
Book Reviews

Leaving Eden: To Protect and Manage the Earth

E.G. NISBET
Cambridge University Press, 1991
pp.358

This book attempts a synthesis of our knowledge of humankind's effects on the world's climate and of the technical, economic, political and sociological means of mitigating these effects. Professor Nisbet has written a sobering book which deserves serious study. (He is, by the way, at the University of Saskatchewan and he uses many Canadian sources and examples in his argument.)

The first three chapters describe the factors controlling the earth's climate and the causes and consequences of change brought about by human activities. Nisbet makes a convincing case that these changes are serious, not with extreme doomsday predictions but by emphasising how little we understand about the complex mechanisms which control climate. Computer models of climate change cannot realistically predict the details of climate change; they only show that marked changes will occur.

The central concern is our ignorance of the factors controlling the overall stability of the earth's climate and of their limits. We do not

know when instabilities can take over. The last ice age was terminated by a rapid rise in the earth's temperature. We do not know why the climate crossed a threshold from one stable state to another, although it was accompanied by sharp increases in the concentrations of methane and carbon dioxide. While the effects of chlorofluorocarbons on the ozone layer were anticipated in the early 1970s, the Antarctic ozone hole, a dynamic effect, was unexpected. Nature may have other surprises.

From this Nisbet argues forcefully that we must do all in our power to halt further changes. "Whatever the shape of the future, *it is important that the industrial economy should make no net emissions of CO₂, CH₄ or other pollutants.* This state should be brought about soon." (p. 298.) Further, it is important that "*deforestation be stopped, and that agricultural practice worldwide be reformed so that good environmental management becomes a chief goal of human use of the land and the seas.*" (p.296) (Author's italics)

The latter chapters of the book are devoted to a wide ranging review of the ways in which these goals might be accomplished. The suggestions are often revolutionary. They are also persuasive because the arguments are tempered with pragmatism and humour.

Opportunities in energy conservation and generation are reviewed in the context of these objectives. While much of this material will be familiar to readers, it is presented in a refresh-

ing manner. Conservation by price, legislation and town planning have both merits and limitations. For instance, while the real cost of using fossil fuels is in the order of \$500 per ton of coal (\$350/ton oil, \$250/ton of natural gas), carbon taxes of this magnitude are politically improbable! More subtle measures are needed, appealing to the enlightened self interest of industry and the consumer.

Nuclear energy is seen as having enormous benefits and enormous risks. It is, nevertheless, argued that conservation, coupled with a switch to nuclear power, is the best immediate technical option for the rich nations. A controversial conclusion.

The effects of agriculture and forestry (mostly deforestation!) on climate are also complex. They require as much attention as the burning of fossil fuels and the release of greenhouse gases. Nisbet is accordingly highly critical of agricultural policies leading to massive crop subsidies which aggravate climatic problems and also lead to the misuse of land. The large sums spent on price support could be better spent on restoring the environment.

Protecting the earth's forests is seen as the single most important priority in global environmental management. The difficulty is that forests and forest products are seriously undervalued. Ultimately a ban on the export of tropical hardwoods, like the ban on the ivory trade, can be envisaged.

The final chapter, "The Management of Man," presents far reaching proposals. Population growth is recognised as the root of our environmental problems. It can be halted: Quebec and Cuba are examples. Good health, good education and the rights of women are prerequisites for controlling population growth. As a consequence, the earth's environmental health depends ultimately on humanity's social health — a novel approach to setting government priorities!

The development and implementation of policies to accomplish all this will require radical institutional changes and changes in government priorities. The establishment of a General Agreement on Trade and the Environment (GATE), modelled on GATT, which

could set targets for environmental reconstruction is one of many suggestions.

As a conservative starting point [for GATE], it is probably sensible to *devise actions that will tend to return the natural vegetation of the world toward its state in 1950*, (the most recent time that the vegetation of the earth and the atmosphere was still in reasonably good health.) We cannot, obviously attain that state, we now have too many people. (p.285) (Author's italics)

In a wistful and saddening comment at the end of the book Nisbet says

Ours is the last generation of humanity to see wild nature. We must eventually be responsible for our planet, but we cannot restore it to its original state. Too much is lost. We have left Eden, and there is no way back. (p.300)

He is, nevertheless an optimist. If humanity recognises these problems it has the strength, ability and wealth to solve them.

Nisbet has successfully achieved his objective, a synthesis. We are shown, as a whole, both the problems and the necessary scale of the solutions. While one may criticize some of the suggested solutions, such criticisms would only be quibbles against the sweep of the whole.

This is required reading.

