



ECREEE

ECOWAS CENTRE FOR RENEWABLE
ENERGY AND ENERGY EFFICIENCY

BUSINESS PLAN
2011 - 2016

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BUSINESS PLAN

ECOWAS CENTRE FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY (ECREEE)

FIRST OPERATIONAL PHASE: 2011 TO 2016

ECREEE is supported by



Imprint



The ECREEE Business Plan 2011–2016
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MESSAGE FROM THE CHAIRMAN

In the context of the Year of Sustainable Energy for All, it gives me great pleasure and pride to present the Business Plan for the Economic Community for West African States (ECOWAS) Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) for the years 2011 to 2016. The document has undergone extensive review by ECREEE's partners, its fifteen National Focal Institutions (NFIs) and the ECREEE Technical Committee, prior to its formal presentation and approval by the Executive Board of the Centre in 2012.

The Business Plan provides a powerful strategic long-term framework which allows continued monitoring of the achievements of the Centre. By mapping out a clear vision, the plan serves to guide the Centre towards a position of relevance and sustainability in the coming years. The strategy includes the definition of objectives and milestones, performance indicators, activities, and human and financial resources requirements. It also highlights the peculiarities and specific challenges facing the region with respect to energy, while presenting the opportunities and barriers for renewable energy and energy efficiency deployment as well as a country-by-country review of the needs, opportunities and key issues within the sector.

In 2009, ECOWAS, in cooperation with the governments of Austria and Spain, and the United Nations Industrial Development Organization (UNIDO) established ECREEE as a unique regional renewable energy and energy efficiency promotion agency. The Center represents a compelling regional policy response to the rising energy security concerns, continued lack of access to energy services as well as the need for climate change mitigation. The Centre creates an important link between international climate, energy and development cooperation policy. It has the potential to become a key entry point for the mobilization of private sector and international funding to address the energy challenges facing the region and mitigate climate change effects.

Over the coming years, we will be mobilizing our partners and stakeholders in the region towards achieving ECOWAS energy objectives such as the ECOWAS/UEMOA White Paper on access to energy services for populations in rural and peri-urban areas. The policy foresees that at least 20% of new investments in electricity generation should originate from locally available renewable resources. The Centre will also contribute to the achievement of the UN Millennium Development Goals (MDGs), the UN goal of universal access to clean, affordable energy by 2030 and the international agreements to reduce greenhouse gas (GHG) emissions to keep the global average temperature rise below two degrees Celsius. The UN goals aim at achieving three interlinked targets by 2030: ensuring universal access to modern, affordable and reliable energy services; doubling the rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix.

We are therefore pleased to note that ECREEE has already started to execute key activities to mitigate the existing barriers for the creation of RE&EE markets in West Africa. At the end of the six year period, an independent external evaluation will be carried out to assess the progress in the region and by ECREEE towards achievements of the objectives of the Centre based on the set performance indicators in the Business Plan. These include the number of additional people/institutions with access to modern energy services through RE&EE; the number of jobs created directly or indirectly during construction and operation of RE&EE projects; the volume of income and savings generated by RE&EE projects; the volume of GHG tons reduced throughout the life-time of installed RE&EE projects; the volume of reduction of fuel wood use for cooking through RE&EE projects, the rate of electricity access in rural areas in ECOWAS; and the capacity of MW installed in the region.

The Business Plan has been elaborated by ECREEE, with the technical assistance of Nexant Inc., and with funding from the United States Agency for International development (USAID). We are truly excited about this long-term planning framework. Special thanks are due to USAID as well as our core partners: the Governments of Austria, Spain and the United Nations Industrial Development Organization (UNIDO). We count on your continued support and collaboration as we strive to accelerate access to modern energy services through the proliferation of RE&EE technologies across the West African region.

Ebrima Njie
ECOWAS Commissioner for Infrastructure & Chairman of the ECREEE Board

HIGHLIGHTS OF THE ECREEE BUSINESS PLAN (2011–2016)

ECREEE Governance Structure: ECREEE is a specialized ECOWAS agency with a public mandate to promote renewable energy and energy efficiency markets. It acts as an independent body but within the legal, administrative and financial framework of ECOWAS rules and regulations. The ECREEE Secretariat is based in Praia, Cape Verde, and has established a network of NFIs among all ECOWAS Member States. The Technical Committee (TC) and the Executive Board (EB) are the highest decision-making bodies of the Centre. The official working languages of the Centre are English, French and Portuguese.

Financial Vision: ECREEE is primarily public funded through grants from the ECOWAS Commission and official development aid from donors. By 2020 the Centre will decrease the share of donor grants from 75% to 50% of its annual budget. The share of ECOWAS and voluntary member state contributions should increase from 15% in 2012 to 40% of the annual budget in 2020. Moreover, the Centre aims at mobilizing around 10% of its annual budget through commercial services and investment shares (fee-for-service).

Overall Objective of ECREEE: To contribute to the sustainable economic, social and environmental development of West Africa by improving access to modern, reliable and affordable energy services, energy security and reduction of energy related externalities (GHG, local pollution).

Specific Objective of ECREEE: To create favorable framework conditions for regional RE&EE markets by supporting activities directed to mitigate existing technology, financial, economic, business, legal, policy, institutional, knowledge and capacity related barriers.

ECREEE Value Chain: Under the Business Plan, the Centre will execute numerous activities within the scope of five interrelated result areas. They include policy development, capacity building, knowledge management, awareness raising as well as business and investment promotion. The Business Plan sets measureable performance indicators and targets for each result area (see below).

RESULT AREA 1: Create an effective regional RE&EE promotion agency and ensure financial sustainability

Performance Indicators by 2016

- Achieve 80% expenditure rate and implement 80% of the planned activities in the annual work plans
- Mobilize 25% of the annual budget of ECREEE from ECOWAS sources and 5% from commercial fee-for-service activities in 2016
- Mobilize €13 million funding through direct funding agreements by 2016
- Sign six funding agreements with international donors
- Sign five funding agreements with ECOWAS member states and/or ECOWAS Commission
- Sign 40 cooperation agreements with local and international technical RE&EE partners
- Review and appraise 300 RE&EE project proposals in accordance with the Centre's quality and appraisal framework
- Prepare, manage and conclude 120 procurements
- Sign and manage 100 contracts
- Prepare and submit at least 18 project/program proposals to international financiers (e.g. EC, GEF) and mobilize €20 million indirect co-funding through such proposals.
- Spend a maximum of 20% of its budget for administrative purposes (e.g. salaries, running costs)
- 50% female employees

RESULT AREA 2: Create and implement tailored policy, legal and regulatory frameworks

Performance Indicators by 2016

- Develop and adopt one regional renewable energy policy and one energy efficiency policy
- Develop and pass RE laws in all ECOWAS Members States
- Ensure binding of national minimum renewable energy targets (MRET) adopted in all ECOWAS Member States
- Achieve 25% MRET across the Member States
- Develop five RE&EE support policies/strategies devoted to rural and peri-urban electrification/energy
- Achieve a 50% rate of adoption of national EE standards and labelling standards.

RESULT AREA 3: Capacities strengthened and applied**Performance Indicators by 2016**

- Execute 80% of the Regional Capacity Building Program based on the Capacity Needs Assessment
- Train directly 500 stakeholders across identified target groups
- Conduct 15 training workshops
- Train 30 local institutions by applying a 'train the trainers' approach
- 60 national follow-up trainings are executed by local institutions (trained by ECREEE)
- 1.000 participants participated in the trainings of local institutions (trained by ECREEE)
- Achieve at least 70% positive feedback of participants in ECREEE trainings (e.g. evaluation forms)
- Conduct three workshops/meetings devoted to sustainable energy in rural/peri-urban areas
- At least 20% of the trained experts are female

RESULT AREA 4: Strengthen knowledge management, awareness raising, networks and advocacy**Performance Indicators by 2016***Awareness raising, advocacy and networks*

- Attract 21,000 visits per year to the ECREEE website
- Draw 50% of visits from the ECOWAS region/Africa
- Conduct two surveys per year among stakeholders and general public
- Attain 50,000 contacts in the ECREEE database
- Send 12 alerts per year to all database contacts
- Record 200 friends on Facebook
- Record 200 twitter followers
- Conduct one awareness campaign per year (radio ads/interviews/mentions)
- Publish ten press releases per year
- Disseminate four newsletters per year.

Knowledge management

- Establish the ECOWAS Observatory for Renewable Energy and Energy Efficiency (EORE) and catalogue 500 documents in the database
- Record 20,000 downloads from the EORE
- Conduct Resource Assessments (solar and wind) contrasted with field measurements (max 10% of data error) of 20% of regional territory
- Conduct Resource Assessment (flow and height) of 50% of the rivers in the region
- Conduct bioenergy crops assessment of 100% of territory in the region
- Organize 6 regional RE&EE conferences with more than 720 participants
- Give 90 presentations at major conferences
- Prepare five policy statements/briefs for regional and international policy and decision-making processes
- Complete two flagship ECOWAS RE&EE publications

RESULT AREA 5: Business and investment promotion**Performance Indicators by 2016**

- Organize five forums of the ECOWAS Renewable Energy Investment and Business Initiative (ERIBI) and five meetings of the Business Advisory Council (BAC)
- Mobilize €500 million of investment for the project pipeline of the RIBI
- Undertake 20 pre-investment studies leading to actual investments
- Develop and implement ten RE&EE demonstration projects
- Approve and implement 90 rural and peri-urban ECOWAS Renewable Energy Facility (EREF) projects
- Create or support ten local energy service companies (ESCOs)
- Complete 15 Electrical Grid Dynamic Analysis (EGDA) studies to evaluate the RES penetration potential in the region
- Mobilize a minimum of €30 million of co-funding for investment projects directly supported/funded and/or developed by ECREEE.

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LIST OF ACRONYMS

2ie ACP-EU ADA	African Carribbean Pacific – European Union Austrian Development Agency
AEA	Austrian Energy Agency
AECID	Spanish Agency for International Development and Cooperation
AEE	Association of Energy Engineers
AEE-Intec AFRETEP AfDB	AEE – Institute for Sustainable Technology African Renewable Energy Technology Platform Africa Development Bank
AIP	Africa Infrastructure Project
ARE AREA BAC	Alliance for Rural Electrification African Renewable Energy Alliance Business Advisory Committee
BENTD BOAD CDM	Bureau National d'Etudes Techniques et de Développement Banque Ouest Africaine de Développement Clean Development Mechanisms
CENER	National Renewable Energy Centre
CER	Certified Emissions Reductions
CIEMAT CLEAN COMFAR	Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas Coordinated Low Emissions Assistance Network Computer Model for Feasibility Analysis and Reporting
COP-XVII	Seventeenth Conference of the Parties to the United Nations Framework Convention on Climate Change
CSET	Center for Sustainable Energy Technology
CSP CSR	Concentrated Solar Power Corporate Social Responsibility
DAF DMOD EB EBID	Department for Administration and Finance Department of Management and Organizational Development Executive Board ECOWAS Bank for Investment and Development
EBREP	ECOWAS-Brazil Renewable Energy Partnership
ECMS	Enterprise Content Managed
ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Regional Centre for Renewable Energy and Energy Efficiency
ECREEE EB	ECOWAS Regional Centre for Renewable Energy and Energy Efficiency Executive Board
ECREEE SEC	ECOWAS Regional Centre for Renewable Energy and Energy Efficiency Secretariat
ECREEE TC	ECOWAS Regional Centre for Renewable Energy and Energy Efficiency Technical Committee
ED EE	Executive Director Energy efficiency

EERF	Energy efficiency reconciliation factor
EIB	European Investment Bank
ENDA-TM	Environmental Development Action in the Third World
ERERA	ECOWAS Regional Electricity Regulatory Authority
EREF	ECOWAS Renewable Energy Facility
ERIBI ESCO	Renewable Energy Investment and Business Initiative Energy Service Company
ESMAP EUEI - PDF EUETS	Energy Sector Management Assistance Programme European Union Energy Initiative – Partnership Dialogue Facility European Union Emissions Trading Scheme
GBEP GDP	Global Bioenergy Partnership Gross domestic product
GEF	Global Environmental Facility
GFSE	Global Forum on Sustainable Energy
GHG GIZ GSR	Greenhouse Gas Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Global Status Report
GVEP	Global Village Energy Partnership
ICC ICRISAT ICSE IDAE IEA	International Chambers of Commerce International Crops Research Institute for the Semi-Arid Tropics International Council for Sustainable Energy Institute for the Diversification and Saving of Energy International Energy Agency
IEPF IFC	L'Institut de l'Energie et de l'Environnement de la Francophonie International Financial Corporation
IFI IHA	International Finance Institution International Hydropower Association
IIASA	International Institute for Applied Systems Analysis
IRENA	International Renewable Energy Agency
ITC	The Canary Islands Institute of Technology
KNUST	Kwame Nkrumah University of Science and Technology
kWh	kilowatt hours
LPG MDG	liquid petroleum gas Millennium Development Goals
MEDREC	Mediterranean Renewable Energy Center
MFA	Ministry of Foreign Affairs
MOU	Memorandum of understanding
MRET MW(h)	Minimum renewable energy targets Megawatt (hours)
NFI	National Focal Institutions

NGO	Non-governmental organizations
OECD	Organisation for Economic Cooperation and Development
OLADE	Latin American Energy Organization
OPIC	Overseas Private Investment Corporation
PHCN	Public Holding Company Nigeria
POC	Point of contact
PPA	Power Purchase Agreement
PPDU	ECOWAS Project Preparation and Development Unit
PV	Photovoltaic
RE	Renewable energy
RECP	Resource Efficiency and Cleaner Production
RE&EE	Renewable energy and energy efficiency
REEEP	Renewable Energy and Energy Efficiency Partnership
REN-21	Renewable Energy Policy Network for the 21st Century
RES	Renewable Energy Sources
RET	Renewable Energy Technologies
RIBI	Renewable energy investment & business initiative
SAIS	Johns Hopkins School for Advanced International Studies
SEEA-WA	Energy Efficiency for Access in West Africa
SHS	Solar Home Systems
SME	Small/Medium Sized Enterprise
SPWA	Strategic Programme for West Africa
SWOT	Strength, weakness, opportunity, threat
TC	Technical Committee
TERI	The Energy Resources Institute
TD	Technical Energy Department
UEMOA	Union Economique et Monétaire Ouest Africaine
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
USTDA	United States Trade and Development Agency
WAEMU	West African Economic and Monetary Union
WAGP	West Africa Gas Pipeline
WAPP	West Africa Power Pool
WWEA	World Wind Energy Association

1. BACKGROUND AND FRAMEWORK CONDITIONS

The Economic Community of West African States (ECOWAS) comprises 15 countries¹ whose territories span a broad swathe of the Sahara Desert and the tropical coastal lowlands of West Africa, from the Cape Verde archipelago in the west to Nigeria in the east. The region has a population of approximately 300 million inhabitants, equivalent to roughly one third of Africa's total as of 2010, even while it represents just 16% of the continent's total surface area; the ECOWAS region is equivalent to about half the surface area of the United States, or about the same as Western and Eastern Europe combined. Despite considerable mineral wealth, agricultural potential and water resources, the region includes some of the world's poorest nations. Given the uneven extent of economic development in the region, governments are focused on fostering economic growth and employment expansion together with the achievement of basic services in the areas of health care, education, housing and transportation.

1.1. Energy Challenges in West Africa

West Africa's energy sector must address the interrelated challenges of energy access, energy security and climate change mitigation and adaptation, which are intertwined with the region's economic challenges. Indeed, this trio of challenges in turn considerably complicates the implementation of regional strategies aimed at fostering socio-economic development, attracting foreign investment programmes, providing basic social services, and achieving the Millennium Development Goals (MDGs). West African energy policy must therefore address these challenges in an integrated way that focuses on social, economic and environmental sustainability.

1.1.1. Energy poverty

Energy poverty and its consequences for local economies and social development are projected to remain the predominant challenge for West Africa through to 2030. Per capita electricity consumption in the region averaged 88 kWh in 2005, one of the lowest rates in the world. Moreover, significant energy access and energy pricing inequalities exist between urban and rural areas. Whereas urban areas tend to use energy in the form of electricity, charcoal, kerosene and other fuels, rural areas continue to rely on largely traditional biomass for meeting their energy requirements for cooking, lighting and space heating. Household access to electricity across the region is about 20%, but wide gaps exist between the access rates in urban areas that average 40% and in rural areas from 6% to 8%. The grids usually serve only urban and peri-urban areas (with the exception of Cape Verde and Ghana) and leave the rural electricity supply dependent on expensive diesel generators. The electricity consumer tariffs in the majority of ECOWAS countries reach equal or higher levels than in industrialized countries with higher income (e.g. USA, Europe). Low-income groups are obliged to spend much more of their income on poor quality energy services. Traditional fuel derived from unsustainably harvested firewood is causing deforestation across the region, general deterioration of key ecosystems, and exposes the population to indoor air pollution, among other damaging impacts.

1.1.1. Energy security

Energy security is of high importance for the governments in West Africa as it affects economic growth and industrial development. The external and internal environment for the energy sector has changed considerably in past years and requires urgent answers from policymakers as well as public and private investors. Currently, the ECOWAS region is confronted with the reality of energy vulnerability, fuel price volatility and system unreliability. The electricity systems in West Africa are facing tremendous challenges due to the growing gap between predicted demand, existing supply capacities and limited capital to invest. The energy intensity in the countries remains high and electricity is used in an inefficient way throughout all sectors. At least 60% of the ECOWAS electricity generation capacity runs on expensive diesel or heavy fuel and imposes significant pressure on national budgets, private households and the private sector. Most ECOWAS countries are inadequately prepared to respond effectively to the challenges of energy security. The absence of governmental policies, low private and public investments, and poor operation and maintenance of grids and generation facilities has led to a severe energy

¹ The member countries are: Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

crisis. Overall, the performance of the West African power sector over the years has been unsatisfactory. Despite implementing power sector reforms aimed at stimulating private sector participation and liberalization, the utility services in the region have not been able to mobilize significant private investment.

1.1.1. *Climate change mitigation and adaptation*

West Africa's economies will inevitably be confronted in the coming decades by the effects of mitigation and adaptation costs of climate change. Given the region's vulnerability to climate change, the urgent need for reliable and affordable energy supply to ensure energy security and energy access poses a dilemma for policymakers. Urgent investments in generation and transmission facilities are needed to satisfy the increasing urban and rural needs for modern, affordable and reliable energy services. In the meantime, expansion of an energy supply based on inefficient, low-cost, fossil fuel based combustion technologies will increase GHG emissions and increase negative climate change impacts. New energy infrastructure investments have a long lifespan and determine the GHG emissions for the next 20 to 30 years. Climate change impacts (temperature rise, extreme weather events and droughts) will challenge the energy security of West African countries and will have to be mainstreamed into energy policy planning (e.g. impacts on water flows).

1.1.1. *Energy as a carrier for developing other sectors*

Energy is considered a key factor in achieving sustainable development and poverty reduction in the ECOWAS region. Most donor governments and international organizations have recognized the importance of integrating energy into development policies to promote sustainable and rural development, by making available new and renewable energy sources, and improved energy efficiency for social services, rural households and productive needs in rural development programmes. Access to clean, reliable and affordable energy services for basic human needs at household level (cooking, heating, lighting, communication), health stations (healthcare), schools (education); and productive uses to improve productivity represent the minimum levels required to improve livelihoods in the poorest countries and to drive local economic development on a sustainable basis.²

1.1.1. *Energy and gender*

In order to lift the income levels of poor families and communities, energy policies and projects must be targeted to reach those who are most in need. In many contexts, it is women who suffer the most from conditions of extreme poverty. Of the 1.2 billion people living on the equivalent of one dollar a day, 70% are women. Because of their traditional responsibilities for collecting fuel and water, in many developing countries women and girls would benefit most from access to improved energy services.

The time and physical effort expended by women and girls in gathering fuel and carrying water seriously limits their ability to engage in educational and income-generating activities. Literacy rates and school enrolment levels in many developing countries are dramatically different for men and women. Much of women's time is taken up with difficult and time-consuming chores related to producing and processing food without mechanical or electrical equipment and with cooking without clean-burning fuels and energy efficient appliances.

Many women and girls also suffer from health problems related to gathering and using traditional fuels. In addition to the time and physical burdens involved in gathering fuel, women suffer serious long-term physical damage from strenuous work without sufficient recuperation time. Women are faced with the danger of falling, threats of assault or other physical harm, and snake bites during fuel gathering. They are also exposed to a variety of health hazards from cooking over poorly ventilated indoor fires, including respiratory infections, cancers and eye diseases. Smoke from poorly ventilated indoor fires accounts for close to 2 million premature deaths per year. Reduced drudgery for women and increased access to non-polluting power for lighting, cooking and other household and productive purposes can have dramatically improved effects on women's levels of empowerment, education, literacy, nutrition, health, economic opportunities and involvement in community activities. These improvements in women's lives can, in turn, have significantly beneficial consequences for their families and communities.³

² Veronica Utz. *Modern Energy Services for Modern Agriculture*, GIZ-HERA (2011)

³ *Gender & Energy for Sustainable Development: A toolkit and resource guide*. UNDP (2004)

1.2. RE&EE Opportunities, Potential and Barriers in West Africa

1.2.1. Opportunities of RE&EE deployment

Regional energy access, energy security and climate objectives will not be obtained simultaneously in future decades without significant additional investment in sustainable energy infrastructure in West Africa. Along with other low-carbon technologies, renewable energy and energy efficiency are appropriate tools to address these challenges simultaneously and in a sustainable manner. Over recent decades, a broad range of proven decentralized and centralized RE&EE technologies and solutions, ready to meet various energy services in urban or rural areas of West Africa, have been developed. Renewable energy (RE) systems are particularly effective if they are combined with energy efficiency (EE) measures which are usually available at low cost. If planned carefully and according to quality principles, such investments can be associated with various benefits and opportunities for West African countries. RE&EE can make a considerable contribution to the eradication of the described negative externalities of the current energy systems. RE based economic development is in many cases more sustainable, as it relies on local energy sources, creates local employment opportunities and prevents negative environmental externalities of the energy system (GHG emissions, local environmental impacts).

1.2.2. Renewable energy and energy efficiency potential

West Africa boasts considerable hydrocarbon resources, but these are unevenly distributed. Nigeria alone is endowed with 98% of the region's proven reserves of crude oil, natural gas and coal, which is 30% of Africa's total proven crude oil reserves (3,017 million tons), and 31% of Africa's proven natural gas reserves (3,581 billion m³). Smaller oil reserve deposits are located in the Gulf of Guinea (offshore Benin, Côte d'Ivoire and Ghana).⁴ West Africa's petroleum refining capacity is concentrated in Nigeria. Nigeria's refining capacity is currently insufficient to meet domestic demand, forcing the country to import petroleum products. Apart from significant fossil fuel resources, West Africa can rely on a wide range of untapped RE&EE potentials in various sectors. Like the region's hydrocarbon resources, the potential renewable energy resources in West Africa are significant, but they are unevenly distributed. Moreover there is considerable potential for energy efficiency improvements:

- An estimated 23,000 MW of hydroelectric potential is concentrated in five of the 15 Member States, of which only about 16% has been exploited. According to preliminary estimates, small hydro power potential in the region amounts to around 6000 MW.
- There is good potential for all forms of bioenergy. Traditional biomass is already the main source of energy for the poor and accounts for 80% of total energy consumed for domestic purposes.
- There are considerable wind, tidal, ocean thermal and wave energy resources available in some ECOWAS countries.
- The region has vast solar energy potential with very high radiation averages of 5–6 kWh/m² throughout the year.
- With respect to energy efficiency opportunities, there is significant potential to improve the demand side and supply side energy efficiency in buildings, appliances, power generation and transmission. It is estimated that in West Africa, 25% to 30% of the total electricity supply is consumed in the building sector, namely cooling and hot water heating. The technical and commercial energy losses due to theft and/or illegal operators lie in the range of 25% to 30% (some sources say 40%). This is quite high in comparison to the 7% to 10% range of energy theft in Northern America and Western Europe.

⁴ David Ato Quansah and Emmanuel W. Ramde, *Potentials, Opportunities and Barriers for the Deployment and Usage of Solar Energy Technologies and Services in West Africa: Discussion Paper for the Regional Forum on the ECOWAS Solar Energy Initiative* (ECOWAS Regional Centre for Renewable Energy and Energy Efficiency, Praia 2010), at 3.

