

The World Energy Assessment: Energy and the Challenge of Sustainability. United Nations Development Programme, Bureau for Development Policy, One UN Plaza, NY 10017, USA. 2000. 508 pp. Price not mentioned.

The importance of energy for poverty eradication is a popular rhetoric in international fora. The theme assumes centre stage in the publication under review, jointly brought out by the United Nations Development Programme and the World Energy Council. According to the team of international authors, energy is not only the backbone of human progress and the driver of economic growth; it holds the key to raising living standards worldwide. In short, energy is fundamental to achieving the interrelated social, environmental and economic aims of sustainable human development. This being the principal argument of *The World Energy Assessment: Energy and the Challenge of Sustainability*, the book has been offered as an input to the World Summit on Sustainable Development (WSSD) held in 2002 at Johannesburg.

From a social perspective, the implication here is that energy services for sustainable development will lead to an enhancement in the quality of life for one-third of humanity still reliant on traditional sources of energy. Although the book does state neither energy supply nor energy consumption are ends in themselves, the implication would have been more credible had the analysis granted the range of other influences on the quality of life. It is an oversimplification to directly link energy to social indicators, suggesting that it is central to poverty, urbanization, lifestyles, population growth and women. The fact is that the linkages between energy consumption and human development are complex: the former does not necessarily pave the way for the latter. Moreover, in this era of globalization where the complex interplay among global markets is a decisive factor in the growth of developing economies, energy may often only be subsidiary to other forces influencing economic growth, especially when international – or largely First World – trade policies are so crucial to making or breaking a poor country's future.

The book does not concentrate solely on social issues surrounding energy;

various other chapters deal exclusively with actual energy hardware. As such, if one is looking for statistics on energy resources and potential, the book has useful and well-organized information on the various resources, technology options, and economic potential given both resource-wise and by region. The tables in the energy resources chapter estimate reserves broadly by region (North America, European Union, Asia, etc.) in the interest of proving that while globally, energy resources may be plentiful, they are not evenly distributed – or equitably consumed – particularly fossil fuels. Further, as far as technology-related information goes, sections on renewable energy technologies (RETs), end-use efficiency, and advanced energy supply technologies have been included. However, although the various RETs are described in fair detail, the chapter does not sufficiently bring out the major challenges of mainstreaming renewables – namely the policy instruments, market approaches and regulatory barriers. Given that these aspects are of utmost importance, especially with regard to promoting new technologies, a more imaginative and lengthy treatment of these challenges – with a case study or two thrown in – would have been more useful rather than simple definitions of the options.

Given the difficulties and given the choices, what lies ahead in our energy future? The authors of the book seem to undertake a purely academic treatment of this question. The chapter dedicated to plausible energy scenarios presents three cases of alternative global developments, each subscribing to varying degrees of the sustainability approach. A reference case B assumes moderate economic growth and technological improvements, but leads to environmental degradation in the long-run. The high economic growth case A includes three subcategories of development – one with an emphasis on clean energy technologies, and the other two with an emphasis on fossil and nuclear energies. Finally, case C is ecologically-driven and assumes a phase-out of nuclear and fossil fuels, and an introduction of carbon taxes. The three scenarios are highly theoretical in that they take a macro and global view. The scenarios are seen largely through developed-country spectacles and lack a critical examination of the high energy

consumption trend throughout the developed world. Reducing gross energy consumption simply by adopting a more waste-conscious lifestyle, is perhaps the simplest method by which to reduce greenhouse gas emissions and ensure energy security. But a sustainable energy future, according to the thought experiments of the team of authors, does not include this vital behavioural change. Moreover, a pre-requisite for those scenarios that are compatible with sustainable development is an increase in research, development and deployment efforts for new energy technologies. Thus, the focus is more on technological leapfrogging, rather than attitudinal or lifestyle changes. The discussion also does not touch on the increasing rural-urban divide and the very likely scenario in which a few urban centres around the world will consume a large fraction of the available energy, with IT used as a powerful controlling tool.

The book nevertheless is probably the most integrated and comprehensive depiction of the inherent multidimensional nature of energy at present. Useful to the multi-disciplinary researcher, it is an informative source for placing energy in the UN context, namely in the heat of the sustainable development debate. But by being just that, it has risked being prone to fallacious arguments. Although hopeful of the hugely important role that energy can play in alleviating poverty, it may be whimsical to expect economic development to follow, especially where there are no opportunities at all to begin with. The scope of the book is vast, which also makes it liable to generalizations. Although it has dealt effectively with this pitfall through detailed examples and case studies, certain pertinent issues with reference to developing-country situations have been left out. It is, however, a highly approachable book that has effectively and systematically explained a myriad of cause and effect relationships between energy systems and human beings.

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