



PRIVATE SECTOR

## FINAL REPORT

# Invest in Renewable Energies in East Africa

East African Business Council



Dr. Fromme International Consulting

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## 1 INTRODUCTION

The East African Business Council (EABC) has so far focused its lobbying work on the Customs Union and non-tariff barriers. EABC has now embarked on a lobbying strategy to leverage issues affecting private sector competitiveness at the EAC level. In the Business Forum 2005 EABC has therefore identified the energy sector as a priority field for lobbying action.

The prime obstacle for business in East Africa is the high price of electricity (5-10 times higher than in Egypt or South Africa) and the low quality of power supply systems. The supply situation is characterized by a high dependency on large scale hydroelectric plants leading to power rationing as a result of dry spells and erratic rainfalls. As a result a number of industrial sectors are uncompetitive. For example the price of cement from any port in Asia is lower than cement produced in East Africa.

EABC planned to develop a sectoral strategy for investment in renewable energies in East Africa. Against this background, a short term consultancy, funded by GTZ and implemented through ICON Consulting GmbH was commissioned. Dr. Jörg-W. Fromme (DFIC) was selected as short term consultant to develop a sectoral investment strategy mapping out the following major themes/issues:

- Development of a renewable energy lobbying strategy for East Africa,
- Analysis of the investment framework for renewable energies in East Africa,
- Development of a concept for a renewable energy investment conference and
- Marketing of a renewable energy investment conference in Germany.

This report summarizes the activities and results of Dr. Fromme's assignment.

Chapter 1 provides an introduction to the topic investment in renewable energies in East Africa while chapter 2 gives an overview of the executed project. The lobbying strategy for investment in renewable energies in East Africa is presented in chapter 3. Chapter 4 provides the documentation of the organisation, marketing and evaluation of the renewable energy investment conference in Germany.

All the documents produced within the assignment as well as the presentations of the organised conference are included in the annexes of this report.

## 2 PROJECT OVERVIEW

### 2.1 Background

The East Africa Community (EAC) region with its five member states Kenya, Uganda, Tanzania, Rwanda and Burundi is abundant with energy resources. This mainly refers to renewable energies such as hydropower but also geothermal, solar and bio-energy. On the other side, most of the commercial energy has to be imported in the form of hydrocarbons. Energy prices are high in the region – especially compared to incomes. Furthermore, electricity supply is insufficient and thus unreliable; power cuts are frequent and rarely scheduled. As climate change is also affecting the region, a domestic contribution should be developed by harnessing renewable energy potential so as to prevent further damage.

The East Africa Community and the East African Business Council (EABC) are major players in the energy sector. EAC has recently implemented the Power Master Plan in order to strengthen the efforts regarding renewable energy and to improve the basic conditions for a better integration from stakeholders in the energy sector. Furthermore the EAC has adopted the “Strategy on Scaling-up Access to Modern Energy Services” which shall now be implemented.

Within the East African Community the generation of electricity is insufficient and its transmission to all places where it is needed can't be assured. The Master Plan identifies viable opportunities for generating more electricity, from hydro in Uganda, geothermal in Kenya, or natural gas in Tanzania for instance. In addition, the transmission lines, where they exist, depend on elderly technology and should be brought up to date. Installation of inter-connectors would permit greater sharing of available power among consumers in the three countries. Lack of power is holding back commercial and industrial production.

The region depends on biomass fuels – primarily wood, for 90% of its energy. This is a source of carbon emissions and creates environmental concerns. Electricity accounts for just 10% of energy consumption. Yet the region is rich in energy resources, especially renewable energies. The EAC has developed, with donor funding, an East Africa Power Master Plan, whose strategy it is to exploit resources and to share power among the countries through the creation of inter-connectors for power transmission.

Thus energy and renewable energies can be regarded as a main lobbying issue of the recent EABC policy.

Within the East African Community the framework conditions for Private Sector Participation (PSP) in renewable energies and their present application vary from country to country. Nevertheless, renewable energies have long had the attention of development partners. It is important to note that ministries of energy in several EAC countries expressed their concern that development partner projects should become more sustainable in a commercial sense and that this is a main reason to increase the focus on PSP.

### 2.2 Terms of Reference (TOR)

The expected outcomes of consultancy included the development of a renewable energy sector strategy for lobbying and marketing purposes. Therefore investment opportunities in the energy sector in East Africa based on the East African Power Master Plan had to be well documented and marketed. Up to date information on the sector framework, energy policy, investment projects and trends as well as financing options had to be considered. Travels to the five East African Countries had to be envisaged in order to assure ownership for the project issues, verify regulatory / sector specific investment framework, prepare the conference input and identify investment projects.

Another expected outcome was to facilitate and establish personal contacts between EABC / EAC and companies and institutions at decision-making level. A concept for a Renewable Energies Investment Conference had to be prepared and marketed. The participation of 50 representatives with a balanced mix from the following sectors had to be assured: commercial banks, development banks, power supply companies, equipment manufacturers and operators. The conference had to be marketed at the Hannover fair, the "International Conference Energy Africa" and the Africa Energy Forum. The conference had to be organised in co-operation with Afrika Verein and conference documentation had to be provided.

A follow up visit to East Africa by a group of conference participants had to be envisaged.

The detailed TOR are provided in Annexe 17.

### **2.3 Project Structure and Project Reports**

A variety of strategy papers and studies were developed concerning the present situation of renewable energies in the EAC member states as well as sector papers focusing on the use of solar energy, wind energy, hydro energy, geothermal energy and bio-energy for municipal and industrial applications.

