

Submission to Energy Review

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by David Ross

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and *Power from the Waves* (OUP, 1995)

For 25 years, the public has been denied access to what has been rightly described as our greatest source of renewable energy, surrounded as we are by the unending and inexhaustible power of the waves. British engineers and scientists were pioneers in the technology of harvesting wave power on a sufficient scale to provide the country with all the electricity we normally need, in the view of the Central Electricity Generating Board which bore the responsibility for supplying the country¹. It did not give its assurances lightly. We could now be enjoying a supply of a new form of hydro-electric power, virtually free on current account, and exporting the generating equipment all over the world to the great benefit of our industry as well as of the recipient countries.

Instead, we are polluting the atmosphere, burning up our diminishing stocks of gas, oil and coal, turning the Lake District into a radioactive rubbish dump, and charging the public needlessly high prices for lighting and heating.

It happened largely because of the resistance to change by the established authorities. And, as I show in a new leaflet, "Scuppering the Waves," (see Attachment), some dubious means were used to extend the reign of the polluters. The greatest obstacle was the lack of financial support from Government, and from utilities which have since become privatised companies. All were reluctant to invest in new sources that would not show a profit for several years and which at the same time challenged the hegemony of those who did not wish to be jolted out of their old-established habits.

My editor returns

It is perhaps encouraging that the present Energy Review is being presided over by one of the people who can claim to have been right in the critical days of the 1980s. Wave energy was described as

“A viable alternative to the nuclear age”

on February 12 1982 in a headline over an article in the West Highland Free Press (coming by post) founded, edited and published by Brian Wilson from his editorial office at the Old School at Breakish on the Isle of Skye, within sound of the waves.

The article was written by me but the headline was presumably the work of the editor. Both were equally accurate and stand up today as they did then. (The one error in the article is mine: "Hinckley" is spelt wrongly; it should be Hinkley. At the time the name of the place was

not as familiar as it later became to many of us taking part in the public inquiry into a new nuclear reactor, which was abandoned by the Government).

The theme of the article was that wave energy could provide all the electricity we needed, if Government provided the necessary financial support, which would be tiny compared with expenditure on nuclear power. The help was not forthcoming and wave power has clung to a penurious existence. It has developed as a research study and, with little help from Government has launched some small generating plants. Its technology has improved but it has not been given the support that it will need if it is to become a major contributor to the Grid. Even today it is receiving less from Government than it enjoyed from Margaret Thatcher's government.

Helping the moneylenders

Its rivals have put great emphasis on cost. They say that wave power will be more expensive. It certainly will not be in the long term, when there is no charge for fuel. But the figure can be distorted by the misuse of the discount rate -- that is, the rate at which the capital is "discounted." The rate was raised from five to eight per cent in April 1989 by John Major during his short and undistinguished spell as Chancellor of the Exchequer. It is doubtful whether Major, who was a pushover for the Treasury and for the moneylenders, realised what he had done². A high discount rate militates against capital-intensive projects which require major investment at the start of their design-life, when construction takes place, and produce their benefits later when the "fuel" (sunshine, wind or water) arrives free.

What it means in practice was illustrated by Sir Frank Layfield, the Inspector at the Sizewell B inquiry into the application to build a nuclear power station. In his eight-volume report he said, on December 5 1986, that a nuclear power station should go ahead because the discount rate was five per cent. Had the rate been higher, he said, he would have favoured a coal-fired station.³ Less than three years later, before the station had been built, the rate was increased but it was too late for the decision to be changed.

Harwell has calculated the cost of a unit of wave-electricity as 9.6p, 6.4p or 3.3p. Which is it?⁴ The figure depends on whether the preferred discount rate is 15 per cent, 8 per cent or zero. This is monetary madness and should not be allowed to influence our choice of an energy policy.

The example of hydro

We should never forget that conventional hydro-electric power in such countries as France, Norway and Scotland is the cheapest – but not at the time of construction. Scottish Hydro-electric has calculated that its hydro plants are generating for 0.8p a unit but has said that if a hydro-electric power station were to be built now that same unit would cost 12p. That is for the same unit of the same electricity from the same water.

What is a fair way of assessing costs? ETSU, the Government's Energy Technology Support Unit at Harwell, which has not been accused of partiality towards wave power for the last 20 years, has given the best answer.

The Government could settle this problem by providing investment-capital at the lowest-possible rate for engineers, scientists and companies with sensible projects which deserve to be developed and are failing for lack of capital.

Bring back the State

The Government could and in my view should offer subsidies and grants and go further by becoming an electricity producer itself and building a wave power station out at sea.

This would provide a new form of PPP, allowing a publicly-owned utility which did not depend on quick returns for shareholders and which could co-exist alongside and in competition with the privately-owned companies, inside a mixed economy. This would not be a precedent: our privatised electricity companies already compete with the State-owned Electricité de France, which is heavily subsidised by its Government and which supplies our Grid. It would enable the State-owned sector to reactivate the invaluable research and educational functions of the CEBG, which have been abandoned since privatisation.

Such a prospect would mean that consumers would be able to choose not only between competing companies, as they can today, but also between the private and public sectors, to the advantage of freedom of choice inside a mixed economy.

I am participating in this review under protest: I believe that an inquiry of this sort should sit in public so that rival arguments can be tested by the chairman and his expert assessors and by other participants in cross-examination, as in normal public inquiries.

References:

1. Official estimate by Ian Glendenning, head of Long-Term Studies Projects for CEBG published in Chemistry and Industry, 1977, and repeated by CEBG chairman Glyn England on July 4 1978 in address to staff at Fawley power station
2. Discount rates in the public sector, Treasury press release, 5 April 1989
3. Sizewell B inquiry report, Volume 5, paras 55.5 onwards
4. ETSU R-90, pp 53-59
5. Wave energy, the Department of Energy's R&D programme 1 974-1983 (ETSU R26)