ECREEE

ECOWAS CENTRE FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY

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HIGHLIGHTS

NATIONAL ENERGY EFFICIENCY CULTURE ESSENTIAL, SAYS HOUSING MINISTER

ECREEE TO CO-FUND CLEAN ENERGY MINI-GRIDS FROM 2015

Clean energy mini-grid projects will be co-funded by ECOWAS Renewable Energy Facility (EREF) from 2015 following the second call for proposals in 2014. The programme collaborates closely with a wide array of partners to provide this support.

PROSPER TO PROMOTE PV MARKET IN ECOWAS REGION

ProsPER is funded by ECREEE, IRENA and the governments of Germany and United Arab Emirates. One of the main objectives of this initiative is to promote development, adoption and implementation of national RE policies

ECREEE ROLE MODEL IN NEW GLOBAL NETWORK OF SUSTAINABLE ENERGY CENTRES

Experts on the study tour were introduced to the achievements, flagship programmes and lessons learned by ECREEE. They came from SADC, EAC, ECOWAS, SPC and the Caribbean Community Climate Change Centre (CCCCC).

MESSAGE FROM THE EXECUTIVE DIRECTOR

Dear Colleagues and Readers,

As we continue the march towards the goal of sustainable energy for all in the ECOWAS region, I am pleased to present the ninth edition of the ECREEE newsletter dedicated to activities and events that transpired over the course of the year 2014.

This edition of ECREEE newsletter proves that the centre is well on its way to achieving the goal of mitigating barriers to renewable energy and energy efficiency development in the region. Very many activities and events took place. The most momentous being the launch of the development of National Renewable and Energy Efficiency action plans and sustainable energy for all Action Agendas in the ECOWAS region.

The launch of the NREAPs, NEEAPs and SE4ALL Action agenda process in the ECOWAS region took place in Abidjan, Cote d'Ivoire at a regional kick-off workshop organized by ECREEE, the governments of Cote d'Ivoire, Austria and Spain, the United Nations Industrial Development Organization (UNIDO) and the Global Environment Facility (GEF) in March 2014. ECREEE is currently assisting the 15 ECOWAS Member States to develop their respective SE4ALL Action Agendas, National Renewable Energy and Energy Efficiency Action Plans.

Another laudable event that took place was the validation of a regional energy efficient lighting strategy by energy ministry officials from the 15 ECOWAS countries.

Under the ECOWAS renewable energy facility - EREF, ECREEE will also co-fund off-grid renewable energy projects for the first time. A call for proposals for clean energy mini-grid projects was made in 2014. We received 51 proposals in total from across the region.

Also in the course of the year ECREEE launched several programmes in the effort to ensure sustainable energy for all in the ECOWAS region one of such programmes is the the ECOWAS solar thermal capacity building and demonstration programme. Through the programme ECREEE will train existing institutions, installers and local companies and support local producers for solar thermal energy.

Based on our commitment to strengthen capacities of public and private entities in the region to implement renewable energy and energy efficiency projects, capacity building activities that aimed to develop an enduring market for renewable energy were implemented. ECREEE organised various technical and theoretical training courses on solar PV in collaboration with IRENA.'

ECREEE also participated in other events organised by partners and stakeholders such as the international conference on competitive solar power hosted by the government of Senegal and the World Bank.

We are extremely honoured that ECREEE is part of the Global Network of Regional Sustainable Energy Centers Platform that was recently launched in April 2014. The regional centres comprise the Southern African Development Community (SADC), the East African Community (EAC), ECOWAS, the Secretariat of the Pacific Community (SPC) and the Caribbean Community Climate Change Centre (CCCCC). The South-South multi-stakeholder partnership is chaired by UNIDO and ECREEE and will facilitate activities between the various centres.

Finally, I take this opportunity to once again express my sincere appreciation to the ECOWAS Member Countries and all other stakeholders. So much of our progress is due to your help and your commitment.

We hope you find this edition both interesting and informative.

Mahama Kappiah
Executive Director, ECREEE

NEW RENEWABLE ENERGY SUPPORT FOR GUINEA-BISSAU

Investment will fund various renewable energy projects with a total capacity of 2.5 MW using a range of technologies. Once in place, it will mark a major transformational shift from diesel and heavy fuel to sustainable energy.

ECREEE and United Nations Industrial Development Organisation (UNIDO) are implementing a major renewable energy Global Environment Facility (GEF) project in Guinea-Bissau. ECREEE and UNIDO will support the programme with the Guinea-Bissau Ministry of Energy and Industry, Ministry of Natural Resources and NGO Associação para o Desenvolvimento pela Tecnologia, Engenharia, Saúde e Educação (TESE). The project will consist of technology demonstration, policy support and capacity building to enable renewable energy investment to be scaled up. It is supported by SIDS DOCK - the Sustainable Energy Island Initiative of the AOSIS.

Investment will fund various renewable energy projects with a total capacity of 2.5 MW using a range of technologies. These include, for instance, medium-scale PV and mini-grid hybrid systems (312-500 kW) for rural electrification and productive uses. They also cover stand-alone PV and bioelectricity systems for industrial facilities in the fishery and cashew processing sectors. A National Renewable Energy Investment Plan (NREIP) and a special financing facility will mobilise the investment.

The project will also lay the foundations for developing the 19 MW Salthino hydropower plant. This is part of the Gambia River Basin Development Organisation (OMVG) interconnection project comprising Guinea, Guinea-Bissau, The Gambia and Senegal. Once in place, it will mark a major transformational shift from diesel and heavy fuel to sustainable energy. It will be developed in close partnership with the AfDB Sustainable Energy Fund for Africa (SEFA) and other partners. The hydropower project is also covered by the ECOWAS Small Hydropower Programme supported by the Austrian government.