The lobbying strategy and the produced background papers are included as annexes to this report and are accessible through the conference website <http://www.renewableseastafrica.de>:

- Renewable Energy Investment Lobbying Strategy for East Africa (Annex 1)
- Renewable Energy Investment for East Africa – Investment Framework (Annex 2)
- Sector Paper Bio-Energy (Annex 3)
- Sector Paper Geothermal Energy (Annex 4)
- Sector Paper Hydro Energy (Annex 5)
- Sector Paper Solar Energy (Annex 6)
- Sector Paper Wind Energy (Annex 7)
- Country Report Kenya (Annex 8)
- Country Report Uganda (Annex 9)
- Country Report Tanzania (Annex 10)
- Country Report Rwanda (Annex 11) and
- Country Report Burundi (Annex 12).

A conference on the topic of "Invest in Renewable Energies in East Africa" was organised by the German African Business Association and EABC with the technical and financial support of ProInvest, GTZ and the German Development Banks DEG as well as KfW (please see Chapter 4).

### 3 RENEWABLE ENERGY INVESTMENT LOBBYING STRATEGY

One main aim of the short-term assignment was the development of an investment and lobbying strategy for the East African energy sector with focus on renewable energies. This strategy is to be found in Annex 1.

The strategy takes up the concerns and interests of EABC members regarding energy issues. Underinvestment, resulting lack of reliable power supply and high energy prices present a major problem for the industry in the region. On the other hand, decentral renewable energy applications provide ample new business opportunities. Besides the need to mobilize private investment as in other sectors the energy sector is highly regulated and traditionally dominated by state enterprises. Investments thus require lobbying for optimal framework conditions.

#### 3.1 Objectives

The objectives of an EABC lobbying strategy can be summarized as follows:

- Strengthen the economic and industrial development of the region through cheap and reliable energy supply
- Strengthen the socioeconomic development of the region by increasing access to commercial energy and electricity
- Strengthen the development of the private sector by developing business opportunities in the energy sector
- Enhance private foreign and local investment in the energy sector
- Generate employment in the fields of renewable energies though local value added
- Enhance cohesion in the region by increasing cross border investments
- Contribute to the alleviation of climate change through the increased use of renewable energies
- Strengthen the role of EABC as a lobbying group to serve its members.

#### 3.2 Vision

Although the European Union started relatively late it has come a long way in the development of an integrated energy market and a common renewable energy policy. For the EAC and EABC the vision for 2020 could be as follows:

- Energy markets are liberalized and integrated on the EAC level
- Investments are split up between the following parties:
  - Original utilities (largely privatized)
  - Industries or ESCOs (cogeneration)
  - IPPs (local/international)
- Binding goals for the use of renewable energies are established
- Limits for CO<sub>2</sub> emissions are agreed upon
- Industry is exploiting the waste to energy paths commercially viable?
- One or several agencies and networks take care of promotion and knowledge management in the relevant issues
- One or several regional renewable energy business associations are active
- Consistent policies to promote renewable energies are in place on the national level
- Where resources are abundant export is achieved (bio-fuels?)

- Commercial and development banks are competing on the EAC level to fund renewable energy project
- EAC takes the lead in promoting PSP in renewable energies
- EABC has established a strong energy sector group which is accepted for its professional advocacy.

### 3.3 Elements of a Renewable Energy Lobbying Strategy

#### 3.3.1 Overview

The figure below shows the various dimensions of lobbying. They include stakeholders on a national and international level.

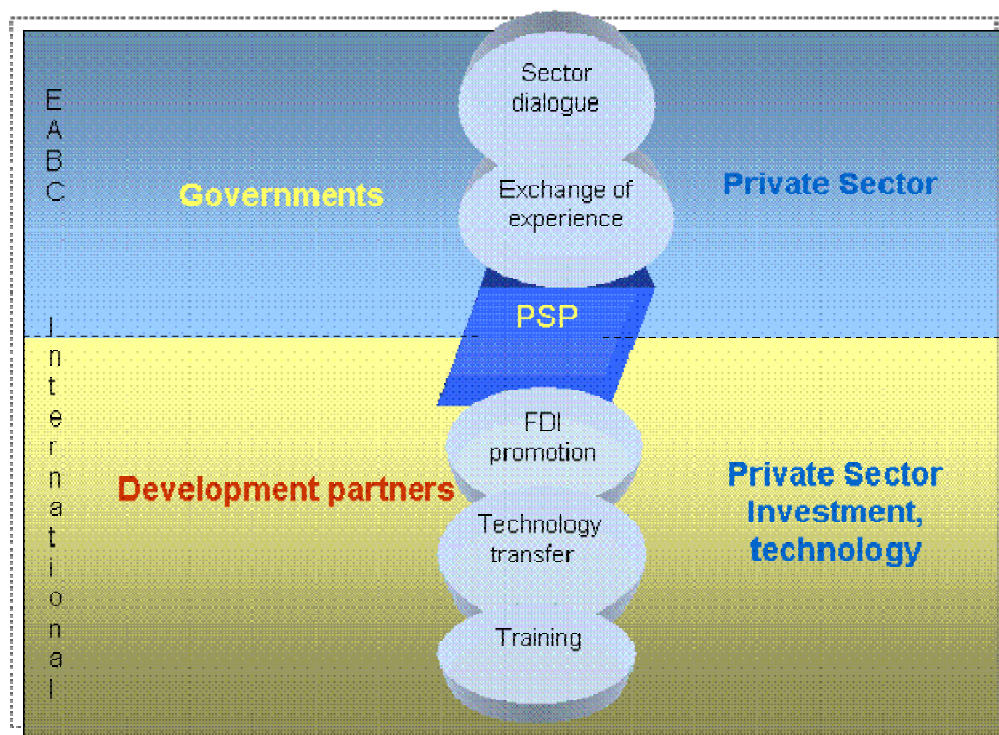


Figure 1: Stakeholder and Activities

#### 3.3.2 Need for Action: Issues for Lobbying

In the chapter above the present situation and some obstacles have been analyzed. In the following these elements are translated into issues for lobbying. The lobbying issues encompass requests, suggestions and actions on differing levels of certainty.

