



Kenya Renewable Energy Association
KERA

Annual Report
For
2008

Kenya renewable energy association
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Background of KEREA

The Kenya Renewable Energy Association (KEREA) was formed in the year 2000. It originated from the transactions of the Renewable Energy Resources Technical Committee (TC) (04 TC 11) set up by the Kenya Bureau of Standards to develop standards and codes of practice governing components and systems intended to make possible the harnessing of renewable energy. The TC comprises of virtually all major players in the renewable energy industry in Kenya.

In the course of developing the codes and standards, the members of the industry realized that the enforcement of the standards and codes would be enhanced if they formed an association. This would not only further their business interests, but also act as a self-regulatory body that would ensure fair and acceptable business practices that would stimulate market growth in renewable energies.

Once the need for the association was established, committee set out to develop a constitution for the proposed association, which was named the Kenya Renewable Energy Association (KEREA).

The objectives for which KEREA is established are:

- To promote the interests of members of the Renewable energy industry among Government, Donor organizations, Non-governmental organizations, General Public and any other organizations that may impact on the development and general well being of the industry.
- To create increased public awareness in renewable energy through publication, advertisements, endorsements, seminars, conferences, advertising and promotional campaigns of every nature.
- To assist the Government and industry on all issues related to renewable energy technologies including energy policy formulation, standards, taxation, settlement of misunderstandings, etc and speak as one body for Renewable Energy Technologies.
- To promote better business practices and professionalism in the industry by maintaining good ethical and moral standards and by encouraging the adoption of good engineering practices and standards (quality products, design, installation and maintenance) among the members of the renewable energy industry.
- To apply for, acquire and hold charters, Acts of Parliament, privileges, monopolies, licenses, concessions, patents or other rights or powers from the Kenya Government or local authority or any other statutory body and to exercise, carry on and work any powers, rights or privileges so obtained.
- To protect the consumer of RE products by encouraging standardization of components

Registration of KEREA

KEREA is now a fully registered association under section 10 of the societies act, rule 4. The certificate (No. 21622) was issued on 2002-08-08

Membership Categories

Full Membership shall be open to registered corporate bodies, individuals, NGOs, Consultants, academic institutions, and other organizations that have been active in the renewable energy industry

Associate Membership shall be open to any individual persons or organizations that have demonstrated strong commitment to Renewable Energy Technologies provided that they fulfill their other obligations to the association.

a) Full membership fee:

Corporate: registration KES 5000/=, annual subscription fee of 10,000

Individual: registration KES 2500/=, annual subscription fee of 2500

b) Academic institutions: registration KES 2500/=, annual subscription fee of 2500

c) Associate membership: registration KES 1500/=, annual subscription fee of 1500

d) Students membership: registration KES 500/=, annual subscription fee of 500

e) Technicians membership: registration KES 500/=, annual subscription fee of 500

Current address

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MAIN REPORT

1. KENYA RENEWABLE ENERGY ASSOCIATION OFFICES

The Kenya Renewable Energy Association has been operating from the ASP company offices since August 2006 to date. Previously the association had been housed by one of its member-Telesales Solar, at Bruce house town centre. The association is seriously in need of an independent office space for its convenience.

KEREA thanks its members for the generous support in housing the association free of charge. Thanks also go to the Ministry of Energy for freely giving its space to the association since September 2004.

The association is currently under negotiations with KIRDI and hopes to secure an office space at KIRDI offices in South C.

2. OFFICE BEARERS

In accordance with the KEREA constitution, the elections should be held at the end of every three years.

Last election was held in February 2008 during the AGM and the Executive Committee now comprises of the following members.