The GEF project will support the development of an industrial renewable energy policy and action plan. ECREEE will carry this out under the umbrella of the ECOWAS Renewable Energy Policy (EREP). The project will also strengthen the capacities of local training institutions by running train-the-trainer workshops. It will also promote South-South knowledge transfer and exchange from universities and companies in Cabo Verde.

An international awareness campaign 'SE4ALL for Guinea-Bissau,' will run at the same time. The whole project is expected to provide Guinea-Bissau with major social, economic and environmental benefits.

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Links:

- http://www.gef.ecreee.org
- http://www.thegef.org/gef/project_detail?projID=5331

The whole project is expected to provide Guinea-Bissau with major social, economic and environmental benefits.

PROSPER TO PROMOTE PV MARKET IN ECOWAS REGION

A solar PV market initiative, jointly launched by ECREEE and International Renewable Energy Agency (IRENA) in 2011, is almost complete. It ran in 2012-14 to accelerate PV adoption. The objective is to provide capacity building support to help develop a regional and enduring market for solar power, and supply areas with little energy access at present. Markets under development include on and off-grid PV applications for both businesses and households.

"It makes sense to select solar power," says Heleno Sanchez. "Firstly, the region enjoys abundant solar resources. Secondly, PV technology costs have been falling. This makes the technology a competitive solution for rural electrification, as well as for decentralised on-grid electricity generation."

Nevertheless, tailored strategies, policy and regulatory frameworks, incentive schemes and alternative finance and business models are required to drive it forward. This will raise the PV project finance, stimulate renewable energy entrepreneurship and launch industry educational institutions required.

PROSPER OBJECTIVES

- Promote development, adoption and implementation of national renewable energy policies
- Improve understanding of incentive schemes
- Use training courses to support development of standardised procedures
- Train policy makers from ministries and specialised government agencies, regulators and utilities
- Promote training to branch managers of financial institutions to increase their confidence in renewable energy technologies, especially PV
- Train SMEs in financial and management skills

ProSPER is implemented by ECREEE and IRENA, and financed by the Governments of Germany and United Arab Emirates. It draws on the Sustainable Energy for All (SE4ALL) initiative, which targets access to modernised energy systems through renewable energy and energy efficiency.

INDIAN SOLAR INCUBATOR COULD HELP WEST AFRICAN ENTREPRENEURS PROSPER

A leading Indian solar power enterprise has given a master class to African entrepreneurs on the solar industry. The training workshops, set up by the Promotion of a Sustainable Market for Photovoltaic Systems in ECOWAS Region (ProSPER) programme, took place in Ougadougou, Burkina Faso and Bangalore, India. They were held in November 2014.

SELCO Business Incubation Centre (India) was contracted by ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) to provide training to a select number of West African entrepreneurs and financial institutions. The potential of decentralised photovoltaic (PV) business models in the region was the main focus of the knowledge-sharing workshops.

Entrepreneurs listened to SELCO's experience of the solar industry and shared best practice and lessons learned. Participants also found out about innovative processes successfully implemented in different countries.

ECREEE and the International Renewable Energy Agency (IRENA) jointly developed and are implementing the ProsPER initiative. Its objective is to help accelerate solar PV deployment in West Africa by strengthening and developing the local capacities of a variety of organisations and stakeholders. These range from policy makers and utilities to financial institutions, trainers and renewable energy entrepreneurs.

The Promotion of Renewable Energy Entrepreneurship in PV Technology and its Financing is part of the ProSPER initiative. This training plan is aimed at entrepreneurs and financial managers. Small and medium enterprises (SMEs) will develop a number of skills through the programme. For instance, it will help them

Group picture of participants of the workshop

assess the business potential of a PV project, construct a business plan, make loan requests and successfully manage and maintain their businesses. Another aim is to improve the sustainability of relevant projects and investments and increase the confidence of financial institutions in renewable energy technologies.

The three-day Ouagadougou workshop was supported by the 2iE Innovation and Incubation Centre, part of a Burkina Faso environmental engineering institute. It covered several topics. These included an overview of PV systems and markets, mini-grids, safety, solar technology innovation and other subjects. The nine-day workshop in Bangalore included theoretical business and management training and modules on team-building, leadership and innovation. Participants also gained first-hand knowledge by visiting SELCO offices and customer sites.

At the end of the workshop, they committed to promoting an ECOWAS Association of Solar Entrepreneurs and to drive regional solar PV development through this provisional structure. ECREEE and IRENA will follow up on the workshops with further support and mentoring programmes.

NEW STUDIES RELEASED ON LIGHTING

The United Nations Environment Programme (UNEP), in collaboration with the ECOWAS Centre for Renewable Energy and energy Efficiency (ECREEE) and the German Federal Ministry for Economical Cooperation and Development (BMZ), launched a set of three studies on efficient lighting, with a special emphasis on the ECOWAS region. These studies are in line with the vision of ECREEE, which is to ensure access to energy, with a focus on the use of renewable sources.

Light and Livelihood: A Bright Outlook for Employment in the Transition from Fuel-Based Lighting to Electrical Alternatives

This study examines the impact of a market transformation to off-grid lighting in terms of job loss and job creation. It focuses on the Economic Community of West African States (ECOWAS), where 178 million people lack access to the electricity grid. The study also provides statistics and introduces policy tools that governments can use to stimulate the production of new, energy efficient lighting technologies and the growth of associated jobs.

Lifting the Darkness on the Price of Light: Assessing the Effect of Fuel Subsidies in the Off-Grid Lighting Market

This research explores how subsidies of fossil fuels can impede the entry of efficient lighting technologies into off-grid markets. The issue of fuel subsidies is key to understanding the dynamics of the off-grid lighting market. The research synthesizes and analyses existing information on energy subsidies and off-grid lighting in Economic Community of West African States (ECOWAS) countries. It explores unintended consequences, the prospects for subsidy reform and associated policy strategies for reducing the need for fuel subsidies.

