

Dear Readers,

access to energy

It is my pleasure to present to you GIZ's Energy Newsletter on access to energy. 1.4 billion people worldwide have no access to electricity, about 600 million in Africa alone.

Approximately 2.7 billion people have to rely on biomass, i.e. wood,

charcoal or plant residues, for cooking and heating. The consequences of unsustainable overuse and inefficient use of biomass are: exposure to smoke from traditional cook stoves and open fires causes more than 1.5 premature deaths annually, with women and young children the most affected; people are losing time and money by collecting and purchasing wood and the environment suffers from depletion of natural forests and increasing greenhouse gas emissions.

The importance of a decentralised, secure and clean energy supply for economic and social development is still often overlooked by policy-makers: lack of access to electricity and efficient stoves does not only affect private households, but hinders the development of small enterprises and the work of social institutions such as hospitals and schools.

As access to energy is an important precondition for development and poverty reduction, it is a substantial factor for achieving the UN-Millennium Development Goals. We are looking forward to bringing in our expertise and contribute to a sustainable energy solution – the pivotal element of our efforts to tackle global challenges such as poverty alleviation and climate change.

I hope you will find this issue on access to energy of interest. Please forward this newsletter to interested friends and colleagues. Kind Regards

Bernhard Zymla (energy@giz.de)
(Head of GIZ energy and transport)

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Small-scale Electricity Generation from Biomass
August 2010
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Part 2 – [Biogas 0.21 MB \(English version\)](#)
Part 3 – [Vegetable Oil 0.29 MB \(English version\)](#)

GIZ HERA – Poverty-oriented Basic Energy Services
Modern Energy Services for Modern Agriculture - A Review for Smallholder Farming in Developing Countries
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Micro-gasification: Cooking with gas from biomass
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GIZ HERA – Poverty-oriented Basic Energy Services
Wood Energy – renewable,

- Productive use of energy – EUEI PDF supports AEI
- Energypedia – Connecting knowledge
- Global Alliance for Clean Cookstoves launched
- Peru – Spotlight on clean and efficient stoves
- Conference: Decentralised energy supply in developing countries
- Sub-Saharan Africa – Small-Scale Hydro Power
- Pico PV systems (solar lanterns) – Experiences in developing countries
- Biomass Energy Strategy (BEST) Guide
- Micro-gasification: Cooking with gas from biomass
- Carbon Markets for Improved Cooking Stoves – Revised Edition: January 2011
- Small-scale Electricity Generation from Biomass – Part III: Vegetable Oil

GIZ Energising Development (EnDev)
Access to sustainable and modern energy sources



"Life has improved greatly since we have electricity: We can read in the evenings and we are even saving money, because electricity is cheaper than kerosene!" (Pedro

Huayllas, 75, Bolivia)

This was made possible by the global programme Energising Development (EnDev), part of the German-Dutch Energy Partnership. This partnership is an impact-oriented global sector initiative between the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Directorate-General for International Cooperation of the Dutch Ministry of Foreign Affairs (DGIS). GIZ implements the partnership in close cooperation with the Dutch NL Agency.

EnDev was initiated in 2005 in order to increase sustainable access to modern energy services in developing countries. The programme promotes the establishment or enhancement of self-sustaining markets in order to achieve sustainable development. EnDev follows a results-based approach which allows for a fast scaling-up of successful activities and the flexible reallocation of funds between countries by performance. All EnDev activities are closely monitored.

By December 2010, 7.1 million people had received access to sustainable and modern energy services and at least 1 million more will be reached by the end of 2012. Currently, 19 activities are underway in 18 low-and middle-income countries in Asia, Latin America and particularly in Sub-Saharan Africa. EnDev supports the provision of:

- Energy for lighting/household applications: provision of modern energy for lighting and small electrical appliances to households, e.g. information and communication technologies
 - Energy for cooking: development of self-sustaining markets for the production and sales of improved cooking stoves
 - Energy for social infrastructure: provision of modern energy services to schools, hospitals and community centres for improved services
 - Energy for productive use: provision of modern energy services to small and medium-sized enterprises, cooperatives and craftsmen for improved services and (additional) income generation
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- For further information: www.senternovem.nl/energising_development.
 - Knowledge platform for EnDev activities (requires registration): www.energypedia.info

profitable, and modern
August 2010
[Download PDF 1.39 MB \(English version\)](#)

GIZ HERA | EUEI PDF
Policy and regulatory framework conditions for small hydro power in Sub-Saharan Africa
July 2010
[Download PDF 1.71 MB \(English version\)](#)

GIZ Energy-policy Framework Papers
Regional Reports on Renewable Energies – 30 Country Analyses on Potentials and Markets in: West Africa (17), East Africa (5) and Central Asia (8)
December 2009
[Website \(English version\)](#)