1. Vincent Sze-yung Loh	Chairman	ASP Company Ltd
2. Norman Chege	Vice-Chairman	Davis & Shirliff (K) Ltd
3. Reuben Gisore	Secretary	Kenya Bureau of Standards
4. Charles Muchunku	Treasurer	ESD Africa
5. Henry Ndege	Deputy secretary	Wilsolar (K) Ltd
6. Caxton Munyoki	Committee Member	KENITAL solar Ltd
7. Patrick King'oina	Committee Member	MAETER

It should be noted here that so far, the KEREA Executive Committee does not draw any allowances. The members serve on a voluntary basis by setting aside their time and resources to attend to KEREA's business.

3. STICHTING TRIODOS RENEWABLE ENERGY FOR DEVELOPMENT FUND

3.1 BACKGROUND

The objectives of the Stitching Triodos Renewable Energy for Development Fund (hereafter referred to as "Donor") is to promote and support the accessibility and use of renewable energy in developing countries as a means of alleviating poverty and improving the quality of life of economically disadvantaged people; encouraging sustainable economic development and promoting the protection of the environment.

In furtherance of these objectives, the Donor has provided grant finance to the Kenya renewable Energy Association (KEREAA) to enable the association to develop and implement quality standards, a code of practice for members of KEREAA related to enforcement of quality standards and to help improve the quality of products and services in the renewable energy business sector of Kenya

All the funds have so far been received by KEREAA

3.2 ACHIEVEMENTS

The achievements reported hereunder are being evaluated against specific requirements of the grant.

3.2.1 Establishment of KEREAA Secretariat

KEREAA secretariat has since been well established and running well except for the office accommodation which is being looked into a lasting solution.

3.2.2 Official Launch of the Association

The association is yet to be officially launched and there is a plan to re launch it soon.

3.2.3 Connection to the Internet and establishment and launch of Website

KEREAA has purchased a Telkom wireless telephone unit and now the association secretariat can do communications through emails. However, as the office and the need for communication grows, association needs to look for a service provider who will offer unlimited communication option since the above service charges on the time spent online

3.2.4 Summarizing of major existing Standards for KEREAA members

This activity was completed at the cost of KES 50 000 (500 Euro). Distribution of the summaries is ongoing but KEREAA needs funds to print summary in a user-friendly format for field and work-areas. The summaries should be in a durable and weather-resistant media.

3.2.5 Preparation of the Code of Conduct for KEREAA Members

This activity was completed at the cost of KES 160000 (1600 Euro) and the dissemination is ongoing. As in the case of the standards summaries, a user-friendly format for field and work-area conditions is needed.

3.2.6 Testing of Amorphous Silicon (A-Si) Panels dominating Kenya Market

The final results of the test were released on 15th June 2005 by Dr Arne Jacobson in a meeting organized by KERA at the Kenya Bureau of Standards Boardroom. The local dealers have since improved the quality of the panels imported into the country though there are still instances of imports which fail to meet the requirements of the Kenya Standards. These are being handled in conjunction with the Kenya Bureau of Standards.

3.2.7 Promotion of Quality Standards and Code of Conduct

This is an ongoing activity aimed at continuously raising members' awareness. In addition to the above documents, KERA has prepared three manuals under the Kenya Photovoltaic Capacity Building Project (KPVCP): (1) Installers Manual for Solar PV Systems; (2) Technical Sales Manual for Solar PV Systems; and (3) End-user Manual for Solar PV Systems. These manuals have been published in a user-friendly format capable of being used in all conditions of work. Distribution to members is free. The aim is to urge dealers to distribute the manuals to their customers as a package with all systems sold. KERA plans to subsidize the cost of the manuals in order to make them more affordable to the customers.

3.2.8 Quality tests for balance of system components

If resources allow, KERA plans to initiate the testing of batteries, charge controllers, inverters, lamps and wiring accessories in order to verify their quality. There are indications that the local manufacturers and assemblers need guidance on improving their products in order to promote availability. This will require additional resources for KERA.

3.2.9 Membership Status

Recruiting more members continues to be the challenge for KERA. This in part results from the stringent membership regulations and the high fees. However, it has been the feeling of the KERA Executive Committee that commitment and the quality of membership must be adhered to rather than mass membership which do not add value to the association. Currently the membership stands at 53.