1.2.1. Barriers for the RE&EE markets and investments in West Africa

So far the West African markets for RE&EE remain largely underdeveloped. According to the Renewables 2011 Global Status Report (GSR), global investments in new RE generation capacity exceeded US\$200 billion in 2010. Regrettably, the African continent and particularly sub-Saharan Africa have attracted only a small fraction of these investments. West African countries do not take advantage of their RE&EE potentials due to various technical, financial, economic, legal, institutional, policy and capacity related barriers:

1. Although significant cost reductions have been achieved, a variety of renewable energy technologies (RETs) still tend to be more expensive than their conventional competitors.
2. Due to the widespread lack of knowledge and awareness, RETs are still perceived as expensive although some are already cost-competitive when they compete with conventional alternatives under specific conditions.
3. Technical knowledge is required to establish a critical mass of policy analysts, economic managers, project financiers and engineers who will be able to manage all aspects of renewable development. For successful dissemination, it is necessary to foster trained manpower capable of developing and manufacturing RETs and offering RE services.
4. In some countries, subsidies for fossil fuel based solutions create a disadvantage for already competitive RETs.
5. The lack of tailored policies, as well as regulatory and legal frameworks in the ECOWAS region, is a key constraint for the wider usage of RE&EE technologies. Clear direction and leadership from governments are often missing, resulting in an ad hoc evolution in the renewable energy sector. Only a few ECOWAS countries have adopted RE support policies, targets and laws, however, the implementation of existing policies is in most cases still in an initial stage. Most of the efforts made in the region are still insufficient to make a difference, for various reasons:
 - Existing RE support policies in many cases have not been implemented due to lack of resources and capacities. Moreover, often they do not consider energy efficiency improvement as a complementary activity.
 - Currently, few states have any legislation, dedicated government body, or funding to support the potential renewable energy and energy efficiency market. Currently, only Cape Verde, Ghana and Senegal have developed renewable energy policy frameworks which will be implemented in forthcoming years. In most West African countries, renewable energy and energy efficiency concerns are often grouped under the government ministry or agency involved in mines, energy, water, power, electricity, trade, industry and/or hydraulics. Besides the existing national frameworks in the aforementioned countries and other policies at various stages of development in other countries, a regional framework is necessary to bring awareness and participation in renewable energy and energy efficiency programmes in West Africa.
 - Practical issues such as applicable feed-in tariffs, technical standards for power generation, are largely not addressed by current policies and regulations. Additionally, in most ECOWAS countries there are no model Power Purchase Agreements (PPAs) in place which would guide negotiations between utilities and independent power producers (IPPs) and potential investors.
 - Oversight of the RE&EE policies to make sure they are adequate, coherent and aligned with policies for other sectors like education, health, agriculture, trade and industry is necessary. Although RE&EE targets and policies are adopted by the Ministry of Energy or Environment, the import of RE equipment remains highly taxed, or labelling standards for appliances or building codes are not in place. In some cases, the importation of efficient light bulbs attracts more import duty than the importation of inefficient incandescent bulbs.
 - Energy policies are often focused on grid-based electricity and oil products. Energy issues for urban areas and peri-urban areas tend to receive more attention compared to matters concerning rural areas. Policy frameworks are non-existent for rural and remote areas, where decentralized RE systems have greater market opportunities and are competitive options.

- In some cases, policy statements have largely remained broad statements of intention and not as a result of evidence-based analysis. Essentially, policies have tended to be monolithic focusing just on the energy sector, yet renewable energy is a cross-cutting issue where there is clear need for linkages with other sectors like agriculture, health, education.

1.3. International Context

Initiatives to support the promotion of renewable energy and energy efficiency in Africa have gained prominence in the context of international development, energy and climate policy processes in recent years. At the G-8 Summit at Gleneagles, Scotland, in 2005, and in other international forums, the world's leading economies identified as critical priorities debt relief for Africa and coordinated action to address the threat of global climate change. International agreements to reduce GHG emissions to keep the global average temperature rise below 2° Celsius provide a framework of mutual responsibility between developed, emerging and developing countries. The UN Goal of Universal Access to Clean, Affordable Energy aims at achieving three interlinked goals by 2030: (i) ensuring universal access to modern energy services; (ii) doubling energy efficiency; and (iii) doubling the share of renewable energy in the global energy mix. The focus on Africa and climate change also suggested renewed efforts to support environmentally sustainable economic development on the continent in following years. Since then, the major donor agencies allocated fresh resources to support renewable energy and climate change activities in the region. ECREEE itself is the beneficiary of donor programmes focused on Africa that have emerged since 2005.

1.4. Regional Integration in the ECOWAS Energy Sector

Under the aegis of ECOWAS, representing 15 West African countries, the West African region has made strides in addressing these energy challenges through the development of a regional energy market. Articles 26, 28 and 55 of the Revised ECOWAS Treaty of 1993 give the Community a clear mandate to foster the promotion, cooperation, integration and development of the energy sector across member states. In particular, paragraph 2, point (c) of article 28 mandates to 'promote the development of new and renewable energy particularly solar energy in the framework of the policy of diversification of sources of energy'. Thus, a first regional energy policy was adopted by ECOWAS in 1982, and a new regional policy is currently being developed. The development process of a regional energy market encompasses several institutions, of which ECREEE is simply the most recent to be established.

The West African Power Pool (WAPP), launched in 1999, seeks to integrate the national power systems operations into a unified regional electricity market with the ultimate goal of providing the ECOWAS member states with a stable and reliable electricity supply at modest costs. Meanwhile, the West African Gas Pipeline (WAGP) was also established in 1999, after almost 20 years of study and development, with the objective of creating a regional market for natural gas from Nigeria. After a decade of work to consolidate their infrastructure and administration, both WAPP and WAGP have begun operations, although in the case of WAPP this is the first phase of a process of market consolidation; it will take more time to achieve the ultimate objective of a competitive regional power market. More recently, the ECOWAS Regional Electricity Regulatory Authority (ERERA) was established in 2008 to provide the regulatory oversight necessary for the effective operation of WAPP. In parallel, the UEMOA, another regional organization covering the French speaking countries in the region, has also commenced several regional energy initiatives (e.g. energy efficiency, bioenergy).

1.5. The Foundation of ECREEE

In recent years, the ECOWAS Commission has gradually taken steps to mainstream RE&EE into its regional activities and policies. The experience of the European Union (EU) has shown that regional integration can be a useful tool to facilitate the adoption and implementation of RE&EE policies and incentive schemes on national levels (e.g. EU Directive with binding renewable energy targets).

The Ouagadougou Declaration, adopted at the ECOWAS Conference for Peace and Security on 12 November 2007 in Burkina Faso, articulated the need to establish a regional centre to promote RE&EE. At the conference,

the Austrian Minister for European and International Affairs and UNIDO pledged support for the creation of such an agency. In 2008 the 61st Session of ECOWAS Council of Ministers adopted the regulation C/REG.23/11/08 and gave the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) a legal basis. In 2010, the Secretariat of the Centre was established during a six-month preparatory phase in Praia, Cape Verde, with the support of the ECOWAS Commission and the Austrian and Spanish Governments, as well as technical assistance from UNIDO. ECREEE was formally inaugurated with a ceremony conducted by His Excellency José Maria Neves, Prime Minister of Cape Verde, and the President of the ECOWAS Commission, His Excellency James Gbeho, at its headquarters in Praia, Cape Verde, on 6 July 2010. In 2011 new funding commitments and pledges were received from the United States Agency for International Development (USAID) and the Government of Brazil.

ECREEE's mandate is also perfectly aligned with the broader strategic goals of ECOWAS Vision 2020. It seeks to realize directly two of the components of this vision, namely: (1) *'A region that anchors its development on sustainable development, including agricultural and mineral resource development strategy, and on planned agricultural and industrial strategies; a region that develops its infrastructure and makes services accessible to its citizens and enterprises.'* (2) *'A region that conserves its environment and resources, promotes modes of equitable and sustainable development in economic, social and environmental fields; a region which brings its contribution to bear on resolution of the common problems and challenges confronting the planet.'*

At a more specific level, ECREEE's mission contributes to several goals of the ECOWAS Regional Strategic Plan 2011–2015. These are first of all the Priority Goal 2 (Promote Infrastructural Development and a Competitive Business Environment), Objective 1 (Improve Business Environment for a Competitive Private Sector), in particular the specific sub-objective 1.1 'Strengthen the support for and the development of economic and technological infrastructure such as transportation, water, power, energy, telecommunication and ICT'. ECREEE also supports the implementation of the Priority Goal 3 (Sustained Development and Cooperation in the Region), Objective 1 (Promote cooperation among member states for the development of a viable regional infrastructure), in particular the specific sub-objectives 1.4 'Promote provision of efficient, reliable and competitive energy sources to Member States through the common exploitation of traditional and alternative energy sources' and 1.5 'Promote rural access to affordable energy in the region'. In 2003, the ECOWAS Energy Protocol envisaged the improvement of energy efficiency and increased use of RE sources. In 2006, the ECOWAS/UEMOA White Paper on access to energy services for populations in rural and peri-urban areas was adopted. It forecasts that at least 20% of new investment in electricity generation should originate from locally available renewable resources, in order to achieve self-sufficiency, reduced vulnerability and sustainable environmental development.

Derived from these major frameworks and aligned with them, there are other strategic documents currently in the making, including the ECOWAS Commission 5-year Strategic Plan and accompanying Capacity Development Plan, as well as the Community Development Programme. ECREEE will ensure alignment with these documents by providing inputs to their formulation.

In pursuing these goals, ECREEE works closely with several departments of the ECOWAS Commission, including the Energy Directorate of the Infrastructure Commission (in matters related to broader energy policy and strategy); the Private Sector Directorate of the Macro-economic Policy Commission (in matters related to investment promotion and involvement of the private sector); and the Agriculture, Environment and Water Resources Commission (essentially in matters related to biofuels). Coordination and alignment are further ensured through the participation of these departments in ECREEE's governance bodies.

Moreover, the Centre contributes to the achievement of the United Nations' MDGs, the UN Goal of Universal Access to Clean, Affordable Energy by 2030 and the international agreements to reduce GHG emissions to keep the global average temperature rise below 2° Celsius. The design of the Centre creates an important link between international climate, energy and development cooperation policy on the one hand and a key entry point for the implementation of international funding to mitigate climate change in the energy sector in West Africa on the other.

2. THE ECREEE BUSINESS MODEL

2.1. Legal and institutional structure of ECREEE

2.1.1. Legal framework

ECREEE is a specialized agency which acts as an independent body but within the legal, administrative and financial framework of ECOWAS rules and regulations. The legal status, the governance structure and mission statement are defined in the headquarters agreement signed between Cape Verde and the ECOWAS Commission and the enabling Rule PEC/ER/1/01/11 adopted by ECOWAS in 2010. The enabling rule defines the institutional structure of the Centre and delegates' day-to-day management and decision-making authorities to the bodies and the Centre's Executive Director. The Centre is applying the staff, procurement and financial rules of ECOWAS. The institutional structure of the Centre includes: the Secretariat based in Praia, Cape Verde

- the Executive Board (EB)
- the Technical Committee (TC)
- the National Focal Institutions (NFIs) in the 15 ECOWAS countries

2.1.2. ECREEE Secretariat

The ECREEE Secretariat is based in Praia, Cape Verde and operates with a small multinational team of West African and international full-time staff. The Spanish Agency for International Development and Cooperation (AECID) and UNIDO are providing seconded experts as part of their technical assistance. The internal structure of the ECREEE Secretariat can be described as follows:

- 1.) Department of Management and Organizational Development (DMOD)
- 2.) Technical Energy Department (TD)
- 3.) Department for Administration and Finance (DAF)
- 4.) External NFIs among all ECOWAS countries.

ECREEE operates as a decentralized organization and has established a network of National Focal Institutions (NFIs) which interlinks the Secretariat with all ECOWAS Member States. The designated focal points were nominated by the respective Energy Ministers and are based either in the Ministry or a relevant agency. Under the supervision of the Executive Director, the Secretariat takes leadership in the implementation of the planned activities in the range of the agreed budget in the annual work plans. Moreover, the Secretariat elaborates the annual work plans, status reports and financial statements and presents the documents for review and approval to the Technical Committee and Executive Board. Usually, the activities of the Centre are executed in cooperation with its NFIs or other public and private entities. The working languages of the Centre are the official languages of ECOWAS which include English, French and Portuguese. Further information on the structure of the Secretariat can be found in the chapter on organizational development of the Centre

2.1.3. Executive Board

The EB is the highest decision-making authority of ECREEE and has the following functions:

- a) to provide strategic policy guidance to the ECREEE secretariat to meet the envisaged regional and national level renewable energy and energy efficiency priorities;
- b) to oversee and monitor the overall performance and management of the ECREEE Secretariat on the basis of its annual Status Report, Work Plan and Business Plan prepared and submitted by the Executive Director;
- c) to approve the overall mission, constitution and management policy of ECREEE;
- d) to monitor the overall performance of ECREEE against its missions and objectives;
- e) to approve ECREEE's organisational chart;
- f) to approve the annual Status (progress) Report and annual financial statements prepared by the ECREEE Secretariat;
- g) to approve ECREEE's annual work plan and related budget of ECREEE upon the recommendation of the TC;

- h) to approve ECREEE's Business Plan upon recommendation of the TC;
- i) to appoint external auditors and approve external audit reports;
- j) to appoint external evaluators and approve external strategic evaluations and impact studies, and related management responses prepared by the ECREEE Secretariat after review by the TC;
- k) to appoint and review the performance of ECREEE's Executive Director (ED);
- l) to review the composition and membership of the Board and the TC;
- m) to ensure ECREEE's visibility and support its mission at the political level in the ECOWAS region and internationally.

The Executive Board has a total membership of nine (9) and includes the following Members:

- Three (3) Representatives from the ECOWAS Commission comprising: the Commissioner for Infrastructure; the Commissioner for Administration and Finance; and the Director for Legal Affairs;
 - One (1) Representative from ECOWAS Energy Ministers;
 - One (1) Representative from ECOWAS Environment Ministers;
 - Three (3) Representatives from Donor or Multilateral Agencies;
 - One (1) Energy Expert from the ECOWAS Region;
 - The ED of ECREEE.
- a) The ED of the Centre shall be a Member of the Board in a non-voting capacity;
 - b) The Chairperson and Deputy Chairperson of the Board shall be elected by Members of the Board;
 - c) No less than two (2) Members of the Board shall be female.

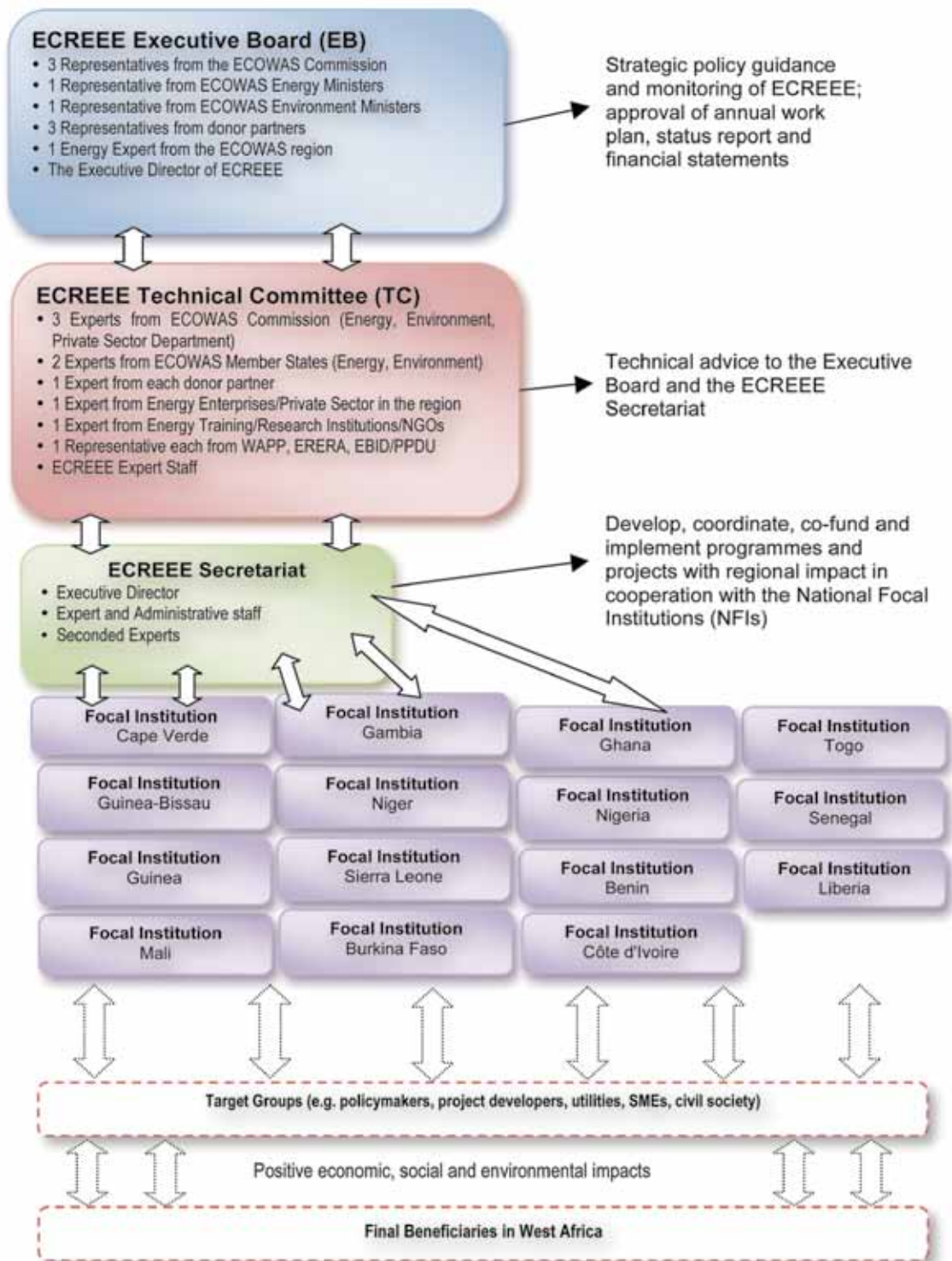
2.1.4. Technical Committee

Technical guidance for the EB is provided by the Technical Committee (TC). ECREEE's TC performs the following functions:

- a) provides technical advice to the ECREEE Secretariat;
 - b) makes suggestions for programme and project activities and facilitates fund raising for ECREEE operations;
 - c) provides technical recommendations to the ECREEE Secretariat regarding its implementation strategy, its quality and organisational framework and internal proceedings;
 - d) reviews the annual status (progress) report of the ECREEE Secretariat, and recommends it to the Board;
 - e) reviews ECREEE's annual work plan and related budget and makes recommendations to the Board;
 - f) reviews ECREEE's business plan and makes recommendations to the Board;
 - g) supports ECREEE to meet its mission and objectives on technical levels and to raise its visibility in West Africa and on international levels;
 - h) reviews major policy documents and reports prepared by the ED for submission to the Board;
 - i) provides a channel for ECREEE to reach out to the key actors in promoting renewable energy and energy efficiency in the region.
- a) The Technical Committee is made up of the following representatives:
- Three (3) Representatives from the ECOWAS Commission (Energy, Environment, Private Sector Department);
 - Two (2) Representatives from the ECOWAS Member States (Energy, Environment);
 - One (1) Representative from each contributing donor;
 - One (1) Representative from Energy Enterprises/the private sector in the region;
 - One (1) Representative from Energy Training/Research Institutions/NGOs in the region;
 - One (1) representative each from WAPP and ERERA;
 - One (1) Representative from ECOWAS Bank for Investment and Development (EBID) or the ECOWAS Project Preparation and Development Unit project (PPDU);
 - Expert staff from ECREEE.

- b) Not less than three (3) members of the TC shall be female;
- c) Depending on the subject matter at its meeting, the TC may request the participation of other technical advisers;
- d) The TC shall appoint its Chair;
- e) ECREEE shall provide technical and administrative support for the Committee.

Figure 1: ECREEE Governance Structure



2.2. Scope of mandate and comparative advantage of the Centre

2.2.1. Geographic and technology focus

ECREEE's action in RE&EE will **focus on the following energy services**: household, public services and productive uses of energy (lighting, cooking, cooling, buildings, power generation and electrical appliances).

The **geographic scope of intervention** is defined as follows. The Centre:

- supports and executes RE&EE activities and projects which cover one or more ECOWAS countries: Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Côte d'Ivoire, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo.
- focuses primarily on activities and projects with regional impact or national projects which demonstrate high potential for scaling-up or regional replication.
- works in urban as well as peri-urban and rural areas. Due to the high relevance of decentralized RE&EE technologies and services for rural areas the Centre will run a special rural energy program.

The Centre promotes the **following energy technologies/solutions**:

- All appropriate and sustainable renewable energy and energy efficiency technologies, including also partly renewable energy based hybrid systems and mini-grids.
- Small scale hydro power projects usually with a maximum capacity of 20 MW.
- Biofuel projects which prove to be sustainable. In this context, ECREEE considers 2nd generation biofuels not competing with food crops for available land, complying with the following minimum criteria: lifecycle GHG reductions, including land use change, and social standards.
- Liquid Petroleum Gas (LPG) cooking projects are eligible due to their high relevance for low-income population groups.



TABLE 1: SCOPE OF INTERVENTION AND STAKEHOLDERS

Geographic Focus	ECREEE Stakeholders	Technical Focus
<ul style="list-style-type: none"> • Benin • Burkina Faso • Cape Verde • Cote D'Ivoire • Gambia • Ghana • Guinea • Guinea-Bissau • Liberia • Mali • Niger • Nigeria • Senegal • Sierra Leone • Togo • Regional (covers more than one country listed above) 	<ul style="list-style-type: none"> • Government institutions (ministries, electrification agencies, municipalities) • Private, public or public-private companies (e.g. SMEs, ESCOs, utilities) • Individual consultants and project developers • Universities, schools, research centres • NGOs and cooperatives • International organizations 	<p>Renewable Energy:</p> <ul style="list-style-type: none"> • Renewable energy (multi-focus) • Biomass (e.g. improved stoves for cooking, power generation) • Biofuels (e.g. biodiesel, bioethanol) • Biogas • Waste-to-energy • Geothermal energy • Hydroelectric power (medium, small, micro, pico) • Solar photovoltaic (PV) (e.g. grid/off-grid, solar home systems (SHS), lighting, pumping, desalination) • Concentrated solar power • Solar thermal (water heating, cooling, process heat, solar cooking and drying) • Wind energy (e.g. off/on-grid, on- and off-shore, small and large, water pumping, desalination, etc.) • Wave, tidal and ocean thermal • Hybrids (indicate sources) • Mini-grids • Storage systems (batteries, hydrogen) <p>Energy Efficiency:</p> <ul style="list-style-type: none"> • Sustainable transport • Efficient appliances • Building efficiency • Cleaner production • Transmission • Energy conservation and management <p>Other focus:</p> <ul style="list-style-type: none"> • LPG for cooking

2.2.2. ECREEE stakeholders and beneficiaries

The final beneficiaries of ECREEE activities are the people benefiting from the energy services provided through RE&EE. During implementation of activities and projects, the ECREEE Secretariat cooperates with a wide range of local and international RE&EE partners and stakeholders (direct beneficiaries). The Centre:

- signs contracts for specific projects or assignments with different private/public entities or individuals. They are usually identified through competitive tenders or demand driven calls for proposals. Through these activities, ECREEE stimulates the RE&EE market in the region. For procurements, ECREEE usually applies the ECOWAS tender code or the rules of the respective donor;
- signs cooperation agreements for specific projects, events or tasks with international and local institutions and knowledge providers (e.g. IRENA, UNIDO, REEEP, REN-21, IEA, TERI, GBEP, IEPF, UNEP, UNDP, IDAE, CIEMAT, ITC, CENER, AREA, GFSE, IIASA, OECD, AEA, AEE-Intec, 2ie, KNUST).
- signs (co-)funding agreements with local and international donor partners to finance its activities and/or specific projects from the region (UNDP, UNEP, ESMAP, etc.).

2.2.3. Comparative advantage and strategic positioning of the Centre

The undertaken SWOT analyses revealed the strengths and weaknesses of ECREEE and defined the comparative advantage and value added of the Centre for the development of the RE&EE markets in West Africa (see detailed analysis in the annex and table 2). Between 2011 to 2016, **ECREEE will position itself more as a regional RE&EE promotion agency rather than an implementer on micro- and grass-root levels.** The execution of specific assignments or services is in many cases delegated by the Secretariat to third parties or implemented in cooperation with the National Focal Institutions (NFIs). Usually, the Centre performs only up to the level of program/project development, fund raising, oversight, quality assurance as well as coordination, monitoring and evaluation of project/program implementation.

Cooperation with a wide range of public/private and local/international stakeholders during implementation will maximize the local added value, north–south and south–south technology and know-how transfer to the ECOWAS region. It also avoids duplication of effort and competition with already existing national energy institutions and companies. Finally, the approach maximizes the impact and visibility of the small Centre in the region. In contrast to the WAPP, which is mainly focused on investments, ECREEE’s mandate is somewhat broader, in that it includes also the promotion of policy initiatives, capacity building, knowledge management and awareness raising at regional and national levels.

