

Summary of the Discussion on Methodology

Edited by Chris Rowland

Discussion of the methodological papers covered much ground and many views were expressed on how to approach energy related problems. Differences in the nature of the problems faced by energy producers and energy consumers, and differences in the relevance of issues within the group of producers or within the group of consumers, were stressed by the participants to the conference. The extent of these differences suggested that no consensus on the analysis of energy problems, let alone on the appropriate policy response to the problems, was likely to be forthcoming.

Despite these differences, two uncontentious issues emerged. First, agreement was reached on the importance of considering energy as a chain of processes that culminate in an end-use rather than as a commodity defined solely by its end-use. Any comparison of energy alternatives must reflect the complex chains. The second area of agreement centred on the crucial role of energy prices. It was accepted that energy prices harmonise the energy economy with the general economy and that changes in energy prices have implications throughout the economy along many different interfaces.

Perhaps the most fundamental area of conceptual difference emerged in the views over the role of energy in economic policy. One half of the debate centred on energy as the object of policy, with questions of who should provide the finance for new energy resources, of who should own these new energy resources, and of how to manipulate energy consumption, being considered. The other half of the debate treated energy as the subject of policy, discussing how to exploit energy to achieve other targets such as employment or growth. Although balance of payments problems and unemployment problems may have arisen from other causes, because of the levels of

interface between the energy economy and the general economy, some viewed energy as a policy tool to influence these variables. Hence, a policy to reduce energy imports was seen as a way to relieve pressure on the balance of payments. Those who view energy as an object of policy stress that this approach was inappropriate as it emphasised the role of energy in substituting for imports when there is nothing unique to energy. Concentrating on energy to resolve other problems would only create a misallocation of energy resources. The key question is how to establish the correct energy pricing in relation to unemployment and other macroeconomic problems. The issue analysed was not just one of balancing energy demand and supply, but of how to choose appropriate rates of discount and how to formulate expectations about the future in a market that is so closely intertwined with numerous other areas of the economy. This is what makes energy prices so crucial.

Energy pricing, though, was recognised to be a rather nebulous issue pertaining not only to current prices which may be taken as objective items of data but also to price expectations which are subjectively formed in the minds of many public sector and private sector participants. Since energy prices tend not to be objective items of data, the accuracy and hence usefulness of price signals from energy markets came under scrutiny. Agreement on the crucial role of energy prices did not, however, extend to agreement on the usefulness of market derived energy price signals and price expectations. Only few felt that markets operate smoothly to move prices in line with scarcity values, while the majority thought that sufficient flexibility was lacking and that energy prices no longer reflect scarcity values accurately. Amongst the latter camp of views both comments suggesting price signals are too weak and comments suggesting they are too strong were made. On the one hand, the view was expressed that the limit where prices no longer bear any relation to scarcity values may have been reached and because institutional rigidities weaken price signals, price increases may not bring forth additional conservation or investment. On the other hand, price signals may be too strong and rises in the prices of inputs may merely be passed on by firms to output prices without stimulating changes in their input mix or their output volumes. In either case, the market alone was thought unlikely to be able to cope with energy shortages.

No matter whether energy was treated as the subject or the object of policy, the relationship of the markets to public planning was considered important. The long run nature of energy decisions was

dwelt on and it was recognised that this forces both market and public sector participants to act similarly and operate as planners. It was stressed that before the 1973 increase in oil prices planners in the public sector based their decisions on oil price expectations that were equally as wrong as the oil price guesses of planners in the market, and hence there was no a priori or historical reason to suggest one set of planners would perform better than the other group of planners. Indeed the notion of an energy market was thought to be rather misleading – since the balance of energy supply and demand is not the outcome of many atomistic decisions guided by profit or utility maximising behaviour but is dominated by a few decisions made in large public corporations guided by principles which have little to do with purely economic behaviour – and recommendations based on such a misleading notion received little support. The real actors in the market need to be identified and, although the social and political links may have little to do with economics, it was thought dangerous for economists to ignore these links.

Rejection of the notion of an energy market led to an analysis of the conflict and co-operation between public planners and the private sector. Several reasons were posited for why public and private attitudes may differ – because of different time horizons, different perceptions of and responses to risks, and different goals – and ways of combining the different interests were suggested. Some felt co-operation would answer the problems while others doubted if a coalition could be found because so frequently the attitudes conflict. In face of conflicting attitudes, the role of planning energy decisions in a market based economy was debated.

