

Powerful mythology

David W. Pearce

The Price of Nuclear Power.

By Colin Sweet.

*Heinemann Educational: 1983. Pp. 107.
Pbk £3.95.*

IN THE space of only five years the focus of public argument about nuclear power in the United Kingdom has shifted from the all-embracing issues of social cost — accidents, routine radiation, civil liberties, proliferation and the “distance” of decision-making from the voting public — to economic cost comparisons. The 1977 Windscale Inquiry into the construction of a further fuel reprocessing plant established that all the social arguments were at least on the agenda. The 1983 Sizewell Inquiry into the construction of a pressurized water reactor is hearing a great deal about the unit costs of nuclear as opposed to coal-fired power stations. The shift in emphasis is partly because Windscale was concerned with one aspect of the fuel cycle, reprocessing, which has international dimensions. Sizewell is concerned with one new power station, although to make any sense at all it must be the test case for a series-ordering of PWRs on a limited scale over the next decade or so. But much of the change reflects more of a holding operation on the part of the nuclear opposition: the social-cost arguments may not have been entirely won but they have become legitimate. It remains to knock the purely economic costings on the head and, intellectually, anyway, nuclear power would be finished.

Colin Sweet's book is written in this context and it has quite clearly been designed to coincide with the Sizewell hearings, so much so that readers unfamiliar with nuclear arguments in the UK will find it oblique in its institutional references. It is also meant to be part of the culmination of a sustained effort in the past five years to get the economics sorted out. To this end, reports by the House of Commons Select Committee on Energy, the Monopolies and Mergers Commission, reflective views of the independent economists and the pressure applied by the committed lobbies have led to a situation in which a full reappraisal of nuclear power economics should be possible. Alas, while openly written from the anti-nuclear standpoint, Sweet's book does not offer that reappraisal and manages to extend and confuse some of the mythology into the bargain.

Sweet's thesis is, first, that the role which nuclear power *can* play in the energy future is limited to base load electricity which is unlikely to include space heating. This is because consumers do not reveal a preference for substituting electricity for gas or even oil, and because, anyway, the level of *overall* energy demand has been greatly exaggerated by the forecasters. Second, nuclear power is not cheaper than

coal-fired electricity and can only be made to appear so by fudging the books. Notably, what is required is a fully fledged current cost-accounting framework in which investment appraisals, plant by plant, are presented using established appraisal techniques. Third, the chances of demonstrating this last set of propositions are small because of the secrecy surrounding nuclear power, a secrecy resorted to so that committed views on the part of the “pro-nuclear lobby” are not to be revealed as self-delusion.

Sweet is on happiest ground when talking about nuclear versus coal costings (Chapter 5). Even here, however, one would wish for full notes on the sources of data. On the general energy policy context, and in invoking the discipline of economics, he is distinctly uncomfortable and discomfiting as a researcher. The problems range from simple mistakes to the setting up of innumerable straw men. Thus Sweet declares that the absolute contribution to electricity output by nuclear power declined from 1971 to 1981. It rose from 19.5 TWh to 23.4 TWh, as his own data show. He declares that total primary energy demand fell by 20 million tonnes oil equivalent over the same period “and continues to fall”, an answer one can only get by careful selection of the base year given that energy consumption rose to 1973, fell to 1975, rose to 1979 and fell in the two years following. These would be quibbles in a short review but for Sweet's conclusion that the Central Electricity Generating Board's case “seems to be somewhat weak” given the context of falling overall demand.

The straw man phenomenon occurs frequently. Because Sir Martin Ryle calculated that nuclear generating capacity would have to rise from 56 gigawatts to a startling 230 gigawatts if *all* fossil fuels were displaced, this is somehow meant to persuade us of the Gargantuan silliness of nuclear claims. But not only would no nuclear enthusiast claim as much, but the quotation of Ryle's computation flatly contradicts Sweet's own very sensible point that electricity of any kind has a limited role in energy substitution in the UK. Much the same disappointment extends to the old chestnut of the Atomic Energy Authority's “programme” in evidence to the Royal Commission on Environmental Pollution in 1976. The AEA is not responsible for forecasts in the UK, nor does it buy generating equipment. Sweet manages to present all of this highly misleading material without once printing the actual official projections of energy demand in the UK. The other errors are manifold, from confusion between rates of return and rates of discount to defining an energy ratio (energy per unit of national output) in terms that can only mean Sweet is thinking of an energy *elasticity* (percentage changes in energy divided by percentage changes in output) whilst consulting data about the former.

The lesson in all this is that we must surely accept the fragility of the relationship between pro- and anti-nuclear power lobbies and, while replete with conspiracy theory, Colin Sweet's book is mercifully clear of the vocabulary-abuse common to both sides. But if Sweet's book is intended as a further nail in what he sees as the coffin of nuclear power he has hammered neither straight nor true. The debate deserves better, especially as those qualified to assess the economics of nuclear power in the sphere of disinterested research are few and far between. □

David Pearce, currently Professor of Political Economy at the University of Aberdeen, is due to become Professor of Political Economy at University College London in October 1983. He is senior author of Decision Making for Energy Futures (Macmillan, 1979).

Learning from Seveso

Frederick Warner

The Chemical Scythe: Lessons of 2,4,5-T and Dioxin.

By Alastair Hay.

Plenum: 1982. Pp. 264. \$??, £??

The Chemical Scythe, the first in a series of books to be published by the International Disaster Institute, deals principally with the “lessons of 2,4,5-T and dioxin”. The author, Dr Alastair Hay, has written widely on the Seveso accident. He has now cast his net more widely to examine different incidents involving 2,4,5-T plus dioxin and others in which chlorinated hydrocarbons, such as hexachlorophene, were the toxic agent. This leads him to discussions of the effect of 2,4,5-T used as a defoliant in Vietnam, Laos and Cambodia, and to the possible adverse effects from past dumping of chemical residues in places such as Love Canal near Niagara.

All of these issues raise emotions which vary according to the closeness of the observer. To the British, who often complain of isolationist trends in the United States, there is little appreciation of the intense feelings generated by the war in Vietnam and the claims of ex-servicemen that they have suffered long-term damage from chemical insults. The nature and severity of these insults is witnessed by papers from Vietnam which, however, have not stood up to detailed critical scrutiny by such bodies as the National Academy of Sciences. Dr Hay has set out the various arguments from the literature available, and has added the accounts of journalists who have made their own contemporaneous or later investigations. The reader is left to make his own judgement since Hay gives the opposing views without putting any particular emphasis. He is critical however of the failure of chemical manufacturers to release information in order to help the airing of problems in