



An Economic Feasibility Assessment of Photovoltaic Energy Systems

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Over the past decade, the electricity generation landscape around the globe has changed severely with rapid multiplying of renewable generation. The 21st century have numerous of points of power injection as well as millions of points of consumption. The power system in India has coarsely folded in the last decade and similarly in the previous decade. Alternative sources of energy are being sought after in the world today, as the availability of fossil fuels and other non-renewable resources are declining. Photovoltaic energy offers an encouraging solution to this search as it is a less polluting renewable energy resource. The proposed work focuses on the Economic Assessment models which estimates the economic impacts of constructing and operating power generation at the local and state levels. The work considers many aspects of the problem including the energy and economic ones, which is of basic importance for evaluating real outcomes of investments. The results of the assessment screens the economic feasibility of photovoltaic systems and the consequent production of electricity, recover costs of installation and maintenance of the system. Additional economic aspects includes evaluation of costs of the PV systems (investment costs and costs for maintenance, servicing and insurance against damage) and benefits due to the gains for the avoided bill costs, the incentives and the sold electricity; analysis of cash flows; estimation of the energy cover factor related to the results of the economic analysis; sensitivity analysis for the most significant physical and economic parameter.