Views on the role of energy planning expressed at the conference covered the full range of opinions on planning in economics. Some interest was expressed in the possible benefits of a globally consistent plan for energy as advocated by systems analysts. Such a plan would remove the conflicts, some obvious and some less obvious, from well defined national positions that embody global inconsistencies. Consideration of the possible benefits, however, soon led to a consideration of the possible problems. First, the lack of ample information means that all forms of centralised decisions, particularly at the global level, must be a gamble. At least in a decentralised environment, by giving choices to different individuals, risks would be spread. Second, although the links between energy and the general economy should not be forgotten, critics of the systems approach thought there may be so many imponderables in the global problem

that policy could never be prepared in practice. Again because of the lack of sufficient information the energy system is too difficult to describe in enough detail for an assessment of the optimal solution of the system. Instead economists can only form ideas which will inevitably not always be consistent. A third problem raised for the global centralised view was expressed in the fears of the developing countries. In the ranking of issues within an organisation holding global concerns, the plight and needs of developing countries would be neglected behind the needs of developed countries. Although the basic realities and needs of the developing countries are rarely paramount, the fear was expressed that changing to a global decision-making scheme would further relegate concern for developing countries. Fourth, doubts were voiced that organisational slack within the global institution may insidiously undermine any potential benefits and dissipate any advantages. A more extreme version of this doubt was also voiced, where the global organisation was thought to be akin to a global government dictatorship. The critics accepted that if the dictatorship is enlightened then economic advantages may accrue, but believed this could not be guaranteed and these discussants suspected that more often than not dictatorships are not enlightened.

The general reluctance to accept the systems approach did not extend to a reluctance to accept planning. The majority had some sympathy with planning performed via classical economics on a piecemeal pragmatic basis. It was suggested that in principle this approach might be surprisingly similar to systems analysis – since it should cover all eventualities and follow all lines of reasoning to their ultimate end – but those advocating the systems approach did not accept this suggestion. They contended that a piecemeal incremental analysis must inevitably miss something as it does not consider the system. In the absence of considerations about the system two types of errors may arise. First, problems or advantages arising from the scale of activities tend to be ignored in piecemeal studies centred on an analysis of incremental impacts. Second the range of criteria used to assess a project may be too narrow with some factors that are not relevant to an incremental decision, such as flexibility to escape from the consequences of a decision based on what may turn out to be false assumptions, being neglected. Energy provides a good example of the different conclusions that emerge from the different approaches. Conventional classical economics tends to view energy as a drain on capital and so one problem of energy is how to find the necessary

investment. In the systems approach, the energy sector as a whole and over a longer period is seen as a net source of capital, so the only problems are those of transfer payments and of asking if the transfer payments will actually flow.

A general acceptance of planning emerged from the meeting, although widely differing views were expressed about the level and the nature of planning that would be most desirable. This acceptance was based on the premise that there are areas where economists know better than market participants and hence can direct those participants to improve their well-being by means that only economists can perceive. For example, many studies have demonstrated that industrialists tend to adopt higher discount rates when there is an investment in energy conservation than the rates adopted for other forms of investments, but as economists recognise, this is a highly questionable procedure. Similarly, societies in the absence of intervention by planners would probably act in a risk neutral fashion and devote too few resources towards research into energy alternatives, although a more risk averse approach would probably be appropriate. Even though the discussion accepted that there probably are areas where economists know better than others, it was emphasised that planners should not be given a free hand but should be closely constrained and supervised with as many checks on their beliefs as practical. With these checks based on market derived responses, the planners would thus supplement (and not obliterate) the market. Rather than shielding planners from competition, this planning mechanism places the onus of proof on planners and would require them to prove the market wrong before acting. The arguments against this mechanism revolved around the extent of inadequacies in the market. If price signals are already so distorted then they will have no use even as a check on planners.

With such a wide range of issues discussed in this session, it is not surprising that more ancillary issues were raised than conclusions drawn. Furthermore, the great interest shown in this variety of topics suggests that research will continue into the methodology to be used in tackling energy problems and that the debate will be long lasting.