

## Abstract

A multisectoral intertemporal optimising model has been developed to analyse questions pertaining to energy-economy interaction. The working of the model was demonstrated under two types of scenarios by activating it with data from the state of Karnataka. The first type of scenarios was the restricted supply of Energy, by individual energy sectors, - including conventional energy sectors such as coal and petroleum, and new and renewable energy sectors such as solar and bio-gas energy and the second type of scenarios was an equity related one, Rarely, the reduction of disparity in per capita energy consumption as heat between the rural and urban regions over the planning horizon. Experiments were designed to simulate the scenarios as inputs to the model, and the model solutions describe the economic consequences of the various scenarios. The results indicate that disparity reduction augments per capita consumption only marginally, whereas the restriction of energy supply reduces economic activity as reflected in aggregate production and state domestic product, with the impact of electricity supply reduction being the maximum of all energy sectors.