ENERGY STUDIES INSTITUTE
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ESI Seminar

Analyzing long-run trends of energy demand in the manufacturing industries in India

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ESI Conference Room
29 Heng Mui Keng Terrace
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Synopsis

The aim of this study is to develop a comprehensive picture of the pattern of energy demand in Indian industries. It is motivated by the implementation of Perform, Achieve and Trade, the new energy intensity reduction policy in India. The work focuses on seven most energy-intensive manufacturing industries, namely, Cement, Iron and Steel, Fertilizer, Aluminium, Chemical, Pulp and Paper and Textile. First, we derive the energy intensity trends of these industries for the period 1973-74 to 2011-12 followed by an Index Decomposition Analysis (IDA) to study the extent to which the energy intensity trends have contributed in the decoupling of industrial activity growth from growth in energy use. We find that the declining energy intensity has been able to neutralize a major portion of the growing energy demand resulting in stronger decoupling trends, especially in recent years. Further we estimate Translog cost functions with an embedded energy demand model for these industries during the period 2000-01 to 2011-12. While the embedded energy demand model sheds light on the inter-fuel substitution possibilities in different industries, the behavioural parameters derived from the estimated cost function provide important information on the rate of technological progress in these industries, their input use biases and response to change in energy price.

About the Speaker

Shyamasree Dasgupta is currently Assistant Professor at the School of Humanities and Social Sciences in Indian Institute of Technology, Mandi (Himachal Pradesh), India. Prior to joining the institute she completed her Ph.D. from the Department of Economics, Jadavpur University, Kolkata, Her research interest is in the area of sustainable development, energy and environmental economics and climate change. She is particularly interested in modeling the energy demand of industries, energy efficiency, rebound effect, energy policies in India and sectoral responses to these policies. Currently, she is also working on issues of social embedding of technological innovation. She was the recipient of the SYLFF (Sasakawa Young Leader Fellowship Fund) Fellowship for her doctoral work at Jadavpur University (2011-14) and Donella Meadows Fellowship (2012). She is a contributing author in the ‘Industry’ chapter of the Fifth Assessment Report of Intergovernmental Panel on Climate Change.