Light for Life: Identifying and Reducing the Health and Safety Impacts of Fuel-Based Lighting

This publication shed light on how adverse impacts of fuel-based lighting disproportionately impact women and children. It compiles and synthesizes information on the health and safety impacts of fuel-based lighting from 112 data sources and 33 countries. It includes examples from the Economic Community of West African States (ECOWAS), where 178 million people lack access to the electricity grid.

The publications are available to the general public and can be downloaded at www.ecreee.org/page/publications or www.agenz.de/en/pages/future-makers.html

ECREEE ROLE MODEL IN NEW GLOBAL NETWORK OF SUSTAINABLE ENERGY CENTRES

In August 2014 United Nations Industrial Development Organisation (UNIDO) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in East Africa organised a study tour of ECREEE for senior energy experts. It took place given the background of the formation of regional sustainable energy centres in Africa, the Caribbean and the Pacific.

At the meeting, the participants launched the Global Network of Regional Sustainable Energy Centres Platform. The South-South multi-stakeholder partnership is chaired by UNIDO and ECREEE and will facilitate activities between the various centres. The first meeting is scheduled to take place at the margins of the Vienna Energy Forum (VEF) on 18-20 June 2015.

Speaking during the study tour, ECREEE Executive Director Mahama Kappiah commended the efforts of UNIDO and other regional economic communities to replicate the West Africa model. "The network of regional centres will form a strong sustainable energy voice of Africa, Caribbean and Pacific countries on international levels," he stated.

The Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) in the Arab region is another centre already in existence carrying out the same kind of work as ECREEE. Both have been operating since 2010. Their job is to help reinforce regional capacity as soon as possible to lower existing barriers against renewable energy and energy efficiency industries and markets in developing and transition countries. Both complement and strengthen ongoing national activities in policy and capacity development, knowledge management, awareness-raising, investment and business promotion. ECREEE aims to reach 100% renewable electricity.

Experts on the study tour were introduced to the achievements, flagship programmes and lessons learned by ECREEE. They came from the Southern African Development Community (SADC), the East African Community (EAC), ECOWAS, the Secretariat of the Pacific Community (SPC) and the Caribbean Community Climate Change Centre (CCCCC).

The event also highlighted the added value of South-South cooperation between the regional centres. Martin Lugmayr, UNIDO Coordinator for the global network, emphasised the centres' role in empowering the local private sector and industry to attract more sustainable energy investment and create job opportunities. "The South-South multi-stakeholder partnership will create critical regional capacity to facilitate the attainment of the SE4ALL target by 2030," he said.

UNIDO was requested to establish an umbrella platform to facilitate knowledge exchange and common activities between the centres.

SIX PROJECTS RECOGNIZED WITH AN ENVIRONMENTAL AWARD

Six different projects were recognised in a new series of environmental awards by the Ministry of Environment of Cabo Verde. The winners received the prizes at the Green Project Awards, a gala evening held on 10 May 2014 at the National Assembly of Praia, Cabo Verde. The evening was jointly hosted by ECREEE, the Ministry of Environment, Housing and Spatial planning and other partners. Launched in 2013, the awards aim to raise awareness and educate Cabo Verdean society about environmental fragility and sustainability.

They reward individuals or groups with projects related to environmental protection. Prizes are awarded in five different categories: Natural Resource Management and Conservation, Renewable Energy and Energy Efficiency, Sustainable Tourism and Agriculture, New Technologies – Research, Co-operation and Mobilisation Initiatives. In addition, a separate award has been created for schools.

Speaking at the awards, the Minister of Environment, Housing and Spatial Planning, Antero Veiga, described the environment as one of the strategic Cabo Verde development pillars. He called it a "transverse axis of governance" in the context of change and schedule transformation. "For a small island territory, environmental practices are a substantive concern," he said.

A range of people attended the invitation-only event, including politicians, VIPs and ordinary Cabo Verde inhabitants. Prime Minister Dr. José Maria Neves read out a poem by António Nunes and referred to Kaka Barbosa. These two Cape Verdean poets have written about the islands' environment.

Mahama Kappiah, the ECREEE Executive Director, delivered the award for Renewable Energy and Energy Efficiency. This was received by Cabeólica SA for its wind energy project.

RISING ENERGY DEMAND DRIVES ENERGY EFFICIENCY DIRECTIVE

Energy efficiency is an increasing concern as ECOWAS energy demand increases, according to ECREEE Executive Director Mahama Kappiah. He was speaking at a meeting to endorse the new ECOWAS buildings energy efficiency directive and map out a route to buildings energy efficiency.

"It is important to remember that the regional demand for electricity has grown without a commensurate increase in supply," he said at the workshop in Dakar, Senegal in September 2014. The workshop was held in advance of a Francophone summit in Senegal in November 2014 discussing some of these themes.

Mahama KAPPIAH stressed how important it was to enact the directive. "In the absence of concrete action, this sad reality will remain unchanged for the foreseeable future. The road map for the implementation of the ECOWAS Directive on Energy Efficiency in Buildings therefore represents our collective resolve to operationalise the directive and ensure concrete results on the ground," he said.

Better construction practices in ECOWAS countries will be one of the directive's outcomes, as it introduces new energy efficiency requirements in building codes and thermal regulations. This will ensure energy efficiency is taken into account at the design and building phase, and defines buildings energy performance standards according to climate zone.

Housing ministers, architects and other experts from the 15 ECOWAS countries validated the directive. They also included a regional directive on sustainable buildings into the buildings energy efficiency road map.

ECREEE organised the workshop jointly with the "Institut de la Francophonie pour le Développement Durable" (IFDD), Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME) and the government of Senegal. Participants also adopted a resolution to promote sustainable cities and a new urban agenda on energy efficiency in buildings. The resolution was prepared for the 15th Francophone summit of heads of state and governments. Its theme is 'Women and Youth in Francophonie: vectors of peace, development actors.'