GIZ EnDev & Energy policy in development cooperation
What difference can a PicoPV system make? Early findings on small Photovoltaic systems – an emerging low-cost energy technology for developing countries
May 2010
[Download PDF 1.05 MB \(English version\)](#) and [Download PDF 2.36 MB \(French version\)](#)

GIZ HERA – Poverty-oriented Basic Energy Services
Carbon Markets for Improved Cooking Stoves – A GTZ Guide for Project Operators
Revised Edition – January 2011
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Upcoming events

7-8 April 2011
Berlin, Germany
[International Conference on Micro Perspectives for Decentralized Energy Supply](#)

11-15 April 2011
Brussels, Belgium
[European Union Sustainable Energy Week](#)

6-7 June 2011
Ulm, Germany

GIZ HERA – Poverty-oriented Basic Energy Services
Promoting access to renewable energy



GIZ has been active in the field of sustainable energy worldwide for over 30 years. On behalf of the German Federal Ministry for Economic Cooperation and Development, GIZ's Programme on

Poverty-oriented Basic Energy Services (HERA) promotes access to renewable energy and its sustainable and efficient use. HERA's focus lies on the basic energy needs of poor households, social infrastructure and SMEs, in particular in rural areas. Basic energy services include energy for cooking, lighting, heating, cooling and drying, information and communication, as well as energy for mechanical power.

Many efficient technologies for basic energy services are already successfully being used in developing countries. Yet there is often a lack of well-developed strategies for the large-scale, sustainable introduction and scaling-up of these technologies. In many countries, for example, less than 10 per cent of the population uses efficient stoves. Political strategies for sustainable resource use are also an important element of a sustainable energy supply, but many countries give them little thought. HERA's aim is therefore to further develop and disseminate strategies and concepts for pro-poor basic energy services and to incorporate these plans into projects and programmes of German development organisations and other partners.

In the past 30 years GIZ has acquired much valuable experience relating energy for development. This experience is brought to bear both in individual projects and in supra-regional consultancy services. The strength of supra-regional consultancy lies in knowledge management and exchange in addition to policy advice services. This consultancy service is useful for example in relation to the launching of efficient stoves or to schemes for subsidising small solar systems.

HERA develops and disseminates strategies and concepts for pro-poor basic energy services in relation to:

- Consumers – the aim is to use energy more efficiently through improved technology (e.g. efficient stoves, energy-saving lamps)
 - Supply-side management – HERA promotes the supply of affordable, environmentally friendly and sustainable energy from renewable resource
 - Policy advice – HERA integrates poverty-oriented basic energy services into the energy policy of its partner countries
 - Lobbying – HERA represents the issue at international conferences and international bodies.
- www.gtz.de/hera (English)

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[PV-Applications – Rural Electrification and Commercial Use](#)

21-23 June 2011
Vienna, Austria

[Vienna Energy Conference 2011](#)

Recommended newsletters

European Union Energy Initiative
Partnership Dialogue Facility
(EUEI-PDF)

[EUEI-PDF newsletter](#)

GIZ Transport Policy Advisory
Services

[GIZ Transport News \(German edition\)](#)

GIZ – International Fuel Prices

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Links

energypedia – developed by the Dutch-German Partnership Programme Energising Development (EnDev)
www.energypedia.info

reegle – the Search Engine for Renewable Energy and Energy Efficiency (Renewable Energy and Energy Efficiency Partnership – REEEP & the Renewable Energy Policy Network for the 21st Century – REN21)
www.reegle.info

Renewables Interactive Map (REN21)
[www.ren21.net/...](http://www.ren21.net/)

Back issues

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First High Level Meeting of the Africa-EU Energy Partnership – new targets for the next decade



In 2010, the European Union Energy Initiative – Partnership Dialogue Facility (EUEI PDF) continued its extensive support to the Africa-EU Energy Partnership (AEEP). A highlight was certainly the organisation and implementation of the First High Level

Meeting (HLM) of the Partnership.

The HLM took place on 14/15 September 2010 in Vienna, Austria, and it was a major success: It attracted over 300 participants, including ministers, ambassadors and other high-level decision-makers from 21 European and 23 African countries as well as the African Commissioner for Infrastructure and Energy, Dr. Elham M.A. Ibrahim and the EU Commissioners for Energy (Günther Oettinger) and for Development (Andris Piebalgs). Moreover, numerous civil society actors including academics, business leaders and NGO representatives from across Africa and Europe attended the meeting, demonstrating the inclusive character of the Partnership.

The decisions taken at the meeting will pave the AEEP's further development over the next decade. Participants in Vienna endorsed the Vienna Declaration containing Political Targets to be achieved by 2020 on energy access, energy security, renewable energy and energy efficiency. Furthermore, the Africa-EU Renewable Energy Cooperation Programme (RECP) was launched. The RECP will constitute one of the main pillars of the AEEP addressing the Partnership's targets to deploy Africa's vast renewable energy potential for increased access to modern energy services on the continent.

