

Greening the African Energy Ladder

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IS-Academy



Energy and Development

Access to modern forms of energy is an important enabler of both social and economic development. Yet, 2.7 billion people around the world still rely on traditional fuels for basic household needs and 1.4 billion people do not have access to electricity. This lack of access poses great challenges regarding health, gender equality, and economic advancement for the poorest communities of the world, while directly impacting efforts in climate change mitigation and adaptation.



RENEW

Renewable energy technologies (RETs) and energy efficient appliances are promising solutions for alleviating energy poverty in developing countries. Despite their advantages, the dissemination of RETs remains low throughout developing countries, particularly in Sub-Saharan Africa. The barriers to the market penetration of RETs in developing countries encompass a range of economic, social, cultural, and institutional factors, all of which form core issues motivating the research content of RENEW.

RENEW is a 5-year, collaborative research project which is part of the IS-Academy program of the Netherlands Ministry of Foreign Affairs. The aim of the IS-Academy is to foster partnerships and exchange knowledge between academia, policymakers and practitioners in the Netherlands and abroad. The RENEW IS-Academy focuses on energy in Africa with specific case studies in Kenya, Rwanda and Mozambique. The project investigates how international cooperation can promote the use of renewable energy at the household level, with overarching goals of improving access to energy, supporting economic development, reducing poverty and ensuring energy security for East African countries.

Our Approach

RENEW has adopted a unique approach by assessing the energy access and diffusion problems from three distinct but complementary perspectives: 1) The enterprise perspective 2) The consumer perspective 3) The institutional perspective. We consider this three perspective approach to be crucial for a good understanding of the current energy situation, and for the development of future policies and programs aiming to push the energy transition process.

Research Themes

Theme 1

The enterprise perspective – business model design

The Base of the Pyramid (BoP) concept proposes that low income markets present profitable, yet complex, business opportunities for private enterprises. Due to a challenging business environment, BoP enterprises must design innovative business models to remain profitable. The focus of this research is to understand energy entrepreneurship at the BoP, and the characteristics of business models which may increase basic household energy access throughout rural East Africa.

Rahul Barua

Theme 2

The consumer perspective – household decision-making

This study aims to improve the understanding of the behavioural drivers of household decision-making. This is crucial for explaining and predicting the energy choices made by households and the possible interventions that can stimulate the transition process towards the uptake of cleaner and more efficient fuels and technologies in an East African context. To this end, a household model will be developed with specific attention for intra-household decision-making, bargaining power and the household decision environment.

Bianca van der Kroon

Theme 3

The institutional perspective – innovation systems

This theme aims at understanding the feasible mechanisms by which different actors (local, regional, national and international) can create the business enabling environment for broader development, diffusion and adoption of renewable energy technologies in East

Africa. To do so, an innovation systems perspective is adopted, with a focus at mapping the functioning of innovation systems and their determinants corresponding to newly introduced renewable energy technologies.

Aschalew Tigabu

Research Dissemination

The research will result in the following outputs: PhD dissertations, academic working papers and articles, and a series of policy briefs. These outputs will be made available at: www.renew-is-academy.org

Project Partners

RENEW is a partnership between several Dutch organizations and Southern partners involved in development-related research, policy and practice. The main partners are the Institute for Environmental Studies (IVM) of the VU University Amsterdam, the Energy Research Centre of the Netherlands (ECN), Unit Policy Studies and the Department of Environment and Water, Directorate-General for International Cooperation of the Netherlands (DGIS). The empirical research of RENEW is supported by three PhD researchers focusing on the thematic perspectives of the project, and a rotating staff of MSc students from the Netherlands and abroad.

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