SENEGAL HOSTS INTERNATIONAL SOLAR CONGRESS

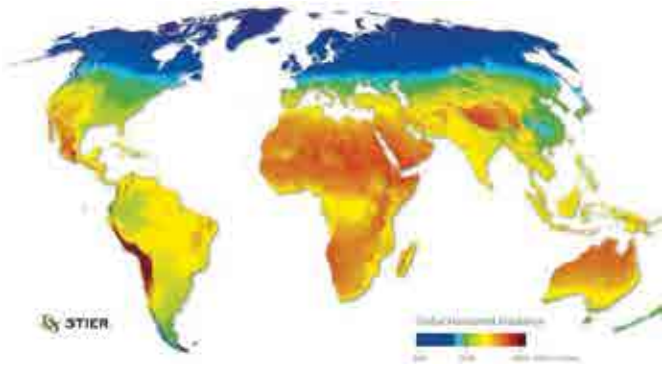
Senegal hosted an international conference on competitive solar power attended by World Bank, International Finance Corporation (IFC), ECOWAS and other delegates. The conference, entitled 'Competitive Solar Solutions West Africa,' was held in May 2014 and took place in the capital, Dakar. Executives from ECREEE and Dutch solar platform SolarPlaza also attended. It engaged more than 100 project developers, financiers, government officials and other key stakeholders. Delegates discussed a number of themes, such as the present status and prospects for solar power in ECOWAS, where country studies were presented. These was conducted by French infrastructure consultancy Nodalis for the World Bank. Participants also benefited from the opportunity to demonstrate or learn about the potential of multiple-scale solar PV technology, from large multi-megawatt (MW) installations to small, pico-PV. These could all contribute to energy access and thereby help increase people's incomes. Inhabitants of ECOWAS need energy for cooking, heating and lighting, for services like communications, health and education, and for manufacturing. Biomass is still the main energy resource in the region, however. "Despite abundant solar resources, ECOWAS still suffers from energy poverty. Solar energy could be a significant lever for reducing poverty, particularly in rural areas,"

NEW ECOWAS PROGRAMME BUILDS SOL

From L - R: H.E. Jose Miguel Corvinos - Ambassador of Spain to Cabo Verde, H.E. Humberto de Brito - Minister of Energy, Tourism and Industry, Mr. Mahama Kappiah - Executive Director of ECREEE and Mr. Antonio Medina Baptista - General Director of Energy

ECREEE will train existing training institutions, installers and local companies and support local producers for solar thermal energy. This also creates jobs and income in the countries and can get a huge market – as in many other hot countries worldwide

ECREEE is to launch the first ECOWAS Solar Thermal Energy Capacity Building and Demonstration Programme, (SOLtrain West Africa) in 2015. West African solar radiation is very high, but solar water heaters are rare. Electricity or biomass resources are downgraded and wasted, even in countries with the lowest access to electricity. Solar water heaters are essential in schools, hospitals, health centers, maternity clinics, hotels, buildings. Solar thermal drying for crops, fruits, cereal, herbs, wood and fish is also crucial for food security in the region and can be improved.



[1] Annual report 2013 of the International Energy Agency (IEA) Solar Heating and Cooling Programme

”Why waste electricity for water heating where you have plenty of sunshine? ECREEE will train existing training institutions, installers and local companies and support local producers for solar thermal energy. This also creates jobs and income in the countries and can get a huge market – as in many other hot countries worldwide,” says programme coordinator Hannes Bauer of ECREEE.

Universities and polytechnic schools with some experience in solar thermal energy will be trained intensively in theory and practice in English and French. They will also regularly train companies, installers and local producers in their countries. The training institutions will help design and install solar thermal demonstration systems to teach their students for testing and research.

Existing solar thermal systems will be monitored, analysed and improved together with the training institutions. Finally the institutions will plan 25 high-quality solar thermal systems per country. They will be installed by local training companies and technically supported by international solar

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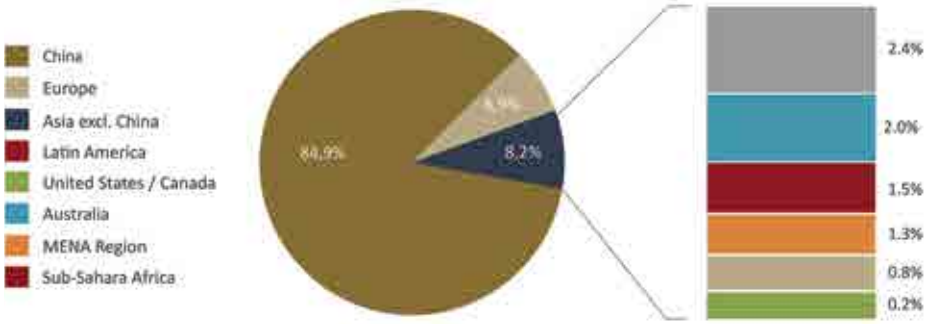

Solar heat worldwide 2012

thermal experts. Policy, administration and financial stakeholders will also be trained to show which incentives and financial schemes were successful in other countries in recent years.

Demonstration systems are to be set up, creating a next call within the ECOWAS Renewable Energy Facility (EREF) working closely with the partner institutions and local companies. These will then be able to provide training and engineering for termosiphon systems for solar thermal collectors of up to 10 m^2 or pumped systems for bigger systems. Fossil fuels, electricity and biomass are at present used for sanitary hot water, cooling and process heat in industry. But the high costs of these systems will not fall, according to a solar thermal study in Nigeria

Solar thermal can counterbalance some of these concerns. In 2013, the world added around 330 gigawatts (GW) of installed solar thermal energy capacity. This is higher than the 318 GW of installed wind power capacity and much higher than the installed solar PV capacity of 138 GW.

