Contact

Germany:

Dr. Ludger Eltrop – Project manager; Institute of Energy Economics and the Rational Use of Energy (IER), University of Stuttgart

Heßbrühlstr. 49, D-70565 Stuttgart, Germany
tel.: +49 (0)711-685 878-16, fax : -73
cell: +49 (0)160-7840682, le@ier.uni-stuttgart.de

Internet: www.ier.uni-stuttgart.de

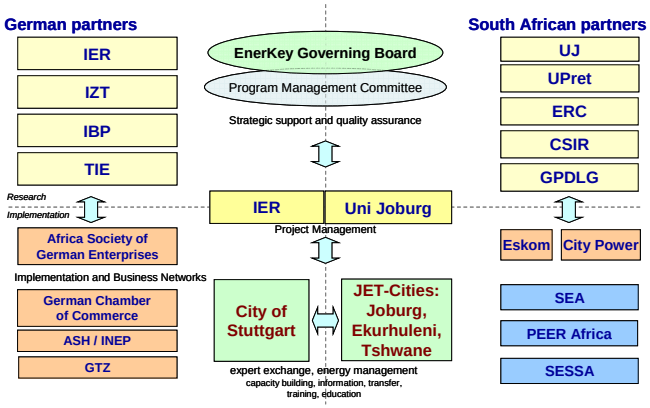
South Africa:

Prof. Harold J. Annegarn, University of Johannesburg, Dept. of Geography, Environmental Management and Energy Studies

PO Box 524, Auckland Park 2006, Johannesburg, SA;
tel.: +27 (0)11-559-3927, fax: -2430,
cell: +27 (0)83 6284210, hannegarn@gmail.com

Internet: www.uj.ac.za

Project Organisation



Project Website

www.enerkey.co.za

The German-South African Consortium

IER University of Stuttgart | **University of Johannesburg**

TÜV Rheinland Group (TIE)
www.eco-tuv.com

Inst. for Future Studies
www.izt.de

FhG Building Physics
www.ibp.fhg.de

INEP GmbH
www.inep-international.de

City of Stuttgart
www.stuttgart.de

German Chamber of Commerce
www.germanchamber.co.za

German Agency for Technical Cooperation (GTZ)
www.probec.de

City of Johannesburg
www.joburg.org.za

Ekurhuleni Metropolitan Municipality
www.ekurhuleni.com

City of Tshwane
www.tshwane.gov.za

Eskom
www.eskom.co.za

Sustainable Energy Africa (SEA)
www.sustainable.org.za

University of Cape Town Energy Research Centre (ERC)
www.erc.uct.ac.za

CSIR
www.csir.co.za

PEER Africa (Pty) Ltd

Sustainable Energy Society of Southern Africa (SESSA)

South African National Energy Association (SANEA)

EnerKey

EnerKey

www.enerkey.co.za

IER
Uni Stuttgart

UNIVERSITY OF JOHANNESBURG

Energy as a Key Element of an Integrated Climate Protection Concept for the City Region of Gauteng

A project in the framework of the Megacities Programme:

www.emerging-megacities.org

Sponsored by:

Bundesministerium für Bildung und Forschung

Status Quo

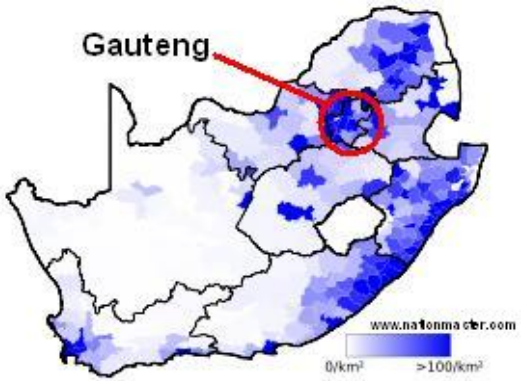
The emergence of megacities is fast becoming an area of global concern as the population growth exceeds the ability of a city's infrastructure and resource base to cope. Megacities of tomorrow have a crucial role to play in the transition towards a global sustainable development.