TABLE 2: ECREEE’S STRENGTHS AND WEAKNESSES

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none"> • As ECOWAS Commission institution, imbued with the required leverage effect • ECOWAS mandate and access to high level decision makers in the region through the NFIs • Clear decision-making structures established and decision-making power delegated to ECREEE bodies (Secretariat, EB and TC) • Effective team of local and international experts that has delivered results during start-up phase; strong fund raising competence • Flagship programmes to be implemented during the next five years are already defined • Annual work plan, budgeting and reporting cycle established and agreed by the donor partners • Strong financial and technical support from donor partners (e.g. Austria, Spain, UNIDO, USAID, European Commission) • Access to international policy processes through political mandate (e.g. climate and energy negotiations at UN levels) • Significant long-term funding (about €29.1 million) has been committed for the core budget and for specific projects and programmes • Holistic approach in addressing RE&EE barriers • Awareness of importance of strong and transparent administrative, financial and procurement procedures • Well connected on international levels 	<ul style="list-style-type: none"> • Institutional capabilities in critical programme and project management areas require improvement • ECREEE is a small organization with a limited management team facing a large mandate to deliver results in a large and complex region • NFI capabilities are limited and weaknesses probably less well known • Incomplete integration of information systems across the ECREEE network • Limited technical knowledge of RE technologies and experience with integration and system planning issues • Poor or slow project implementation may compromise Centre’s ability to continue to raise funds • Recruitment difficulties concerning technically skilled human resources in the region

<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none"> • The emphasis of ECREEE to build policy frameworks leads to sustained development in the RE&EE sector in the region over the long term • Investor interest in RE&EE projects in region creates potential for tie-ins, demonstrations, technology transfer and possibility of claiming quick successes • Donor emphasis on Africa and increasing climate mitigation funding create potential for new programmes • International energy and climate conferences and decision-making processes offer opportunities for international recognition and lobbying for West African RE&EE interests • Potential international partnerships, international institutions with RE&EE mandates and international climate mitigation funding (such as IRENA, IEA) • Rising petroleum prices create new pressures on national governments to act • Decreasing prices for RE&EE technologies • Commitment to RE&EE and stability of host Cape Verde, and easy demonstration of RE&EE viability in the island context 	<ul style="list-style-type: none"> • Potential for insufficient engagement and limited follow-through by policymakers in member states due to numerous human resource, policy and political constraints would limit ECREEE's ability to show results at policy level • Low competitiveness of some RE&EE technologies in relation to other conventional relatively clean sources and technologies (especially natural gas, LPG) erode support for ECREEE • Mismatch between regional and national activities; lacking implementation of regional outcomes in the national contexts, in part because member countries are not obliged to enact ECOWAS decisions ('legislation') • The obligation to implement donor funding according to a wide range of different administrative and financial procedures and procurement rules leads to delays and high administrative overheads • Loss of focus and risk of 'donor fatigue' given ECREEE's limited staff and considerable donor interest • Lack of clarity and clear mandate regarding coordination with other ECOWAS institutions and organizations (such as WAPP and ERERA) which may hinder activities • Difficult political environment in West Africa, with added complications due to large number of countries

2.3. ECREEE's Objectives, Result Areas and Value Chain

The Centre operates according to a planning and management matrix which follows the logical framework approach. The objectives, results, outputs, and activities of the Centre are described in a logical framework matrix and respond to the described challenges in the ECOWAS energy sector. The findings of the undertaken SWAT analyses were incorporated (see Annex A). The complete logical framework matrix can be found in Chapter 4 on monitoring and evaluation.

2.3.1. Overall and specific objectives

Under the current Business Plan, the Centre aims at achieving the overall and specific objectives as described in Table 3, where specific objectives, measurable indicators and six-year targets are defined. In 2016, the effectiveness of the Centre will be measured by applying the established performance indicators. An independent external evaluation will determine whether the improvement of framework conditions has led to the envisaged growth in RE&EE investments and markets. For the overall objectives (impact), indicators but no targets were defined. The achievement of these indicators is usually out of ECREEE's direct control, but is determined by many other external factors.

TABLE 3: OVERALL AND SPECIFIC OBJECTIVES

Overall Objective: To contribute to the sustainable economic, social and environmental development of West Africa by improving access to modern, reliable and affordable energy services, energy security and reduction of energy related externalities (GHG, local pollution)				
ID No.	Indicators	Source of verification		Baseline 2010
IO.1	% increase of population with access to reliable and affordable electricity services through RE technology deployment	National Statistics, project data		
IO.2	% increase of population with access to modern, reliable and affordable cooking services through RE technology deployment	National Statistics, project data		
IO.3	% reduction of fuel wood use for cooking through RE&EE technology use	Sectoral statistics from the countries		
IO.4	# GHG and polluting gases tons reduced throughout the life-time of installed RE&EE projects	Investment Project documents and feasibility studies		
IO.5	% increase of jobs created directly or indirectly during construction and operation of RE&EE projects	Sectoral statistics from the countries		
IO.6	# EUR increase of income and savings generated by RE&EE projects	Investment Project documents and feasibility studies		
IO.7	% increase RE contribution in the electricity and energy mix (region and country)	National Statistics		
IO.8	% reduction of the energy intensity (region and country)	National Statistics		
IO.9	% reduction of blackouts through RE&EE technology deployment (region and country)	Utility annual report in the countries		
Specific objective: create favorable framework conditions for regional RE&EE markets by supporting activities directed to mitigate existing technology financial, economic, business, legal, policy, institutional, knowledge and capacity related barriers.				
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals	Baseline 2010
IO.10	% growth rate of RE&EE investments in the ECOWAS region by country, technology and on/off grid	country and global reports on RE investments (e.g. IRENA, REN-21, UNEP), project documents;	20% per year (baseline 2009)	
IO.11	# of MW installed in region with Solar Technology (PV, CSP, thermal) by country, technology and on/off grid	Commissioning documents of the power plants	200 MW at end of the period	
IO.12	# of MW installed in region with Wind Power Technology by country and on/off grid	Commissioning documents of the power plants	250 MW at the end of the period	
IO.13	# of MW installed in region with Bioenergy (Waste to energy) Technology (bio-electricity) by country, technology and on/off grid	Commissioning documents of the power plants	150 MW at the end of the period	
IO.14	# of liters of second generation biofuels produced in the region use at local level by country	National Statistics		
IO.15	# of liters of second generation biofuels produced in the region use for export by country	National Statistics		
IO.16	# of MW installed in region with Small Scale Hydropower Technology by country and on/off grid	Commissioning documents of the power plants	200 MW at the end of the period	

ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals	Baseline 2010
IO.17	# of kW installed in minigrids using hybrids RE technologies in the region by country and technology	Commissioning documents of the minigrids	30 MW at the end of the period	
IO.18	% reduction of residential and tertiary sector energy consumption through EE measures	Project results and impacts	5% at the end of the period	
IO.19	% Increase in number of RE projects in ECOWAS region, by country, technology, on/off grid with the participation of local enterprises and investors	Commissioning documents of RE projects	50% at the end of the period	
IO.20	# of registered local enterprises dedicated to RE and EE	National Chamber of Commerce and Industry Associations in the countries	100 at the end of the period	

2.3.2. Result areas and ECREEE's value chain

To contribute to the specific objectives **ECREEE undertakes key activities in the scope of the five result areas** which directly respond to the described RE&EE barriers in the ECOWAS region. For each of the result areas the Business Plan defines measurable performance indicators which allow for monitoring of these achievements by 2016. For each indicator, minimum targets were defined (e.g. number of experts trained, amount of investment raised). The five result areas are as follows:

TABLE 4: FIVE RESULT AREAS

	Intervention logic
Overall objective/ Development goal/Impact	To contribute to the sustainable economic, social and environmental development of West Africa by improving access to modern, reliable and affordable energy services, energy security and reduction of energy related GHG emissions and climate change impacts on the energy system.
Specific Objective/ Outcome(s)	The specific objective of ECREEE is to create favourable framework conditions for regional RE&EE markets by supporting activities directed to mitigate existing technology, financial, economic, business, legal, policy, institutional, knowledge and capacity related barriers.
Result areas and outputs	<ul style="list-style-type: none"> • RESULT AREA 1: Effective regional RE&EE promotion agency created and financial sustainability reached • RESULT AREA 2: Tailored policy, legal and regulatory frameworks created and implemented • RESULT AREA 3: Capacities strengthened and applied • RESULT AREA 4: Knowledge management, awareness raising, advocacy and networks strengthened • RESULT AREA 5: Business and investment promotion
	Activities: to be defined in the annual work plans

The result areas are interrelated. A regional RE&EE market can be developed only through holistic intervention in all fields simultaneously. The following figures show the **value chain between policy development, capacity building, knowledge management, awareness raising and business and investment promotion**. The figures also show different types of activities and tools which will be applied by the Centre in respective areas (e.g. conferences, trainings, policy advice).

FIGURE 2: ECREEE’S STRATEGIC VALUE CHAIN OF RESULT AREAS

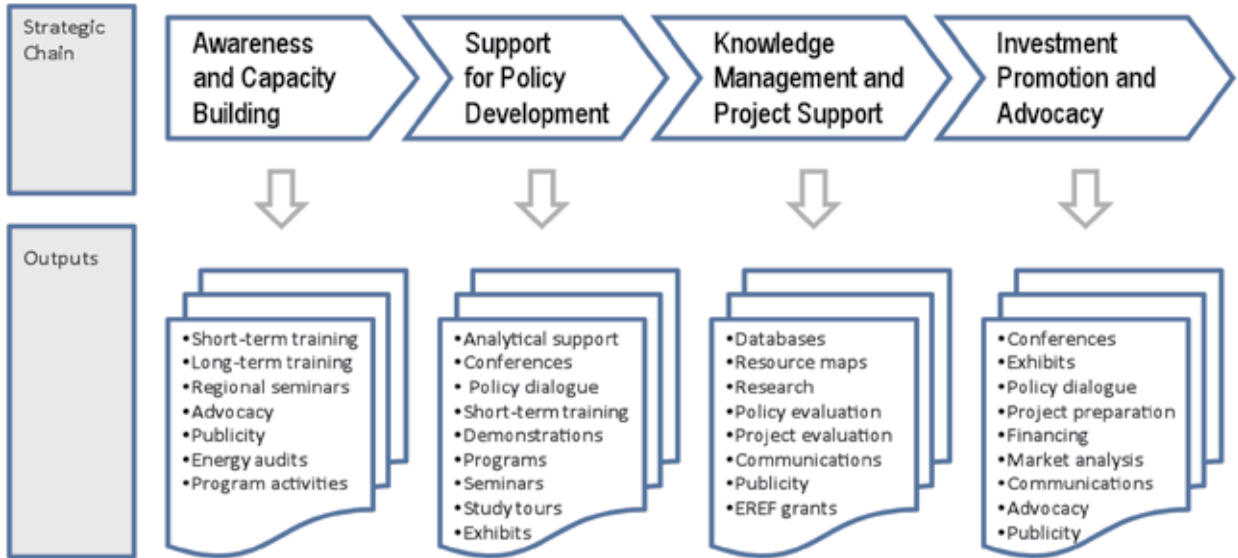
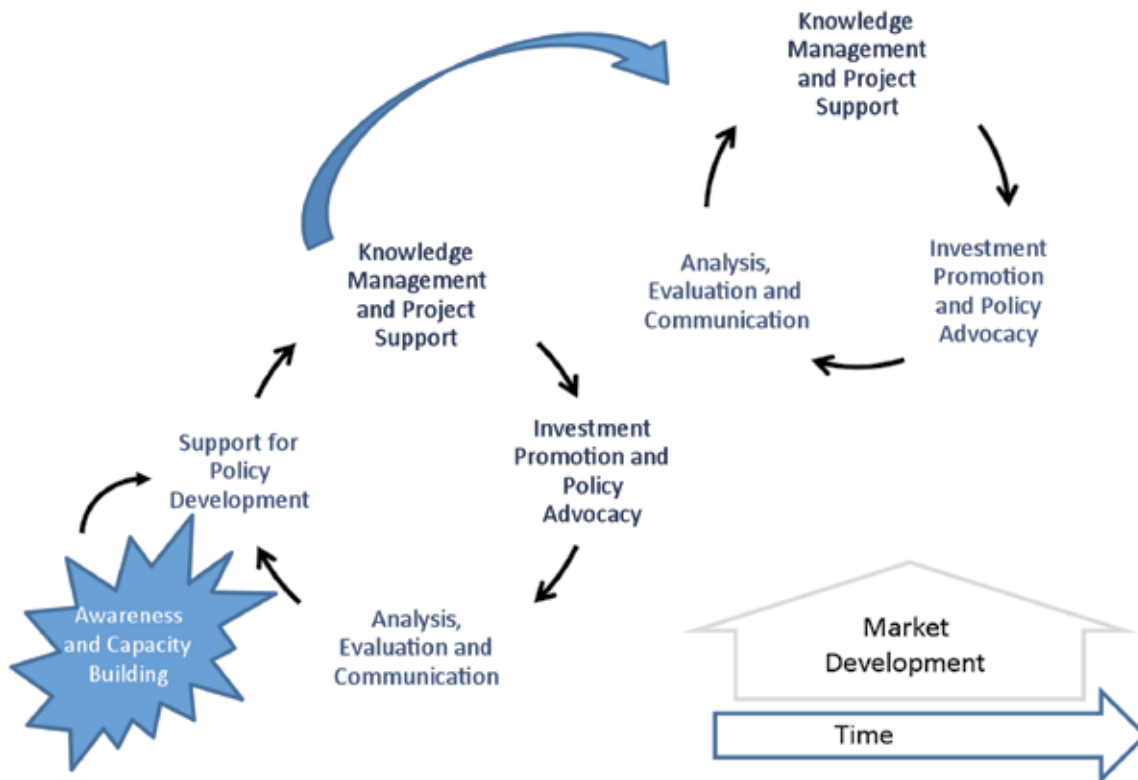


FIGURE 3: INTERRELATIONSHIPS AND SPILL-OVER EFFECTS IN ECREEE’S VALUE CHAIN



The figures also show the interrelationships and possible **spill-over effects** of intervention in different result areas; for example awareness raising and capacity building can lead to positive developments in the area of policy formulation and investment promotion. The implementation of some selected demonstration projects can on the other hand lead to awareness raising and capacity building. To create a regional RE&EE market, it is crucial for ECREEE to stimulate as much as possible such spill-over effects across result areas and national borders.

2.4. Indicative budget and financial sustainability

2.4.1. Budget forecast (2012–2016)

A preliminary and simplified forecast of ECREEE's financial budget between 2012 and 2016 appears in Table 5. It presents the Centre's indicative financial requirements to achieve the set targets of the five result areas in relation to funding commitments received so far from different partners (see full matrix in Chapter 4 on monitoring and evaluation).

Between 2012 and 2016, the budget requirements of all five result areas are estimated at €34.5 million. Around 41% of the budget would be used for result area 5 – investment and business promotion; around 17% for result area 3 – capacity development; 14% for result area 2 – policy development; and 9% for result area 4 – knowledge management. **The Centre aims at keeping the administrative overhead below 20% of the overall budget throughout the years** (lying far below the maximum ECOWAS level of 35%). The major part of the overhead will be used to pay the salaries of the administrative and technical staff in accordance with the Centre's approved organizational chart (see Chapter 3 on staffing).

The budget forecast shows a funding gap of around €13 million between budget requirements and funding commitments so far identified. By the end of 2011 the Centre mobilized €21.6 million from various donor partners (e.g. Austria, Spain, UNIDO, USAID, European Commission) and the ECOWAS Commission. To close the existing funding gap, ECREEE envisages signing at least five funding agreements with new donor partners and three funding agreements with ECOWAS member states by the end of 2016. ECREEE will particularly approach banks, such as the ECOWAS Bank for Investment and Development (EBID), the Banque Ouest Africaine de Développement (BOAD) and the African Development Bank (AfDB).

As staff and administrative expenditure are not expected to grow significantly, Result Area 1 is expected to remain at the same level in the budget. Result Area 2 will require funds to assist the member states to implement RE&EE policies and incentive schemes during the following years, and in 2016 it is expected to monitor and evaluate the impact of these measures. Result Area 3 expects to spend a constant amount of funding thanks to the Regional Capacity Building Program that ECREEE will run from 2013 and during the remainder of the period. Result Area 4 will be more financially intensive in the initial period because of the need to obtain and compile data, with the latter period devoted to monitoring, updating and follow-up of the data collected. Result Area 5 will require a significant amount of funding in order to trigger investments in the region; the funds will be used to fund preliminary and preparatory activities for RE&EE investment as well as providing seed funds for projects and to continue with the EREF calls for proposals to boost RE&EE activities and markets in rural and peri-urban areas.

Moreover, ECREEE attempts to leverage at least €20 million co-funding (in-kind and cash) for project proposals and events developed and/or supported by the Centre. In this regard, ECREEE will participate in different calls for proposals and will submit proposals to different funding agencies (e.g. GEF Strategic West Africa Program, EC). ECREEE events will usually be co-funded with other partners. In cooperation with UNIDO, the Centre will **coordinate the energy component of the GEF-4/5 Strategic Programme for West Africa (SPWA)**. Currently, the Centre is directly involved in implementation of the following projects:

- Supporting Energy Efficiency and Access in West Africa (SEEA-WA) co-funded by the ACP-EU Energy Facility (with ECREEE as overall project coordinator);
- GEF-UNIDO Project - Promoting Regional Coordination, Coherence, Integration and Knowledge Management under the Energy Component of the Strategic Programme for West Africa (SPWA) (ECREEE as implementing agency)
- GEF-UNIDO Project - Promoting Market Based Development of Small to Medium Scale Renewable Energy Systems in Cape Verde (ECREEE as implementing agency).
- GEF-UNIDO Project - Technology Transfer: Typha-Based Thermal Insulation Material Production in Senegal for Regional Scaling-Up (ECREEE as partner).

TABLE 5: INDICATIVE ECREEE BUDGET (2012–2016)

Indicative Budget Requirements (EURO)	2012	2013	2014	2015	2016	TOTAL	% of total budget
<i>RESULT AREA 1: Effective regional RE&EE promotion agency created and efficiently managed (overhead)</i>	1,528,750	1,397,500	1,347,500	1,410,000	1,225,000	6,908,750	20%
<i>RESULT AREA 2: Tailored policy, legal and regulatory frameworks created and implemented</i>	1,745,000	890,000	890,000	890,000	250,000	4,665,000	14%
<i>RESULT AREA 3: Capacities strengthened and applied</i>	730,000	1,000,000	1,000,000	1,500,000	1,500,000	5,730,000	17%
<i>RESULT AREA 4: Knowledge management, awareness raising and advocacy strengthened</i>	1,540,000	700,000	500,000	250,000	150,000	3,140,000	9%
<i>RESULT AREA 5: Business and investment promotion</i>	2,100,000	3,000,000	3,000,000	3,000,000	3,000,000	14,100,000	41%
TOTAL BUDGET	7,643,750	6,987,500	6,737,500	7,050,000	6,125,000	34,543,750	100%
Overhead in % (staff salaries, running costs, equipment)	20%	20%	20%	20%	20%	20%	
Total Committed Contributions (EURO)							
<i>Funding sources</i>	2012	2013	2014	2015	2016	TOTAL	
<i>ECOWAS Commission – ECREEE project</i>	596,000	1,000,000	1,000,000	1,000,000	1,000,000	4,596,000	
<i>ECOWAS Commission – others</i>	500,000					500,000	
<i>AECID</i>	2,180,000	2,000,000	1,630,800			5,810,800	
<i>ADA (pledges from 2014 to 2016 to be confirmed)</i>	862,063	704,838	500,000 (to be confirmed)	500,000 (to be confirmed)	500,000 (to be confirmed)	3,066,901	
<i>Austria – Multilateral Aid</i>	150,000					150,000	
<i>UNIDO</i>	175,000	126,694	Pledge to be confirmed	Pledge to be confirmed	Pledge to be confirmed	301,694	
<i>EUEI-PDF</i>	230,000	250,000				480,000	
<i>SEEA-WA</i>	865,500	500,000	500,000			1,865,500	
<i>USAID</i>	370,000					370,000	
<i>GEF Regional Project</i>	180,000	200,000	200,000			580,000	
<i>GEF Cape Verde Project</i>	330,000	500,000	500,000			1,330,000	
<i>Other</i>	495,000	500,000	500,000	500,000	500,000	2,495,000	
<i>Government of Cape Verde</i>	12,000	12,000	12,000	12,000	12,000	60,000	
TOTAL FUNDING	6,945,563	5,793,532	4,842,800	2,012,000	2,012,000	21,605,895	
FUNDING GAP	698,187	1,193,968	1,894,700	5,038,000	4,113,000	12,937,855	
CUMULATIVE FUNDING GAP	698,187	1,892,155	3,786,855	8,824,855	12,937,855		

2.4.2. Financing strategy of the Centre (2012–2020)

One of the major institutional objectives of ECREEE is to seek financial sustainability in the long term. **The detailed fund diversification strategy of ECREEE can be found in Annex B of the Business Plan.** The evolution of the Centre over time should be accompanied by a **shift in the types of revenue** that the organization receives or generates. In due course, the composition of revenue should diversify, with a progressively greater share of revenue falling under the budgetary support from ECOWAS Commission, member state voluntary contributions and fee-for-service charges.

In this scenario, the **share of international donor grants would decrease from 85% of the Centre’s annual budget in 2012, to 70% in 2016 and 50% in 2020.** Within the grant category, there will also be some diversification, as ECREEE secures support from new donors from both the bilateral/multilateral category as well as from private foundations and corporations (e.g. sponsoring in the context of the ECREEE Business Advisory Committee).

The **share of ECOWAS and voluntary member state contributions should increase from 15% in 2012 to 25% in 2016 and 40%** of the annual budget in 2020. This evolution is illustrated in Figure 4. By 2020, the Centre would receive around **10% of its annual budget through commercial services provided to private partners and investment shares** (fee-for-service). An overview of activities and different revenue types, sources and uses can be found in Table 6.

TABLE 6: ECREEE ACTIVITIES AND REVENUES BY 2020

<i>Activities</i>	<i>Revenue types</i>	<i>Revenue sources</i>	<i>Revenue uses</i>
<ul style="list-style-type: none"> • Manage and disseminate knowledge • Foster communications • Convene regional stakeholders, including policymakers, businesses and others • Manage programmes • Provide defined services to members and clients • Provide funding for programmes and investments in renewable energy and energy efficiency projects • Act as regional POC for international partners 	<ul style="list-style-type: none"> • ECOWAS Commission budgetary support • Grants • Annual member state voluntary contributions • Fee-for-service income • Dividends from investments • Interest income from investments • Interest from cash management 	<ul style="list-style-type: none"> • ECOWAS Commission • Bilateral development agencies • Multilateral development agencies • Multilateral financial institutions • National governments in ECOWAS region • Regional institutions • Private companies • Private foundations • Recipients of investments or loans by ECREEE 	<ul style="list-style-type: none"> • Core operating costs • ECREEE capital investment • Programme costs • Project investments (demonstration and commercial ventures)