Most ECOWAS governments are already becoming more aware of solar thermal. The programme will seek to continue along this path and cut down political, technical and capacity barriers restricting solar thermal development. It will also help increase grid stability and save national power reserves. This is because the shift away from electricity to heat significantly reduces stress on electric grids.

Solar radiation in West African countries: double that of Central European countries but deployment lags behind.

Source: Solar resource map from IEA Solar Heating and Cooling Technology Road map

Worldwide, demand for heat is higher than for electricity and transport. According to the IEA, heat represents almost half the planet's final energy use. The large-scale deployment of solar thermal energy is essential for guaranteeing a sustainable supply of heat in decades to come. In West African countries, solar thermal is a missed opportunity to replace fossil fuels for water heating. It is much more widely used in Europe. The programme aims to plug this gap.

> *"The programme will seek to continue along this path and cut down political, technical and capacity barriers restricting solar thermal development. It will also help increase grid stability and save national power reserves."*

SCHOLARSHIPS FOR WEST AFRICAN YOUNG PROFESSIONALS

The WAI-ZEI Cooperation project offers seven scholarships for West African young professionals to study the "Master of European Studies - Governance and Regulation" (MES) at ZEI in Bonn in the years 2015 and 2016. Scholarships cover the tuition fee of 6.500 €.

The Master of European Studies – Governance and Regulation is characterized by consistently high academic standards and a fruitful working atmosphere among faculty members and students from around the world. In close collaboration with other institutions of the University of Bonn, alumni and local companies, the curriculum is supplemented by offering further career development activities that facilitate the entry into the international labor market after successful graduation.

The application period for the upcoming program year (from October 2015), has already begun. Interested candidates from around the world can apply for the Master of European Studies – Governance and Regulation until 15 March 2015. Detailed information on the application process can be found on the program's website. In addition, interested candidates are invited to come to ZEI and get a first impression of the program's structure on the spot or to get in contact with the MES alumni directly. For the next program year, WAI and ZEI will again offer seven scholarships for qualified West African candidates. Interested students or professionals from the sub-region who are fluent in English, can apply by sending their documents to WAI or directly to ZEI´s Master office. The scholarships do not cover any living or travel expenses.

For more information visit:
www.zei.uni-bonn.de

ECREEE TO CO-FUND CLEAN ENERGY MINI-GRIDS FROM 2015

The ECREEE Project Development and Finance programme is to co-fund energy efficiency and off-grid renewable energy for the first time. Clean energy mini-grid projects will be co-funded by ECOWAS Renewable Energy Facility (EREF) from 2015 following the second call for proposals in 2014. EREF is run by the ECREEE Secretariat alongside West African focal institutions.

The Project Development and Finance programme helps member states develop projects. This platform supports major investments in sustainable energy frameworks and infrastructure, without which the region's energy access, energy security and climate objectives cannot be met.

The programme collaborates closely with a wide array of partners to provide this support. These include ministries, utilities, bilateral and multilateral development co-operation institutions, development finance institutions and the private sector. It links up different stakeholders involved in renewable energy and energy efficiency project development and finance in West Africa.

An Investment and Business Forum for Renewable Energy Projects will take place in 1H 2015 to develop these activities following a previous forum in 2012 and 2013. This will showcase the most exciting initiatives to potential investors.

Grid-connected non-conventional renewable energy power plants are steadily coming on stream. Almost 140 MW are already operating in the ECOWAS region. If medium and large hydropower is included, total installed renewable energy capacity is over 4.5 GW.

More than 130 grid-connected renewable energy projects (excluding medium and large hydropower) are under consideration in the ECOWAS region. This means almost 7 GW of installed capacity is expected to come on stream.

All major renewable energy technologies are in the pipeline, but the majority is PV.

ECREEE is supporting project preparatory activities in many ways. For example, it helped the government of Mali prepare standard documents for grid-connected renewable energy power plant tenders. Additionally, it helped the Cabo Verde Ministry of Tourism, Industry and Energy launch solar PV auctions. Meanwhile, ECREEE helped infrastructure organisation Communauté Électrique du Bénin devise a decision- making process for two solar power plants. Both 5 MW in capacity, they will be developed under a turnkey scheme in Togo and Benin.

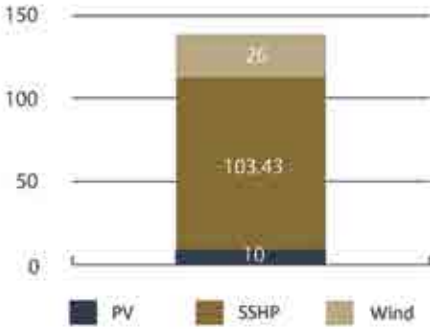

Figure 1: Operational grid-connected non-conventional renewable energy power plants - installed capacity

