The Economics of Technology Diffusion and Energy Efficiency

Advances in Ecological Economics series

Peter Mulder, Assistant Professor, VU University Amsterdam and Tinbergen Institute, The Netherlands

Technological change plays a crucial role in realizing energy efficiency improvements and, therefore, in ameliorating the conflict between economic growth and environmental quality. However, the diffusion of new technologies can prove a costly and lengthy process, meaning that many firms do not invest in best-practice technologies. The author offers important new explanations for this energy-efficiency paradox.

'This book is a path-breaking work. It is unique in the economic growth literature for its incorporation of diffusion theory into an economic growth model. In constructing the model, the author has drawn on both neo-classical and evolutionary growth theory. He uses the model to address the energy-efficiency paradox – why are efficient energy technologies often adopted so slowly? A significant, and counterintuitive, finding is that subsidies designed to speed-up the adoption of energy saving technologies in the short run may have an adverse effect in the longer run, due to the premature adoption of inferior technologies. Therefore, an important policy implication is that increased subsidies for energy saving technologies can be counterproductive.'

– Vernon W. Ruttan, University of Minnesota, Twin Cities, US

‘Energy and environmental policy discussions increasingly focus on issues related to technological change. In this new book, Peter Mulder recognizes that technological change will play an absolutely central role in achieving increases in energy efficiency, thereby mitigating what might otherwise be unacceptable trade-offs between economic growth and environmental quality. He focuses on the role of uncertainty, which is central to investment, in order to investigate how microeconomic decisions give rise to macroeconomic patterns. In a broad-ranging study, he builds upon key developments in the economic theory of technological change to develop his theoretical model and empirical analysis.’

– Robert N. Stavins, Harvard University, US

Edward Elgar Publishing Ltd. is registered in the UK at: The Lypiatts, 15 Lansdown Road, Cheltenham, Glos GL50 2JA. Registered number: 2041703