It is expected that membership will substantially increase now that the training and certification of technicians is on. The fees for the technician membership have also been reviewed to be in line with their income expectations.

3.4 GRANT UTILIZATION STATUS

First tranche of the grant totalling Euros 6,600 was received early August 2004 and the second tranche totalling Euros 7500 was received in the year 2007. The amount spent and committed to date is summarized hereunder:

	Description	Amount (Euro)
1	Setting up KEREa secretariat and related activities	4670
2	Summarizing of Main PV standards for KEREa Members	500
3	Preparation of the Code of Conduct for KEREa Members	1,600
4	Running the KEREa secretariat for the last three years	7500
	Total Expenditure	14,270
	Balance	Nil

Table 2 – Grant utilization status summary

4. THE KENYA PHOTOVOLTAIC CAPACITY BUILDING PROJECT (KPVCP)

Foreword

One of the gravest concerns emerging in the PV sector in Kenya is the continued and increasing use, by PV dealers, of inexperienced and untrained FREELANCE PV Technicians. Unfortunately, these technicians are not directly "employed" or "attached" directly to any one company, and no one takes responsibility for their training, poor installations and even worse, bad reputation for PV.

A second serious problem has been the proliferation of poor quality PV components, coupled by very low consumer knowledge or skill to differentiate quality attributes. Consumers have been cheated by recent and intensive advertisement of PV components, some with outright falsehoods.

A third issue that has come to the fore is that most consumers are unaware of environmental and health hazards related to batteries. In addition, there are already over 200,000 SHS installed Kenya and nearly all owners of these, have inadequate or no knowledge of proper battery management.

There is interest in the market to resolve these issues, but industry players, though willing to co-finance, do not have adequate funds to undertake any meaningful intervention.

Such an effort is estimated to cost about US\$ 417,000, towards which PV dealers in Kenya are willing to contribute. PVMTI has been approached by industry to co-finance at least US\$ 300,000 towards this initiative in order to achieve the following:

- a) A well-structured and inexpensive countrywide training programme for appropriately selected freelance technicians. A large database is already available from the STEP Program, as a starting point. The project would include creation of control mechanisms e.g. registration and accreditation of "Recommended Freelance PV Technicians." Technicians can be deregistered if found ineffective or fraudulent. Refresher courses could be one of the activities of KEREa, every few years.
- b) Development of a solar curriculum which should be incorporated into the existing electrical and electronics training courses at the regionally based technical training institutes and polytechnic schools.
- c) A market awareness campaign on quality systems and publicizing the Kenya PV standards recently drafted by the Kenya Bureau of Standards, in collaboration with the PV sector stakeholders.

- d) A market awareness campaign on battery management and collection of used batteries.

4.1 KPVC BACKGROUND

The Kenya photovoltaic capacity building is a Photovoltaic Market Transformation Initiative (PVMTI) project being implemented in Kenya by the International Finance Corporation (IFC), which is the implementing agency of the Global Environment Facility (GEF).

It is a collaborative project between IFC, GEF, and the local PV industry stakeholders. GEF is financing 75% of the total project budget with the local project partners contributing the 25% balance.

IFC has contracted IT Power (ITP UK) to provide management of the project funds. Integral Advisory Ltd. directly supervises all local project activities.

The project aims at achieving the following:

- a) Development of a standard PV Training Curriculum for technical training, and to develop technical manuals for developing and enhancing technical skills in the industry.
- b) Conducting a country wide technical training at all levels of the PV delivery chain.
- c) To conduct an effective market awareness campaign on PV in the country
- d) To introduce a quality assurance mechanism through field testing on the performance of installed Solar Home Systems

The project activities are distributed as follows:

Organization	Activity
KEREA	Deployment and adaptation of the PV Curriculum Distribution of the Technical manuals Development and deployment of a PV marketing slogan
RENCON Associates	Development of the PV Curriculum Technical training of PV practitioners
Energy for Sustainable Development Africa	Technical training of PV practitioners Development of technical manuals
SOLARNET	Market awareness and media activities
Chloride Exide / KENITAL	Technical training of Solar PV trainers

4.2 ACHIEVEMENTS

The achievements reported hereunder are being evaluated against the above work plan and also against specific TOR for the project.