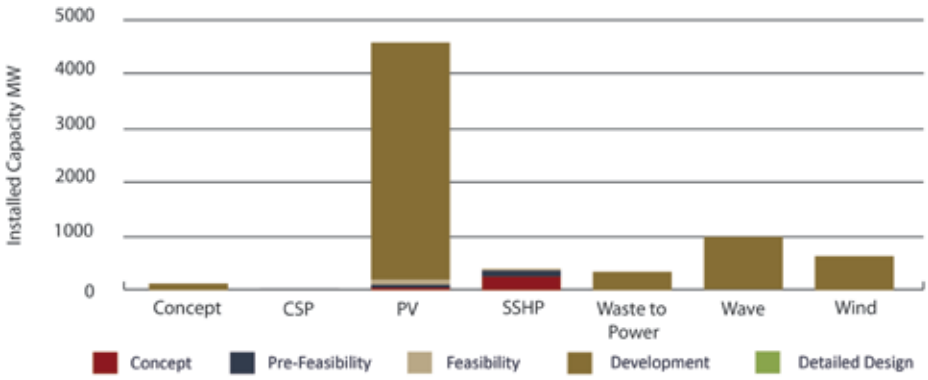

Figure 2: Grid-connected renewable energy power plants under consideration

ECREEE PROJECT DEVELOPMENT AND FINANCE PROGRAMME ASSISTANCE

- identification of technically viable and economically feasible projects to build up a solid renewable energy and energy efficiency pipeline
- preparatory activities to make projects bankable, supporting specific technical studies
- public procurement processes i.e. tender and auctions
- transaction advisory services
- fund mobilisation for project implementation
- continuous capacity building of local stakeholders for the design, implementation, supervision and operation of RE&EE projects
- role modelling to demonstrate feasibility of renewable energy and energy efficiency projects
- Reliable and up-to-date information through the ECOWAS Renewable Energy and Energy Efficiency Observatory - ECOWREX (www.ecowrex.org)
- entrepreneurship and innovative business models such as energy service companies (ESCOs), RESCOs, co-operative funding, promotion

ECOWAS COUNTRIES LEAD ON CLEAN ENERGY ACTION PLANS

ECOWAS countries are ahead of the rest of Africa on clean energy plans, according to a UN representative. Daniel-Alexander Schroth, SE4ALL hub coordinator for the African region said: "out of the 42 countries in sub-Saharan Africa that have demonstrated interest in the [SE4All] initiative, ECOWAS countries are the countries taking the first concrete steps." He was speaking at the launch of the ECOWAS national renewable energy and energy efficiency and SE4ALL action plan process.

The UN SE4ALL initiative was launched in 2012 and the ECOWAS renewable energy and energy efficiency policies were adopted in 2013. They form a major component of the action plan process. All three action plans are due to be in place in all 15 ECOWAS countries by the end of 2014.

The launch took place at a regional kick-off workshop organised by ECREEE, the governments of Cote d'Ivoire, Austria and Spain, United Nations Industrial Development Organisation (UNIDO) and the Global Environment Facility (GEF) in March 2014 in Abidjan, Cote d'Ivoire.

More than 80 experts from within the region and international organisations attended the workshop. These included ministry of energy representatives from the 15 ECOWAS countries. It also attracted officials from a number of international organisations such as the European Union (EU), United States Agency for International Development (USAID), African Development Bank (AfDB), IFC and UNIDO. Executives from International Renewable Energy Agency (IRENA) and many other local and international stakeholders also attended. National consultants selected to assist action plan facilitation for each member state were also present.

The main purpose of the workshop was to officially launch the national renewable energy and energy efficiency action plan process. Executives present also discussed the framework for implementing the regional renewable energy and energy efficiency policies and the SE4All Action Agendas in the ECOWAS region. They also validated the templates for developing the action plans.

"The creation of these national action plans by the 15 ECOWAS countries is essential to fulfil goals in the two major regional renewable energy and energy efficiency policies," stated Hyacinth Elayo, ECREEE policy analyst. They provide a road map for countries in the region to address the triple challenge of energy poverty, energy security and the impact of climate change.

Speaking at the workshop, ECREEE Executive Director Mahama Kappiah reiterated the importance of fulfilling these objectives. "I am delighted to see all the national representatives have come here today. It is a sign of their commitment to reaching the regional policy targets," he said. He also noted the significance of the plans. "Action needs to be taken at a national level if these regional sustainable energy policies to improve the conditions of rural and semi-urban populations are to deliver."

The workshop also featured presentations from key experts on the experiences of other regions on implementing action plans, especially the EU. They outlined the various support mechanisms available to drive them forward. They also praised ECREEE leadership on this issue. Delegates agreed that the action plans are critical to attaining the regional targets.

ECREEE and other international partners have repeated their commitment to providing ECOWAS member states with the necessary technical and financial support to ensure the action plans are rolled out.

The main purpose of the workshop was to officially launch the national renewable energy and energy efficiency action plan process.

RESOURCE MAPPING GETS SMARTER

Decision makers, investors, project planners and other stakeholders, now can easily access more accurate and reliable resource maps and other relevant data, thanks to a new ECREEE project. This is entitled 'Promoting Sustainable Energy Access through the use of geospatial technologies in West Africa'. Funded by the European Union (EU, under the Africa, Caribbean and Pacific (ACP)-EU Science and Technology Programme II (ACP S&T II, GRANT FED/2013/330-248), it will improve the ECOWREX Information System (available at: www.ecowrex.org/mapView/), by building a complete Spatial Data Infrastructure (SDI) and adding new maps of energy access, green power potential/power consumption . ECOWREX is the ECOWAS Observatory for Renewable Energy and Energy Efficiency.

Lack of data and planning tools still obstruct the development of the energy sector in West Africa, and more reliable information systems are necessary. These need to improve data consistency, become more user-friendly and provide easy data access, sharing and discovery. They underpin planning, support renewable energy policies and targets, and help increase investment in the region.

The project's output will fully comply with Open Geospatial Consortium (OGC) standards, thus aiding data interoperability, effective data processing, information sharing and knowledge transfer.

DATA IMPROVEMENTS

- Better web-based map framework with improved functionalities, enabling easy and reliable data sharing and transfer
- Improved solar and wind maps with better temporal and spatial resolutions
- Map of ratio between power consumption and green power production potential
- Energy access map based on Ghana 'GEAR GIS toolkit' model created by KNUST
- Increased knowledge and awareness of geospatial technology, including data and metadata collection standards in West Africa.

ECREEE is implementing the project, in partnership with the University of Geneva, Noveltis S.A.S., the Energy Centre of the Kwame Nkrumah University of Science and Technology (KNUST) and the Directorate of Energy, Cabo Verde.