Energy is one of the key issues to be addressed in order to implement sustainability. Secure energy supply, equitable access to energy resources as well as environmentally responsible energy production and use are fundamental prerequisites for the sustainable development of the world and of megacities in particular. Energy use in cities influences the local and global environmental impacts, such as climate.

Megacities are both a threat and an opportunity to base future development on sustainability.

Johannesburg, Ekurhuleni and Tshwane form part of the Gauteng Global City Region in South Africa. Together the population exceeds 10 million. With an average annual population growth rate of approximately 2.4%, the population is projected to grow to 14.6 million by 2015, ranking it the 14th largest urban region in the world. The Gauteng government has endorsed a strategy to develop this city region into a globally competitive district. The province aspires to achieve this while meeting major economic, social and environmental objectives.

Population density of South Africa

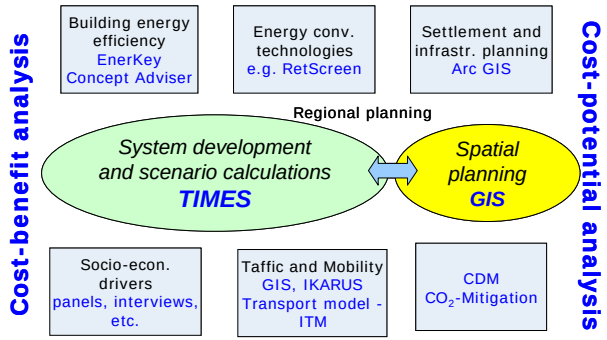


Project Objectives

The EnerKey project, comprising German and South African researchers and businesses, will undertake to assist the region to tackle these energy challenges and develop measures to improve and optimise the sustainable development of megacities while meeting major economic, social and environmental objectives.

- to investigate the potentials of innovative technologies for climate protection and sustainability
- to show the feasibility of an integrated approach through the development and use of integrated model tools and instruments
- to develop and implement energy projects as pilot studies, e.g. mass SWH implementation, schools retrofit and education campaign, and a cooking and heating energy needs test site.

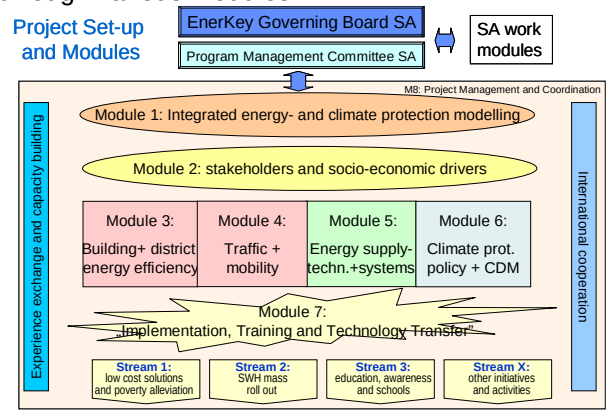
Modelling Approach



A modelling tool will be developed to evaluate data from various components of the energy system (technology options, energy policy, social and environmental drivers) and facilitate a knowledge base for a suitable pathway to an integrated energy and climate protection concept.

Focus Areas

The project will cover all relevant fields of the energy system and integrate sustainable energy planning through various modules:



Module 1: Integration the integrated energy and climate protection concept is developed with the help of an integrated energy system model

Module 2 - stakeholders and socio-economic drivers investigates and actively supports the non-technical aspects of the decision and implementation process.

Module 3 - buildings and district energy efficiency investigates the conditions and optimisation potentials for improving the energy efficiency in the building and urban district sector.

Module 4 - transport and mobility investigates and promotes the options for improvements and potentials for air quality and GHG mitigation in the transport and mobility sector.

Module 5 - supply systems evaluates the potentials and techno-economic-ecological key figures of energy supply technologies for the cities with particular reference to renewable energies.

Module 6 - climate policy and CDM follows and tests the international and national policies to meet the challenges of climate change and energy utilisation against the requirements of the urban energy system in Gauteng.

Module 7 - implementation prepares, monitors and evaluates the execution and performance of the case studies and implementation projects.