The EUEI PDF developed the drafts of the guiding documents of the Partnership, such as the Vienna Declaration, the AEEP Roadmap and the outline of the RECP. It also coordinated the document approval process with the European and African Implementing Teams as well as the Joint Expert Group, comprising both teams.

AEEP 2020 Political Targets:

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- **Energy access** – As a contribution to the African objective of achieving a continent wide rate of access to modern and sustainable energy of around 50 per cent, which means additional 250 million people, Africa and the EU will take joint action to:
 - bring access to modern and sustainable energy services to at least an additional 100 million Africans, focusing on sustainable models: to provide energy for basic services (health, education, water, communication); to power productive activities; and to provide safe and sustainable energy services to households.
- **Energy Security** – Africa and the EU will take joint action to improve energy security by:
 - doubling the capacity of cross border electricity interconnections, both within Africa and between Africa and Europe, thus increasing trade in electricity while ensuring adequate levels of generation capacity;
 - doubling the use of natural gas in Africa, as well as doubling African gas exports to Europe, by building natural gas infrastructure, notably to bring currently flared gas to market.
- **Renewable Energy and Energy Efficiency** – Africa and the EU will take joint action to increase both energy efficiency and the use of renewable energy in Africa by:
 - building 10 000 MW of new hydropower facilities taking into consideration social and environmental standards;
 - building at least 5 000 MW of wind power capacity;

- building 500 MW of all forms of solar energy capacity;
- tripling the capacity of other renewables, such as geothermal, and modern biomass; and
- improving energy efficiency in Africa in all sectors, starting with the electricity sector, in support of Africa's continental, regional and sectoral targets.

- First High Level Meeting (HLM) of the Partnership: [www.africa-eu-partnership.org/...](http://www.africa-eu-partnership.org/)

GIZ Energising Development Kenya Efficient stoves – a business case for Kenya



The majority of the rural Kenyan population lives below the poverty line. One consequence of this is that people cannot afford modern energy services. Besides lacking electricity, people are often still using a three-stone-fire for cooking, whose energy efficiency is very low. To tackle this

problem, Energising Development is promoting resource-friendly cooking stoves that only need a fraction of the wood energy needed for traditional stoves. The target groups of this programme are rural and urban households, social institutions (SI) and productive stove users, such as restaurants.

The programme promotes a commercial approach to stove activities at all levels (production, marketing and installation). In particular, the programme supports small and medium enterprises (SMEs) in rural areas to increase their use of market opportunities. The project is thus empowering groups and individuals involved in all aspects of stove commercialization.

Between 2006 and December 2010, 3.0 million persons in households were provided with improved cooking energy in a sustainable manner. Furthermore, 750 institutions and 1100 SMEs were reached by the programme.

In February 2011, the Partnership for Clean Indoor Air (PCIA) has awarded the project with a special achievement award for its ingenuity and commitment to improve the design and manufacturing of clean and efficient cooking technologies.

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- Major interventions include:
 - Capacity building of and support to all actors of the stove value chain
 - Promotion of stove marketing
 - Awareness creation
 - Promotion of income generation
 - Promotion of the adaptation of energy-saving devices among SI
 - An appropriate end-user financing mechanism
- Main impacts are:
 - Stove production has become a real business with an average monthly production of 337 Jiko Kisasa liners per producer and an average monthly income of 100 EUR to 200 EUR
 - Restaurants benefit from fuel wood and monetary savings (a small restaurant saves 0,85 EUR and a big one 5,1 EUR daily) and faster cooking times.
 - Extra time gained due to faster cooking was used for farming, income generating activities, girls' education and women's participation in community life. Money saved from lower fire wood use (today households need 2 EUR monthly instead of 10 EUR before) was used for items of daily need.
 - Health improvements due to reduced smoke emissions and reduction of

accidental burns of children

- For further information please contact Anna Ingwe (Component Leader): anna.ingwe@giz.de.

GIZ Energising Development Bolivia Energy is Life



Bolivia is one of the poorest countries in Latin America. Especially people living in rural and remote areas do not have access to modern energy services. EnDev Bolivia promotes energy for household lighting and cooking, for social institutions and energy for small scale farmers

(production and processing of agricultural products). Technologies promoted include improved cook stoves, biogas, PV, pico PV and net densification.

From 2006-2010 more than 87.000 households, 4.000 social institutions and 5.300 SMEs gained better access to energy. Until 2012, the project aims at improving the energy services of an additional 24.000 households through energy for lightning and cooking energy; and also to improve energy services for 400 social institutions by providing electricity, and energy for cooking and heating. Furthermore, 2.900 SMEs shall be supported with improved productive energy use.

