

V.B.2. Environmental Cost of Construction

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Construction activity in different bio-climatic zones results in loss or displacement of existing flora and fauna, apart from humans, whether it is a dam or a factory, a housing complex or a power plant, the fact remains that all construction destroys a habitat, displacing almost all inhabitants. In most cases, it does not happen overnight. We have an overlapping time frame of a few decades.

Planting in advance before the actual construction begins, could fill this gap. Also, some presence of mind and planning could save many trees from being cut by incorporating their position, making some adjustments in the layout and by taking care that unscrupulous elements do not chop them while the construction is on. As for the animal population, predators like big costume hyenas, wolves, etc., have to go. The smaller and harmless once take some time to decide. This includes all birds, squirrels, bats, mangoes, etc. Snakes are feared and killed whereas antelopes are easy prey for poachers in the built up environment. The innumerable insect population that forms a major part of life is never accounted for. In case of a water body or a river, fish and water birds stay a little longer depending upon human encroachment and pollution levels unleashed by the incumbent population. One system replaces another. The ever-increasing population and the resultant housing needs of human beings find every speck of land suitable for building with inherent infrastructure requirements falling in place sooner or later. Forests are reokaced by fields which in turn, are replaced by buildings. It is an irreversible transition.

In case of human displacement, the trauma and suffering is often not considered. Only material loss is provided for an inadequately compensated under the rehabilitation 'head'. In the corporate world, we now have a breed of professionals called 'change managers'. Their aim is to help people settle in a new environment. Unfortunately the governments (the biggest displacement and construction agency) of third world countries do not recognize this field of expertise and do not have any criteria or guidelines for rehabilitation. If at all any guidelines exist, these are not followed in letter and spirit. Hirakund, Singrauli, Sardar Sarovar, etc. in India are a few examples of the sad endless saga of lakhs of people who not only losstheir homes and livelihood and are forced to live a life of abject poverty, but also their cultural heritage the cost of which is unaccounted for. Since most constructions offer overlapping time (of change in the environment triggered by construction) of at least a decade, the least that constructing agencies could do is to utilize this time to make transformation (from natural to man made environment) slightly easy on the flora, fauna and humans by offering good quality rehabilitation and plan to make alternative energy pricing scenarios. The present research is based on recent firm-level energy consumption data compiled for the study. The paper discusses advantages of this data over the existing data

sources and discusses interesting insights about energy consumption aspects, like in-house electricity generation by industrial consumers.

An inter-fuel substitution model characterises substitution among three types of energy inputs, namely, electricity, solid fuels and petroleum products, using a flexible function structure of translog specification. This model is estimated for fourteen Indian industries and relevant elasticity estimates namely, Allen-Uzawa partial elasticity of substitution, gross & net own / cross price elasticities are presented. The econometric estimates of inter-fuel substitution model and relevant elasticity estimates reveal existence of inter-fuel substitution, though varying in extent across industries. These estimates could serve as a guideline to derive policy implications towards managing energy demand and for reducing CO₂ emissions in Indian industry. The study assesses impact of a set of energy pricing scenarios on industrial energy demand and CO₂ emissions, and makes policy recommendations thereof.