On the EAC level regional cooperation in the energy sector currently concentrates on the electricity interconnections. Policies, strategies and action remain on a national level. EAC and EABC can take important roles in the development of renewable energies.

The existing level of dedication has yet to be put into action. The potential for decentral solutions with investments by the private sector still has to be fully exploited.

- Sector reform liberalization of the power sector
  - Unbundling
  - Establishment of an independent, sufficiently financed and efficient regulator
  - Possibility to sell power to the grid: standardized Power Purchase Agreements (PPAs)

- PSP in renewable energies sector policy
  - Long term perspective with binding quantitative objectives
  - Adequate fixed PPA tariffs for renewable energies
  - Avoidance of thermal power plants (especially diesel plants)
- Finance and subsidies
  - Government guaranteed schemes for private sector financing
  - Pilot projects and schemes through national development banks
  - Facilitation of use of climate change funding i.e. CDM mechanisms, support from national focal point, lobbying on international level for simplified procedures
  - Exemption from import duties for all kinds of renewable energy and climate friendly technologies
  - Tax exemption for private sector investment in renewable energy projects
  - Use of budget funds for PPP projects
- Use of rural electrification funds for private sector projects
  - Establishment of an explicit and clear policy
  - Establishment of a strong implementation agency
  - Provision of adequate funding
  - Efficient and clear procedure for the distribution of funds (tendering or call for proposals)
- Encouragement of PSP in power sector
  - Policy for funding Private Sector Participation in infrastructure
  - Promotion of Public Private Partnership
  - Legal framework for PPP
  - Use of development partner funds for PSP
  - Model PPA for electricity from grid
  - Adequate prices for production from renewable energy.

### 3.3.3 Stakeholders to be Lobbied

For EABC renewable energies present an enormous opportunity. The current situation in the five member states varies very a lot. This relates to the potential of renewable energies. The difference regarding the liberalization of the electricity sector is much more important. In many member counties the present policies and programs for the use of renewable energies are not well developed. This strongly contrasts with the current developments in Tunisia or Morocco where a renewable energy law is now passed much similar to the German EEG. Much needs to be done and EABC could play a major role in this respect. The strategy includes the results of the investment conference in Germany.

The lobbying strategy has to take into account the various stakeholders. The stakeholders have their roles and possibilities. Lobbying has to be specific in order to be credible, effective and efficient.

The graph below shows stakeholders to be lobbied directly or indirectly.

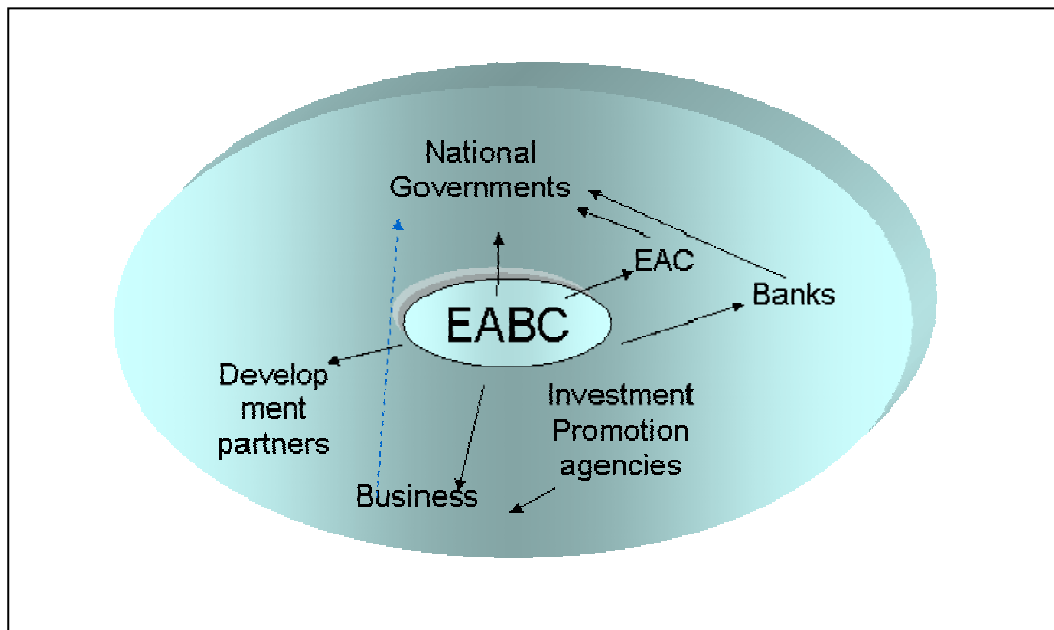


Figure 2: Lobbying stakeholders directly and indirectly

The following table shows the role and importance which the stakeholders have regarding the main lobbying issues.

Table Stakeholders and Issues

| Stakeholder          | Issue | Liberalisation of power sector | IPPs | Cogeneration | PSP in rural electrification | Promotion of RE of appliances |
|----------------------|-------|--------------------------------|------|--------------|------------------------------|-------------------------------|
| EAC                  |       | ++                             | +    |              | ++                           | +                             |
| National governments |       | ++                             | ++   | ++           | ++                           | ++                            |
| Development partners |       |                                |      |              | ++                           |                               |
| Banks                |       | +                              | ++   | ++           |                              |                               |
| Business             |       |                                | +    | ++           | ++                           | ++                            |

Some major characteristics of stakeholders are developed below.

EAC

is gaining strength with two new members. EAC is taking up energy issues as described above. The integration and promotion of private sector participation does not come naturally but requires substantial lobbying efforts. EAC should then also take up some lobbying activities towards the national governments.

National governments

are the main stakeholders as they are:

- Setting the regulatory framework
- Owning the only or main utility
- Investing heavily in electrification.

Development partners

are very active in the energy sector. This will increase with time especially regarding renewable energies. Most development partners' money goes to government where it is spent slowly and often inefficiently. Development partners' finance should be more geared towards PSP projects.