42.1 Mainstreaming Of the PV Training Curriculum.

KEREA has met with the Directorate of Industrial Training (DIT) thrice and the process of adapting the curriculum is ongoing.

KEREA also organized and held a workshop for PV dealers on 30th June 2006, with the purpose of disseminating the Technical manuals, and mainstreaming the PV Curriculum. The assistant DIT Director was invited to this workshop, who explained to the participants the process of adapting the curriculum.

KEREA has through one her members organized a visit to principals and heads/tutors of electrical departments in some selected Polytechnics and technical training institutions. The aim was to facilitate the adoption of the PV curriculum into these institutions. The response to the adoption of the curriculum in their already existing training programmes has been very positive and KEREA is writing proposals to donors to fund the process. Below is a list of the visited institutions:

1. Machakos Technical Training Institute
2. Coast Institute of Technology
3. Mombasa Technical Training Institute
4. Comboni Youth Polytechnic
5. Nyeri Technical Training Institute
6. Thika Technical Training Institute
7. Nairobi Technical Training Institute
8. Gusii Institute of Science and Technology
9. Kisumu Rotary Youth Polytechnic
10. Rift Valley Technical Training Institute

A meeting between KEREA and a Kenya Institute of Education official also took place in December 2007. Copies of the KEREA PV curriculum and Technical manuals were given to the officer who promised to facilitate for their adoption into the current Youth polytechnics training programmes.

KEREA is also exploring the possibility of developing a textbook in line with the already developed PV curriculum.

4.2.2 Market awareness: Development and Deployment of a PV Marketing Slogan

The slogan has been developed and is now being aired by Radio Citizen. The slogan developed is: "SOLAR POWER, UMEME TOSHA!" The airing has since

continued for a period of three months.

4.2.3 Technical Training — Examination and Certification of Trained PV Technicians

KEREA placed an advert in one of the daily newsprint on 8th September 2006, inviting applications for this training.

Thirty-three (33) names of trainees were short listed for training.

Consequently, the training programmes continued in different part of the country and the analysis is as shown in the table below.

The exams have since been marked and results communicated to the trainees.

	No. of Trainees	Training Dates	KEREA Exam Date	Trainer	Region / Venue
1 st Training	16	6 th to 10 th March	10 th March 2007	ESDA	Nakuru
2 nd „	12	5 th to 12 th July	12 th July 2007	ESDA	Eldoret
3 rd „	11	8 th to 15 th Oct	16 th Oct. 2007	RENCON	Machakos
4 th „	13	29 th Oct. to 6 th Nov	6 th Nov. 2007	ESDA	Mombasa
5 th „	13	19 th to 26 th Nov.	27 th Nov. 2007	RENCON	Kakamega
6 th „	8	27 th Nov. to 4 th Dec.	4 th Dec. 2007	ESDA	Embu

A total of seventy two technicians (72) have already been trained and sat for KEREA certification theory exam. A practical assessment has been done and below is a list of technicians who certified the examiner. These technicians will be awarded with tool kits plus a certificate. An advert will also be placed in one of the local daily to publicise them. Below is the list of technicians, their telephone and regions of operations.