ECREEE TARGETS BIOCHAR

Affordable technology can be introduced through Policies, incentive schemes and capacity building at technical, entrepreneurial and scientific levels.

A new biochar project was given the go ahead. It started in February 2014 and is due to last until January 2017. Its main aim is to build capacity in African, Carribbean and Pacific (ACP) countries in biochar technology. ECREEE is partnering with the University of Udine in Italy and United Nations Industrial Development Organisation (UNIDO) to implement the project regionally. It is known as Biochar Plus and financed under the ACP-EU Cooperation Programme in Science and Technology II.

ECOWAS and other African countries, such as Zimbabwe and Ethiopia, will be the focus of the project. It will reinforce national and regional competences to adapt the gasifier technology to the local context. This concerns materials and biomass availability as well as socio-economic conditions and the local climate.

The Biochar Plus project is a successor to the Be.Bi project (Agricultural and Environmental Benefits from Biochar use in ACP countries) managed by the University of Udine. This demonstrated that small-scale biochar production can be effectively deployed in local contexts using micro-gasifiers, and tested a stove known as the ELSA gasifier. The Be.Bi project developed small gasifiers to produce clean energy from almost all types of agro-industrial waste. It used the pyrolysis process, which cuts emissions of harmful gases, improving air quality.

Clean gas is produced using the ELSA burner. The residue in the stove is called biochar. The stove can burn agricultural waste (e.g. corn cobs, shrubs and stalks or briquettes) and wood waste. The remaining biochar may be incorporated into soil for agricultural purposes. Core benefits are outlined below.

1. Farming: it enriches the nutrient content of soil and increases the pH of acidic soils. This means it improves agricultural productivity while reducing demand for chemical fertilisers. Biochar buried in sandy soil improves soil aeration, porosity and water-holding capacity.
2. Health: reduced smoke emissions from the burner.
3. Social: reduces risks and time spent on wood gathering.
4. Environmental: biochar technology cuts the unsustainable use of biomass. The stove can burn agricultural residues, thus reducing the consumption of firewood and/or other type of fuels (i.e. liquid fuel). This minimises deforestation.

ECREEE will lead capacity building activities on small-scale biochar plants using a participatory approach. Information and training materials will be packaged into educational kits. These will be distributed to policy and decision makers and scientific organisations such as schools and technical institutes, local entrepreneurs and non-governmental organisations (NGOs).

> THE PROJECT WILL REINFORCE NATIONAL AND REGIONAL COMPETENCES

The same approach will be applied to develop large-scale demonstration biochar plants and value chain projects in two different African countries. Both models will adopt sustainability indicators to avoid any competition between food and energy.

The University of Udine is the lead project partner. Other partners include the ASA Initiative in Ghana, CORD-SL in Sierra Leone and University of Lomé in Togo, STARTER in Italy, Jimma University in Ethiopia and Bindura University of Science Education in Zimbabwe. The Biochar Plus project was launched in Udine in February 2014.

The readily available and affordable technology is needed to improve the socio-economic development of families in rural and suburban areas .It can be introduced through policies, incentive schemes and capacity building at technical, entrepreneurial and scientific levels.

NATIONAL ENERGY EFFICIENCY CULTURE ESSENTIAL, SAYS HOUSING MINISTER

From L - R: Ms Hélène Sabathié-Akonor - ADEME, Mr. Mahama Kappiah - Executive Director of ECREEE, H.E. Antero Veiga - Minister of Environment, Housing and Spatial Planning of Cabo Verde, H.E Jose Miguel Corvinos - Ambassador of Spain to Cabo Verde

"We must win the present without losing the future. For this purpose, a culture of energy efficiency has to be created, in which responsibility for energy efficiency becomes an element of the collective consciousness and part of an inclusive African development,"

A Cabo Verde minister urged African countries to integrate energy efficiency into their national culture right from the start of their energy programmes. He was speaking at an energy efficiency training workshop in June 2014, in Cabo Verde on a new ECOWAS buildings energy efficiency directive.

"We must win the present without losing the future. For this purpose, a culture of energy efficiency has to be created, in which responsibility for energy efficiency becomes an element of the collective consciousness and part of an inclusive African development," said Antero Veiga, Minister of Housing, Environment and Spatial Planning. One of the driving forces behind the directive is the energy poverty experienced by many people in ECOWAS countries. Energy efficiency policies release more energy potential.

ECREEE hosted the regional workshop to design the directive, generating discussions on energy efficiency. Participants pointed out major concerns. For instance, progressive democratisation of clean energy access is a key challenge. This requires different attitudes and behaviour. Energy efficiency practices are part of the solutions.

The workshop was aimed at the directive working group and also included energy efficiency training. It took place as part of the EU-funded project 'Supporting Energy Efficiency for Access in West Africa (SEEA-WA).' This falls within the remit of the EU Energy Facility and Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME).

Experts from energy and housing ministries and presidents of professional architect organisations attended. The training on buildings energy efficiency was aimed at stakeholders in energy and housing, (urban) planning and construction. Experts informed and shared experience with participants on regulations, codes and best practice for energy efficiency in buildings. This was a capacity building exercise on energy efficiency in building design, components and construction.

Mahama Kappiah, ECREEE Executive Director opened the workshop. Other opinion leaders present included Hélène Sabathié-Akonor from ADEME and Jose Miguel Corvinos, honourable Ambassador of Spain to Cabo Verde.

ECOWAS ACCELERATES SWITCH TO EFFICIENT LIGHTING

ECOWAS energy ministry officials approved a new energy efficient lighting strategy at a meeting in Dakar, Senegal in April 2014. They also agreed to harmonise two Minimum Energy Performance Standards for Efficient Lighting (MEPS) for on-grid and off-grid applications.