### Banks

Finance is crucial for private investors: banks have to be lobbied into more exposure in long term debt and structured off balance sheet finance.

### Business

needs to be mobilized to see energy not only as a cost factor but also as a field of investment. Only if there really are investors governments will improve the framework.

#### 3.3.4 Activities within a Lobbying Strategy

In the sections above two dimensions of the lobbying strategy have been discussed: lobbying issues and stakeholders. In the following the elements and activities are described which a lobbying strategy should comprise.

At this stage a number of elements and activities of such a strategy are emerging:

- Policy dialogue
  - Formulation of a policy white paper clearly formulating the demands, such as deregulation of the energy sector, promotion of third party access to grid, cogeneration, tariff policies, special programs for the promotion of renewable, renewable energies master plan
  - Establishment of high level working group on the formulation of energy policy especially energy supply, energy mix consisting of private and public sector (EABC together with EAC)
  - Business meets politics: regular meetings with members of parliament (MP) including government officials, challenging MPs to explain their policy projects
- Monitoring and benchmarking on progress on regulatory environment (legal framework, institutional framework, implementation and enforcement)
- Collecting and publishing good practice such as Money Maker Pump (originally funded by USAID/ kick start) with features such as:
  - Suitable low maintenance technology
  - Significant local content and value added
  - Use of development partner funding.
- Including Private Sector Participation (PSP) in development partner activities  
Development partner organizations are increasingly open to PSP in the field of renewable energies. Sizeable projects and private investment are needed. Once EABC becomes seriously involved in the fields of renewable energies a policy dialogue could be initiated with development partner organizations and governments on the framework conditions. Furthermore projects could be conceived more directly aiming at the development and facilitation of PSP in this field.
- Establishment of energy investors' dialogue with banks and private business  
The development of capital markets is an important issue for the successful development of renewable energies. Lending policies of banks should be turned towards the specific needs of the sector. This includes public banks with development tasks as well as commercial banks. A private equity market needs also to be developed. This can include direct investment as well as funds. Public budget funds for decentral development and micro finance should also be promoted to develop the market. EABC could enter into a stakeholder dialogue here.
- Investment promotion  
Investment is needed from all sides. Private business locally and internationally shall contribute in the same way as shall the national companies. Cooperation should be initiated with the investment promotion agencies in the region. An international investor's conference in 2008 in the region could be an important activity.
- Taking-up and teaming-up with development partners NGOs and Charity  
Ample experience is available in the region in renewable energy projects run by

NGOs and development partner organizations. Many of these have a potential to be transformed into commercially viable and sustainable concepts. Development partner organizations and NGOs normally do not strive for commercialization. EABC should lobby for mechanisms to transfer such projects to the private sector. This experience should be taken further. Ways and means have to be found to enter into an effective exchange with the relevant organizations. Large amounts of charity money are available at these NGOs. Joint action could well be imagined between NGOs and business to multiply successful projects. This not only includes the technologies used but especially the institutional set-up.

- Exchange of experience  
The regular exchange of experience within threshold become an important element of EABC lobbying as a cross cutting activity. One level is the EABC business community. Another level is the exchange with government officials and business community. Benchmarking and internal competition for investment shall be initiated (see also monitoring).
- Public relations  
Awareness has to be raised among business community and politicians:
  - In a first step the business community should be addressed in order to mobilize for the development of business opportunities and then to join the EABC lobbying effort
  - In a second step government press coverage should address the lobbying issues mentioned above.

### 3.3.5 Immediate Action

There are ample issues and manifold activities to be taken up. The following immediate steps are suggested:

- Discussion of this draft strategy among EABC members
- Establishment of a working group as a core for a renewable energy association
- Discussion of the draft strategy with EAC
- Formal adaptation of the EABC lobbying strategy and definition of resource levels
- Development of implementation plan
- Part of the early parts of implementation plan should be
  - Renewable energies' conference in the region
  - Development of a renewable energy price (could be sponsored by international companies and UNEP)
  - Study tour to German and European industrial lobbying organizations).

## 3.4 Implementation Planning

Substantial resources are required to achieve the vision spelled out above.

Depending on the initial political decisions at EABC a careful and realistic implementation plan should be developed.

Before any more detailed implementation planning can be undertaken, co-ordination with EAC shall take place.

The lobbying strategy should be implemented over a period of at least two years. EABC should dispose of resources from national and international energy economists of at least 12 person months.

## 4 CONFERENCE “INVEST IN RENEWABLE ENERGIES IN EAST AFRICA”

The conference titled “Invest in Renewable Energies East Africa” took place at KfW Development Bank in Frankfurt, Germany, from September 6<sup>th</sup> to September 7<sup>th</sup> 2007.

The conference organising committee was constituted by:

- Afrika-Verein (German-African Business Association), Hamburg, Germany
- East African Business Council, Arusha, Tanzania.

The conference was designed to bring together the key players in the EAC governments responsible for energy generation, transmission and distribution, private (including privatised) and public industries from EAC member states with German firms and administrators in order to make them aware of the investment opportunity, which the current energy situation presents. Part of the solution envisaged for EAC’s energy needs, is to locally generate and consume electricity produced by solar and wind power. German expertise in this area will be introduced to this venture. However, the situation in East Africa risks being overshadowed by more news-worthy opportunities in the oil and gas sectors elsewhere in Africa, notably in Nigeria, Algeria, and South Africa.

More than 210 participants, among them over 70 representatives from the five member countries of the EAC, and more than 140 representatives from Germany, attended the conference “Invest in Renewable Energies in East Africa”.

For more information on the conference, please see the conference website:

<http://www.renewableseastafrica.de>

### 4.1 Conference Concept and Marketing

A marketing concept was developed for this investment conference concerning renewable energies in East Africa (see Annex 13).