FIGURE 4: EVOLUTION OF ECREEE REVENUE SOURCES — YEAR 2012

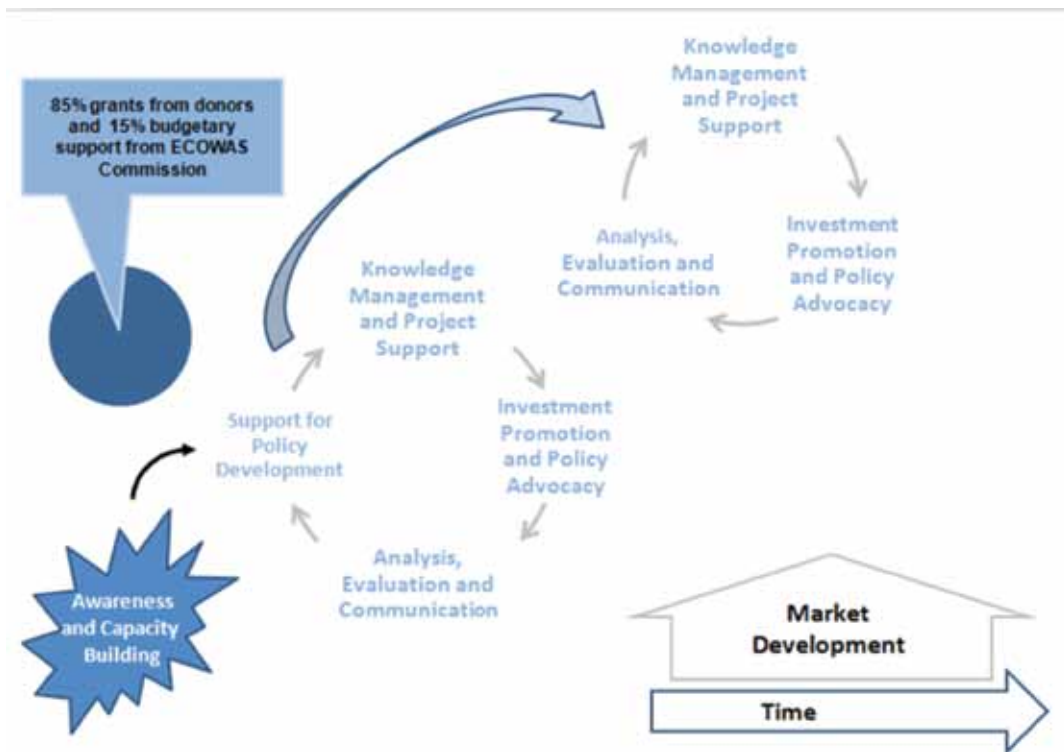


FIGURE 5: EVOLUTION OF ECREEE REVENUE SOURCES — YEAR 2016

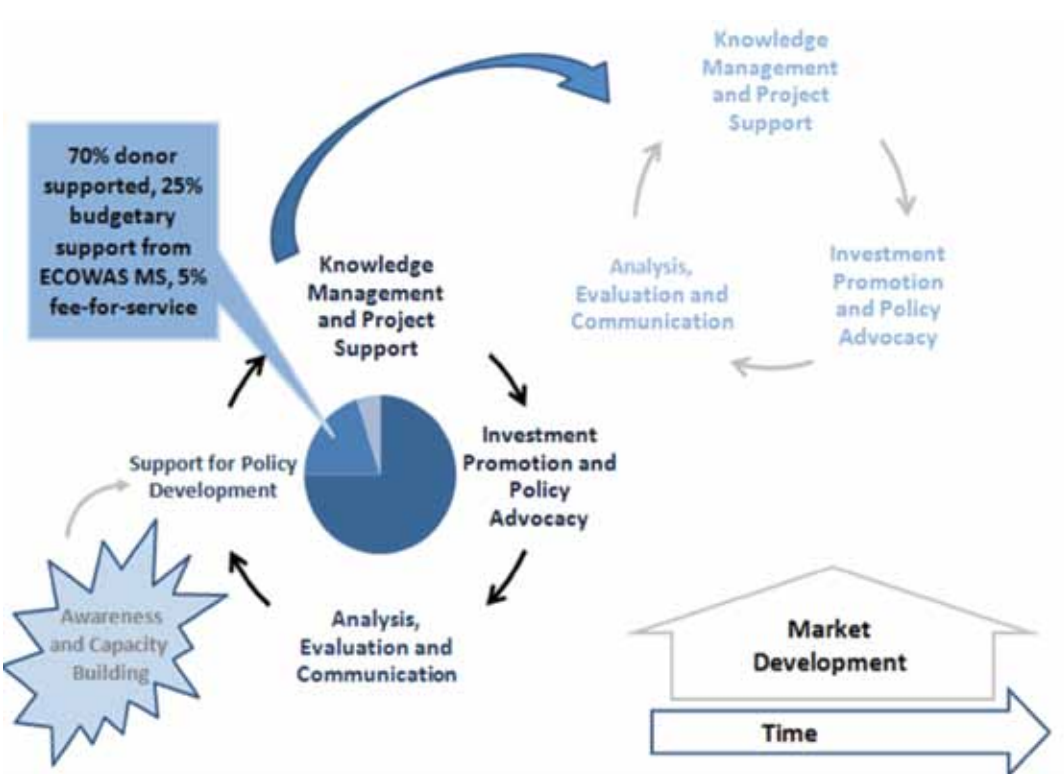
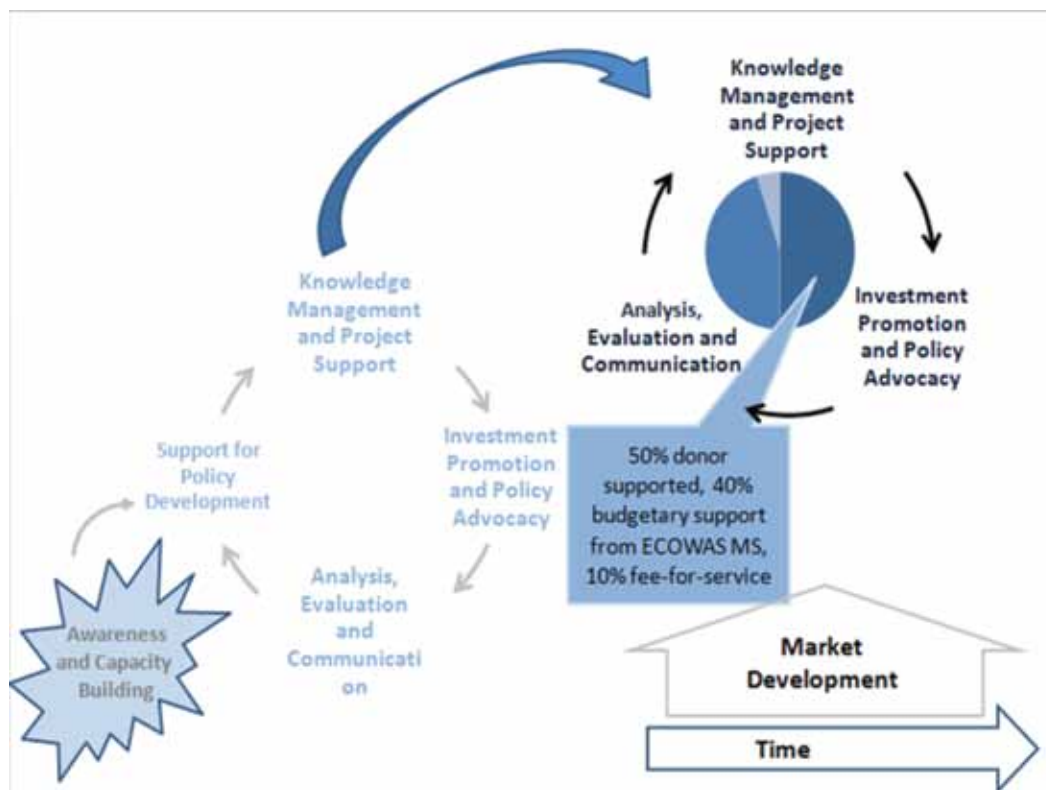


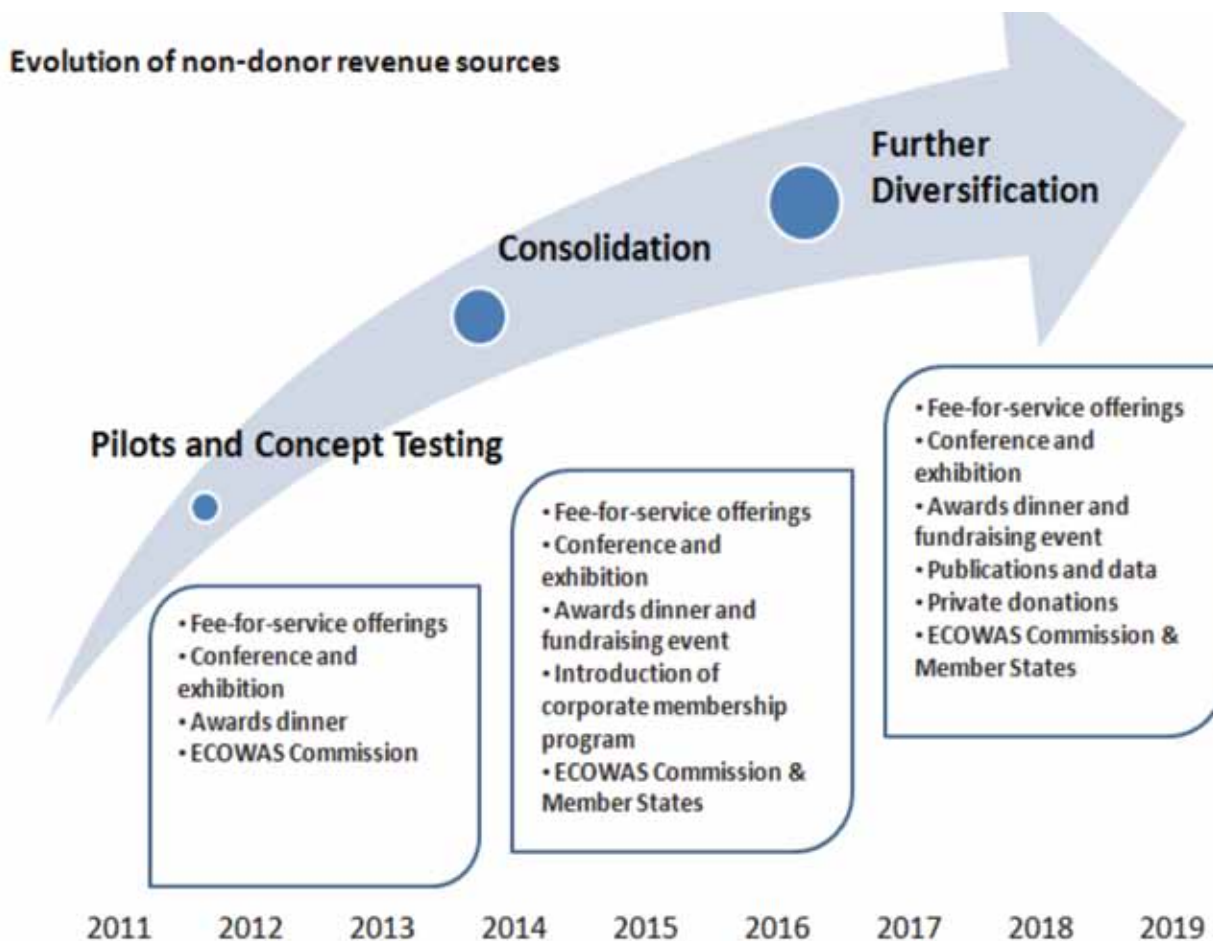
FIGURE 6: EVOLUTION OF ECREEE REVENUE SOURCES — YEAR 2020

From 2016, the Centre will begin to generate revenue from activities conducted on a fee-for-service basis without losing its public service nature and mandate. By 2020, around 10% of the overall annual ECREEE budget would be generated through such fees. The chart below gives an overview of the possible evolution of non-donor revenue sources. Two general approaches to this objective are identified here:

1. the 'membership organization' model, whereby members pay annual dues in exchange for which they may participate in ECREEE's programmes and activities and receive information that is prepared, collected and disseminated by ECREEE;
2. the '*commercial model*' based on the provision of services on a fee-for-services basis (e.g. studies, organization). In this case ECREEE provides a service to a client and receives a fee.

It is important to note that these two models are not mutually exclusive, although a hybrid approach may require careful management of conflicts of interest. The membership model is based on the principle that companies and associations would join ECREEE as 'members', 'associates' or 'sponsors' in order to receive a series of specified benefits, which might include: ability to participate in ECREEE events, conferences and seminars; subscription to ECREEE publications and access to ECREEE resources; and possibly, depending on the extent to which ECREEE develops activities that might be described as policy advocacy, a voice in the development of statements and recommendations presented by ECREEE to national governments. Figure 7 gives an overview on the possible evolution of non-donor revenues.

FIGURE 7: EVOLUTION OF NON-DONOR REVENUE SOURCES



3. ORGANIZATIONAL DEVELOPMENT (2011–2016)

By 2016, ECREEE has to prove its institutional ability and capacity to implement complex programmes and projects to sustain long-term support from donor partners and ECOWAS countries (see Result Area 1). In 2016, the Centre’s performance will be evaluated in accordance with the defined indicators and targets in Result Area 1 of the ECREEE Business Plan (see Table 7). The successful implementation of the annual work plans and the budget spending performance is an important indicator among others. The objective is to establish ECREEE as a sustainable and efficient organization which effectively contributes to the improvement of RE&EE framework conditions and uses a diversified set of revenue sources, including donors, members and clients for fee-for-service activities. UNIDO will continue to provide assistance for the institutional development of the Centre until 2016. Based on the experience of other international regional energy organizations (see analysis in Annex A), the ECREEE Business Plan foresees priority actions in the following areas:

- strengthening of management, implementation and technical capacities;
- strengthening of internal administrative, procurement and financial procedures;
- strengthening of project cycle management and quality framework;
- ensuring the financial sustainability of the Centre;
- developing and executing a pipeline of flagship RE&EE programmes and projects;
- developing a pipeline of future collaboration with local and international partners.

TABLE 7: PERFORMANCE INDICATORS FOR RESULT AREA 1

RESULT AREA 1: Effective regional RE&EE promotion agency created and efficiently managed			
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals
I1.1	% expenditure according to the annual budget in the work plan	annual finance statement	80% per year
I1.2	% of implemented activities of the annual the work plan	annual status reports	80% per year
I1.3	% of the annual budget of ECREEE mobilized from ECOWAS sources and commercial fee-for-service activities	Annual budget, MoUs, bank statements, audits	25% of the ECREEE budget in 2016 originate from ECOWAS sources and 5% from commercial fee-for-service activities, 70% from donor sources
I1.4	Total amount of mobilized funding through funding agreements (donors and ECOWAS)	Bank accounts or financial agreements	13 million EURO at the end of the period
I1.5	# of funding agreements signed with donors	agreements signed	6 MoU at the end of the period
I1.6	# of funding agreements signed with ECOWAS member states and the ECOWAS Commission	agreements signed	5 at the end of the period
I1.7	# Project/program proposals prepared and submitted to international and local financiers (e.g. EC, GEF)	Project proposals	18 submissions by 2016
I1.8	Total amount of mobilized co-funding through submitted project/program proposals to financiers	Bank accounts or financial agreements, project proposals	20 million EURO by 2016
I1.9	# of MoU with local/regional/national technology partners	Signed MoUs	40 at the end of the period
I1.10	# of Procurements elaborated and/or managed and concluded	tender documents, minutes of the procurement committee	20 procurements per year
I1.11	# of contracts signed and managed	contracts	100 contracts by 2016
I1.12	# of RE&EE project proposals reviewed and appraised	project documents and evaluation grids	50 project proposals per year
I1.13	# of templates and forms for administrative issues approved and used	templates in the admin files	10 by 2016
I1.14	# of internal regulations approved or adopted	regulation texts applied internally	10 at the end of the period
I1.15	# of staff training exercises	training reports	3 training attended per year
I1.16	% of staff evaluated	Results of staff evaluations/annual staff appraisal process	100% of staff evaluated per year
I1.17	% administrative costs over the total	annual budget	maximum of 20% of the annual budget
I1.18	% Rotation in key staff	yearly staff evaluations, RRHH annual reports	40% at the end of the period
I1.19	% women in staff	RRHH annual reports	50% at the end of the period
I1.20	# of Technical Committee and Executive Board meetings	EB and TC reports	2 per year
I1.21	# of employees funded through to project overheads	Contracts	8 at the end of the period

3.1. Staff strategy and organizational chart

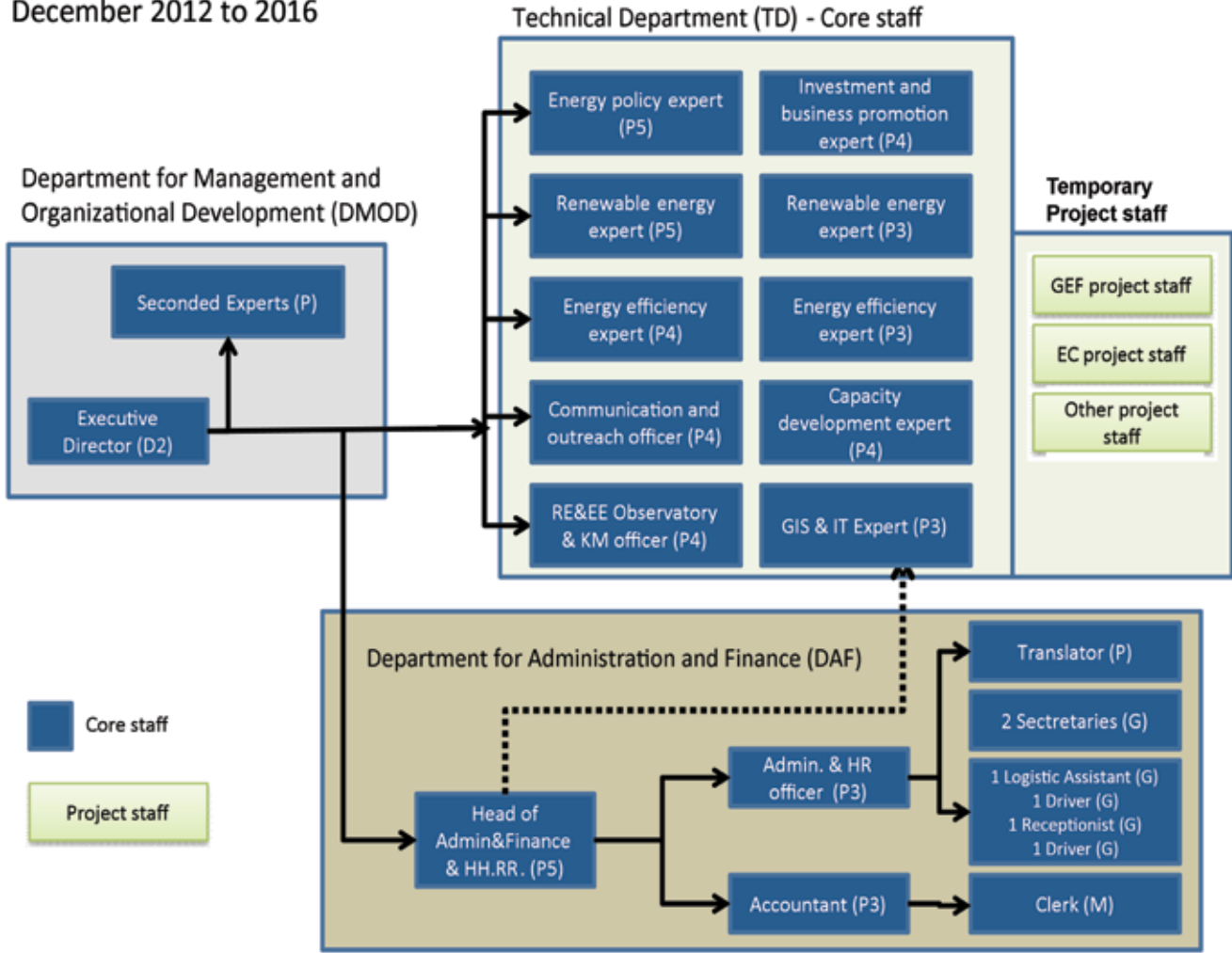
By 2016 the Centre will broaden its staff base and improve staff capacity in the Technical Department (TD), the Department for Administration and Finance (DAF) and the Department for Management and Organizational Development (DMOD) in accordance with growing requirements. Most of the ECREEE flagship programmes are currently being transformed from the planning phase to the execution phase. Given the broad mandate and the ambitious work programme, the new phase requires a strengthening of the Centre's human resources, project cycle management skills, internal structures and financial procedures. ECREEE uses different kinds of employment categories which range from permanent core staff, to seconded experts and to project staff. ECREEE applies the following staff strategy:

- The Centre **maintains its initial experienced technical and administrative core staff** and extends the base in accordance with its operational requirements. The core staff will be employed in accordance with the ECOWAS staff rules. In 2012, ECREEE will hire an RE&EE investment and business promotion officer and an officer for the ECOWAS Observatory for RE&EE. In 2016, the Technical Department will have employed ten technical experts which are assisted by temporary project staff (see organizational chart).
- It is envisaged that **the current seconded expert positions of UNIDO and AECID will be maintained until 2016**. From 2013 onwards, UNIDO will apply a more flexible technical assistance approach (e.g. partly rotating experts between HQ and Praia). The mixture of West African and international experts has proven to be effective for the quick up-take and quality of operations of the Centre. Further seconded experts are under discussion with other donor partners (e.g. GIZ).
- Apart from permanent core staff, **ECREEE will engage temporary project staff**. The expenses of project staff are covered through specific projects funded by third partners (e.g. GEF, ACP-EU Energy Facility projects). In this regard, ECREEE will continue to actively participate in international calls for proposals.
- Further **services will be outsourced in accordance with the ECOWAS procurement rules** (e.g. translation, layout, review and evaluation consultants, editing, printing).



FIGURE 8: ORGANIZATIONAL CHART OF ECREEE (2012–2016)

ECREEE Organizational Chart
December 2012 to 2016



3.2. Consolidation of administrative procedures and controls

ECREEE will further **strengthen its established administrative, financial and procurement procedures, project cycle management and quality framework**. In 2011, the Head of Administration and Finance was recruited. In 2012, the Centre will implement an electronic document management and accounting system. This will allow the documentation of all processes, decisions and payments undertaken by ECREEE. A permanent Procurement Committee and procurement template collection (e.g. TORs, evaluation grids) was established by ECREEE. The Committee ensures the application of the ECREEE/ECOWAS tender code regarding price, competition and transparency, and prevents delays to procurement decisions.

3.3. Consolidation of project cycle management and quality framework

ECREEE has **established a project cycle and quality framework for co-funded RE&EE projects** and other assignments. Trilingual ECREEE project document templates (including annexes: logical framework matrix, time schedules, budget excel sheet) for various types of RE&EE projects were developed. Interested applicants for ECREEE co-funding are required to submit a full project proposal. **Trilingual ECREEE contracts including annexes (e.g. payment and reporting schedules, visibility guidelines)** were developed and will be applied to most of the supported ECREEE projects. An internal quality appraisal framework tailored to renewable energy and energy efficiency projects was developed. ECREEE staff will **appraise projects by applying these appraisal criteria and evaluation grids**. Through the appraisal of projects the capacity of expert staff will be further strengthened. The appraisal and project cycle framework was successfully tested with the first call for proposals for the ECOWAS Renewable Energy Facility (EREF) which was launched in 2011. Templates and contracts showed high acceptance by the applicants.

3.4. Cooperation with know-how and technology partners

By 2016, the Centre will have increased the number of its technical partners in West Africa as well as in other parts of the world. **The partnerships strengthen the Centre's implementation power, facilitate know-how and technology transfer to West Africa, and foster the exchange of experience**. ECREEE envisages signing cooperation agreements (e.g. MoUs) with at least the following institutions and organizations:

- Universities: KNUST (Ghana), 2ie (Burkina Faso), Uni-CV (Cape Verde), Universite Cheik Anta Diop, Dakar, Senegal;
- Sokoto Energy Centre, Nigeria;
- Bureau National d'Etudes Techniques et de Développement (BENTD), Cote Ivoire;
- International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), in Niger and Mali;
- Renewable Energy and Energy Efficiency Partnership (REEEP), Vienna, Austria;
- International Agency for Renewable Energy (IRENA) and related offices in Abu Dhabi, Bonn and Vienna;
- UNIDO and its Energy Technology Centers (e.g. ICS, Solar and hydro centres), China, India, Italy;
- UNIDO Regional Small Hydro Centre in Abuja, Nigeria;
- Other UN bodies such as UN Energy, UNDP, UNEP, FAO, UNFCCC, UN Foundation;
- Global Bioenergy Partnership (GBEP);
- Alliance for Rural Electrification (ARE), Brussels, Belgium;
- The Energy and Resources Institute (TERI), New Delhi, India;
- Canary Technological Institute (*Instituto Tecnológico de Canarias*), Canary Islands, Spain;
- The Centro Nacional de Energías Renovables (CENER), Spain;
- Energy Diversification and Conservation Institute (*Instituto para la Diversificación y Ahorro de Energía*, or IDAE);
- the Centre for Energy, Environment and Technological Research (*Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas*, or CIEMAT);
- Other Spanish institutions such as: the Spanish Climate Change Office (*Oficina Española de Cambio Climático*, or OECC), the Catalonia Polytechnic University (*Universidad Politécnica de Catalunya* or UPC), University of Zaragoza and the Madrid Polytechnic University (*Universidad Politécnica de Madrid*, or UPM);

- Austrian Energy Agency (AEA) and the Agence de l'Environnement et de la Maîtrise de l'Energie;
- Global Alliance for Clean Cook-stoves;
- AEE Institute for Sustainable Technologies (AEE-Intec);
- L' Institut de l'énergie et de l'environnement de la Francophonie (IEPF), Canada;
- RETScreen International, Canada;
- The Photovoltaic Power Systems Programme (PVPS) and the Solar Heating and Cooling Programme of the International Energy Agency (IEA);
- REN-21 Network, Paris;
- Columbia University, New York, USA;
- Johns Hopkins School of Advanced International Studies (SAIS), Washington, DC, USA;
- The International Institute for Applied Systems Analysis (IIASA), Vienna, Austria;
- The Global Forum on Sustainable Energy (GFSE), Vienna Austria.

3.5. Key Programmes, Projects and Activities (2011–2016)

Under the framework of the Business Plan (2011–2016) and the five result areas, the ECREEE Secretariat will implement numerous activities. These activities are usually bundled and managed through programmes or projects. The Centre will undertake fund-raising activities, assist in the development of regional and national RE&EE policies, organize training workshops and conferences, provide reliable RE&EE data and information to different clients, create RE&EE networks, organize awareness campaigns and assist in the development and implementation of investment projects, including business ventures. The following section gives an overview of the milestones to be achieved by 2016 under each of the five result areas.

The short-term activities implemented under the result areas are defined in the Centre's annual work plans. The work plans are subject to review and approval by the National Focal Institutions (NFIs), the Technical Committee (TC) and the Executive Board (EB). The successful implementation of activities contributes to the achievement of the performance indicators of the result areas (see Section 4 on monitoring and evaluation). ECREEE provides annual progress reports on the status of work plan implementation to the Executive Board. In 2016, the impact and success of ECREEE will be evaluated according to the achievement of these indicators. So far, ECREEE has implemented the 2010 and 2011 work plans and is currently implementing the 2012 edition.

3.5.1 Milestones under Result Area 2: Tailored RE&EE policy, legal and regulatory frameworks

By 2016, ECREEE will contribute to the establishment of a coherent regional Policy Framework for RE&EE and will facilitate national follow-up activities (see indicators and targets in Table 8). In 2011, ECREEE launched the development of the ECOWAS Renewable Energy Policy and the ECOWAS Energy Efficiency Policy with the support of the Renewable Energy Cooperation Programme (RECP) of the Africa-EU Energy Partnership and the ACP-EU Energy Facility respectively.

