

Focus on CSIR Built Environment Key Projects

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REED: Rural Energy for Economic Development

Access to energy services plays a major role in economic development. The linkages between the provision of energy and poverty alleviation through economic development are, however, not fully understood. Rural Energy for Economic Development (REED), a long-term research project by the CSIR, is working toward improved understanding of these linkages. The focus is on the investigation of targeted interventions with the potential to increase economic development in underdeveloped communities through energy provision, and processing and value addition to natural/renewable resources, as well as the efficient use of energy.

It is anticipated that the research programme, co-funded by the CSIR and interested research partners, will take at least five years to complete. Total investment over the next four to five years is expected to exceed R9 million.

Africa's economic priorities are strongly influenced by the need to alleviate poverty. With more than 500 million people currently without access to electricity and more than 600 million people dependent on traditional biomass for survival on the African continent, there is a dire need for safe, affordable and clean forms of energy to enable productive economic activities



for generating much-needed income. The provision of energy must, however, also be cognisant of Africa's primary need to also deliver potable drinking water, sanitation, improved access to markets, communications, transport infrastructure and health services.

The delivery of new energy services must be based on a systemic and holistic approach where Africa's primary needs and poverty reduction are included in any paradigm for development. The challenge





of alleviating poverty through establishing new economic activities must be taken up, and validated decision-support processes and technologies can be applied to this end. However, the implementation

processes must be supported by good information and science, technology and innovation.

REED's overarching objective is the identification of targeted intervention measures with the potential to stimulate and increase new and improved, endogenous economic activities, based on processing and adding value to natural/renewable resources. The aim is to subsequently increase the demand for modern forms of energy in underdeveloped communities, whilst also ensuring the efficient use of energy. Research will be based on the use of validated methodologies employing developmental economics, simulation and modelling, and geo-spatial analysis.

Due to the complex nature of rural socio-economic development, anticipated outcomes from the research programme include:

- development of a systemic energy economic methodology, employing novel techniques and processes based on development economics, simulation and modelling and geo-spatial analysis to describe the linkages between energy provision and economic activities. The team will also study the effect of different development strategies in a community that will lead to the formulation of effective business models, to be applied in conjunction with implementation partners.
- validating the above-mentioned methodology through a rural energy-active laboratory. A "rural living lab" approach will be followed, where the current situation can be properly mapped, researched and documented beforehand and where a suite of researched interventions can be followed over time. These must be monitored, evaluated, documented and used for providing feedback to any novel model that is developed.
- development and implementation of technologies based on researched, relevant supply-chain linkages between local firms and multinationals, where high-value natural/renewable resources are value-added through novel processing and manufacturing technologies requiring science, technology and innovation; and
- the development and implementation of novel processes and technologies to ensure the efficient use of energy.

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