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- The services of the project include the support of governmental and partner institutions to:
 - Design policies and co-finance mechanisms supporting increased access to energy
 - Support and train local stove and biogas plant installers
 - Support awareness and public relations campaigns about indoor air pollution, productive energy use, proper use of natural gas and safe indoor electric installations
 - Advise and financially support financing institutions that offer loans to producers/retailers and households
 - Facilitate and support networking between stakeholders in the energy sector, e.g. through workshops and working groups.
- Impacts - examples:
 - Thanks to their biogas plant the family of Sonia Lima can save cooking gas and no longer needs to buy chemical fertilizer. They save approx. 90 Euro per year and earn 4.50 EUR per month by selling the fertilizer to their neighbours. Though this does not sound much, for the family it means a lot.
 - More than 32,000 families have achieved access to the national grid through EnDev. This is contributing to the national governmental program "electricity for living with dignity". This government programme adopted the net densification strategy developed by EnDev Bolivia as a national policy.
 - About 1,200 people benefit from efficient peanut toasters. The producers associations of different regions could improve their incomes by 200% and reduced the time for processing peanuts significantly.
 - 20,000 rural households cook on improved Malena cook stoves. They save more than 50 per cent fuel wood and the users no longer have to suffer from the effects of toxic smokes in their kitchens.

- www.endev-bolivia.org (in Spanish)
 - www.gtz.de/en/... (in German)
-

GIZ Energising Development Indonesia Monitoring survey proves great success



In Indonesia only 65 percent of the population have access to electricity. Particularly in rural areas the energy situation is still a challenge and increased use of hydro power potential is an appropriate solution. The GIZ Mini Hydro Power Project (MHPP) has been successfully

supporting mini hydro power in Indonesia since the 1990s. Since 2006, as part of the global Energising Development Programme, MHPP has been scaled-up to further enhance sustainable access to energy in rural Indonesia. Between 2006 and 2009, over 90 additional mini hydro power (MHP) schemes went into operation. By 2009, these MHP schemes supplied 68.000 persons in households, 427 social infrastructures, and 2.020 small businesses with sustainable energy.

In autumn 2010 a monitoring survey visited 20 MHP sites which were built in Sumatra and Sulawesi under MHPP. The survey mission found 19 of the 20 visited MHP sites still operational and in an overall good condition. Only one system is temporarily out of operation due to land conflicts. Currently, on average a capacity of about 240 W is available for each of the 1.638 households supported by the 19 MHP investigated. Additionally, 88 percent of the social infrastructure buildings in the communities are supplied and small businesses profit from electricity from the MHP. All sites are looked after by trained operators, who receive a regular salary. All communities defined a tariff system, whereby rules for customer and social infrastructure tariffs are set; 5 communities even have special tariffs for productive use. Each community has an established technical and financial management system. All villages use the collected tariff for future maintenance and repair of the systems. All operational sites are run without any further external support.

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■ www.endev-indonesia.or.id (in English)

GIZ Energising Development Mali Improving living standards in rural areas



"Since our health station in Dialakoro has been provided with a photovoltaic station, giving birth at night is so much easier" explains midwife Oumou Sale.

It is mostly at night that women give birth in Mali. Health stations in

rural areas have no access to grid-based electricity due to the low population density of the poor country. Hence, kerosene lamps typically provide lighting at night. Providing solar power to rural social infrastructure such as health posts improves the quality of health service delivery. In this particular case, electric lights ease the work of the midwife and an electric fan provides some level of convenience to the young mothers (to be).

Energising Development is promoting solar power at schools, health posts and city halls in selected villages. Solar street lights improve the security in the communities. Solar driven battery charging stations provide opportunities to

households to access electricity for their domestic needs. Due to lower costs for recharging batteries than for buying kerosene for traditional lighting, people can spend money for maintaining their lanterns, which helps making the projects sustainable.

Until the end of 2011 Energising Development wants to have supplied an additional 180 social institutions with electricity obtained from photovoltaic installations in order to improve living conditions in rural areas in Mali.

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European Union Energy Initiative - Partnership Dialogue Facility
(EUEI PDF)

SADC - Regional Energy Access Strategy and Action Plan



EUEI PDF supported the development of the SADC Regional Energy Access Strategy and Action Plan. The documents consist of a review of the current status of energy access and associated policies, strategies and programmes in the Member States, a review of best practices in SADC and other regions, and the development of proposals for a regional strategy and associated action plan. The aim was to

identify where regional concerted action could add most value, bearing in mind principles of subsidiarity.

At their 31st Meeting of SADC Energy Ministers on 29 April 2010 in Luanda, Angola, ministers approved the document and urged the member states to develop national roadmaps based on the SADC Regional Energy Access Strategy and Action Plan.