Furthermore, activities were conducted for the promotion of the conference, including the design of a conference flyer (please see Annex 14), the publication of recent project profiles from the East African participants (see Annex 15) and the management of presentations and speeches for the conference program.

### 4.2 Conference Program

#### 4.2.1 Overview of the Program

The conference program is described in detail in the following chapters. All the speeches and presentations held at the conference are included in the annexes of this report.

The investment conference for renewable energies in East Africa started on Thursday, 6<sup>th</sup> September 2007, with welcome addresses by Mr. Wolfgang Kroh (German African Business Association and KfW Development Bank), Mrs. Oliv Kigongo (East African Business Council EABC), Amb. Julius B. Onen (East African Community EAC) and Mr. Walter Englert (German African Business Association).

The conference was officially opened by Eng. Albert Butare, Minister of State in charge of Energy and Communications, Rwanda. The minister delivered the speech of H.E. Paul Kagame, President of the Republic of Rwanda, who conveyed his warmest greetings and best wishes for the successful deliberations of this crucial conference on investment opportunities in renewable energies in East Africa.

Two plenary sessions concerning success stories in the field of investment in renewable energies in East Africa and the framework for investment also took place on Thursday, 6<sup>th</sup> September 2007.

Thursday afternoon was programmed for two parallel workshop sessions about projects, technologies and investments in East Africa. Panel sessions concerning solar energy, mini-hydro, wind energy, bio-energy and rural electrification projects were offered to the conference participants from East Africa and Germany.

Many business to business meetings took place during the first conference day in order to exchange on-going projects and future plans in the field of renewable energies in East Africa.

The second day of the Investment Conference on Renewable Energies in East Africa was opened by a plenary session with the topic "Renewable Energies between Development and Business". An exchange focusing on financing the energy projects in East Africa to meet future needs took place in a second plenary session. Closing remarks were addressed to the participants by Mr. Karanja Kabage (EABC and Kenya Private Sector Alliance) and Mr. Walter Englert (German African Business Organisation). Besides the official end of the conference, business-to-business meetings took place during the afternoon of Friday, 7<sup>th</sup> September 2007.

On Saturday, 8<sup>th</sup> September 2007 optional site visits to German energy companies were organised for the conference participants. The German company Ossberger, for example, visited a hydropower plant in Southern Germany.

For more information on the conference program, please have a look at the conference website <http://www.renewableseastafrica.de>.

#### 4.2.2 Welcome Addresses

The following table gives an overview of speakers from different organisations that opened the conference with welcome addresses. Please see the annexes for the different speeches.

| Speaker             | Organisation  | Topic             | Annex  |
|---------------------|---|-------------------|--|
| Walter Englert      | German African Business Association                             | Welcome Addresses | Further Information:<br><a href="mailto:englert@afrikaverein.de">englert@afrikaverein.de</a> |
| Wolfgang Kroh       | German African Business Association, KfW Development Bank       | Welcome Addresses | 18   |
| Olive Kigongo       | East African Business Council                                   | Welcome Addresses | 19   |
| Amb. Julius B. Onen | East African Community  | Welcome Addresses | 20   |
| Eng. Albert Butare  | Minister of State in charge of Energy and Communications Rwanda | Official Opening  | 21   |

The welcome addresses paid special consideration to the increasing role of renewable energies in the East African countries. It can be summarized that renewable energies have become more and more competitive, mainly due to the increase of oil prices but also as a result of technological progress and economies of scale resulting from growing markets. Renewable energies have thus become a key element of energy supply strategies, aiming at

diversified investment portfolios that represent an optimum combination of least cost and risk mitigation aspects. Furthermore it was stated that the expanded use of renewable energies is a key element to limit further global warming and climate change.

#### 4.2.3 Plenary Sessions

The following tables give an overview of the speakers from different organisations that took part in the plenary sessions of the conference. For further information, please have a look at the conference website <http://www.renewableseastafrica.de> or at the annexes of this report.

##### Plenary Session 1: Investment in Renewable Energies in East Africa: Success Stories

| Speaker                | Organisation  | Topic  | Annex   |
|------------------------|---|--|---|
| James Wahogo           | Kenya Electricity Generating Company (Kengen)                 | Geothermal Projects in Kenya   | 22  |
| Buregaya Paulin        | Coopérative pour l'Environnement et le Développement – COOPED | Methane Gas Recovery from Municipal Waste in Kigali City, Rwanda     | 23  |
| Mohamedrafik A. Parpia | Zara Solar  | Providing affordable Solar Photovoltaic Systems in Northern Tanzania | 24  |
| Bernd Wolff            | Energiebau Solarsysteme GmbH                                  | Solar Hybrid Systems for Rural Electrification                       | Further information: <a href="mailto:info@energiebau.de">info@energiebau.de</a> |

##### Plenary Session 2: Financing Energy Projects in East Africa: Framework for Investment in Renewable Energies in East Africa

| Speaker      | Organisation   | Topic   | Annex |
|--------------|--|---|-------|
| Winfried Nau | New Business Africa, Deutsche Investitions- und Entwicklungsgesellschaft mbH (DEG) | DEG in Renewable Energies                       | 25    |
| Klaus Gühr   | KfW Development Bank   | Investing in Renewable Energies                 | 26    |
| Orli Arav    | Frontiers Markets  | Private Sector Investment in an Emerging Sector | 27    |

Discussed issues concerning the framework for investment in renewable energies in East Africa covered the regulatory conditions of independent electricity producers. It was recommended to clarify the rules for grid connection and feeding of electricity into the grid. Furthermore private sector participation in the renewable energy sector should be promoted to establish funding and long term investment. PPP could be an appropriate model (public private partnership).