The development of a feasible regional RE&EE policy and effective implementation strategy is a first step towards aligning the regional and national government's policies, legislative and regulatory procedures in a systematic approach. The policy will set attainable minimum RE&EE targets at regional level harmonized with national targets and will propose a portfolio of policy measures, laws, regulations and incentives to be implemented on national and regional ECOWAS levels in a short-term and long-term view. It is envisaged that the policies will be adopted by the ECOWAS Ministers at a High Level Meeting in 2012 in Ghana, Accra. In the policy development process, both at regional and national levels, coordination with other relevant stakeholders will be sought with a view to ensuring useful convergences.

TABLE 8: PERFORMANCE INDICATORS FOR RESULT AREA 2

RESULT AREA 2: Tailored policy, legal and regulatory frameworks created and implemented			
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals
I3.1	# of Regional RE&EE policies adopted by ECOWAS	ECOWAS Council of Ministers adopted measures	2 at the end of the period
I3.2	# of countries developing RE laws	Ministry's Resolutions	RE laws developed in all members states
I3.3	# of countries with adopted RE laws	National Official Bulletin	RE laws passed in all members states
I3.4	# of countries that have a binding national MRET	National Official Bulletin	All member states with binding MRET
I3.5	# of countries that are achieving the MRET	National Electrical Statistics	25% at the end of the period
I3.6	# of RE&EE support policies/strategies devoted to rural and peri-urban electrification/energy developed	Ministry of Energy, rural electrification agencies	5 at the end of the period
I3.7	# of national strategies developed for EE	National Official Bulletin	50% at the end of the period
I3.8	# of countries developing EE laws	Ministry's Resolutions	EE laws developed in all members states
I3.9	# of countries with adopted EE laws	Ministry's Resolutions	EE laws developed in all members states
I3.10	# of countries with adopted national strategies for EE	National Official Bulletin	EE law passed in all members states
I3.11	# of national EE standards and labeling standards adopted	National Official Bulletin	50% at the end of the period
I3.12	# of resolutions related to RE&EE and/or ECREEE adopted by ECOWAS Council of Ministers	ECOWAS bulletin	1 per year
I3.13	# of resolutions related to RE&EE and/or ECREEE adopted by the Authority of ECOWAS Heads of States and Governments	ECOWAS bulletin	1 per year

3.5.2. Milestones under Result Area 3: Capacities are strengthened and applied

Based on a capacity needs assessment, the Centre will design and execute a comprehensive capacity development programme on different RE&EE aspects and for various target groups (see indicators and targets in Table 9). In 2011, a regional capacity needs assessment was launched in cooperation with 2iE (Burkina Faso), KNUST (Ghana) and the UNI-CV in Mindelo (Cape Verde). The assessment will be used for the development of a comprehensive, multi-year ECOWAS Regional Capacity Building Programme in RE&EE. ECREEE's capacity building activities will seek synergies and collaboration with other international technology partners and the ECOWAS capacity development initiative. The capacity building programme will particularly address the gender aspect as well as south–south and north–south knowledge transfer issues. ECREEE will apply in most cases a train-the-trainers approach (supporting national trainers through regional training activities) as well as strengthening the technical capabilities of the NFIs.

TABLE 9: PERFORMANCE INDICATORS OF RESULT AREA 3

RESULT AREA 3: Capacities are strengthened and applied			
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals
I4.1	% of execution of the Regional Capacity Building Program elaborated based on the Capacity Needs Assessment	Training reports and Capacity Building Program document	80% of execution at the end of the period
I4.2	# of stakeholders trained (differentiate the identified target groups and the ECOWAS country)	Training assistance lists	500 people at the end of the period
I4.3	# of trainings conducted	Training reports	15 training activities at the end of the period
I4.4	# educational and/or training institutions with a multiplier effect trained (train the trainers approach)	Training assistance lists	30 institutions at the end of the period
I4.5	# of trainings at the national level conducted by the trained institutions	Training reports	60 trainings conducted at the end of period
I4.6	# of participants in the national trainings conducted as a result of regional training by the trained institutions	Training reports	1000 participants at the end of period
I4.7	% of participants satisfied with the trainings in average	Workshop evaluations	at least 70%
I4.8	# of workshops/meetings devoted to sustainable energy involvement in rural/peri-urban areas	Workshop reports	3 at the end of the period
I4.9	% of women among the stakeholders trained (differentiate the identified target groups and the ECOWAS country)	Workshop reports	20% as an average at the end of the period

3.5.3. Milestones under Result Area 4: Knowledge management, awareness raising, networking and advocacy

By 2016, ECREEE will establish and maintain the ECOWAS Observatory for Renewable Energy and Energy Efficiency (EORE). The web-based Observatory is managed by ECREEE and will provide reliable and updated data for investors and project developers on RE&EE policies and regulatory frameworks, potentials, stakeholders, policies, events, lessons learned and investment projects in the ECOWAS region (see performance indicators and targets in Table 10). The EORE will provide GIS based maps of wind, solar, small hydro and bioenergy potentials. In 2011, ECREEE launched a regional wind and solar assessment and a biocrops assessment. The Observatory will also provide a library of key documents (e.g. energy policies, studies, laws), RE&EE country data profiles and space for networking.

The scale and scope of ECREEE's mandate in West Africa requires that it mounts an aggressive RE&EE awareness raising campaign. Specifically, ECREEE's communications activities must: (1) sensitize the public and policymakers in member countries on the benefits of developing RE resources and achieving improvements in EE; (2) inform stakeholders in the region and donors about ECREEE's activities, achievements and objectives; (3) project the activities of ECREEE and the region's RE and EE sectors to the international community, particularly interested persons, the private sector and potential donor organizations. ECREEE will regularly organize conferences on RE&EE aspects. Moreover, the Centre will prepare policy statements for decision-making processes and publish key studies. **ECREEE will make use of new forms of networks, social media and programmes**, including LinkedIn, Facebook, YouTube and Twitter. These platforms provide

alternative communication vehicles to the public and interested organizations throughout the world, and as such are especially relevant to the development of ECREEE’s communications strategy. There are numerous examples of organizations similar to ECREEE that have begun to exploit these social media as part of their formal communications strategies. For ECREEE, these networks could be especially useful in reaching interested parties, including potential donors, outside the region.

TABLE 10: PERFORMANCE INDICATORS OF RESULT AREA 4

RESULT AREA 4: Knowledge management, awareness raising, networks and advocacy strengthened			
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals
Awareness raising, advocacy and networks			
15.1	# of visits to ECREEE websites	Website statistics	21000 visits per year
15.2	# of visits from the ECOWAS region	Website statistics	50% of the visits from Africa
15.3	# of contacts in the database	ECREEE Database	50000
15.4	# of MoU with local/regional/national technology partners	Signed MoUs	10 at the end of the period
15.5	# friends on Facebook	Facebook website and statistics	200 end of the period
15.6	# twitter followers	Twitter website and statistics	200 end of the period
15.7	# of awareness campaigns (radio ads/interviews/ mentions)	Media files	1 per year
15.8	# of press releases	Press Files	10 per year
Knowledge management			
15.9	# of documents available in the database of the established ECOWAS Observatory for RE&EE	database	500 end of the period
15.10	# of documents downloaded from the ECOWAS Observatory for RE&EE	Website statistics	20000 end of the period
15.11	% of territory in the region with a Resource Assessments (Solar and Wind) contrasted with field measurements (max 10% of data error)	Regional Atlas	20% at the end of the period
15.12	% of the rivers in the region with a Resource Assessment (flow and height)	Regional Atlas	50% at the end of the period
15.13	% of territory in the region with bioenergy crops assessment	Regional Atlas	100% at the end of the project
15.14	# of RE&EE conferences organized	Conference documents	6 by 2016
15.15	# of participants in E&EE conferences	Conference documents	720 participants by 2016
15.16	# ECREEE presentations at int. RE&EE conferences	Presentations	90 ECREEE presentations
15.17	# Prepare policy statements/briefs for regional and international decision making processes on behalf of ECOWAS	Briefs and decision making documents	Prepare and submit 5 policy briefs
15.18	# Publish and disseminate ECOWAS RE&EE flag-ship reports	books	Publish and regularly update at least two ECOWAS flag-ship reports

3.5.4. Milestones under Result Area 5: Business and Investment Promotion

By 2016, ECREEE will promote and/or co-fund the development and implementation of RE&EE demonstration and investment projects with a high visibility, socio-economic impact and the potential for replication in other ECOWAS countries. In this regard the Centre promotes equally grid-connected as well as decentralised renewable energy solutions in urban, peri-urban and rural areas.

In 2011, ECREEE launched the **ECOWAS Renewable Energy Facility (EREF) for rural and peri-urban areas** which aims at the mitigation of financial barriers for RE&EE investments in rural and peri-urban areas. The EREF makes available grant based co-funding for small and medium sized RE&EE projects and businesses. Under the facility the ECREEE Secretariat organizes regular demand-driven calls for proposals. The first call for proposals was successfully launched in May 2011. The call targeted pre-investment activities (e.g. potential assessments, feasibility studies), the installation of pilot projects as well as business development activities (e.g. training for SMEs, business plan development). ECREEE received 166 concept notes with a grant request of more than €7 million (overall volume including co-funding €14 million). The technical appraisal of the concept notes was done according to the established evaluation criteria: relevance, impact, effectiveness, feasibility and efficiency, as well as sustainability. Each project was appraised by ECREEE and an external evaluation consultant. The guidelines and templates of the EREF were developed in three languages and can be downloaded from <http://eref.ecreee.org>. ECREEE will continue to undertake regular calls for proposals and develop the concept of the EREF further through the inclusion of innovative finance schemes (e.g. micro-credits). The Facility has numerous synergies with other operational areas of ECREEE, such as knowledge management and training, and capacity building. All EREF documents and results will be published through the ECOWAS Observatory for RE&EE.

Besides EREF, for rural areas, ECREEE will also focus on Rural Electrification through micro-grids with RE penetration as well as improved cook-stoves and alternative fuel options rather than traditional charcoal at the household level. In 2012, ECREEE will define the strategy based on supporting innovative approaches; disseminate successes and lessons learned, demonstration cases and assist ECOWAS Member States in their respective national scale-up as well as support the regulatory frameworks which will enable access to modern energy services in rural areas.

To stimulate the grid-connected market in urban areas, ECREEE will establish and manage the ECOWAS Renewable Energy Investment and Business Initiative (ERIBI). The Initiative will facilitate annual Investment Forums with the participation of local and international financiers (e.g. AfDB, KFW, EIB). ECREEE will provide coordination and facilitation services and will act as an honest broker between the ECOWAS Energy Ministries, the WAPP and financiers to develop a renewable energy investment project pipeline. As part of this initiative, ECREEE will establish a **Business Advisory Committee (BAC) comprised of companies that are actively involved in RE and EE in the region** in close partnership with the Private Sector Directorate of the ECOWAS Commission. The ECREEE BAC would be composed of five to ten representatives, local companies and foreign companies based in the region or elsewhere but actively engaged in activities in the region. The purpose of the BAC would be for ECREEE's Secretariat to engage in dialogue with private sector actors in the region on the following issues: business conditions particular to the RE sector; policy development needs and concerns; human resource development needs; case studies and examples. BAC will have an advisory status at ECREEE's Secretariat and may participate in the Technical Committee.

Apart from these initiatives, ECREEE will support selected RE&EE demonstration projects in the ECOWAS countries with a high visibility and potential for replication. By the end of 2011, the following projects were launched:

- Green ECOWAS Commission Headquarters in Abuja, Nigeria;
- Solar Cooling System for the National Assembly in Praia, Cape Verde;
- PV system for the ECREEE Secretariat and One UN Building in Praia, Cape Verde;
- Several projects through the GEF project “promoting market based development of small to medium scale renewable energy systems in Cape Verde”.

TABLE 11: PERFORMANCE INDICATORS FOR RESULT AREA 5

RESULT AREA 5: Business and Investment Promotion			
ID No.	Indicators for Evaluation of Result Area	Source of verification	Yearly target or 5 Year Project Goals
16.1	# forums of the ECOWAS Renewable Energy Investment and Business Initiative (ERIBI) and # meetings of the Business Advisory Council (BAC)	Meeting documents	5 ERIBI forums and 5 BAC meetings
16.2	EUR of investment for the project pipeline of the ECOWAS Renewable Energy Investment and Business Initiative (ERIBI) mobilized (e.g. financing institutions, investors)	Meeting documents, pipeline	500 million EUR end of the period
16.3	# of members in the Business Advisory Council (BAC)	membership letters, BAC reports and registration files	20 at the end of the period
16.4	# of undertaken pre-investment studies led to investments	final reports	20 studies at the end of the period
16.5	# RE&EE demonstration projects developed and implemented	ToR, contracts	10 at the end of the period
16.6	# of rural and peri-urban RE&EE projects approved by the EREF (by country, technology, on/off grid)	EREF call, contracts signed	90 at the end of the period
16.7	# local RE&EE companies and ESCOs created or supported	Establishment documents, grants provided, contracts	10 at the end of the project
16.8	# of Electrical Grid Dynamic Analysis studies completed to evaluate the RES penetration potential in the region	Final reports of Grid Dynamics	15 at the end of the period
16.9	EUR of raised investment and co-funding for projects directly supported/funded and/or developed by ECREEE	project documents, feasibility studies, contracts	at least 30 million EUR investments leveraged at the end of the period
16.10	# of estimated CO2/ton savings generated through supported RE&EE projects		depends on alternative fuel use in the respective country

3.6. Services of the Centre

ECREEE seeks to play a role consistent with its public mandate and with a different mix of activities and different areas of emphasis. **On a day-to-day basis the Centre offers the services as described below.** ECREEE’s clients comprise the entire range of public and private stakeholders in the RE&EE sector (e.g. ministries, investors, universities, companies, banks, donor agencies). ECREEE:

- **coordinates, develops, executes and monitors regional key programmes and projects** in cooperation with other implementing partners. ECREEE recruits project staff to manage these projects and contracts assignments to individual consultants as well as NGOs and firms located in the region;
- **mobilizes funding for its activities and RE&EE projects in the region** (through the participation in calls for proposals and donor consultations); in this regard, ECREEE operates as key entry point for the implementation of international funding to mitigate climate change in the energy sector in West Africa (e.g. GEF, EU, UN and the World Bank);

- **takes the lead and coordinating role in the development of ECOWAS' coherent regional RE&EE policy framework** and facilitates its implementation on national levels;
- **provides defined services to members and clients:** ECREEE may also provide specific services under contract to a private- or public-sector client and fee-for-service activities. By 2020, the Centre envisages to mobilize 10% of its annual budget from fee-to-service activities (see Annex B on ECREEE finance);
- **manages and disseminates RE&EE knowledge and data:** ECREEE will manage the ECOWAS Observatory for Renewable Energy and Energy Efficiency (EORE) which provides access to a range of information, including RE potential assessments, studies, analysis, national energy markets data, global market data, technology assessments, GIS maps and related data. Data available fall into two categories: (1) data available free to any visitor on the Observatory website; (2) data that are available to members or users who pay access fees (through a specific service of information analysis on demand);
- **fosters communication and awareness raising:** ECREEE issues regular newsletters on its activities and those of its members and stakeholders, together with regular columns and special coverage of topics of general interest to the ECREEE membership. ECREEE organizes regular awareness raising campaigns with regional impact;
- **acts as an RE&EE networking and capacity building agent:** ECREEE convenes regularly scheduled meetings and conference calls with its members from the business community, from its member countries, NFIs and ECOWAS. ECREEE convenes conferences and seminars from time to time on topics related to specific programmes in its work plan. Moreover, ECREEE provides a framework for RE&EE capacity building activities and strengthens networks between research and training institutions and organizes regular train-the-trainer workshops;
- **provides co-funding for demand-driven programmes, projects and initiatives** executed by the private and public sector or civil society in the region (through calls for proposals and tenders); the ECOWAS Renewable Energy Facility (EREF) was launched in May 2011 (see description under Result Area 5). In 2012, the Centre will launch a permanent call for co-funded projects which address specific agreed activities in the annual work plans;
- **acts as a think tank, advisory and advocacy platform for RE&EE in West Africa and internationally.** ECREEE serves as a source of analysis that advances understanding and knowledge among the region's policymakers, business leaders, non-governmental organizations and academic institutions. Moreover, the Centre provides policy inputs to international and regional policy processes and interlinks with RE&EE lobby and pressure groups;
- **facilitates north-south and south-south cooperation and partnerships for knowledge and technology transfer.** In this regard, ECREEE signs agreements with technology partners on international and local levels (e.g. IEA, IRENA, UNIDO, etc.).

4. PERFORMANCE INDICATORS, MONITORING AND EVALUATION

ECREEE is applying an interrelated short-term and long-term planning and monitoring framework. **The ECREEE Business Plan provides a long-term planning framework for the period 2011 to 2016.** It defines measurable and attainable performance indicators for the objectives and result areas of the logical framework matrix. Moreover, targets were set for each of the established indicators per result area (see Table 12). The **annual work plans**, which are subject to approval by the Board, provide a short-term planning framework which incorporates projects and activities to be executed by the Secretariat in a given year. The defined activities contribute to the achievement of the performance indicators and goals of each result area. The **annual status reports** monitor the implementation of the work plans and report on the achievements in the different result areas of the Business Plan.

In 2016, an independent external evaluation will assess the achievements and performance of the Centre based on the set indicators. For example, it will review whether the Centre has trained the envisaged 500 experts, developed a regional policy for RE&EE, co-funded 50 rural RE&EE projects and raised €30 million of investment through its developed projects. The evaluation will also determine whether the improvement of framework conditions has led to the envisaged growth in RE&EE investments and installation of new RE power capacities (e.g. 200 MW solar power/heat, 250 MW wind power and 200 MW small hydro) at the level of the specific objective. Finally, it will determine whether the growth in investments has led to the expected sustainable development impact through increased access to energy services, job and income creation and GHG emission reduction.

TABLE 12: ECREEE PERFORMANCE AND MONITORING INDICATORS (2011–2016)

Overall Objective: To contribute to the sustainable economic, social and environmental development of West Africa by improving access to modern, reliable and affordable energy services, energy security and reduction of energy related externalities (GHG, local pollution)				
ID No.	Indicators	Source of verification		Baseline 2010
10.1	% increase of population with access to reliable and affordable electricity services through RE technology deployment	National Statistics, project data		
10.2	% increase of population with access to modern, reliable and affordable cooking services through RE technology deployment	National Statistics, project data		
10.3	% reduction of fuel wood use for cooking through RE&EE technology use	Sectoral statistics from the countries		
10.4	# GHG and polluting gases tons reduced throughout the life-time of installed RE&EE projects	Investment Project documents and feasibility studies		
10.5	% increase of jobs created directly or indirectly during construction and operation of RE&EE projects	Sectoral statistics from the countries		
10.6	# EUR increase of income and savings generated by RE&EE projects	Investment Project documents and feasibility studies		
10.7	% increase RE contribution in the electricity and energy mix (region and country)	National Statistics		
10.8	% reduction of the energy intensity (region and country)	National Statistics		
10.9	reduction of blackouts through RE&EE technology deployment (region and country) [%]	Utility annual report in the countries		

Specific objective: create favorable framework conditions for regional RE&EE markets by supporting activities directed to mitigate existing technology financial, economic, business, legal, policy, institutional, knowledge and capacity related barriers.				
<i>ID No.</i>	<i>Indicators</i>	<i>Source of verification</i>	<i>Yearly target or 5 Year Project Goals</i>	<i>Baseline 2010</i>
I0.10	% growth rate of RE&EE investments in the ECOWAS region by country, technology and on/off grid	country and global reports on RE investments (e.g. IRENA, REN-21, UNEP), project documents;	20% per year (baseline 2009)	
I0.11	# of MW installed in region with Solar Technology (PV, CSP, thermal) by country, technology and on/off grid	Commissioning documents of the power plants	200 MW at end of the period	
I0.12	# of MW installed in region with Wind Power Technology by country and on/off grid	Commissioning documents of the power plants	250 MW at the end of the period	
I0.13	# of MW installed in region with Bioenergy (Waste to energy) Technology (bio-electricity) by country, technology and on/off grid	Commissioning documents of the power plants	150 MW at the end of the period	
I0.14	# of liters of second generation biofuels produced in the region use at local level by country	National Statistics		
I0.15	# of liters of second generation biofuels produced in the region use for export by country	National Statistics		
I0.16	# of MW installed in region with Small Scale Hydropower Technology by country and on/off grid	Commissioning documents of the power plants	200 MW at the end of the period	
I0.17	# of kW installed in minigrids using hybrids RE technologies in the region by country and technology	Commissioning documents of the minigrids	30 MW at the end of the period	
I0.18	% reduction of residential and tertiary sector energy consumption through EE measures	Project results and impacts	5% at the end of the period	
I0.19	% Increase in number of RE projects in ECOWAS region, by country, technology, on/off grid with the participation of local enterprises and investors	Commissioning documents of RE projects	50% at the end of the period	
I0.20	# of registered local enterprises dedicated to RE and EE	National Chamber of Commerce and Industry Associations in the countries	100 at the end of the period	
RESULT AREA 1: Effective regional RE&EE promotion agency created and efficiently managed				
<i>ID No.</i>	<i>Indicators</i>	<i>Source of verification</i>	<i>Yearly target or 5 Year Project Goals</i>	<i>Baseline 2010</i>
I1.1	% expenditure according to the annual budget in the work plan	annual finance statement	80% per year	
I1.2	% of implemented activities of the annual the work plan	annual status reports	80% per year	
I1.3	% of the annual budget of ECREEE mobilized from ECOWAS sources and commercial fee-for-service activities	Annual budget, MoUs, bank statements, audits	25% of the ECREEE budget in 2016 originate from ECOWAS sources and 5% from commercial fee-for-service activities, 70% from donor sources	

ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals	Baseline 2010
I1.4	Total amount of mobilized funding through funding agreements (donors and ECOWAS)	Bank accounts or financial agreements	13 million EURO at the end of the period	
I1.5	# of funding agreements signed with donors	agreements signed	6 MoU at the end of the period	
I1.6	# of funding agreements signed with ECOWAS member states and the ECOWAS Commission	agreements signed	5 at the end of the period	
I1.7	# Project/program proposals prepared and submitted to international and local financiers (e.g. EC, GEF)	Project proposals	18 submissions by 2016	
I1.8	Total amount of mobilized co-funding through submitted project/program proposals to financiers	Bank accounts or financial agreements, project proposals	20 million EURO by 2016	
I1.9	# of MoU with local/regional/national technology partners	Signed MoUs	40 at the end of the period	
I1.10	# of Procurements elaborated and/or managed and concluded	tender documents, minutes of the procurement committee	20 procurements per year	
I1.11	# of contracts signed and managed	contracts	100 contracts by 2016	
I1.12	# of RE&EE project proposals reviewed and appraised	project documents and evaluation grids	50 project proposals per year	
I1.13	# of templates and forms for administrative issues approved and used	templates in the admin files	10 by 2016	
I1.14	# of internal regulations approved or adopted	regulation texts applied internally	10 at the end of the period	
I1.15	# of staff training exercises	training reports	3 training attended per year	
I1.16	% of staff evaluated	Results of staff evaluations/ annual staff appraisal process	100% of staff evaluated per year	
I1.17	% administrative costs over the total	annual budget	maximum of 20% of the annual budget	
I1.18	% Rotation in key staff	yearly staff evaluations, RRHH annual reports	40% at the end of the period	
I1.19	% women in staff	RRHH annual reports	50% at the end of the period	
I1.20	# of Technical Committee and Executive Board meetings	EB and TC reports	2 per year	
I1.21	# of employees funded through to project overheads	Contracts	8 at the end of the period	

RESULT AREA 2: Tailored policy, legal and regulatory frameworks created and implemented				
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals	Baseline 2010
I3.1	# of Regional RE&EE policies adopted by ECOWAS	ECOWAS Council of Ministers adopted measures	2 at the end of the period	
I3.2	# of countries developing RE laws	Ministry's Resolutions	RE laws developed in all members states	
I3.3	# of countries with adopted RE laws	National Official Bulletin	RE laws passed in all members states	
I3.4	# of countries that have a binding national MRET	National Official Bulletin	All member states with binding MRET	
I3.5	# of countries that are achieving the MRET	National Electrical Statistics	25% at the end of the period	
I3.6	# of RE&EE support policies/strategies devoted to rural and peri-urban electrification/energy developed	Ministry of Energy, rural electrification agencies	5 at the end of the period	
I3.7	# of national strategies developed for EE	National Official Bulletin	50% at the end of the period	
I3.8	# of countries developing EE laws	Ministry's Resolutions	EE laws developed in all members states	
I3.9	# of countries with adopted EE laws	Ministry's Resolutions	EE laws developed in all members states	
I3.10	# of countries with adopted national strategies for EE	National Official Bulletin	EE law passed in all members states	
I3.11	# of national EE standards and labeling standards adopted	National Official Bulletin	50% at the end of the period	
I3.12	# of resolutions related to RE&EE and/or ECREEE adopted by ECOWAS Council of Ministers	ECOWAS bulletin	1 per year	
I3.13	# of resolutions related to RE&EE and/or ECREEE adopted by the Authority of ECOWAS Heads of States and Governments	ECOWAS bulletin	1 per year	
RESULT AREA 3: Capacities are strengthened and applied				
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals	Baseline 2010
I4.1	% of execution of the Regional Capacity Building Program elaborated based on the Capacity Needs Assessment	Training reports and Capacity Building Program document	80% of execution at the end of the period	
I4.2	# of stakeholders trained (differentiate the identified target groups and the ECOWAS country)	Training assistance lists	500 people at the end of the period	
I4.3	# of trainings conducted	Training reports	15 training activities at the end of the period	
I4.4	# educational and/or training institutions with a multiplier effect trained (train the trainers approach)	Training assistance lists	30 institutions at the end of the period	
I4.5	# of trainings at the national level conducted by the trained institutions	Training reports	60 trainings conducted at the end of period	

ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals	Baseline 2010
14.6	# of participants in the national trainings conducted as a result of regional training by the trained institutions	Training reports	1000 participants at the end of period	
14.7	% of participants satisfied with the trainings in average	Workshop evaluations	at least 70%	
14.8	# of workshops/meetings devoted to sustainable energy involvement in rural/peri-urban areas	Workshop reports	3 at the end of the period	
14.9	% of women among the stakeholders trained (differentiate the identified target groups and the ECOWAS country)	Workshop reports	20% as an average at the end of the period	
RESULT AREA 4: Knowledge management, awareness raising, networks and advocacy strengthened				
ID No.	Indicators	Source of verification	Yearly target or 5 Year Project Goals	Baseline 2010
Awareness raising, advocacy and networks				
15.1	# of visits to ECREEE websites	Website statistics	21000 visits per year	
15.2	# of visits from the ECOWAS region	Website statistics	50% of the visits from Africa	
15.3	# of contacts in the database	ECREEE Database	50000	
15.4	# of MoU with local/regional/national technology partners	Signed MoUs	10 at the end of the period	
15.5	# friends on Facebook	Facebook website and statistics	200 end of the period	
15.6	# twitter followers	Twitter website and statistics	200 end of the period	
15.7	# of awareness campaigns (radio ads/interviews/mentions)	Media files	1 per year	
15.8	# of press releases	Press Files	10 per year	
Knowledge management				
15.9	# of documents available in the database of the established ECOWAS Observatory for RE&EE	database	500 end of the period	
15.10	# of documents downloaded from the ECOWAS Observatory for RE&EE	Website statistics	20000 end of the period	
15.11	% of territory in the region with a Resource Assessments (Solar and Wind) contrasted with field measurements (max 10% of data error)	Regional Atlas	20% at the end of the period	
15.12	% of the rivers in the region with a Resource Assessment (flow and height)	Regional Atlas	50% at the end of the period	
15.13	% of territory in the region with bioenergy crops assessment	Regional Atlas	100% at the end of the project	
15.14	# of RE&EE conferences organized	Conference documents	6 by 2016	
15.15	# of participants in E&EE conferences	Conference documents	720 participants by 2016	
15.16	# ECREEE presentations at int. RE&EE conferences	Presentations	90 ECREEE presentations	

<i>ID No.</i>	<i>Indicators</i>	<i>Source of verification</i>	<i>Yearly target or 5 Year Project Goals</i>	<i>Baseline 2010</i>
I5.17	# Prepare policy statements/briefs for regional and international decision making processes on behalf of ECOWAS	Briefs and decision making documents	Prepare and submit 5 policy briefs	
I5.18	# Publish and disseminate ECOWAS RE&EE flag-ship reports	books	Publish and regularly update at least two ECOWAS flag-ship reports	
RESULT AREA 5: Business and Investment Promotion				
<i>ID No.</i>	<i>Indicators for Evaluation of Result Area</i>	<i>Source of verification</i>	<i>Yearly target or 5 Year Project Goals</i>	<i>Baseline 2010</i>
I6.1	# forums of the ECOWAS Renewable Energy Investment and Business Initiative (ERIBI) and # meetings of the Business Advisory Council (BAC)	Meeting documents	5 ERIBI forums and 5 BAC meetings	
I6.2	EUR of investment for the project pipeline of the ECOWAS Renewable Energy Investment and Business Initiative (ERIBI) mobilized (e.g. financing institutions, investors)	Meeting documents, pipeline	500 million EUR end of the period	
I6.3	# of members in the Business Advisory Council (BAC)	membership letters, BAC reports and registration files	20 at the end of the period	
I6.4	# of undertaken pre-investment studies led to investments	final reports	20 studies at the end of the period	
I6.5	# RE&EE demonstration projects developed and implemented	ToR, contracts	10 at the end of the period	
I6.6	# of rural and peri-urban RE&EE projects approved by the EREF (by country, technology, on/off grid)	EREF call, contracts signed	90 at the end of the period	
I6.7	# local RE&EE companies and ESCOs created or supported	Establishment documents, grants provided, contracts	10 at the end of the project	
I6.8	# of Electrical Grid Dynamic Analysis studies completed to evaluate the RES penetration potential in the region	Final reports of Grid Dynamics	15 at the end of the period	
I6.9	EUR of raised investment and co-funding for projects directly supported/funded and/or developed by ECREEE	project documents, feasibility studies, contracts	at least 30 million EUR investments leveraged at the end of the period	
I6.10	# of estimated CO2/ton savings generated through supported RE&EE projects		depends on alternative fuel use in the respective country	

ANNEX A: SWOT ANALYSIS OF ECREEE

Now that the Centre has successfully secured initial funding, it is appropriate for it to take stock of its strategic position as the sole regional organization that deals with RE and EE; with a public service mandate to promote sustainable development throughout the region. One way for institutions to assess their strategic position is to conduct a periodic review of their strengths, weaknesses, opportunities and threats, or SWOT for short. On the basis of the SWOT analysis (presented in Table 2) ECREEE will determine its added value for the promotion of RE&EE markets in West Africa and define its strategy for the next six years.

a) Stakeholder analysis

West Africa is already home to a significant number of international and local stakeholders that are active in one or more of the areas encompassed in ECREEE's Mission Statement. Therefore, it is desirable for ECREEE to seek to align its activities with those of existing stakeholders, programmes, projects and initiatives in the RE&EE sectors so as to avoid wasteful duplication of effort.

For the purposes of analysis, these institutions may be grouped under the rubrics of non-governmental organizations (NGOs), academic institutions, government and multilateral agencies and businesses. Many of these institutions have long histories; in the case of some academic institutions, their origins date back more than 150 years.

In addition, most of these organizations are active in a limited number of areas relevant to ECREEE, and in some instances, their primary focus is collateral to that of ECREEE's mandate to work on RE and EE. For instance the Lambassa Institute works on a range of economic and social development issues, including issues related to RE. Songhaï Center and ENDA Tiers Monde appear to be especially strong in a variety of agricultural disciplines. Others address gender and health issues together with rural development and energy considerations. Mali Folk Center has focused to a significant extent on biomass energy and biofuels, although the organization has worked on other topics.

The activities in which these organizations are engaged are similarly varied, ranging from pure research and development work to teaching and training, business incubation, environmental and social advocacy, investment, demonstration projects and straightforward technology retailing and distribution. It is also apparent that in several cases, organizations are engaged in activities that make them somewhat difficult to characterize. Various entities engage in commercial activities as businesses while at the same time undertaking advocacy roles (as in the case of the Energy Foundation or ENDA Tiers Monde). In the case of several educational institutions, such as Foundation 2iE and Songhaï Center, business and professional training activities are closely linked. The UNIDO Center, meanwhile, has received support from the UN, but its management appears to be charting a course for it to operate much more as a business. These examples are illustrated in Figure 2.

Finally, the geographic coverage of the organization varies considerably, with only a very few institutions making a credible claim to being regional actors in the RE and EE sector; for the most part, these institutions are active at the national level, and in some cases, notably the UNIDO Small Hydropower Center in Nigeria, the regional designation is not matched by the scope of the projects in which it has been involved. In addition to the organizations located within the region, there are numerous extra-regional institutions active in the RE and EE sectors that have networks and ties to institutions based in the region. These include the multilateral institutions, such as the World Bank, African Development Bank and the IFC, which have a physical presence in the region, as well as a large number of NGOs, businesses and other organizations that do not, but they have links and networks with local organizations, or they manage programs with local partners and are otherwise actors in the RE and EE sectors.

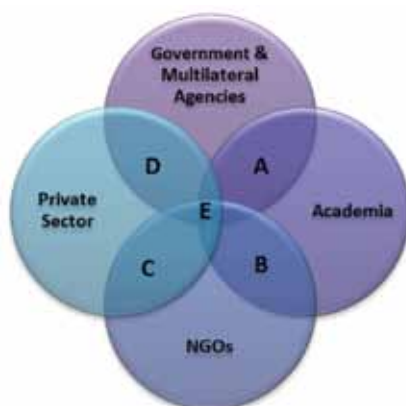
Current international partnerships and networks with which ECREEE is involved:

- UNIDO Energy Technology Centre Network
- Renewable Energy and Energy Efficiency Partnership (REEEP)
- International Renewable Energy Agency (IRENA)
- Renewable Energy Policy Network for the 21st Century (REN-21)
- African Renewable Energy Alliance (AREA)
- Alliance for Rural Electrification (ARE)
- Coordinated Low Emissions Assistance Network (CLEAN)

- African Renewable Energy Technology Platform (AFRETEP)
- Global Bioenergy Partnership (GBEP).

ECREEE acts more as a promotion agency rather than as an implementer of micro- and grass-root level projects and performs up to the level of program/project development, fund raising, oversight, quality assurance as well as coordination, monitoring and evaluation of project/program implementation. Most of the activities in the ECREEE work plans are executed in cooperation with qualified private and/or public project implementers identified either through competitive tenders for requested services or demand driven call for proposals (EREF is an example). Indeed, ECREEE should foster the idea that cooperation with ECREEE can and will lead to broader engagement with donors, based on provision of quality services and successful project implementation. As such, ECREEE should act as a platform for expanding options for other organizations, and it can facilitate this role by serving as a clearinghouse of information on regional organizations (this objective should be supported by having the Observatory collect information on such organizations). In addition, while ECREEE should avoid becoming a competitor to private sector companies (by performing work such as feasibility studies), it can engage in certain activities for limited periods to have a 'demonstration' effect in the marketplace.

FIGURE 9: MAP OF ECREEE'S COMPARATIVE ADVANTAGE



Examples of hybrid organizational types

- A – UNIDO Regional SHP Centre
- B – National universities and research institutes
- C – Energy Foundation, ENDA-TM
- D – CSET
- E – Space that ECREEE could aspire to occupy

Even those organizations with considerable resources at their disposal and some local infrastructure, such as the World Bank or the AfDB, cannot cover the region by themselves and will see value in the dense local network that ECREEE is developing on the basis of its own institutional structure and through implementation of its programmes. Therefore, as ECREEE proceeds with the implementation of its Work Plan, its value to such extra-regional institutions can only grow.

b) ECREEE's comparative advantage

In light of the foregoing review of organizations active in various aspects of the RE and EE sector in West Africa, ECREEE enjoys several, clearly discernible comparative advantages and could come to develop several more. Specifically, ECREEE can already claim the following:

- The Centre enjoys **considerable financial support**.
- The Centre has a **formal regional mandate authorized by the ECOWAS member countries**, given ECREEE's status as a specialized agency of the ECOWAS Commission. ECREEE has direct access to high level policy decision-making processes and the delivery of official statements on behalf of ECOWAS.

- ECREEE’s two-tiered architecture makes it a **truly regional organization**; its structure includes ECREEE’s presence at the national level through the NFIs appointed directly by the Ministers of Energy. The NFI assures a dense network relationship at the country level.
- ECREEE’s organizing charter gives it **considerable flexibility with respect to its activities**, sources of revenue and the institutional partnerships that it can establish.
- ECREEE is well connected at the international level (e.g. seconded experts).

In terms of what ECREEE can aspire to become in the future, first and foremost, the Centre has the potential to be active in an **extremely diverse series of issue areas**, ranging from EE to biofuels, and to engage in **qualitatively different types of activities**, including policymaking as well as support for project development, training and capacity building, certification of service providers. In addition, ECREEE can, by virtue of its institutional mandate from the ECOWAS Commission and Member States, exercise **power to convene stakeholders** in the RE and EE sectors in a way that other organizations are not able to. Thus it can position itself so that its areas of activity encompass areas where the private sector, government and multilaterals, NGOs and academic institutions all overlap – the niche depicted in the figure above.

c) Assessment of strengths, weaknesses, opportunities and threats

As a complement to the review of the organizations operating in West Africa in the RE&EE sectors, whether from a base within the region or from outside it, and the articulation of ECREEE’s comparative advantage in this environment, it is important to identify what are some of ECREEE’s limitations, as well as the threats it faces as it seeks to consolidate its role as the leading organization working on RE and EE issues in the region.

These areas of opportunity may be exploited through the implementation of four separate but parallel strategies:

- Fostering the emergence of entities specialized in the identification of energy efficiency opportunities in industry and commerce. Through supporting programmes for training and certification of specialists in energy management, and broader efforts to build awareness of the opportunities for exploiting energy efficiency, ECREEE can contribute to the development of an energy efficiency sector in the region.
- Supporting the development of regional energy efficiency standards. Product standards and labelling programmes for appliances, motors and other energy consuming equipment and products have been an important part of efforts to increase the efficiency of end-use energy consumption in many countries around the world. In regions with small markets, the establishment of regional standards is an important strategy for achieving energy efficiency objectives. ECREEE, as a regional organization affiliated to ECOWAS, is uniquely positioned to support regional strategies for achieving improvements in end-use efficiency, and should begin by conducting research and analysis that will quantify the benefits of implementing regional standards and developing the national and regional infrastructure for their implementation.
- ECREEE, in collaboration with WAPP, should play a vital role in facilitating delivery, to the national utilities in the region, of information, expertise, training and analysis that the management of these companies require to assess opportunities for supply-side efficiency investments that will increase output from existing resources, allowing them to serve rapidly growing markets. Over the longer term, ECREEE should also work with national governments, regulatory agencies and ERERA to identify ways by which regulatory frameworks may be used to create incentives for utilities to view demand-side management as a strategy for improving the level of service they provide to end-users and expanding their revenue base by adding paying customers.
- Facilitating the development of the full menu of feasible RE technology options, including centralized and decentralized, on- and off-grid solutions for electricity generation, heating and cooling services. The Centre should also adequately exploit the potential of large-scale RE applications to meet the rapidly growing energy demand of urban areas and to boost regional power trade as well as small-scale installations to support productive uses in rural and peri-urban areas. ECREEE should be in the vanguard of the declaration of a decade of energy sufficiency in the region; the exploitation of the region’s renewable energy resources; and the adoption of minimum renewable energy targets (MRETs) for the region, as recommended by the Third ECOWAS Business Forum, held in 2010.

d) Gap analysis

West Africa remains a deeply fragmented region, divided along a great many different cleavages, including language, culture and ethnicity; relative political and economic development; climate and natural resource endowments (including water, agricultural potential, minerals as well as renewable energy resources); energy and transportation infrastructure. While it is of course true that ECOWAS itself, as well as the WAEMU (or UEMOA in French), as well as initiatives such as WAPP and WAGP, represent efforts to bridge these divisions and enhance the prospects for broader integration and accelerated economic development, they are initial building blocks that will facilitate the considerable amount of work that remains to be done in the future.

As in the experience of other experiments with regional economic integration (Europe, Central America, Southern Cone), there are inevitable tensions between the prerogative of national governments to develop and implement policies consistent with political, economic and social realities in each country, and the desire to implement uniform strategies and policies at the regional level. In West Africa, given the wide variation in the capacities of national governments to develop and implement policy in this area, and the fact that they are relatively limited, the potential for considerable variation from country to country is even greater. Some countries, such as Senegal, Cape Verde, Mali and Ghana, have made progress in varying degrees in the articulation of policy frameworks for RE, EE and rural electrification, where renewable energy resources enjoy natural competitive advantages. On the other hand, other countries have done comparatively little, due in some cases to institutional limitations, as in the case of Guinea and Guinea-Bissau, or because of the overwhelming importance of non-RE or fossil fuel based resources, as in the case of Nigeria and Cote d'Ivoire.

Given the resource and capacity constraints facing most countries in the region, there is a significant gap in the region with respect to the **availability of resources and technical and analytical capabilities** to support policymaking and project development in RE&EE. ECREEE's role as a regional resource in a wide range of areas is intended to help meet this need, not only in support of national and regional agencies and organizations, but also international donors and multilateral institutions that need local support for project implementation. To some extent, ECREEE's involvement can help fill this gap while at the same time introducing some consistency and uniformity in the policy approaches adopted throughout the region. This will contribute to the development of a regional marketplace that will be more attractive to investors, technology companies and distributors. It has been argued that one of the other ECOWAS agencies involved in the energy sector – and particularly WAPP – has a mandate to engage in activities related to RE and EE. However, a close examination of WAPP's charter, as well as discussions with individuals familiar with its activities, suggests that WAPP's mandate is quite different, supporting the notion that there is a gap to be filled with the creation of ECREEE. Furthermore, ECREEE has begun to address the need for coordination with other ECOWAS agencies; in the specific case of WAPP, a draft MoU with WAPP lays the groundwork for collaboration between the two agencies. Participation by the ECOWAS Commission's Energy Directorate as well as other ECOWAS energy agencies in ECREEE's Technical Committee (TC) also ensures synergies.

Separate from the need for a coherent policy environment, the emergence of an RE and EE sector in West Africa will require the development of human resources and the creation of the necessary **'institutional infrastructure'** for this marketplace. The term 'institutional infrastructure' refers to specialized agencies, such as standards and certification bodies; public sector programmes to increase public awareness of the benefits and opportunities for RE and EE; academic programmes and curricula for long-term as well as vocational training and education; information resources and databases to support early-stage project preparation; and lastly a community of entrepreneurs engaged in the implementation of projects and the delivery of services. While a considerable amount of work has already been done to create this infrastructure, the efforts of institutions from within the region are **scattered and thinly distributed**, lacking regional coherence and tending to be concentrated in their particular countries or sub-regional spheres of activity. In contrast, the activities of extra-regional institutions tend to be more coherent and systematic, but they are similarly thinly distributed and typically cannot provide comparable levels of coverage throughout the region.

The foregoing suggests that there is also a need in terms of an organization that can (1) serve as a **catalyst for regional dialogue** on a range of issues critical to the development of a RE and EE sector in West Africa; (2) provide a **forum for personal and institutional exchanges** on policymaking, best practice in policy implementation, technology deployment, project implementation and business opportunities; (3) **demonstrate how to implement programmes and projects** while at the same time fostering the development of this capacity throughout the

region; and (4) serve as a West African institution with skills and capacities in the RE and EE space that enable it to support national, regional and international institutions.

ECREEE has already begun addressing the needs identified here. The success of workshops and conferences already held confirms that there is keen interest within West Africa in conducting and sustaining a dialogue on policy issues and accelerating the pace of exchanges. While a number of conferences and industries dedicated to RE and EE do take place in Africa every year, relatively few occur in West Africa – such events have typically taken place in Southern Africa and in North Africa. While it is true that there are several agencies that have experience in programme and project implementation, the extent to which these capacities are well established and widely available in the region is extremely limited. ECREEE’s ability to implement the projects identified in its Work Plan will not only result in tangible benefits as a result of the actual projects, but also in the context of demonstrating the process and engaging the NFIs and local partners also in the process.

TABLE 13: SWOT ANALYSIS FOR ECREEE

Strengths	Weaknesses
<ul style="list-style-type: none"> • As ECOWAS Commission institution, imbued with the required leverage effect • ECOWAS mandate and access to high level decision makers in the region through the NFIs • Clear decision-making structures established and decision-making power delegated to ECREEE bodies (Secretariat, EB and TC) • Effective team of local and international experts that has delivered results during start-up phase; strong fund raising competence • Flagship programmes to be implemented during the next five years are already defined • Annual work plan, budgeting and reporting cycle established and agreed by donor partners • Strong financial and technical support from donor partners (e.g. Austria, Spain, UNIDO, USAID, European Commission) • Access to international policy processes through political mandate (e.g. climate and energy negotiations at UN level) • Significant long-term funding (about €29.1 million) has been committed for the core budget and for specific projects and programmes • Holistic approach in addressing RE&EE barriers • Awareness of importance of strong and transparent administrative, financial and procurement procedures • Well connected on international levels. 	<ul style="list-style-type: none"> • Institutional capabilities in critical programme and project management areas require improvement • ECREEE is a small organization with a limited management team facing a large mandate to deliver results in a large and complex region • NFI capabilities are limited and weaknesses probably less well known • Incomplete integration of information systems across the ECREEE network • Limited technical knowledge of RE technologies and experience with integration and system planning issues • Poor or slow project implementation may compromise the Centre's ability to continue to raise funds • Recruitment difficulties concerning technically skilled human resources in the region.

Opportunities	Threats
<ul style="list-style-type: none"> • The emphasis of ECREEE to build policy frameworks leads to a sustained development in the RE&EE sector in the region over the long-term • Investor interest in RE&EE projects in region creates potential for tie-ins, demonstrations, technology transfer and possibility of claiming quick successes • Donor emphasis on Africa and increasing climate mitigation funding creates potential for new programmes • International energy and climate conferences and decision-making processes offer opportunities for international recognition and lobbying for West African RE&EE interests • Potential international partnerships, international institutions with RE&EE mandates and international climate mitigation funding (such as IRENA, IEA) • Rising petroleum prices create new pressure on national governments to act • Decreasing prices for RE&EE technologies • Commitment to RE&EE and stability of host Cape Verde, and easy demonstration of RE&EE viability in the island context. 	<ul style="list-style-type: none"> • Potential for insufficient engagement and limited follow-through by policymakers in member states due to numerous human resource, policy and political constraints would limit ECREEE's ability to show results at policy level • Low competitiveness of some RE&EE technologies in relation to other conventional relatively clean sources and technologies (especially natural gas, LPG) erode support for ECREEE • Mismatch between regional and national activities; lacking implementation of regional outcomes in the national contexts, in part because member countries are not obliged to enact ECOWAS decisions ('legislation') • The obligation to implement donor funding according to a wide range of different administrative and financial procedures and procurement rules leads to delays and high administrative overhead • Loss of focus and risk of 'donor fatigue', given ECREEE's limited staff and considerable donor interest • Lack of clarity and clear mandate regarding coordination with other ECOWAS institutions and organizations (such as WAPP and ERERA) which may hinder activities • Difficult political environment in West Africa, with added complication due to large number of countries.

e) Concluding remarks – towards a vision of ECREEE's future development

ECREEE's creation targets a clear gap in West Africa for a regional institution that can command an audience to conduct a regional dialogue on critical issues for policymakers on RE and EE, while at the same time serving as a conduit for donor resources to reach a broader set of actors in the region. A catalyst for action is required to accelerate the so far uneven and generally insufficient degree of policy formulation in the region; this will require greater public awareness of the benefits of RE resources and the potential for their deployment in West Africa; support to governments for implementation of national policies that foster greater use of RE resources and EE; and capacity both within government as well as throughout the business sector and civil society to develop and implement projects and programmes.

Now that ECREEE's start-up phase has concluded successfully, the Centre faces the challenge of matching and surpassing its success to date. It has raised resources from several donors; it has a qualified team in place; and it has launched several of its flagship programmes. At this juncture, it is critical that ECREEE deliver results that justify the donors' investment and confirm the Centre's relevance as a leading regional RE and EE institution. These results will provide the donors already committed to the Centre with the evidence they need to demonstrate the success of their programmes. Success with the initial programmes will also attract support from new donors, thereby putting ECREEE on the path to funding its operations in the future and expanding its programmes.

In the following years, ECREEE must **deliver tangible results**. Cape Verde, in particular, is a leading country in the region in terms of implementation of RE programmes, and its reliance on high-cost diesel-fired and heavy fuel generation will make it easy to demonstrate the economic value of several RE applications. Tangible results in Cape Verde may then serve as powerful examples for other countries in the region, as well as in Cote d'Ivoire and Senegal, as leading Francophone countries; Burkina Faso, where 2iE, a major training partner, is located; and

Ghana, given the transformational impact associated with the development of petroleum there, and the country's long-standing engagement in areas such as EE and experienced academic institutions (i.e. KNUST), as well as the new RE bill. Mali also is a country with vast experience in RE and in attracting investment in RE&EE sectors. ECREEE must also deliver results for its bilateral and multilateral donors with respect to the implementation of programmes that it has contracted. In the immediate near term, there are three projects, which are supported by the GEF-UNIDO and the European Commission. In the longer term, there will be several other programmes, beginning with those for which ECREEE has received notices of award or other preliminary commitments. With the European Commission, the Energy Facility through the SEEA-WA programme on EE, the EU Energy Initiative–Partnership Dialogue Initiative (EUEI–PDF) for the RE policy development. Similarly, ECREEE should position itself to address issues that are well established priorities of the ECOWAS White Paper on access to energy services such as rural and peri-urban electrification, in order to position itself to develop future programmes. In cooperation with UNIDO and other GEF agencies ECREEE should take a leading role in coordinating the energy component of the Strategic Program for West Africa (SPWA).