The goals of the joint strategy are:

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- at the strategic level to harness regional energy resources to ensure, through national and regional action, that all the people of the SADC Region have access to adequate, reliable, least cost, environmentally sustainable energy services, and;
- at the operational level to ensure that the proportion of people without such access is halved within 10 years for each end use and halved again in successive 5 year periods until there is universal access for all end uses.
- SADC Regional Energy Access Strategy and Action Plan (www.euei-pdf.org/...)

Amazonia – Rural Electrification of Indigenous Communities



Amazonia comprises the largest area of tropical rainforest on the planet and contains 20 per cent of its biodiversity and fresh water. This vast region is threatened by growing mineral and agricultural exploitation – the extraction of wood, oil and gas

amongst other intensive economic activities. In spite of this its rich resources, the thinly scattered indigenous population suffers high levels of poverty and malnutrition, very poor access to basic health services, education, fresh water supply and communications. This level of deprivation can be greatly alleviated by modest levels of modern energy services, specifically basic electricity supplies. Currently there is an insignificant effort by national governments to provide such energy services. Investments in electricity supplies have previously concentrated on urban centres (mini-grids supplied by diesel generators for the most part). In rural areas, the responsibility falls to local governments, which seldom have the necessary resources or planning and management capacity. Health, education and communication programmes rarely include sustainable energy supply solutions suitable for this difficult environment. Consequently, the small remote communities do not benefit from any level of electricity supply and depend on batteries, with no possibility of recycling.

The objective of the EUEI PDF activity is to develop a model, based on a variety of practical experience acquired across the region, to develop the capacity of local governments and local communities in Amazonia, to plan and maintain sustainable energy service delivery for the welfare of the isolated communities. The activity will support the bi-national government programme of the frontier regions of Ecuador and Peru, which aims to provide infrastructure services for the communities in this part of Amazonia. The work will consist of capacity building of local government and communities and the planning of pilot installations, for which funding will be secured (funds are available from the two national governments and from donors). The lessons learnt will be actively communicated and advocated to other governments and development organisations across the Amazon basin.

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■ www.euei-pdf.org/...

Burundi – Development of an Energy Policy and Strategy

This project builds on an existing energy sector policy covering the period until 2009. Assistance to the Ministry of Energy and Mines is provided in updating the existing energy sector policy as well as developing an implementation strategy and investment plan.

Therefore, a draft policy and strategy were elaborated by a team of local and international consultants. Additionally, the draft lettre de politique énergétique was validated at a workshop in Kigali, Rwanda by the Ministry of Energy and Mines, the EUEI PDF and the lead consultant. The final lettre de politique énergétique has been submitted for approval by the Ministry of Energy and Mines.

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■ For further information, please visit www.euei-pdf.org/...

GIZ Energising Development Senegal PPP between GIZ/PERACOD and INENSUS in Senegal



A business trip to Senegal, organised by GIZ on behalf of the German Ministry of Economics and Technology in 2006, can be named the starting point for a public-private partnership (PPP) between

GIZ/PERACOD and INENSUS. One of the co-founders of INENSUS, Jakob Schmidt-Reindahl, found good pre-conditions for wind power for decentralised energy supply in the coastal areas, where only 15 percent of the population is connected to the grid.

With the financial support from EWE AG within a first PPP measure, INENSUS examined five sites along the "Grande Cote" for their suitability for wind power over a period of one year. After the best site had been identified, a contract for another PPP between GTZ, EWE AG and INENSUS was signed in April 2009 in order to electrify the corresponding village. Twenty-six per cent of the financing was provided by Energising Development, which was among others responsible for procuring technical equipment such as the solar power plant.

The project aims at the realisation of village electrification by solar-diesel-wind hybrid systems in Senegal. In January 2010 the first hybrid system was put into operation in the village Sine Moussa Abdou and was officially inaugurated by the Senegalese Deputy Minister for Energy and the German Ambassador in March 2010. The programme's extension to two further villages is under planning since February 2010. Many villages shall follow: market potential is high since more than 10.000 villages are not electrified yet.

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- This integration of three different generation technologies into one mini-grid has several innovative aspects:
 - Utilisation of a small wind energy turbine for rural electrification
 - Utilisation of pre-paid meters: Application of a new tariff scheme which consists of selling energy and power blocks (still to be validated by the regulatory authority)
 - Installation of a three-phased grid: This provides the opportunity for utilisation of larger engines in the future (e.g. for the processing of agricultural products)
 - Efficient load management: power and energy is limited according to programmed values, e.g. low-priority charges are disconnected first, whereas high-priority charges such as health centres remain connected as long as possible
 - These innovations shall contribute to the following improvements:
 - Higher security of electricity supply, since there is a more flexible load management;
 - Optimal utilisation of local renewable energy sources should reduce the specific cost of energy, i.e. due to the reduced need to run the diesel generator
 - Lower specific cost of storage, because the optimal utilisation of the different energy sources available should reduce the size of the battery necessary
 - [www.energypedia.info/...](http://www.energypedia.info/) (English)
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GIZ

News about PicoPV Systems



PicoPV systems, such as solar lanterns or micro solar home systems, provide a promising option for making access to modern energy for low-income households living in rural areas possible. Up to now more than 100 firms are offering PicoPV systems in developing countries. But diffusion

of PicoPV systems face various challenges, such as low quality products and lack of information of solar technology in private sector. Therefore, GIZ accomplished laboratory tests whose results are further examined by field tests afterwards. Conducting field tests in various countries, the following questions are of further interest: Which lamp designs and features are preferred by local customers? How do the lamps perform under real-life conditions by target groups? What are the socio-economic impacts of the new lighting devices at household level? How much are the target customers willing and able to pay?