Plenary Session 3: Renewable Energies between Development and Business

| Speaker               | Organisation                       | Topic  | Annex |
|-----------------------|------------------------------------|--|-------|
| Dr. Nyamajeje Weggoro | East African Community (EAC)       | East African Power Master Plan Framework for Investment into Renewable Energies in East Africa | 28    |
| Stefan Opitz          | German Technical Cooperation (GTZ) | ODA and Private Sector: Synergies to Promote Investment in Renewable Energies in Africa        | 29    |

Plenary Session 3 was followed by a question and answer session. The lack of regulatory capacities and a lack of possibilities to feed renewable energy to the grid were stated by an East African participant. Furthermore, aspects of the East African Power Master Plan were picked up by the participants. It was suggested to promote prototypes of energy projects that can be replicated quickly. It was also recommended to prove the assumptions of the Power Master Plan, especially in the field of hydropower. It was stressed that subsidies and appropriate tariffs are needed in the East African power sector until renewable energies become economically efficient. The EAC representative concluded that EAC is actually working on a more advanced version of the Power Master Plan that will also include Rwanda and Burundi.

Plenary Session 4: Financing Energy Projects in East Africa – Meeting Future Energy Needs

| Speaker          | Organisation                    | Topic  | Annex |
|------------------|---------------------------------|--|-------|
| Patrick Seifert  | BHF Bank AG                     | Financing Energy Projects in East Africa – Meeting Future Energy Needs | 30    |
| G. Mbeshherubusa | African Development Bank (AfDB) | East Africa Energy Sector – Challenges and Opportunities               | 31    |

In the question and answer session following Plenary Session 4, commitments were asked for in order to improve finance for renewable energy projects in East Africa. A representative of a German development bank recommended to group suitable small scale renewable energy projects in order to become attractive for international development banks and assure long term cost efficiency.

#### 4.2.4 Workshop Sessions

The following tables provide an overview of the speakers and their topics in the field of renewable energies in East Africa. For further information, please have a look at the conference website <http://www.renewableseastafrica.de> or at the annexes of this report.

Panel 1a: Solar Energy

| Speaker         | Organisation                   | Topic  | Annex  |
|-----------------|--------------------------------|--|--|
| Detlev Höhne    | Stadtwerke Mainz               | Kigali Solaire – Solar Energy for Africa   | 32   |
| Dr. Martin Gorn | Schott Solar AG                | Invest into PV Solar Electricity Supplies for Africa and Asia – Profitability and Expectations from a German PV Manufacturer   | 33   |
| Nicolas Rohrer  | Solar 23 GmbH                  | Solar Energy in Africa   | Further information:<br><a href="mailto:Nicolas.rohrer@solar23.com">Nicolas.rohrer@solar23.com</a> |
| Kimbowe S. Emmy | Energy Systems Limited, Uganda | Utilization of Solar Energy Resource and Technology to achieve basic Rural Electrification, improved Social Services and safe Water Supply in off-grid rural Communities of Uganda | 34   |

Panel 1b: Mini-Hydro

| Speaker               | Organisation                     | Topic   | Annex |
|-----------------------|----------------------------------|---|-------|
| P. C. Kamau           | Tana River Development Authority | Current Hydropower Projects of Tana and Athi Rivers Development Authority | 35    |
| Helmut Erdmannsdorfer | Ossberger GmbH                   | Mini Hydro  | 36    |
| Jean Claude Maillard  | AZ Technologies                  | Pico and Solutions  | 37    |

The question and answer session from the participants of the “Mini-Hydro” panel concentrated on the need for micro-credits in order to further promote small scale projects. The presented technologies are widely applicable both for grid and off-grid solutions and can use various water qualities, e.g. sea water. A benefit of mini-hydro technologies is its low maintenance cost.

Panel 2a: Wind Energy

| Speaker                   | Organisation                  | Topic  | Annex   |
|---------------------------|-------------------------------|--|---|
| Patrick F.A. Wurster      | Innovative Windpower GmbH     | Innovative Wind Power  | 38  |
| Robert Muchiri            | Windflow Power Limited, Kenya | Marsabit Wind Project – Opportunities and Challenges in a desert Landscape | 39  |
| Manfred Gose              | Lahmeyer AG                   | Wind Energy Projects   | Further information: <a href="mailto:manfred.gose@lahmeyer.de">manfred.gose@lahmeyer.de</a> |
| Angelika Fahrhan-Reimpell | WKN Windkraft Nord            | Wind Energy Projects   | Further information: <a href="mailto:info@wkn-ag.de">info@wkn-ag.de</a>                     |

Panel 2b: Bio-Energy

| Speaker                 | Organisation                              | Topic  | Annex |
|-------------------------|---|--|-------|
| Thomas Siegmund         | BBE Federal Association of Bio-energy     | Bio-energy “Made in Germany” – Technologies, Markets and Challenges in East Africa | 40    |
| Dieter Arndt            | Bioking Germany                           | Bio-diesel   | 41    |
| Eng. Ngosi C.X. Mwihava | Ministry of Energy and Minerals, Tanzania | Bio-energy Business Opportunities in East Africa                                   | 42    |
| Eng. Hosea A. Mbise     | Ministry of Energy and Minerals, Tanzania | Biomass-Based Cogeneration Potential in East Africa                                | 43    |

The question and answer session on the potential of biomass for energy stressed the aspect of competition between food crops vs. energy crops. Access to land and water for plantations of oil crops and locally available knowledge / trained staff might become bottlenecks in the development of bio-energy projects. Project experiences showed that bio-diesel is only competitive when the oil price is high. Nevertheless, there are many prospects for bio-energy, e.g. income generation, use of locally available resources, prevention of climate change. Private sector investment, especially German expertise, could result in a win-win-situation for local farmers and private investors. The participants of the panel were interested in an on-going exchange of the best practice experiences in the bio-energy sector in East Africa.