Name	Telephone Number	Region
1. GEORGE OMONDI OWINO	0721 949501	NAKURU / MOLO / NJORO
2. SIMON NDUNG'U CHEGE	0726 301649	KIPIPIRI / MIHARATI
3. NDIBUI SHEM GATUNU	0722 278729	NYAHURURU / NAKURU
4. JAMES KANYUGO WAWERU	0723 450240	MAILI KUMI, BAHATI NAKURU
5. AGNES WAMBUI MWANGI	0721 178773	MAI MAHIU, NAIVASHA
6. PETER NJUGUNA NGUGI	0727 607206	NAKURU WEST
7. CHARLES KARIUKI MUNGAI	0721 225867	OLKALOU / NAKURU / NYAHURURU
8. ANTHONY NYAMBU IRUNA	0723 640407	MIGADINI / MOMBASA
9. MURTAZA ABDULRASUL MULLA	0733 728 084	KIKAMBALA / MOMBASA
10. BONIFACE MUNYIKA MWIDOMA	0728287792	MWATATE / VOI / WUNDANYI
11. KENNEDY MANENO CHARO	0727645392	KINANGO / MARIAKANI / MOMBASA
12. DICKSON MWASHUKE MAGHANGA	0726700494	WUNDANYI / VOI / MWATATE
13. TIMOTHY MWEMA	0724 772611	SULTAN HAMUD / EMALI
14. KYUMBI FESTUS M.	0720 572836	MAKUENI / MACHAKOS
15. JAMES MWEMA KIKUJI	0721 108735	MACHAKOS / MAKUENI / MATUU
16. MATHEW MUTUKU MWANZA	0720533831	KITUI / IKUTHA
17. BENJAMIN NTHUKU MUSYOKI	0734801638	KITUI / MAKUENI
18. GRAVILLE MKULA MSHOTE	0721 462 669	NYERI / KARATINA
19. MATHEW KIAMA GAKONYA	0723 443780	NYERI / MARAGUA
20. JOHN OMONDI	0724 349493	ELDORET
21. WYCLIFFE OUMA OYOYA	0722 471 677	BUSIA
22. MAURICE ODHIAMBO YUGI	0726 714 441	BUNGOMA / WEBUYE
23. BENJAMIN OMUCHENI MANYASA	0725619026	KAKAMEGA / MUMIAS
24. ERIC NJAGI NJIRU	0722 600 481	EMBU
25. JOSEPH CHILISWA AMBANI	0721 741 385	KAKAMEGA

4.2.4 Quality assurance — Field testing of installed Solar Home Systems

This activity involves the testing and inspection of 75 Solar Home Systems (SHS) all over the country, Kenya.

KEREA has formulated a guide (protocol) to be used during the field testing of the solar home systems. The protocol has been developed within the framework of the current PV code of practice: KS 1673-1:2004, solar photovoltaic power systems — Design, installation, operation, monitoring and maintenance — Code of practice — Part 1: General PV system requirements published by the Kenya Bureau of Standards.

The protocol incorporates a value addition component to the owners of the systems which are inspected. This includes the minor adjustments and component maintenance like dusting, readjusting, cleaning, relocation, etc. The protocol should be able to create a relationship with KEREA that will encourage a working relationship beyond the project duration and act as a basis to establish life-cycle analysis of PV systems in Kenya.

So far the test exercise has been done in regions like Mt. Kenya, Eastern, Rift Valley and Nyanza and to follow is Western region.

4.2.5 Purchase of testing instruments

To effectively carry out the field tests, KEREA has purchased some basic tools. 5 insulation meters and 5 clamp-on meters have been imported from the USA. Some of these instruments could not be sourced locally. The instruments have been taken to the Kenya Bureau of Standards for performance checks.

4.3 CHALLENGES IN IMPLEMENTING PROJECTS

Over the last two years, KEREA has faced challenges in implementing projects arising from the following:

- 1) The decision by GoK to renovate the Kenya Renewable Energy Laboratories (KREL) premises denied KEREA a central base from which to carry out projected activities including short-term training. This further put a hold to the planned installations of demonstration projects for best practices in renewable energy technologies.
- 2) The acquisition of testing equipment proved to be a major challenge due to limited stocking of the same since sales volumes are not economically reasonable.
- 3) Members who were requested to bid for field testing and inspection tended to quote figures which were largely unrealistic and beyond the budget. This resulted in delays in implementing activities.
- 4) KEREA members need to propose activities that would further their interests. Initiatives for income generating activities need to be developed and means of funding proposed.