Commenting on the ECOWAS Regional Efficient Lighting Strategy at the meeting, ECREEE Executive Director Mahama Kappiah said: "In the quest to achieve the region's SE4All objectives, efficient use of already scarce energy is critical." He noted the wasted opportunity from not acting: "energy efficiency is an important, yet untapped energy resource. There is increasing consensus that the best kilowatt-hours in the one we have never consumed".

The strategy accelerates the move to energy efficient lighting by adopting an integrated policy approach. The underlying drivers are strong: demand for electricity in the ECOWAS region has grown without an accompanied increase in electricity supply. About 60% of the 300 million inhabitants still lack access to electricity and thus an efficient, modern and safer lighting service.

A 2013 ECREEE/UNEP assessment showed ECOWAS could achieve annual savings of over USD 4bn if it makes a full transition to efficient lighting. This shift would include lamps or solar lighting solutions in residential, commercial, industrial and public lighting, and would result in annual savings of 2.43 terawatt hours of electricity consumption. This is equivalent to cutting carbon emissions by 12,338.6 kilotonnes each year, saving 3.9 billion litres of kerosene.

Senegal announced the launch of the regional strategy as host and champion of the ECOWAS efficient lighting initiative, which contributes to the SE4All initiative. The validation workshop was set up by ECREEE, the government of Senegal and the UNEP en.lighten initiative. It helps implement the SEEA-WA project funded by the EU Energy Facility with co-financing from ECOWAS and Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME).

ECOW-GEN LAUNCHES NEW ONLINE GENDER/ENERGY NETWORK

ECOW-GEN HIGH IMPACT INITIATIVES

- ECOWAS Women's Business Fund supports the establishment and expansion of energy businesses led by women
- Women's Technical Exchange Programme facilitates knowledge and technology transfer among women's groups with expertise in various energy technologies
- Women's Economic Empowerment through Energy for Productive Uses enables rural women farmers to improve agricultural productivity using renewable energy technologies
- Mainstreaming Gender in Energy Programmes and Projects reduces gender inequality in energy access and development in West Africa through regional gender-responsive policies and national strategies, capacity building activities and advocacy
- Youth Leadership Development in Energy empowers West African youth to shape and influence energy development through research grants supporting high quality, relevant studies to solve topical energy issues

The ECOWAS Programme on Gender Mainstreaming in Energy Access (ECOW-GEN) launched a new online interactive network for professionals working on gender and energy. The ECOWAS Network on Gender Mainstreaming in Energy Access, will provide these professionals with the opportunity to participate in ECOW-GEN activities.

ECOW-GEN is a flagship programme launched by ECREEE to promote socially inclusive energy development in West Africa. It serves as the catalyst for energy solutions meeting the needs of both men and women in African countries.

A founding principle behind ECOW-GEN is the recognition of the underutilised potential of women as producers and suppliers of energy services. Secondly, ECOW-GEN acknowledges that universal energy access will not be achieved unless both women and men drive forward energy development.

ECOW-GEN strategies therefore aim to close the gender gap in the energy sector. It places women at the centre stage of energy development while also empowering young people, boys and girls to contribute to West Africa's energy expansion.

The programme's activities will be implemented closely with member state energy and other relevant ministries, departments and agencies, NGOs, universities and research institutions, women's associations, youth organisations and development partners.

NEW ENERGY FUND INCENTIVES FEMALE ENTREPRENEURS

A new Women's Business Fund is to stimulate clean energy businesses by women in the ECOWAS region. Set up by ECREEE and supported by the Spanish Agency for International Co-operation and Development (AECID) and the Austrian Development Agency (ADA), it will help cut barriers to business enterprise by women.

Women's groups active in the gender and energy field will be screened for financial support for energy projects. Selection criteria are devised with the assistance of energy ministries in ECOWAS member states.

The fund will help successful participants upscale existing energy projects and will also provide technical assistance for designing new projects.

Its aim is to ensure women entrepreneurs help solve energy problems in the region while gaining skills that empower them economically. The fund is one of five ECOWAS Programme on Gender Mainstreaming in Energy Access (ECOW-GEN) initiatives. The underlying principles of ECOW-GEN recognise the underutilised potential of women as producers and suppliers of energy. The programme also acknowledges that SE4ALL goals in West Africa will not be fulfilled unless women are empowered in this field. These principles are based on the ECOWAS Gender Policy, which emphasises the need to "develop policies and programmes to provide alternative energy sources which would contribute to women's health and also alleviate their time burden."

Selection criteria – Women's Business Fund

- ***Past and ongoing gender and energy projects***
- ***Participation in development activities***
- ***Partnership building and networking strength***
- ***Commercial viability***

ECREEE AND AFREA: ALL WOMEN NEED ENERGY ACCESS

ECREEE agreed to work with the Gender and Energy Programme of the Africa Renewable Energy and Access Programme (AFREA) to mainstream energy access for women. This was stated at a three-day workshop organised with the World Bank and the Energy Sector Management Assistance Program (ESMAP) on 7–9 April 2014 in Dakar, Senegal.

More than 50 people attended from West, East and Southern Africa, Europe and the United States. Participants shared national experiences and benefited from two days of training. Development partners, ECREEE, International Network on Gender and Sustainable Energy (ENERGIA), the Danish Embassy, UN Women and SNV Netherlands Development Organisation gave presentations on their work on gender mainstreaming in energy access.

Training helped participants identify gender concerns in energy access, renewable energy and energy efficiency, energy policy, electricity transmission and distribution. Participants also learned how to conduct gender assessments, develop action plans and formulate monitoring and evaluation frameworks.

The AFREA Gender and Energy Programme is a capacity building organisation working since 2009 in Benin, Mali and Senegal. ECREEE will collaborate with AFREA through its flagship programme, the ECOWAS Programme on Gender Mainstreaming in Energy Access (ECOW-GEN). The two will focus on networking and knowledge exchange.

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