The analysis presented here, as well as ECREEE's own work plans, underscores the need for ECREEE to consolidate its position and to further develop its own capabilities, as well as those of the NFIs, in order to be able to achieve these objectives. A particularly important objective in the near term, given the ongoing workload, is strengthening capabilities in project management and implementation to the greatest extent possible. This urgent need may be partially addressed through the mobilization of external resources, such as interns and cooperation from academic institutions. However, such a strategy does have the limitation in that it may not resolve the challenge of ensuring adequate internal management capacity – indeed, it might even increase the scale of the management challenge that the Centre must address in the near term. For its own long-term success, as well as the achievement of lasting results in the region, ECREEE must build its capacities as well as those of the NFIs.

ANNEX B: ECREEE FUNDING STRATEGY

a) Types of Revenue

ECREEE's **long-term sustainability** in the period following 2016 will depend on its ability to **diversify its sources of revenue** so that donor support is complemented by other resources. While the Centre's success in securing resources for its core operations as well as programmes with specific work plans has put it in a reasonably strong financial position, there is still a need to ensure ECREEE's requirements for the next years are substantially covered; this will allow the Centre to test several different approaches to generating resources from new sources, donors and stakeholders to support its ongoing activities and the development of new programmes. ECREEE should explore other financing scenarios and identify the most appropriate for its long-term sustainability. Before articulating a vision for how ECREEE might begin this process of diversification, it is important to stipulate (1) what are the different types of revenue; (2) what types of organizations these revenues come from; and (3) the uses to which revenues are put within ECREEE. Each of these definitions is addressed in turn:

1. *Types of revenue.* Revenues received by ECREEE may be labelled⁵ as (a) **grants** awarded in response to solicited or unsolicited proposals, with an allocation that may include support for core operating costs of ECREEE, programme-related costs, or investments and ECREEE grants, and physical investments, audits and potentially effectiveness assessments [accounting designation: 'donor grants']; (b) **annual contributions**, payable by national ECOWAS governments or private entities, in exchange for specific services and information; (c) **fee-for-service revenues**, resulting from the performance of a service (such as execution of a study, delivery of training) or organization of an event attended by participants who pay a fee; and (d) **dividend and interest income** resulting from an equity participation or lending to a profit-making venture, or interest accruing from unspent cash held in accounts controlled by ECREEE. Donors typically have specific reporting and even some procurement requirements, so each block of funding may require specific administrative procedures; ECREEE would lose some measure of control over the funds use (indeed, in the case of some donor support, the funds are never transferred to the control of ECREEE). In the case of the other three types of revenues, ECREEE would have complete control over funds.
2. *Source organizations.* Sources of funding may be (a) **regional and national governments (ECOWAS and its member states)**; (b) **bilateral or multilateral institutions**, such as a national technical cooperation agency or an international development bank; (c) **private companies, banks or foundations**; and/or (d) entities that are the **recipients of grants or loans made by ECREEE**.
3. *Uses of revenues.* Revenues received by ECREEE must be considered as budgetary support and may be allocated, depending on the donor's requirements, to pay for (a) **core operating costs of ECREEE (Result Area 1)**, including overhead, specialized infrastructure, salaries of administrative staff, travel and other expenses for members of the Board or TC, costs associated with ECREEE's representation at major RE&EE fora; (b) investments in **ECREEE capital assets**, communications and media infrastructure and new capabilities;⁶ (c) **costs for specific programmes**, including salaries of staff whose time, either wholly or in part, is dedicated to work on defined programme(s), travel and direct costs associated with programme implementation, or consultancies [accounting designation: 'programmes,' to Income Statement]; and (d) **project investments and support provided to recipients of ECREEE grants**, paying for contractors implementing physical investments or executing activities defined in a contracted scope of work, and which lead to the formation of assets of ECREEE that could generate dividends, interest or capital gains upon the sale of the asset.⁷

5 These designations are not to be confused with the accounting terminology applied in accordance with ECOWAS practice. The relevant accounting designations are included in brackets at the end of each description.

6 Ideally a more detailed accounting designation will be used to identify capital assets as opposed to recurring expenses.

7 Ibid.

Table 14: ECREEE activities and revenues by 2016

Activities	Revenue types	Revenue sources	Revenue uses
<ul style="list-style-type: none"> • Manage and disseminate knowledge • Foster communications • Convene regional stakeholders, including policymakers, businesses and other stakeholders • Manage programmes • Provide defined services to members and clients • Provide funding for programmes and investments in renewable energy and energy efficiency projects • Act as regional POC for international partners 	<ul style="list-style-type: none"> • ECOWAS Commission budgetary support • Grants • Annual member state voluntary contributions • Fee-for-service income • Dividends from investments • Interest income from investments • Interest from cash management 	<ul style="list-style-type: none"> • ECOWAS Commission • Bilateral development agencies • Multilateral development agencies • Multilateral financial institutions • National governments in ECOWAS region • Regional institutions • Private companies • Private foundations • Recipients of investments or loans by ECREEE 	<ul style="list-style-type: none"> • Core operating costs • ECREEE capital investment • Programme costs • Project investments (demonstration and commercial ventures)

b) Fund diversification

At present, ECREEE’s revenue base is comprised of grants awarded by bilateral and multilateral institutions, as well as the ECOWAS Commission, to support ECREEE’s core operating costs as well as specific programme costs. The evolution of the Centre over time will be paralleled by a **shift in the types of revenue that the organization receives**. Over time, the composition of revenue will diversify, with a progressively greater share of revenues falling under budgetary support from ECOWAS Commission, member state voluntary contributions and fee-for-service and investment interest categories. Within the grant category, there will also be some diversification, as ECREEE secures support from new donors from both the bilateral/multilateral category as well as from private foundations and corporations. This evolution is illustrated in Figure 10.

Concerning the revenues from private companies, through either ‘membership model’ or ‘other grant-based sources of revenue’ presents the risk of the Centre being influenced in its decision-making process and lose part of its independence. This risk can however be addressed through the ECREEE Executive Board, given that membership of this body does not include representatives of the private sector. Moreover, these revenues will only be accepted if they are aligned with ECREEE’s programme, targets and strategy and are in full accordance with the public service nature and vocation of ECREEE’s mandate.

ECREEE will therefore develop an array of criteria that private companies should fulfil in order to cooperate with the Centre. Furthermore, the possibility of fee-for-service through energy audits also poses the risk of market distortion and unfair competition with small local companies offering these services, damaging instead of promoting in the long run the energy efficiency sector in the area. Nevertheless, this option could be viable transitionally where local companies are still not offering these services to the public.

FIGURE 10: EVOLUTION OF ECREEE REVENUE SOURCES — YEAR 2012

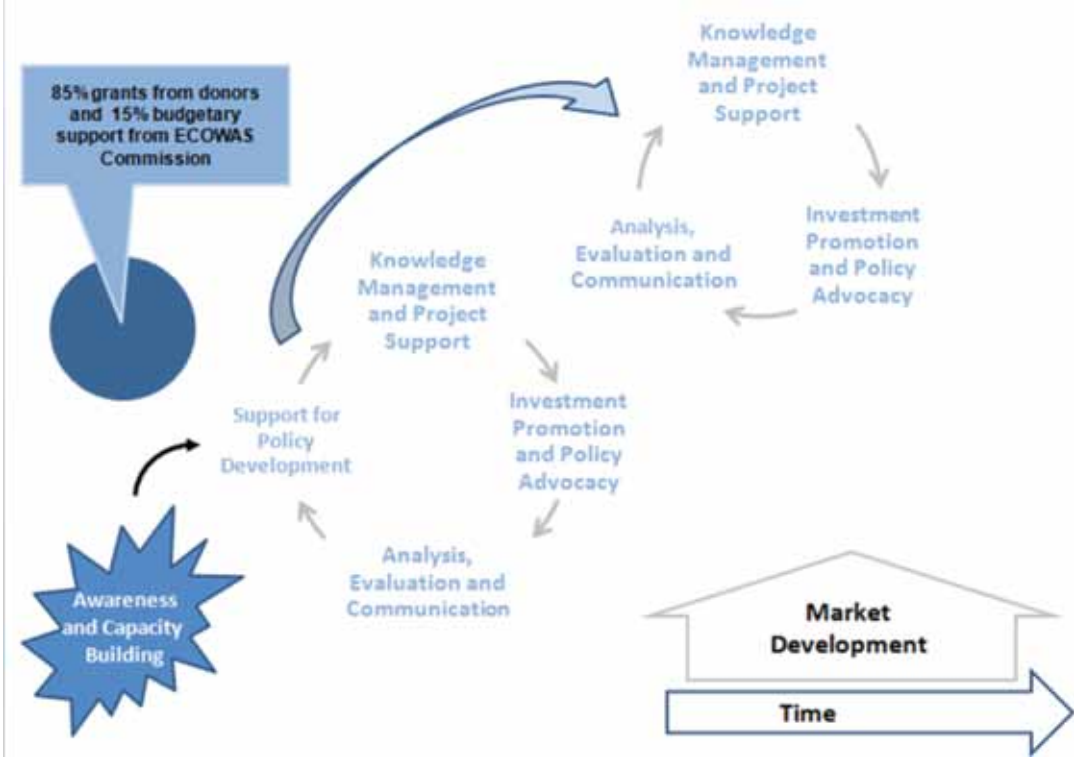


FIGURE 11: EVOLUTION OF ECREEE REVENUE SOURCES — YEAR 2016

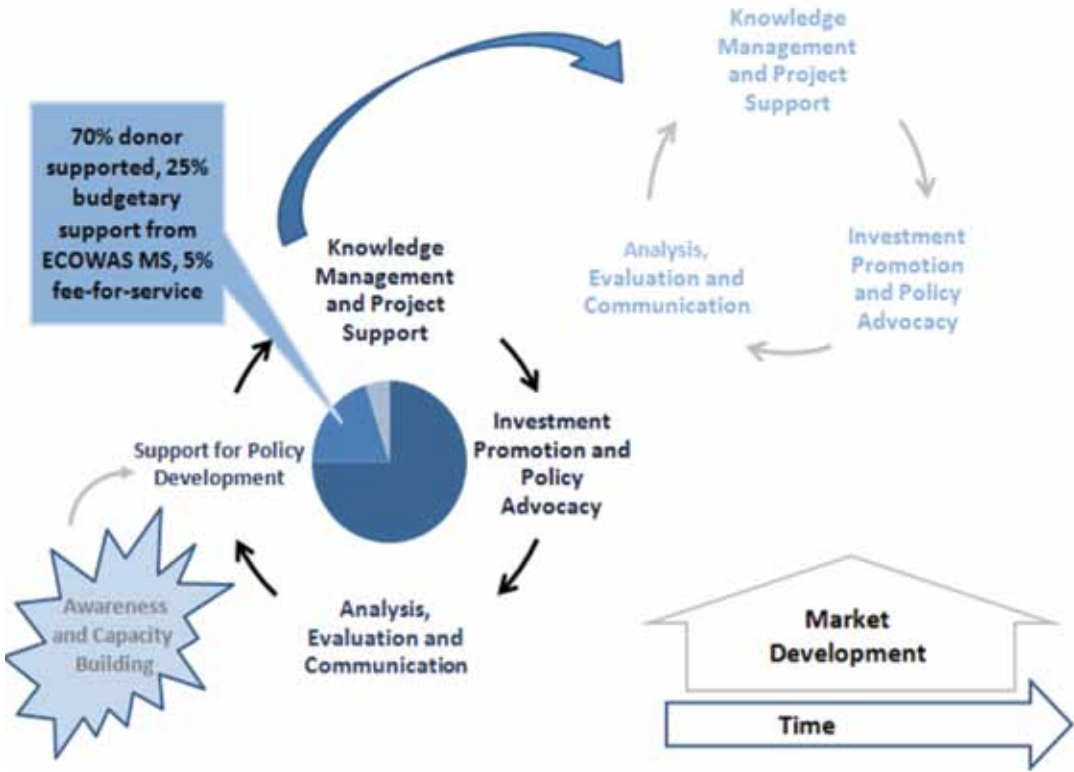
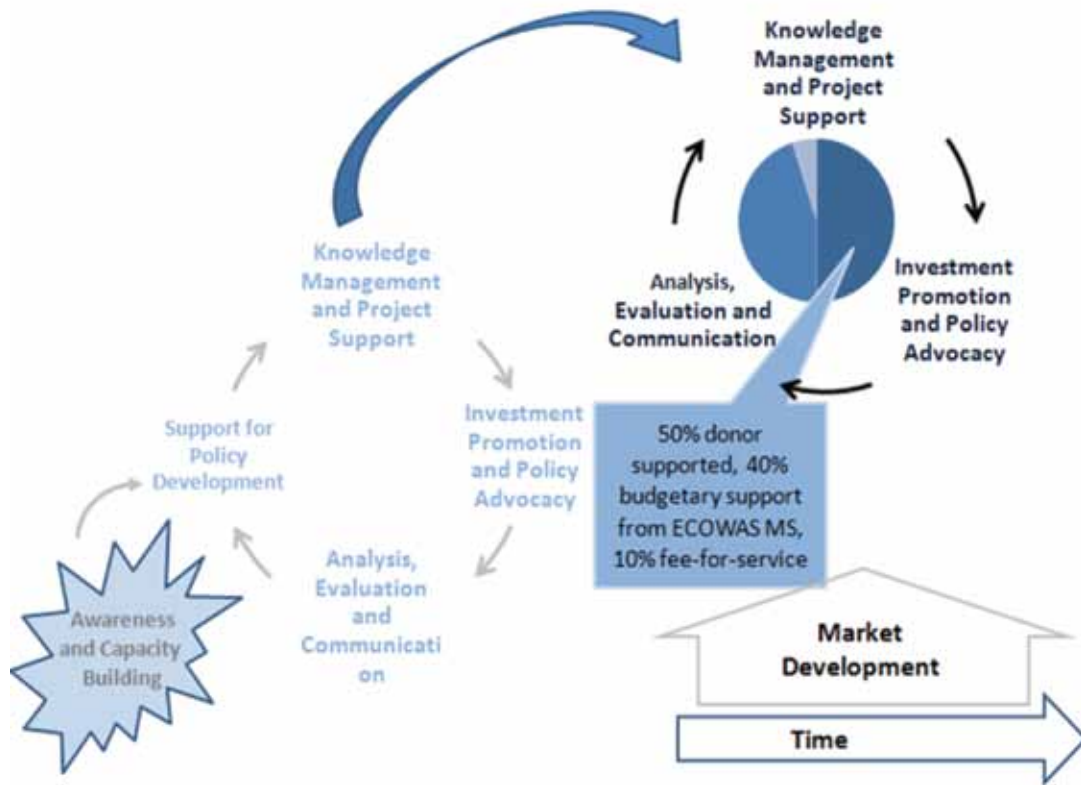


FIGURE 12: EVOLUTION OF ECREEE REVENUE SOURCES — YEAR 2020



c) ECREEE’s business community network

The community of RE businesses and financial institutions active in West Africa – including project developers, equipment manufacturers and suppliers, investors and sources of financing – constitutes the group of entities that is directly involved in the completion of existing RE projects in the region, and will be responsible for financing and implementing the expansion of business activities there in the future. While ECREEE’s institutional structure provides some scope for interaction with this segment of the private sector and those NGOs that undertake small-scale projects employing commercial principles, through ECREEE’s TC, it is not clear that this mechanism will enable ECREEE to establish an effective line of communication with the private sector entities that are already engaged in project development activities in West Africa. Nor is it clear that the international organizations representing the global clean-energy sector, with which ECREEE has begun establishing links (one example is IRENA) address specifically business-oriented concerns.

There are other organizations, such as the World Wind Energy Association (WWEA), the International Council for Sustainable Energy (ICSE) and the IHA, that serve as advocates for their specific industries and provide information and resources to support the growth of their industries. Nonetheless, it is not clear that these institutions or the many others organized around a specific technology (wind, hydropower, solar energy, 2nd generation biofuels, geothermal, etc.) can adequately address the specific concerns of those companies and investors that are actually doing business in the RE sector in West Africa. Collaboration and assessment from the Private Sector Directorate of the ECOWAS Commission must be engaged. This Directorate is the link among all ECOWAS companies and the Regional Governments. Conversely, the network of international chambers of commerce has a relatively limited footprint within the region, and has worked to a limited extent on issues related to RE and EE. The best organized business chambers are located in Nigeria, Ghana and Senegal,⁸ and work primarily on national level

⁸ For instance, International Chambers of Commerce (ICC) has national committees in Ghana, Nigeria, Senegal and Togo. There are American Chambers of Commerce (AmChams) in Ghana, Nigeria and Senegal. There are German chambers in Nigeria and Ghana.

business policy concerns, and to the extent that they do address regional commercial integration issues, these are unlikely to have reached the degree of specificity involving issues such as EE standards, or a regional RE policy. However, these institutions can clearly provide a critical point of contact for ECREEE in its efforts to develop a broader network within the business community in the region.

To address the needs of this sector, which is expected to grow further as a result of ECREEE's own efforts, as well as those of other programmes, the Centre, in close partnership with the ECOWAS Commission's Private Sector Directorate, should **begin by creating a Business Advisory Committee (BAC) comprised of companies that are actively involved in RE and EE in the region.** Involvement could be defined as including the development of RE projects, manufacture or distribution of equipment, provision of specialized services, equity investment or financing. It should also take cognizance of the recommendations of the Third ECOWAS Business Forum with a view to effective implementation.

The ECREEE BAC would be composed of five to ten representatives, local companies and foreign companies based in the region or elsewhere but actively engaged in activities in the region (e.g. the Spanish Trade Offices in Senegal, Ghana and Nigeria are possible ECREEE partners in this activity as well as National Chambers of Commerce taking into account geographical balance and the promotion of regional industry. They might meet at the ECREEE Secretariat once a year and participate in periodic conference calls, perhaps on a quarterly basis. ECREEE would invite individuals to participate on the basis of a recommendation from the ECREEE EB or the TC, and their tenure would be for two years (this would be renewable). This designation would not be remunerated, but expenses associated with participation in the annual face-to-face meeting at ECREEE would be reimbursed by the Centre.

The purpose of the BAC would be for ECREEE's Secretariat and TC to engage in dialogue with private sector actors in the region on the following issues: business conditions particular to the RE sector; policy development needs and concerns; human resource development needs; case studies and examples. BAC will have an advisory status at ECREEE's Secretariat and may participate in the TC, but will not be involved with the EB. The establishment of the BAC will require that ECREEE allocate resources to its development, primarily for the salary of an investment and business promotion expert (see ECREEE's organizational chart) to develop a formal work plan to implement the strategy outlined here, working with ECREEE's team and the ECOWAS Commission Private Sector Directorate, local chambers of commerce, regional business organizations such as the AmChams and other chambers of commerce, and representatives of companies active in the sector in the region. Ideally, this individual would have previous experience working with business organizations in a West African setting, and have a network of contacts to begin developing the list of potential BAC members. This individual would work closely with ECREEE's ED to formulate the specific activities that will be used to create interest on the part of businesses in the region in participating in the BAC, namely dialogues with policymakers. This individual would also work with the rest of the ECREEE team in the formulation of a concept for the regional conference and exhibition, together with the identification of a suitable partner from the list of firms engaged in the organization of business conferences in Africa, to develop the first West Africa regional event for the sector. The development of private sector match-making platforms between West African and international business organizations is also key to the success of this initiative. **Over time, the manager of the BAC would be expected to secure sponsorships and other support from companies for specific costs associated with these meetings, such as venues for business conferences, lunches and coffee breaks.**

The results of this dialogue would be valuable in the context of the Centre's implementation of its programmes, development of new initiatives, and more generally creating an institution that will be responsive to the long-term commercial needs of the RE and EE sectors in the region. Participation in the BAC would be of interest to the companies' representatives because it would offer a relatively low-cost way to engage in dialogue with ECREEE on matters that are central to the Centre's support to regional governments on RE&EE policy issues. At the same time, however, it is important that private sector participation does not undermine or influence ECREEE procurement decisions or result in undue influence over ECREEE's activities in the policy arena. The institutional arrangements necessary to ensure this include the following: (1) limiting the term of members of the BAC to two years; (2) requiring that an existing ECREEE body (Board or Technical Committee) invite individuals to become members of the BAC; (3) separating membership on the BAC from membership of another ECREEE body; and (4) establishing a directive to ECREEE management that the level of financial support or payment for commercial services of ECREEE by corporate entities owned, controlled or managed by members of the BAC be monitored and reported to the Board in the context of regular reporting on the financial affairs of ECREEE.

d) Extension of donor pipeline

Alongside the execution of programme activities under the agreements it already has in place (or will soon sign with donor agencies), and in addition to administrative and managerial consolidation, ECREEE must cultivate future collaborations with new donors (as well as existing ones). The process of developing a diversified pipeline of future activities is essential for the long-term development and growth of the Centre, and this function must be firmly established among the core activities. **By 2016, the Centre seeks to sign at least five financing agreements with donor partners (see performance indicators in Result Area 1).** Cooperation with the following partners will be particularly strengthened:

- **Cooperation with the European Commission.** The EC already supports two ECREEE projects: the SEEA-WA project through the ACP-EU Energy Facility and the ECOWAS Renewable Energy Policy Project through the Renewable Energy Cooperation Program (RECP) of the Africa-EU Energy Partnership. Particularly, the new RECP strategy offers further opportunities for ECREEE to mobilize funding for its envisaged activities. ECREEE will strengthen its dialogue with the EUEI Partnership Dialogue Facility which is responsible for the implementation of the RECP.
- **Cooperation with USAID:** ECREEE has already engaged with the West Africa Regional Mission of USAID (USAID/WA, based in Accra), resulting in support for strategic and business planning activities, including those presented in this Business Plan, as well as proposed support by AIP. A possible further cooperation with USAID includes: (1) support for resource assessment and mapping linked with preliminary project assessments for on-grid and off-grid applications of renewable energy; (2) support for a programme to engage with regional utilities on issues related to (a) off-grid electrification programmes, particularly in countries where the institution responsible for electrification is especially weak, and/or (b) energy efficiency and demand-side management; (3) training and institutional development in the areas of energy efficiency audits, certification of auditors, laboratory accreditation and analytical support; (4) support to increase investment in clean energy as a key part of comprehensive efforts to promote low carbon economic development.
- **Cooperation with Brazil in the area of bioenergy:** Following the ECOWAS-Brazil Summit convened in Cape Verde in July 2010, ECREEE prepared a draft MoU for the creation of the ECOWAS-Brazil Renewable Energy Partnership (EBRAP). The agreement with Brazil was developed by the end of 2011 and will be signed in 2012. Further discussions on possible support for Brazil will be held in 2012.
- **Cooperation with the German government:** In 2011, the Centre initiated discussions with BMZ and GIZ on possible support to ECREEE's RE&EE capacity-building programme. Also, the possibility of a seconded GIZ expert was discussed.
- **Expand ECREEE's catalytic role to support investment in RE&EE projects in ECOWAS through cooperation with International Finance Institutions (IFIs) and national support instruments:** ECREEE seeks to expand its catalytic role in the region to facilitate engagement between development finance institutions and project developers. ECREEE seeks to foster the development of a 'virtual investment fund', a concept that envisages commitments by IFIs to allocate equity and debt financing for projects in the region while at the same time ECREEE, through the EREF, supports the development of a pipeline of projects for these institutions to review and select projects that fulfil their investment criteria. ECREEE is developing the concept for formal presentation to financial institutions, and has already developed contacts with two major IFIs involved in West Africa, the AfDB and the World Bank (this last through the ESMAP programme). However, there are at least two other institutions with a mandate to operate in the West African region, such as the International Finance Corporation (IFC) and the European Investment Bank (EIB), as well as numerous national institutions, some of which could be interested in playing a role in the region. These include the Overseas Private Investment Corporation (OPIC) [US], Spain's Development Promotion Fund (Fondo para la Promoción del Desarrollo, or FONPRODE), Germany's KfW Bankengruppe and the Japanese Bank for International Cooperation (JBIC) (we should perhaps mention the roles of EBID or BOAD). These institutions have access to grant funds to support project preparation activities, although the size of the available resources varies from institution to institution.

- **Request for Project Development Support from business promotion and support agencies (e.g. USTDA or ICEX).** ECREEE has not yet exploited the potential assistance that business support agencies from the US, Europe or Asia can provide for RE project development activities in the region. These institutions support commercial links between own countries' businesses and export opportunities by providing grants for overseas project planning activities, development of pilot projects as well as reverse trade missions. Potential discussion points and subsequent presentation in a formal request might include: feasibility studies for grid-scale renewable energy projects; a reverse trade mission featuring a portfolio of pre-screened renewable energy projects; technical assistance in the formulation of energy efficiency standards for equipment and machinery.

e) Non-grant sources of income for the Centre

As ECREEE expands and develops, it should begin to generate revenue from activities conducted on a fee-for-service basis, as opposed to revenues secured through donor support, without losing the public service nature and mandate of ECREEE. Two general approaches to this objective are identified here: (1) the '**membership organization**' model, whereby members pay annual dues in exchange for which they may participate in ECREEE's programmes and activities and receive information that is prepared, collected and disseminated by ECREEE; and (2) the '**commercial model**' based on the provision of services on a fee-for-services basis. It is important to note that these two models are not mutually exclusive, although a hybrid approach may require careful management of conflicts of interest.