Panel 2c: Rural Electrification Projects

| Speaker            | Organisation                               | Topic  | Annex |
|--------------------|--|--|-------|
| Alexander Varghese | UNIDO Representative for Kenya and Eritrea | Empowering Rural Communities in East Africa – The role played by Affordable Renewable Energy Technologies for Value Addition, Employment and Income Generation | 44    |

This panel was followed by a question and answer session in which strategies for commercial sustainability of rural electrification projects were discussed. A participant characterised the most expensive energy as the energy required but not accessible and therefore evaluated the availability of energy as more important than energy prices. Access to energy was considered as a basic issue. The co-operation with the private sector and local banks should be considered in order to finance and execute rural electrification projects. There are 25 rural electrification agencies in Africa that can provide further information on on-going projects.

4.2.5 Side Event

The following table provides an overview of the side event concerning a strategy on scaling up access to modern energy services (see Annexe 45).

| Speaker           | Organisation | Topic   | Annex |
|-------------------|--------------|---|-------|
| Peter N. Kinuthia | EAC          | Strategy on Scaling up Access to Modern Energy Services | 45    |

The strategy seeks to engage EAC partner states in an ambitious initiative to scale up access to modern energy services to support the achievement of the Millennium Development Goals. A major objective is to enable at least half of the population to access modern energy services by 2015. It is envisaged to provide access to reliable modern energy services for 9.6 million East African households (approx. 48 million people) and 23,000 extra localities, e.g. schools, clinics, hospitals and community centres. The following four issues have been identified as key factors to the success of the strategy:

- Policy harmonization
- Capacity building of public and private sectors
- Formulation of support formulas (e.g. soft loans, grants, etc)
- Strategic coordination and project management.

The strategy combines a regional approach with multinational impact and fund mobilization capability; it builds on local leadership and ownership.

4.2.6 Closing Remarks

The following table provides an overview of the closing remarks of the conference.

| Speaker        | Organisation                        | Topic           | Further information  |
|----------------|-------------------------------------|-----------------|--|
| Walter Englert | German African Business Association | Closing Remarks | <a href="mailto:englert@afrikaverrein.de">englert@afrikaverrein.de</a> |
| Karanja Kabage | Kenya Private Sector Alliance, EABC | Closing Remarks | <a href="mailto:info@kepsa.or.ke">info@kepsa.or.ke</a>                 |

The closing remarks summarized impressive success stories in the field of renewable energies in East Africa. Solar energy systems are commercially viable and a number of companies are already active and have set up sales and maintenance networks. Successful projects were presented that turn municipal waste into energy. The first biomass projects are being implemented and developed; the potential has to be tapped. Furthermore bio-fuels are not only coming up in Germany, they are also an arising subject for East Africa and jatropha is suitable for small to larger scale production of bio-fuels.

East African governments are opening up their renewable energy policies. The developed policy frameworks for renewable energies shall be made operational and efficiently enforced. The conditions for investments into renewable energies also need to be improved.

The regional integration in East Africa could be used as a driver to create an integrated energy market and an investor friendly environment, which, once achieved, will promote FDI into East Africa and accelerate a technology transfer and dissemination in the field of renewable energies.

Concerning finance & development partners it was mentioned that the supply-demand gap has widened due to lack of projects in the 90's, resulting in a present backlog of projects. The approval procedures from financing institutions are very time consuming. The East Africa Community needs funding facilities in the range below 5 million €, especially for the implementation of the "Strategy on Scaling up Access to Modern Energy Services" (see also Annex 45).

Mr. Englert from the German African Business Association proposed the creation of a renewable energy platform in order to facilitate the dialogue between financial institutions, power producers, development partners and politicians.

### 4.3 Participants

More than 210 participants attended the conference. Representatives from the following sectors were present:

- Industries for the supply and production of energy (utilities) as well as energy consuming industries
- Financing institutions
- Development partners
- Governmental institutions.

Please see the list of conference participants in Annex 16.

The East African participants had ample opportunities to exchange with German companies about investment opportunities in the East African energy sector, especially concerning matters like consultancy, know-how transfer and provision of equipment.

From the East African side various representatives from the ministries, international organisations and companies were present at the conference.

The following East African Investment Promotion Centres attended the conference:

- Kenya Investment Authority
- Kenya Private Sector Alliance
- Rwanda Private Sector Federation
- Rwanda Investment and Export Promotion Agency (RIEPA)
- Tanzania Investment Centre
- Uganda Investment Authority.

Various representatives of private companies from East Africa took part in the investment conference, including 8 private sector participants from Kenya, 1 private sector participant

from Burundi, 19 private sector participants from Rwanda, 10 private sector participants from Tanzania and 5 private sector participants from Uganda. Please see the following table for detailed information.

| EAC Country | Companies present at the Conference   |
|-------------|---|
| Kenya       | Barclays Bank Kenya, Green Power Int., Kengen, Kenya Sugar Board, Sun 'N' Sand Beach Resort, Tana River Development Authority, Windflow Power         |
| Rwanda      | ABCI, Adenya, AHIG, Bio Agronomics, BUFMAR, COOPED, CRE, Entregele, GIC s.a.r.l, Kan International, Netech, RES, RIEIX, SEFIK, Sogemer                |
| Tanzania    | Electric International Company Ltd., Katani Limited, REX Investment Limited, Scan Tanzania Limited, TANESCO, TaTEDo, Wind e Co. Ltd., Zara Solar Ltd. |
| Uganda      | Energy Systems Ltd., Hydromax Project, Mount Elgon Hydro Electric Power Project, Solar Energy in Uganda   |
| Burundi     | REGIDISO  |

More than 40 Profiles for renewable energy projects in East Africa were prepared by East African participants and represented an important issue for business to business meetings within the conference. For more information please see the list of project profiles in Annex 15 or the conference website <http://www.renewableseastafrica.de>.



