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Different models used in Africa and Asia for off-grid electrification and the challenges faced

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Various models used for rural electrification in developing countries. The unsuccessful projects and their causes of failure are analyzed and the analysis proves that there is more to just the technology aspect of the deployment and the socio economic and political factors play a major role in determining success of the programs. Analysis of the projects also proves that the technical aspect of the of grid electricity deployment is only one part of the complete picture and there are various elements which determine the success factor of a project. Some essential elements required for success of projects are commitment from government, grass root level involvement of NGOs and companies, adequate financing models, subsidies which explicitly create the conditions whereby they are no longer needed logistical issues and good revenue collection methods. Some factors that determine sustenance of off grid projects are dispersed homesteads, low energy demand density, unavailability of spare parts, inappropriate financing models, theft of parts, upfront installation costs, day-to-day organization and logistics of solving repairs, lack of operational and managerial skills and lack of technical knowledge needed to run and maintain the systems. Among the various models, fee for service concession and micro credit schemes have proved to be most successful.

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