4.4 KPVCP FUNDS UTILIZATION

KPVCP FUNDS UTILIZATION

So far KEREA has received a total of US\$ 79,900 from IFC for KPVCP activities.

Tranch 1. US\$ 12,103 converted into KShs. 874,199.69 (13/12/2005) with bank charges totalling KShs.490.00 (Exchange rate 1US\$ = KSh.72.23)

Tranch 2. US \$ 11,265 converted into KShs783, 294.00 (6/11/2006) with bank charges totalling KShs.530.00 (Exchange rate 1US\$ =KSh.69.53)

Tranch 3. US \$ US\$ 56,533 converted into KShs 4,080,932.60 (26/09/2008) with bank charges totalling KShs.810.00 (Exchange rate 1US\$ = KSh.72.20)

The following details the funded activities according to the terms of reference (TOR).

Description of items	Total IFC Grant (\$ US.)	Total IFC Grant (KSH)	Amount spent (KSH.)	Balance (KSh.)	Status (% Completed)	Remarks
Description of items	Total IFC Grant (\$ US.)	Total IFC Grant (KSH)	Amount spent (KSH.)	Balance (KSh.)	Status (% Completed)	Remarks
TOR 1 (c) Curriculum adaptation and mainstreaming	2,200	155,938	162,244	Nil	Complete	KSh.86, 324 Holding of curriculum development workshops 44,820 - Down payment for mainstreaming the curriculum. 31,100 - Last instalment for curriculum mainstreaming
TOR 2 (c) Market awareness - development and deployment of a solar PV marketing slogan	20,500	1,452,665	794,800	657,865	Complete	KSh 180, 000 Developing the slogan. KSh 174,000 Airing the slogan for the first one month. KSh 174,000 Airing the slogan for the second one month. KSh 266,800 Airing the slogan for the third & last month.
TOR 3(d): Technical Training - Testing and certification of trained freelance technicians	12,200	875,392	557,634	317,758	90% complete	KShs 70,312 –Newspaper advert for national sourcing of technicians exercise KSh. 191,080 - Theory exam expenses KSh. 296,242 - Practical assessment expenses
TOR 4 Quality Assurance – testing of solar home systems	30,000	2,147,403	830,309	1,317,094	60% Complete	KSh 60,000 – Development of a Field testing protocol KSh. 205,059.50 -Importation of solar Meter and clamp on multimeter. KSh147,250 - Local Purchase of tools KSh.125,400 - Final Instalment for SHS testing first phase KSh.122,100 - First Instalment for SHS testing first phase

TOR 5: establishment of KEREA secretariat	15,000	1,074,990	114,500	960,490	20% Complete	KShs 65,000 -Computer and printer KSh14,500 -Purchase of Wireless telephone KShs 10,000.00-Solar day participation charges KSh 25,000.00 - Advert on Ministry of Energy desk calendar
Total	79,900	5,706,388	2,334,087	3,246,901		

NOTE

The Dollar rate has since the time of cash reception changed by 12.5%.

5.0 OTHER AREAS OF COOPERATION

- ❖ KEREA has had talks with the German Technology Corporation (GTZ) on how the two could work together to promote standards and the use of PV. This would be among others; setting up a Solar PV testing laboratory, technical support on instrumentation and developing a solar calendar; Assisting in developing a business plan for KEREA.
- ❖ KEREA and KIRDI are working jointly to develop a testing rig for solar water heating systems. KIRDI will provide an office space for KEREA.
- ❖ KEREA has talks with JICA & Finish Embassy fact finding group to look for a possibility of a further funding for continuation of the already started projects and any news to promote the use of renewable energies in the country.