Picture 1: Interested participants attending a plenary session



Picture 2: Promotion of renewable energies “made in Germany” during a conference exhibition



Picture 3: Last minute preparations for presentation



Picture 4: Lively discussions and business-to-business meetings



Picture 5: Speakers of a plenary session about success stories concerning renewable energies in East Africa

#### 4.4 Conference Evaluation

A conference evaluation was conducted by EABC, based on the opinions, impressions and ideas of the conference participants. More than 70 conference participants took part in the evaluation. The major results are summarized and ranked in the following table.

| Conference Objective  | Conference Evaluation   | Rank |
|---|---|------|
| Learn about East Africa as an investment location                                 | Majority of respondents considered objective was mostly achieved                                      | ++   |
| Stimulate interest in investment in renewable energies in East Africa             | Majority of respondents considered the objective as mostly achieved                                   | ++   |
| Stimulate interest in investment in renewable energies in East Africa             | No negative feed back, 80% of the respondents considered this objective as fully and mostly achieved. | +++  |
| Exchange of experiences on projects and business approaches in renewable energies | Majority of respondents considered the objective as fully or mostly achieved                          | +++  |
| Establish business contacts between German and East African companies             | Majority of respondents considered the objective as mostly achieved                                   | ++   |
| Deepen dialogue with finance institutions & development partners on energy        | Majority of respondents considered the objective as fully or mostly achieved                          | +++  |

A detailed report of the EABC conference evaluation is included in Annex 46 of this report.

The conference was rated by the participants as a high profile platform for company executives, technology experts and decision-makers from governments. The impression was that there are ample opportunities to invest for business which shall become even more attractive as governments improve framework conditions.

The transfer of modern technologies and investments from Germany into the energy sector can be a win-win scenario for both East African businesses and for high-tech companies in Germany / Europe.

#### 4.5 Follow-Up

A main objective of the conference was to raise awareness in Germany concerning the needs and resulting investment opportunities in East Africa, leading to a number of future business partnerships.

The liberalization of the energy sector is necessary to encourage capital investment from donors and stakeholders. The EAC region states will be an increasingly attractive territory for private sector investment in the energy sector in regards to renewable energy.

The EABC conference evaluation gave a first impression about the follow-up activities of the conference, as requested by the participants. The results of the evaluation (see Annex 46) can be summarized and ranked in the following table.

| Conference Follow Up Activity                            | Conference Evaluation | Rank |
|--|-----------------------|------|
| Establish German-East African Renewable Energies network | Very important        | +++  |
| EABC working group on Energy issues                      | Very important        | +++  |
| Trade missions to East Africa                            | Very important        | +++  |
| Follow up conference in East Africa/Germany              | Very important        | +++  |

The Investment Lobbying Strategy (see Annex 1) recommended the following reforms for the East African Community:

- Further development of sector reform liberalization of the power sector
- Promotion of Private Sector Participation (PSP) in renewable energies sector policy
- Encouragement of PSP in the power sector
- Adequate Finance and subsidies
- Use of rural electrification funds for private sector projects.

A variety of follow up activities is emerging to tackle the present challenges for renewable energy projects and will be discussed at a follow up meeting organized by EABC and also, among other subjects, at the GTZ Energy Workshop in Nairobi, Kenya, in October 2007. These issues are based on the conference evaluation and the impressions and remarks of the conference participants.

Among the follow up activities, the establishment of a Renewable Energy Association as a business association might be discussed. The development of a suitable regional versus national structure of this association has to be envisaged, an example to be studied is the Germany – South Africa business network driven by the Chamber of Commerce. Cooperation with European business associations and application for international funds (e.g. EU funds) should be considered.

The objectives of such a Renewable Energy Association include:

- Promotion of FDI and Joint Ventures
- Lobbying for reforms of the regulatory environment concerning renewable energies
- Networking/information exchange on replicable projects in the energy sector
- Constitution of a database on funding opportunities for renewable energy projects.

Furthermore the organisation of follow up business meetings in East Africa with the implication of governmental institutions is planned. Thematic focus of business meetings should consider the finance of renewable energy projects in East Africa and the scaling up of success stories concerning renewable energies in East Africa.

The dissemination of information and sharing of experiences through websites, newsletters and meetings is considered as another follow-up activity. The mobilisation of new members that consider energy as an investment opportunity in East Africa is necessary.

The integration of the private sector within the EAC energy activities - based on the recommendations of the lobbying strategy - is seen as another follow-up activity. This includes the:

- Definition of adequate structure working groups
- Inclusion in implementation of strategy of scaling up access to energy
- Organisation of special events, e.g. regional conferences on energy policies including renewable energies and rural electrification as a main issue.

Furthermore the exchange on financing small energy projects was considered as necessary for future activities, including the following topics and statements:

- International finance institutions and international commercial banks stated at the conference that they require large projects
- All member countries thus face the challenge of bundling projects to receive funding
- Cogeneration has a large potential in East Africa and could be a prime focus
- Climate finance mechanisms (CDM) should be used as a finance source
- Study of best practice examples - international and regional - should lead to a follow up conference.

The exchange on biomass as a new issue for resource rich regions in East Africa should also be planned. This implies a discussion on the following key aspects:

- Assessment of technical and economical aspects of biomass use, e.g. direct thermal combustion vs. biogas production
- Evaluation of competitive biomass applications (electricity generation versus fuel for transport versus food)
- Mobilisation of key industries for investment in bio-energy projects (e.g. sugar, coffee, tea, flowers' industries)
- Prognosis of the international demand for biomass (especially bio-fuels)
- Promotion of interregional policy coordination and trade issues.

The further development of Private Sector Participation (PSP) - including technology transfer and FDI - should be promoted. This could occur at a business event that might take place in East Africa with the participation of German industries. This event could consist of the following components:

- Energy policy dialogue with key partners (e.g. EAC, GTZ, development banks)
- Subsectorial issue workshops
- Business to business meetings
- Poster exhibition
- Promotion of a "finance market place" where presented small scale energy projects could meet key (financial) partners for future project execution.

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