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The Future European Gas Market

EUROPEAN ENERGY CONSULTING GROUP (EECG) and SCAN-ENERGY
Copenhagen, 1992
pp.117

The authors of this study set out to evaluate the structure and functioning of the European natural gas industry in only slightly more than

one hundred pages — indeed an ambitious objective, especially since they wanted to take account of the often-discussed regulatory constraints proposed by the European Commission and western European governments. The report is directed at strategic planners in gas companies rather than at research institutions. It can be looked at as the last link in a chain of Scan Energy and EECG publications on natural gas markets; in 1989 these consultants issued a study entitled *Common Carriage in Western Europe* and in 1990 they published *Natural Gas for Power Generation*.

The present study focuses on the initiatives of the European Communities Commission that are aimed at liberalizing gas markets. The Commission's directives on price transparency, on gas transit in high pressure grids, and on its proposals for Third Party Access (TPA) are examined. Taking into account the characteristics of gas markets in buying countries and the given level of European demand, the report attempts to compare European and US regulatory frameworks. The result is a clear (perhaps too clear) anticipation of a non-reversible process of western European market liberalization. The consultants, obviously well informed, have painted a picture of rapid evolution in gas markets.

A probable result of liberalizing the gas industry and integrating central and eastern European gas markets will be a growing number of gas suppliers. Integration of eastern markets leads therefore to reinforced competition. The authors anticipate powerful new market participants, such as Russian Gazprom, looking for downstream integration in western European markets. The European Commission's drive to further market liberalization will thus find itself supported by, among other factors, constantly increasing competitive forces. Obviously EECG and Scan-Energy expect the recent proposal for a directive on TPA and a sort of industry code of practice to be applied soon and aggressively (see Commission proposal on "Common Rules for the Internal Market of Natural Gas").

The report briefly analyses recent developments in the UK and German gas industries,

giving examples of possible competitive market developments. The British approach to introducing common carriage regulation in the 1980s is viewed as resulting in increased overall industry efficiency, probably still based on long term contracts. The German example is used to call established market structures into question and to demonstrate the case for increased competition by citing the entry of a new resourceful market participant, Winterhall/BASF. However, the consultants also call attention to the different nature of evolving competition relative to a typical TPA scenario in Germany. They conclude that future gas industry liberalization will result in emerging second and third tier gas trading markets, eventually even leading to spot market and derivative transactions.

The framework for this scenario will involve rapidly intensifying western European market demand. At the same time, reinforced environmental regulation and changes in the nature of gas supply contracts may constitute constraints on rising gas consumption. The market is anticipated to be increasingly oriented to the short term.

The authors use the well known DG XVII (European Community) energy demand scenarios, first published in 1989 in *Major Themes in Energy* and later revised in *Energy for a new Century* (1990). However, they introduce a modification by reevaluating the market share of nuclear power, which they believe was overstated. The dash for new gas already foreseen is consequently once more strengthened.

Without intending to call the overall value of the report into question, some problematic aspects of its conclusions should be noted.

There is a real possibility that further progressive changes in regulation will be blocked by industry interest groups — strong lobbying can be expected. In that event, rapid market liberalization appears less likely. Evidence on the results of effective lobbying are available by way of a comparison of the initial and final versions of the Commission's directive on gas transit. Another example is the role played by the Professional Consultative Committee on Gas, set up by the Commission, in designing

future community legislation on gas industry matters. It's possible that the consultants were subject to some wishful optimism (perhaps involuntary, given their professional interests) when they drew their picture of rapid market evolution.

In regard to the British and German case studies, independent experts still view the nature of gas competition in these countries as an open question. For instance, the present British regulatory system appears less than successful when one considers the recent proposals of the industry watchdog (Ofgas) on the possible break-up of British Gas (BG), which is still vertically integrated and dominant. Ofgas seems convinced that nothing but a drastic decision to separate the gas trading and gas transport divisions of BG could help to do away with monopoly industry behaviour. A study on this possibility is currently in preparation. Thus the introduction of TPA regulation without providing for a level playing field and ways to deal with overly dominant gas companies does not appear to be a sufficient recipe for the liberalization of gas markets.

While the entry of BASF/Wintershall into the German gas market may have triggered last year's approximate 20% decline in industrial gas prices, its long term behavior seems less predictable than assumed by Scan Energy and EECG. Once well established, new market

actors like Wintershall may be poised to make a strategic U-turn, adopting the behaviour of a traditionally dominant company. Wintershall's recent contract negotiations with still-captive clients like VNG may be seen as a first indication of such a change in strategy.

With regard to the predictable expansion of gas consumption, the authors may have underestimated the difficulties arising from an introduction of TPA. This may particularly include the consequences of already signed take-or-pay clauses in long term supply contracts and supplementary construction of new infrastructure.

These few observations do not, however, deny the study's value, especially to those professionally involved in the gas industry, given the easily accessible summary of current gas marketing and regulation that it provides. The complexity and uncertainty involved in the European gas industry is successfully condensed into some basic regularities in gas market behaviour. The result is a positive and dynamic vision of tomorrow's gas industry within the framework provided by the European Commission's classic scenarios.

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