Energy and Climate: How to Achieve a Successful Energy Transition

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Books on this general topic currently seem to proliferate with a new one appearing as soon as the previous one appears on the market. Each one has a particular slant and tends to emphasize different aspects of the subject. As I write this there is another one sitting on my desk with an almost identical title but a cursory glance is sufficient to make clear that it is aimed at a totally different audience. The book here seems to concentrate more on the geopolitical and economic decisions that must be faced in the near future rather than on the practical issues although these are covered.

The author was the former Director of Sustainable Development of the French Institute of Petroleum and this slim volume reads rather like a document prepared as a series of lectures for senior management. The subsidiary part

of the title covers “transition” and the author (correctly in my opinion) makes clear that we are going to be dependent on fossil fuels for much of our energy needs, particularly those concerned with transport, for many years. There are two aspects to this—the first is will the oil last or run out and the second is the reduction or removal of CO₂. For the whole of my career in the petroleum industry there were constant dire warnings of imminent shortage but this never happened (except on a temporary basis) and it won’t happen in the future. What will happen is that oil and oil products will get more and more expensive until they reach the point where another source will become more economically attractive. As for the reduction of CO₂, this volume outlines a number of ways by which this might be achieved. These include an expansion in nuclear energy (France already generates 70% of its electricity from nuclear reactors), biofuels, and so-called renewable energy (wind power, solar cells, hydroelectricity, geothermal energy, hydrogen, etc.). All of these possess severe disadvantages in that they are either intermittent or inflexible or not currently suitable as a fuel for transport). One way of reducing the amount of CO₂ released to

the atmosphere is that of removal and storage. Underground storage is being tried in several locations in various parts of the world but the statistics given here are staggering. The, first large scale venture, the Sleipner Project in the North Sea, conducted by Statoil has been injecting underground (or more correctly under-sea) a million tonnes of CO₂ per year at a depth of 1,000 m in a saline aquifer but apparently 6,000–7,000 operations of this size world wide will be required. No information is given about the energy requirements to compress and pump 10⁶ tonnes of CO₂ although it must be considerable and another source informs me that the offshore rig that does the injection weighs over 8,000 tonnes and is the heaviest module ever lifted offshore. These figures make one wonder about the net saving of CO₂ over the lifetime of the project (neither of these figures are given).

This is an interesting concise résumé of the current situation but I am not clear why the (British) Society for Chemical Industry has decided to support it. The references are up-to-date but over half are in French, a fact not likely to appeal to monoglot Anglophones.

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