the Social and Political Aspects of Energy History held at the Museum of Science and Industry, Manchester, in November 1990, an account of which was given in the Society's *Newsletter* No. 34.

There has long existed a tradition in pedagogical instruction which treats the technologies by which human energy needs have been provided in terms of inevitable and unquestioning progress. It has been in the struggle against nature that new sources of energy were discovered and harnessed to human need. The history of energy technologies is, then, a record of the successive means by which humanity has released itself from the drudgery of subsistence living to enjoy relaxation and be entertained. We all know the sequence – hunter-gathering, farming, mercantilism, industrialism – and the related changes in fuel dependence: from wood to coal to oil and gas to nuclear, each step involving a more intensive energy source. Associated with these changes has been the electrification of society, bringing with it the centralization of power production which has taken pollution away from our homes and offices and brought it under the control of power engineers. This 'triumphalist' image, to use a term coined by Bill Luckin, no longer continues unquestioned in energy history.

The aim of this conference was to uncover the political and social forces lying behind the process of technical change in energy policy. Technical change is seen to be determined not only by the availability of new technologies but by particular local and temporal circumstances which together constitute the political, economic and social context.

Bill Luckin's discussion of the establishment of the National Grid in Britain in the inter-war years has not been included in this collection because he has already written on the subject in his valuable and lucid book *Questions of Power* (1990). There he showed on the one hand how exaggerated technical claims for the benefits of the Grid were used to overthrow opposition to its construction, and on the other, how the preservation of amenities of rural England was the chief ground of opposition. At the meeting he also pointed to the unifying influence which politicians hoped the construction of the National Grid would exert at a time of devoluting tendencies in the nation.

Jonathan Winterton's paper summarizes the conclusions of his trenchant analysis of the technological developments lying behind the pit closure announcements which instigated the miners' strike of 1984. He notes that the plans for expanding coal production following the last oil crisis (1973–74) were well under way before the first Thatcher government came to power in 1979. These plans were caught by the new limits on public sector spending

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introduced by the Thatcher administration and by the world-wide fall in coal prices. The National Coal Board's plans involved mechanization, automation, deskilling, and closer managerial control of the work face. Notwithstanding these new factors, the Board pressed ahead with its programme with the result that those mines for which the new technologies were unsuited became relatively less economic. The fall in coal prices and in the demand for coal spelt their closure. And once the strike had been defeated the Board could press ahead with its goal of low-cost production and the deskilling consequent upon these technical developments. Winterton questions whether this programme, impressive though it has been in increasing productivity per man-shift, is in the best interests of Britain's long-term future energy supplies, for it is rare indeed that a coal mine, once closed, can later be reopened.

Ian Welsh examines the NIMBY (not in my back yard) syndrome explanation given by promoters of nuclear power – especially Lord Marshall and Nicholas Ridley – for the presence of opposition to this technology. After noting the prominence of this explanation for the intense opposition to the site investigations for future nuclear waste disposal, Welsh goes on to criticize the categories of opposition identified by O'Riordan, Lee and Brown. They represented opposition as local and thus attributable to local concerns, i.e. the NIMBY syndrome. More distant opposition they attributed to an irrational anti-nuclear minority which was therefore unrepresentative of the public, but which succeeded in 'contaminating' the local populations. Welsh considers this portrayal of the social structure of opposition as misleading, for to him social identity and geographical locality 'are related in a much more complex way'. Far from being a recent development due to the growth of a vociferous minority, Welsh shows that opposition to nuclear installations on grounds of reactor safety, radiation hazards, and mistrust of nuclear authorities, was prominent in the public enquiries over the Magnox nuclear stations in the 1950s.

Welsh concludes his paper with a comment on the prescription for overcoming opposition of providing 'clear and reliable information'. This, he points out, is based on the assumption that the offending opposition is due to 'contamination'. However, if there is to be open debate, he suggests, it would need to be operated retrospectively as well as prospectively in order to dispel distrust of the nuclear authorities. Such *glasnost*, he explains, would need to overcome formidable organizational and institutional barriers.

At the conference Arnold Pacey used his collection of slides to describe examples of the introduction of Combined Heat and Power (CHP) in the UK, and he discussed the paper on the subject submitted by Stewart Russell of Australia. In this paper Russell examines and rejects conspiracy theories for the failure of adoption of this technology. Yet he does not find that a rational and unfavourable assessment was ever produced. He notes the extensive use of CHP in Scandinavia, Eastern Europe and the former USSR. What social processes, he asks, have led to its virtual exclusion from Britain?

He begins by drawing our attention to the fact that CHP has been 'almost entirely written out of histories of the energy sector', with the result that explanations that have been given of the situation only scratch the surface. His analysis probes the institutional structure of the profession of electrical engineers whose first duty was perceived to deliver high conversion of thermal power to electricity. Local authorities keen to establish District Heating (DH) schemes using CHP, on the other hand, were constrained by their limited

freedom of action. Governments, for their part, either gave conflicting signals or upheld a policy of non-intervention in the affairs of the electricity industry. The result has been that despite political initiatives to achieve more efficient use of energy by using the waste heat from power stations, little was achieved.

Russell offers a perceptive analysis of both the contexts for these initiatives and the fundamental structure of the industry which resisted them. Producer interests, he explains, have dominated. Consumers have had little say. Producers have sought to 'maintain the structure of the sector in vertically integrated chains'. DH and CHP involved separate interests – the electricity industry (CHP) and local authorities (DH). Without government intervention to coordinate the activities of these two, and the establishment of favourable terms to promote such collaborative efforts, little progress was likely to be made. Yet surely the path of 'progress' should take us through CHP and DH to more efficient use of primary energy? Our failure suggests that there is not a technological imperative at work.

Elizabeth Sprenger and Pauline Webb, of the Manchester Museum, report on the archives deposited with the Museum by the former Electricity Council, and they focus on the papers of the Electrical Development Association (EDA) founded in 1919 and those of the Electrical Association for Women (EAW) founded in 1924. The chief function of the former organization was to promote the sale of electrical appliances. Its advertisements directed to women in the home focused on the advantages of electrical appliances, which are depicted as freeing the housewife from drudgery. 'Electrical housework', write Sprenger and Webb, 'seems to take place in a fantasy land where women, resplendent in their best clothes, languidly operate appliances'. The EAW was more objective, and carried out surveys on the public perception of electricity. Its educational role was largely given to dispelling fear of electricity on account of ignorance. Sprenger and Webb note that the EAW was targetted at middle class women, and did not directly address the working class consumer, but they conclude that it was more sensitive to the varying needs and circumstances of women than was the EDA.