It should be noted that each of these initiatives, as well as other initiatives that might emerge in the future, will require more detailed review to verify feasibility, relative potential impact in terms of revenue generation potential, to develop detailed work plans and identify possible contradictions with commitments under existing donor-supported programmes (particularly with respect to collection of fees for publications or training services). In many respects, these activities integrate numerous TAs and contribute to the achievement of results under more than one of the Result Areas established for the Centre, as noted above. Several specific areas of opportunity for further exploration, tentatively organized under the rubric of the membership organization and the commercial model, include:

f) Membership model

The membership model is based on the principle that companies and associations would join ECREEE as 'members', 'associates' or 'sponsors'⁹ in order to receive a series of specified benefits. These benefits might include: ability to participate in ECREEE events, conferences and seminars; subscription to ECREEE publications and access to ECREEE resources; and possibly, depending on the extent to which ECREEE develops activities that might be described as policy advocacy, a voice in the development of statements and recommendations presented by ECREEE to national governments. Clearly, activities more in line with advocacy for policies in support for RE and EE may make membership more attractive to businesses in this sector:

- **Conferences.** As a complement to the membership model, ECREEE could organize an annual membership conference and/or other events and seminars. ECREEE could undertake this with its staff (possibly expanded with an individual qualified in this area), or initially by teaming with an experienced conference organization firm, such as the one behind Renewable Energy Africa conference or one of the others active in the region, to host an RE&EE business conference for West Africa.¹⁰ The primary target for the event would be international companies interested in the regional market and regional companies, particularly those that would benefit from deployment of EE measures. Expectations of revenue generation in the first

⁹ The terminology employed should distinguish between companies and organizations, but the general arrangements should make it possible for as broad a set of stakeholders to join ECREEE. The participation of national governments, in particular, is especially important, given ECREEE's mandate.

¹⁰ There are already various Africa-oriented and even West Africa-oriented renewable energy business conferences – one scheduled for 2011 is Renewable Energy Africa, in Johannesburg [<http://www.reafrica.co.za/contact.htm>].

year would likely be limited, but if the first event achieves reasonable attendance goals, revenue potential in ensuing years would increase.

- **Awards dinner.** Another possible complement to the membership model, which is a frequently employed strategy for generating revenue for organizations similar to ECREEE, would be to establish an annual award and organize a presentation ceremony, typically in the context of an annual dinner accompanied by a speech from a senior official or other notable person. Often, the dinner is scheduled to coincide with another event, so as to increase attendance by allowing participants to combine the two events in one trip. ECREEE should explore the possibility of creating an ECREEE RE Business Award and/or a similar EE Award, for businesses engaged in the sector in West Africa. The award would be given to a company based in the region or engaged in project development or other business in the region that has exhibited excellence, creativity, leadership and/or innovation in the utilization, production or delivery of a renewable energy resource, or has achieved something comparable in the area of energy efficiency. Normally, such awards are based on a review of nominations submitted by stakeholders, and eligibility would be limited to entities not associated with an ECREEE-supported project to maintain impartiality; ECREEE's TC might be assigned the task of evaluating nominations and selecting a winner. Such events are generally funded with corporate sponsorships, with companies paying for a table at the event. ECREEE would likely choose to initiate the award and organize a relatively small awards ceremony in the first year so as to create awareness and interest, and seek to increase the size of the event in subsequent years.
- **Publications and research.** As ECREEE's research activities expand, and certainly as the Centre builds up the library of available information in the ECOWAS Observatory, the Centre should institute a requirement that delivery of on-time studies or annual publications would require payment of a reasonable fee. Examples might include regional surveys and maps, or an annual publication. Fees for such publications might be scaled, such that subscribers in the region would pay a lower rate than subscribers outside the region. For members, access to this information would be free. Fees would be set to cover the production costs of the document and handling, but would be unlikely to be able to cover overall preparation costs without reaching prohibitive levels. This initiative may require a phase-in in future years in order to comply with donor agreements that stipulate that information developed with their support be provided to stakeholders free of charge. Specifically, in the periods covered by donor support for the development of research and analysis, documents would be available free of charge; following conclusion of the donor-funded activities, those documents would continue to be available free, but new materials developed subsequent to the donor-supported programmes would be available for a fee. To facilitate such payments, it will be necessary to establish a suitable payment mechanism (ideally, an on-line payments system such as PayPal, although the technical considerations for such an arrangement would have to be evaluated); but given the realities of credit-card use in West Africa as well as willingness to pay, the only users who may be able to use this mechanism in the near term will be stakeholders located outside West Africa.

g) Commercial model

The commercial model entails the provision of specific services for clients that are identified either through direct marketing of ECREEE's services, through participation in competitive tenders or submission of unsolicited proposals. Work would be conducted by ECREEE's team of experts, possibly with the support of specialized contractors for specific assignments. Services could encompass any or all of the following areas:

- **Specialized information.** ECREEE's objective of becoming a clearing-house for information on the RE and EE sectors, together with the proposed objective articulated here of serving the business community active in the sector, and the Centre's effort to exploit digital and new media to maximum effect, could all coincide with the development of a service focused on the promotion of investment and business opportunities. Through the ECOWAS Observatory, ECREEE could develop a subscription-only service providing information on business opportunities for the RE&EE business community. The provision of

other types of specialized information services on a fee basis will have to be undertaken in accordance with the dictates of donor requirements so that information supported by donor programmes be freely available, and may therefore have to be phased in over time. More generally, ECREEE's objective of serving as a 'think-tank' and advocacy organization must be balanced with the need to generate revenue. This can be accomplished by offering the results of analysis and research in a summarized form free of charge, but charging a reasonable fee for the detailed and more extensive form of the reports. Members, whether national governments or other organizations, would have access to the information free of charge as part of their membership.

- Specialized training services.** While based on a limited number of conversations to date, it is likely that businesses active in the RE&EE sector in West Africa may have, or will require as the sector develops, training in specialized areas. Targets for fee-for-service activities would be private entities, as distinct from government agencies or NGOs, which are assumed to lack sufficient financial resources to pay for training. Specific training needs may range from topics related to evaluation of specific technologies to more vocationally oriented worker training intended to support the operational phase of projects in specific countries. For example a representative of Africa Renewables noted that equipment for use in the company's biomass energy project in Côte d'Ivoire is not currently used in West Africa, and hence there are no experienced operators resident in the region. The company will require training for its staff. While this specific instance may not present a 'commercial' opportunity for ECREEE at present, this type of requirement will emerge more frequently in the future, creating demand that the Centre could serve by offering training programmes at training centres with which it has agreements, or in conjunction with NFIs in a specific country. ECREEE's role will not be that of the institution providing the training so much as the entity serving as a clearing-house for information on available programmes and facilitating the identification of sources of training for institutions and companies in the region.
- Certification and accreditation.** The development of an EE sector in West Africa, as well as the development of the infrastructure for testing and conformity assessment that will be required for the implementation of a system of regional EE standards, will necessitate the certification of individuals who provide energy audits, manage testing laboratories and provide related services, and the accreditation of the companies and institutions that offer these services commercially. The performance and issuance of certifications, the performance of periodic re-certifications, and the accreditation of organizations that offer various services in this sector, is in itself a service that may be provided by ECREEE on a fee-for-service basis. The performance of certifications and accreditations is a highly technical activity requiring specialized staff that ECREEE does not have in place at the present time, but it could develop this capability in order to be able to provide them as the market develops, and in particular as key elements of the marketplace, specifically regional standards as well as national regulations and codes are put in place. In the near term, ECREEE should explore the possibility of working with a specialized international partner to provide certification for individuals. One example is the Certified Energy Manager certification offered by the Association of Energy Engineers (AEE),¹¹ which offers certification courses for various aspects of energy management, energy efficiency, and the development of energy efficiency laboratories. AEE typically provides these services outside the US through the implementation of a train-the-trainers methodology through local chapters; in the West African region, AEE has no chapters, so ECREEE could propose to serve as one. As an AEE chapter, ECREEE would gain access to a wide range of AEE materials as well as insert itself into an international network that would be an invaluable resource for the development of ECREEE's own capacities and those of organizations in the region. As in the case of the provision of energy audits, ECREEE would serve as a catalyst, withdrawing from the provision of these services for specific countries as local entities emerge. Further, it should be noted that in the absence of national policy, or regional agreement on a regional policy, at the outset the certification should be voluntary. Voluntary certification can be a powerful marketing tool, although it requires a process of education and sensitization for the entities that would be the beneficiaries of the standards of quality that such certification would provide. Subsequently, and only after the emergence of service providers in this area as well as the appropriate regulatory framework, this certification could become mandatory.

11 More information is available at www.aeecenter.org.

h) Other grant-based sources of revenue (not public funding)

While grants from bilateral donor agencies, multilateral institutions and international development banks will be a source of support for ECREEE, the Centre should also explore the possibility of securing grants from private foundations and the grant-making divisions of international corporations active in the region, particularly their Corporate Social Responsibility (CSR) programmes. From the standpoint of programme structure and administration, private foundations and CSR programmes are likely to be similar to public sector donors, in that there will be specific reporting requirements, possibly specific procurement procedures and restrictions on the uses of the funds. From the design standpoint, private foundations will have their particular areas of interest and preferences regarding the type of activity and approaches, but these are unlikely to be any more cumbersome than those observed in the public sector.

i) New assets for ECREEE

Based on the action plan of the ECOWAS/UEMOA White Paper on Energy Access, ECREEE has prepared a proposal for the establishment of an ECOWAS Renewable Energy Facility (EREF), for which the Centre has begun discussions with potential sources of grant and debt resources to establish it. To pave the way for the creation of the EREF and generate interest in the stakeholder community throughout the region, ECREEE has already launched the first call of the EREF proposals for May 2011 to support pre-investment or business development activities in the RE&EE space.

The EREF Concept Paper refers to several potential windows for the Facility: (1) a grant window to support pre-investment studies for projects that will employ RE or EE technologies in peri-urban and rural areas of West Africa; (2) a grant window for business development, training and knowledge management activities; and (3) in the longer term, a 'tailored loan fund' that will make loans of varying sizes for small- and medium-scale projects. The Concept Paper also mentions risk capital, although it is not explicit as to whether this would translate into an actual equity share in any projects. The Concept Paper focuses on smaller projects in rural and peri-urban settings, which are likely to include a high percentage of rural electrification projects that are typically less attractive to investors, but may, depending on how they are structured, provide modest returns. In future, the EREF concept can be used to launch calls for larger, more attractive investments in the renewable energy sector that are also under development in the region. However, it is assumed that capital is more plentiful for projects in this class, although some investors note that concerns about the viability and risk associated with renewable energy projects may still make it necessary for donor support to play a role. Therefore, there may be a role for EREF to play in also providing early-stage capital for the development of large-scale projects.

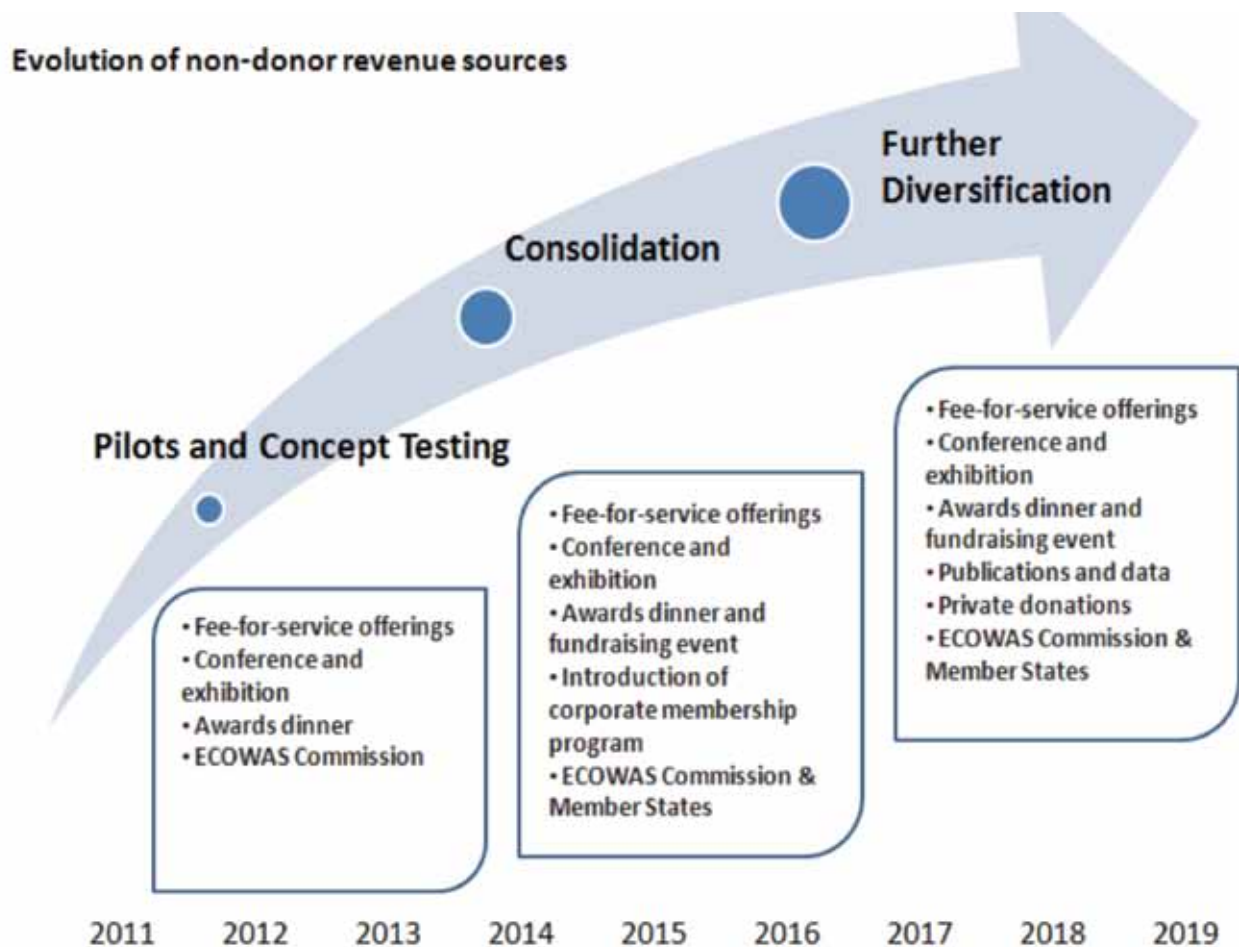
To the extent that the EREF facility, as shaped in further discussions with donors, could provide support for early stage preparation of larger projects, there could be an opportunity for ECREEE, as the manager of EREF, to negotiate a carried interest in a major project in exchange for early stage support. Such equity stakes in regional RE&EE projects, while small, would have value and possibly would generate dividends to ECREEE. Of course, such investments would be highly speculative, so the likelihood of securing any return would be relatively low.

Meanwhile, if structured appropriately, the tailored loan fund could generate repayments and interest from loans made to projects, with these payments going to ECREEE if the facility is managed by ECREEE directly. Should ECREEE be able to secure donor support for a funding mechanism that allows for reflows of interest and principal to ECREEE (as opposed to the donor), with interest payments accruing to ECREEE, this mechanism would also be a source of revenue for the Centre. However, it should be noted that the effective management of a financial services programme for RE and EE projects and businesses will require a specialized team not yet in place at ECREEE; development of this activity will therefore require staff growth at the Centre. Moreover, these potential revenue sources for ECREEE are speculative, particularly insofar as the potential for returns on equity investment is concerned.

j) Financial evolution of ECREEE through to 2020

To achieve the long-term objective for ECREEE by 2020 the Centre will need to undertake a range of activities under the five categories described above. For the most part, these activities should be implemented *in addition to or in conjunction with* ECREEE's Work Plan, which has been prepared and approved by the ECREEE Board and for which the necessary human and material resources have been mobilized or will be mobilized during the course of 2012. The figure below summarizes the activities proposed in order to drive the evolution of ECREEE towards the long-term objective.

FIGURE 13: PROPOSED EVOLUTION OF ECREEE THROUGH TO 2020



ANNEX C: LIST OF RE&EE INSTITUTIONS IN ECOWAS

Box 1: Sample list of organizations active on renewable energy and energy efficiency in West Africa

NGOs

Lambassa Institute of Cultural Affairs, LICA (Benin)
 GoSolar Africa (Nigeria)
 E&Co West Africa (Ghana)*
 SOS Energie Burkina Faso, SOSEB (Burkina Faso)
 Green Actors of West Africa (Sierra Leone) (<http://www.greenactorswestafrica.org/>)
 Energy for Opportunity (Sierra Leone)
 Center for Sustainable Energy Technology (Liberia) (<http://csetliberia.org/home.html>)
 ENDA Tiers Monde (Senegal)*
 Mali Folk Center (Mali)*
 Ghana Energy Foundation (Ghana)*
 Songhai Center (Benin)* (<http://www.songhai.org>)
 Community Research and Development Center, CREDC (Nigeria) (<http://www.credCenter.org>)

Academia

Kumasi Institute of Technology, KITE (Ghana)*
 Energy Center at Kwame Nkrumah University of Science and Technology, KNUST (Ghana)
 Fondation 2iE (Burkina Faso)*
 Jean Piaget University (Cape Verde)
 Universidade de Cabo Verde (Cape Verde)
 National University of Côte d'Ivoire (Côte d'Ivoire)
 Ecole Supérieure Inter-africaine d'électricité de Bingerville (Côte d'Ivoire)
 Ecole des Mines, de l'Industrie et de la Géologie (Niger)
 Universities of Nsukka, Sokoto and Maiduguri (Nigeria)
 Ecole Supérieure Polytechnique (Senegal)
 Centre d'Etudes et de Recherches sur les Energies Renouvelables (Senegal) (<http://cerer.ucad.sn>)
 Center Africain d'Etudes Supérieures en Gestion, CESAG (Senegal) (<http://www.cesag.sn>)
 Fourah Bay College, University of Sierra Leone (Sierra Leone) (<http://fbcusl.net>)
 CRES (Center régional de l'énergie solaire) (Mali) *

Government and multilateral

AMADER (Mali)*
 ASER (Senegal)*
 UNIDO Regional Center for Small Hydropower in Africa (Nigeria)*
 Gambia Renewable Energy Center (Gambia)
 Council for Scientific and Industrial Research, CSIR (Ghana)
 CNESOLER (Mali)
 Center Nationale d'Énergie Solaire, CNES (Niger)
 ARC-AGHRIMET Regional Center (Niger)
 Nigeria Rural Electrification Agency (Nigeria)
 LESEE in Burkina

Business (preliminary listing)

Solar Solve Ltd (Nigeria)
 AID (Mali)
 Africa Renewables Ltd (Côte d'Ivoire, Ghana)
 Buchanan Renewables (Liberia)

*Organizations known to have received international donor support.

APPENDIX D: CASE STUDIES OF OTHER REGIONAL RE&EE CENTRES

Box 2: Case Study of MEDREC Structure & Strategy

The Mediterranean Renewable Energy Center (MEDREC) started in 2004 as an energy centre initiative involving the North African states (Algeria, Tunisia, Morocco, Libya and Egypt) and the Italian Ministry of the Environment. The Italian government maintains the financial needs of the Center and covers approximately 60% of the costs of the organization. The North African states and European Communities cover the remaining 40% of the costs the financial backing of MEDREC changes annually depending on the budget of the Italian Ministry of the Environment and the commitment of the North African states to allocate funding to the initiative.

Currently, MEDREC maintains a permanent mixed staff of Tunisian and Italian experts based in Tunis. The permanent staff works with country experts in the North African states to offer on-the-ground insight to renewable energy projects in country. Rather than contract renewable energy programmes throughout the region, MEDREC allocated funding to country projects in which larger international bodies lead the project. MEDREC recently funded the PORSOL project in Tunisia for Solar Water Heating with UNEP leading the contract. MEDREC wants to expand the Solar Water Heating project to appropriate areas of North Africa; however, a lack of funding is inhibiting the growth of the organization.

Whereas the Italian Ministry of the Environment primarily funds MEDREC with the cooperation of the North African states, few sustainable projects exist in the region. MEDREC seeks to develop comprehensive feasibility studies and data sharing for the North Africa region; however MEDREC still needs to create an online access point for purchasing information. MEDREC desires to be a prominent regional force in North Africa for renewable energy development but must diversify its funding pipeline to sustain organizational growth.

Box 3: Case Study of OLADE Structure & Strategy

The Latin American Energy Organization (OLADE) started in 1973 in response to the international energy crisis from the early 1970s. OLADE requires membership dues from the 27 member countries, which vary depending on the GDP of the country; larger economies contribute US\$ 250,000 per year (€242,718); smaller economies contribute US\$ 25,000 per year (€ 19,230). Regardless of the size of a member country's economy, OLADE weighs equally the voting rights of the countries. The membership dues pay for OLADE's administrative costs, which currently sustains a staff of approximately 100.

Although member country dues primarily support OLADE, bilateral and multilateral donor agencies distribute additional funds to the organization. For additional revenue sources, OLADE offers an online membership for data and hosts regional conferences. OLADE started the collection of data and information surrounding energy in the Latin American region when initially established and continues this practice to raise revenue and awareness. Approximately ten years ago, OLADE began charging a fee using their data and information collection services online. Currently, an online data membership costs US\$ 200 annually (€153). In 2006, OLADE began charging fees for hosting regional conferences and workshops, which generates a small amount of revenue for the organization. Aside from various workshops on topical issues such as rural electrification, energy statistics, electricity generation, hydrocarbons, etc., three regional conferences are held annually; Forum for Regional Energy Integration (FIER); Latin American and Caribbean Seminar on Biofuels; and Latin American Carbon Forum. Participation in the conferences and workshops generates revenue for OLADE and promotes the brand region-wide.

Given OLADE's government funding, additional sources of revenue limit the scope of membership; therefore, OLADE does not support private company membership. OLADE encourages private companies to participate in the ministerial meetings and invites these companies to the annual conferences; however, private companies do not have a voting interest in OLADE.

Box 4: Case Study of the Alliance to Save Energy Structure & Strategy

The Alliance to Save Energy (the Alliance) started in 1977 in response to the OPEC oil embargo and acts as a non-profit, non-partisan organization dedicated to the education of the general public, collaboration with the energy industry and trade associations as well as organized labour, advocacy for energy efficiency with state and local governments, and work with Washington policymakers to show the advantages of energy efficiency proposals. Originally, two voluntary boards governed the Alliance: the Board of Directors with 35 members devoted to activities and fundraising, and the Board of Advisors, which originally hosted 145 members and is currently comprised of Associates of the companies that pay a contribution for specialized services. Currently, one board of directors acts as the decision-making body for the Alliance and a member group of Associates support the board but do not have voting rights. In the Alliance's first year, 720 organizations and individuals pledged as members, which brought in approximately US\$ 34,000 (€ 26,000) in membership dues. In 2009, the Alliance received US\$ 1.2 million (€ 920,000) in membership contributions, which accounted for only 10% of their annual revenue and support. The Alliance's remaining revenue and support in 2009 consisted of grants from the government (24%), corporations and foundations (45%), and special events revenue (24%), which makes the total annual revenue and support US\$ 12,724,351 (€9,787,962).

As the Alliance gained recognition and grew financially, the administration adjusted the original strategy to maintain consistent donor interest and support. In 1977, the Alliance allocated 60% of their resources to education programmes throughout the US. By their second year, the Alliance had expanded the established education programme to include a nationally televised public service advertising campaign, distribution of information booklets throughout the country, and a widely circulated White Paper regarding energy efficiency policy for the US. By 1979, the Alliance had hosted a large scale international conference addressing global energy concerns titled Dynamics of Energy Efficiency, which hosted 150 leaders who participated in workshops devoted to various sectors affected by high energy costs. Between 1978 and 1979, government grants increased seven times and earnings from publications released by the Alliance flourished, which increased the total assets of the Alliance from US\$ 38,035 (€29,257) in 1978 to US\$ 140,390 (€107,992) in 1979. The growth in revenue led to the development of a library, local Alliance branches throughout the US and successful advocacy work in Congress to set stiff national conservation goals.

The Alliance continues to increase its revenue annually; however, the expenses mix changes gradually, showing a mix over the past 30 years of employing staff and hiring consultants. The Alliance's first ten years of operation showed an increase in salaries and benefits for Alliance employees and a decrease in professional fee and contract services expenses. From 1987 to 1997, the professional fees and contract services expenses tripled, which caused the proportion of revenue spent on salaries to drop by one quarter. Office expenses, such as advertising, travel, and occupancy, remained a consistent expense from 1977 to 2007, fluctuating from 27% to 38% of the Alliance's total expenses. By 2007, the financial mix included: office expenses (38%), professional fees and contracting services (29%), salaries (22%), and benefits (13%). Recently the Alliance hired new staff to make the total 71 personnel after 35 years. The Alliance evolved from its founding mission of providing awareness in the US to influencing the global debate on the energy sector.



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