

## ENERGY PLANNING : A PRICE STOCHASTIC MODEL

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Uncertainties circumscribing the energy sector often pose problems in energy planning. Price-uncertainty is perhaps very important when its working mechanism on the economic system is understood. This paper attempts to highlight the possible scenarios under such circumstances and to capture their implications.

The bisector economy under consideration is comprised of an electricity producing energy sector and an electricity consuming non-energy sector. Electricity is generated from basic fuel inputs by the energy sector and supplied to the non-energy sector to produce goods at fixed prices. The Decision maker is assumed to be interested in the total economy.

Uncertain prices of the energy producing fuel inputs draw deeper attention to capital investment and operation decisions. The decision maker has to choose a certain technology or combination of technologies and plan (ex-ante : before operation commences) for the construction and operation of the respective plant/plants. Substitution of plants or building additional capacity (ex-post : after operation begins) may become difficult tasks. Operating capacity of the plant cannot be reduced at wish as such decisions would harm the system.

'Harmful' price shocks of fuel may result in interruptions of constructional or operational programmes, postponement or cancellation of construction projects, shortage of electricity supply or even total shut-down of plants. Meanwhile 'beneficially' priced regimes usually induce less-productive accelerated construction projects or the very benefits may not be realized due to the limited capacity available. Therefore price changes in energy sector plays a role on the quantity of output from the non-energy sector, and hence the benefits to the systems.

Decision makers' choices under certain-price and uncertain-price regimes and further the ex-ante and ex-post conditions of the stochastic regime are compared in this study. Resulting propositions are discussed with preponderance.