General lamp performance: Studies in rural areas showed that PicoPV systems need to be improved (mainly charge controllers, robustness and connection parts) and a quality labeling mechanism needs to be introduced. Therefore, warranty and maintenance services are essential. Investigations concluded that field studies are necessary to complement laboratory tests. Furthermore, test criteria of laboratory tests need to be adapted.

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■ Uganda

- Impacts: The following conclusions can be drawn from interviews of 100 Ugandan households: Children use the lamp to study, men spend more hours reading and doing productive work, while women do domestic work in the evening instead of in the morning hours. The phone charging function provides an additional source of income for 70 per cent of users.
- Features: Regarding lamp features users appreciate multi-purpose lamps with 360 horizontal light cone and high illuminance level. Lamps that resemble the traditional hurricane lamps in design and functioning were preferred. Lamp features that make usage easier, such as a handle at the top of the lamp and indication of switch position (on/off) were favored by users. Furthermore, consumers appreciate if the solar lamp has different illuminance levels to adjust brightness. On the other hand, users dislike products of poor quality, usually expected from products "made in China", switches that are not clearly visible and products with low solar fraction. Surprisingly, willingness to pay in the Ugandan survey of three months is significantly higher (62,5 USD as threshold) than former studies stated.

■ Ethiopia

- Impacts: In addition to expected impacts on health, education, security and economical factors this qualitative study detected several interesting results, such as that access to solar lanterns reduces the stress of women concerning the planning of energy supply. Furthermore, children become more autonomous, because parents leave them alone with the solar lamps (to go to toilet or study) without fear of accidents; in total, children benefit most of the solar lamps. Additionally, users stated an improved family life, because now the solar lamp can be used simultaneously by various users (due to a large and bright light cone). Therefore, users mentioned less conflict among family members.
- Features: Concerning features, users chose lamps according to the duration of light, brightness and robustness. Additionally, quality of lamps is measured in terms of glare, cone of light, ease of operation for children and a regulator in order to change the level of brightness. Moreover, people choose white, bright light instead of the yellow one. A built in

switch was favored in contrast to a pull switch. Within evaluation mobile charger was a nice feature, but the crucial factor was the light itself. Interestingly, even low-income households are willing to pay more for products of high quality. Reliable companies are an important criterion.

- For more information please visit www.energypedia.info

GIZ EUEI PDF

EUEI PDF supports AEI in creating and sustaining productive use of energy (PUE)



Sub-Saharan Africa's (SSA) low level of household electrification is well documented. The most commonly cited statistic is that only about 8 per cent of Sub-Saharan rural households have access to electricity. The overall access rate

is below 25 per cent. The causes are multiple and range from economic impediments to weak policy and inapt design of electrification programs. One major obstacle is that it is difficult for practitioners to obtain practical and timely knowledge from elsewhere on how to overcome or lessen existing economic, technical, institutional and political barriers to electrification.

EUEI PDF is, amongst other players, supporting the Africa Electrification Initiative (AEI) to create and sustain a living body of practical knowledge and a network of practitioners in the area of design and implementation of rural, peri-urban and urban on-grid and off-grid electrification programmes in Africa. Productive Use of Energy (PUE) was identified as one area of future interest for the AEI.

EUEI PDF is currently engaging to support Sub-Sahara Africa practitioners working for electrification agencies and funds, government ministries, regulators and state, community or privately owned utilities to promote productive use of energy in (rural) electrification programmes. More specifically the project aims at the assessment and collection of existing know-how on promotion and design of PUE interventions on the one hand and the diffusion of knowledge amongst Sub-Sahara African practitioners on the other hand. The support will be based upon a draft PUE-Manual, which provides a holistic framework including practical advice on how to go about productive use promotion and which will be continuously updated.

The project will actively seek and facilitate specific inputs from rural practitioners on PUE promotion experiences at various stages, from planning to implementation. Moreover, it will include a test-run of at least three Modules of the Draft PUE Manual, leading to an improved PUE Practitioners' Manual. In order to create a platform to exchange experiences and to shape out context-specific methods and good, applicable practices, two or three multilateral practitioners' workshops will be conducted.

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Energypedia – Connecting knowledge
Energypedia – Connecting knowledge



Energypedia is an internet platform similar to Wikipedia*. Energypedia provides articles about renewable energies and experiences in the context of development aid. These articles are and will be updated continuously with everyone's collaboration (collective intelligence)!

Unlike conventional web-platforms, energypedia allows all its users to make their contributions. Providing and

revising knowledge (in terms of wiki articles about renewable energies) is not organized in responsibilities or hierarchies. All wiki users are equal, everyone has the right to create content. As a result, all relevant content concerning renewable energies in the context of development aid are continuously revised.

**A Wiki is a system of sites. Users can not only read but also edit articles directly online.*

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■ www.energypedia.info

GTZ HERA – Poverty-oriented Basic Energy Services
Global Alliance for Clean Cookstoves launched



The Alliance's goal is to reach 100 million homes with clean burning, efficient cookstoves and fuels by 2020. The Global Alliance for Clean Cookstoves is a new public-private partnership to save lives, improve livelihoods, empower

women, and combat climate change by creating a thriving global market for clean and efficient household cooking solutions. Exposure to smoke from traditional cookstoves and open fires causes 1.9 million premature deaths annually, with women and young children the most affected. Indoor air pollution is the fourth biggest health risk in the developing world. Inefficient cookstoves also contribute to climate change through emissions of greenhouse gases.

The new initiative was launched on 23 September 2010 by the UN Foundation together with BMZ, GTZ, US State Department, WHO, UNEP, Shell Foundation and other founding members. About 250 guests attended the high level event. State Secretary Hans-Jürgen Beerfeltz emphasized 30 years of German commitment in the field of household energy and stressed the point that "in the last 5 years, together with the Dutch government, we have provided 5 million people with improved energy for cooking." He invited to an international cookstove conference to be held in Germany next year.

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■ For more information please visit www.cleancookstoves.com.

5th biennial Forum of the Partnership for Clean Indoor Air (PCIA)

Spotlight on clean and efficient stoves – national stove campaign in Peru



More than 350 experts from around 40 countries discussed their experiences in disseminating efficient and clean cooking stoves at the 5th biennial forum of the Partnership for Clean Indoor Air (PCIA). Latest developments in efficient stove technology, carbon finance and testing

procedures as well as commercialisation approaches, monitoring, and recent health studies were part of the program.

Hosted by GIZ Peru, the conference took place in Lima during the last week of February 2010.

The forum was opened by members of the Peruvian government who convincingly demonstrated the government's high commitment to solving the health problems caused by smoke from traditional cookstoves. Peru's Prime Minister José Antonio Chang, First Lady Pilar Nores, and the ministers for health, energy and mines, and women and social issues presented the experiences in implementing a national cook stove campaign.

The campaign aims at reaching 500,000 homes with improved cook stoves until the end of 2011. To this end the government has passed an emergency decree that allows regional and local governments to allocate money for efficient and smoke free stoves. Each stove model that is installed within the campaign has to be tested and certified before installation.

Many conference participants stated that they felt very inspired by the broad attention the Peruvian government pays to the problem of indoor air pollution.

Every year, 1.5 million people die due to toxins in smoke from open cooking fires. Since decision-makers in many countries still lack awareness for this topic, the Peruvian commitment could become a role model for many other governments.

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GIZ HERA – Poverty-oriented Basic Energy Services Off-the-grid - Decentralised energy supply in developing countries



Energy is a prerequisite for development and growth. However, 2.7 billion people in developing countries rely on biomass for everyday cooking and heating. Furthermore, 1.4 billion people worldwide have no access to electricity.

How can people in developing countries profit in a sustainable way from existing technologies and approaches?

The very first conference organised by the new Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) from 10 to 12 January 2011 in Bonn

focused on decentralised energy supply in developing countries. Presentations and discussions allowed a deep insight for the 170 participants from German speaking development organisations, private companies, and research institutions.

In order to facilitate effective networking, plenty of room for exchanging knowledge and experience was provided: an exhibition with contributions from the participants and 16 thematic discussion groups on topics such as carbon markets as a financing mechanism, power generation from biomass, sustainability of different dissemination approaches and the productive use of energy. One of the highlights of the conference was a panel discussion about cooperation between development organisations and German companies in the field of decentralised energy supply.

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■ [GIZ HERA – Poverty oriented Basic Energy Services](#)

GTZ HERA – Poverty-oriented Basic Energy Services | EUEI PDF
Small-Scale Hydro Power – Policy and regulatory
framework conditions for small hydro power in Sub-
Saharan Africa – Discussion Paper

In total, 12 per cent of the world's hydro potential is found in Africa – and due to geographical conditions most of it is located in the Sub-Saharan part. But in no other continent is the gap between actual hydro power generation and the technologically exploitable potential bigger than in Sub-Saharan Africa, where only 5 per cent of the potential is currently tapped. In fact, if one considers small and micro hydro power schemes, which are largely unmapped potential, the gap is probably even bigger.

Small and micro hydro power plants have a long tradition in Africa, but never reached substantial dissemination, although the geographical conditions in some regions are favourable. In the last decade, however, some countries have made progress in promoting micro hydro power (MHP) more systematically, moving away from demonstration and pilot programmes to large-scale initiatives. In most of these countries, amongst them Rwanda, Kenya, Ethiopia, and South Africa, decentralised renewable technologies such as small-scale hydro power have been mainstreamed into regional and national policy documents.

The GTZ sector project Poverty-oriented Basic Energy Services (HERA) together with the EU Energy Initiative's Partnership Dialogue Facility (EUEI-PDF) have jointly prepared a discussion paper analyzing the policy and regulatory framework conditions under which small hydropower can be developed in Sub-Saharan Africa.

As a next step, EUEI PDF is envisaging the development of a best-practice guide for small-scale hydro power promotion for political decision-makers and policy advisers.

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■ The discussion paper is available for download from the following link:

www.gtz.de/...

GTZ EnDev & Energy policy in development cooperation
Booklet on experiences with Pico PV systems (solar
lanterns) in developing countries

What difference can a Pico PV system make? Early findings on small Photovoltaic systems – an emerging low-cost energy technology for developing countries.

Even under optimistic scenarios more than 1 billion poor people will remain without electricity for another twenty years! Pico PV systems may well be part of a solution, by allowing "pre-electrification". There are several good reasons to be bullish regarding the potential of this emerging off-grid market segment: Pico PV prices are coming down fast. Pico PV systems are over-the-counter consumer products and don't need specific know-how for installation or O&M.

Therefore, distribution has lower transaction costs than for all other grid or off-grid alternatives. The welfare gain from electrification at household level is arguably largest after stepping from flame-based lighting to efficient electric lights. Consumers do not fear that PicoPV lamps will bar them from future grid roll-out, as they often do in the case of SHSs.

Introducing social, economic and environmental benefits of PicoPV systems, the booklet also points out the assessment of quality and cost. Furthermore, it summarises results of a Pico PV field survey (Bolivia, Nicaragua, Mozambique and Uganda) and illustrates policy and market aspects such as pricing and subsidies.

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- The publication is available in English and can be downloaded from www.gtz.de/de/dokumente/... (PDF: 1.05 MB, [English version](#)) and www2.gtz.de/dokumente/... (PDF: 2.36 MB, [French version](#)).

GIZ & European Union Energy Initiative - Partnership Dialogue Facility (EUEI PDF)

Biomass Energy Strategy (BEST) Guide

The experience of developing sustainable Biomass Energy Strategies (BEST) in four countries under the joint EUEI PDF/GIZ BEST programme has provided many lessons which were summarized in our new BEST Guide. This compendium will guide not only our work on this important energy sub-sector, but will hopefully also provide useful advice to other institutions and agencies interested in the subject. The importance of biomass as a valuable renewable energy resource which will continue to be widely used is underpinned by the fact that EUEI PDF has received four additional requests for support.

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- The BEST Guide is available in English and French. For more details on the Biomass Energy Strategy (BEST) Initiative see www.euei-pdf.org/....

GIZ HERA - Poverty-oriented Basic Energy Services
Micro-gasification: Cooking with gas from biomass

Micro-gasifiers: much more than "just another improved cook stove". In this new HERA handbook, Christa Roth provides an introduction to the concept and the application of wood-gas burning technologies for cooking.

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- [Download PDF 2.00 MB \(English version\)](#)

GIZ HERA - Poverty-oriented Basic Energy Services
Carbon Markets for Improved Cooking Stoves -
Revised Edition: January 2011

After receiving a lot of positive feedback for the 2010 edition of the carbon market guidebook for cooking stove projects, HERA has come up with a major revision for 2011. Besides a large number of minor corrections and updates, a new chapter on "Implementing a Carbon-funded Cooking Stove Project" with information on how to practically design a carbon-funded stove project has been added. The chapter includes information on stakeholders' roles and responsibilities, the CDM-PoA approach, recommendations on the use of carbon revenues as well as an overview on expected costs and revenues from a stove project on the carbon market.

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GIZ HERA - Poverty-oriented Basic Energy Services
Small-scale Electricity Generation from Biomass -
Part III: Vegetable Oil

In the third and final part of HERA's paper series on power generation from biomass, GIZ and non-GIZ experience with electricity production from

vegetable oils is compiled. While from a technology point-of-view, plant oils constitute a very viable option for off-grid power generation in developing countries, their sustainable application in daily operation for rural electrification projects still remains rare. The paper identifies remaining bottlenecks and provides recommendations for future electrification projects based on plant oil.

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