



TERMS OF REFERENCE (TOR)

Consulting services for the design of the Economic Community of Central African States Sustainable Energy Centre (ESEC)

Project Title: Preparatory phase for the Economic Community of Central African States Sustainable Energy Centre (ESEC)

Statement of Work: Conduct a consultative needs and feasibility assessment and develop the project document on the first operational phase of the centre

1. Country/ Region

ECCAS Member States, or ECCAS Region include: Angola, Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Rwanda and Sao Tome and Principe.

2. Organizational Background

The United Nations Industrial Development Organisation (UNIDO) is a specialized Agency of the United Nations based in Vienna, Austria. Its mandate is to promote and accelerate sustainable and inclusive industrial development in developing countries and countries in transition.

The Climate Policy and Partnerships Division (CPP) of the Department of Energy (ENE) aims to accelerate the uptake of integrated and inclusive markets for sustainable energy and climate technology products and services in LDCs, SIDS and emerging countries through policy support, advocacy, convening, knowledge and information systems and the creation of industry networks, associations, clusters and institutions.

The Economic Community of Central African States (ECCAS; French: Communauté Économique des États de l'Afrique Centrale, CEEAC; Spanish: Comunidad Económica de los Estados de África Central, CEEAC; Portuguese: Comunidade Económica dos Estados da África Central, CEEAC) promotes regional economic co-operation in Central Africa. It "aims to achieve collective autonomy, raise the standard of living of its populations and maintain economic stability through harmonious cooperation".

3. Project Background

UNIDO and ECCAS are partnering on the establishment of the ECCAS Centre for Sustainable Energy (ESEC) as part of the Global Network of Regional Sustainable Energy Centres (GN-SEC) Programme.¹ The process is closely coordinated with the provided support of the International Renewable Energy Agency (IRENA) and the Africa-EU Energy Partnership (AEEP).

The ECCAS region is facing similar economic, social and environmental challenges as other regions in Sub-Saharan Africa. ECCAS is comprising 11 member states,² whereas most of them are classified as low or lower-income countries. ECCAS countries represent a growing population of 172 million and remain fragile in a political and economic view. In the energy sector, the region faces multiple challenges. Although the region has vast fossil fuel and renewable energy potential, the access rate to

¹ www.gn-sec.net

² ECCAS is a group of 11 member states: Angola, Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo, Gabon, Equatorial Guinea, Rwanda, and Sao Tome & Principe. It covers an area of 6.7 million km².

modern, reliable and affordable energy services remains very low. The total electricity production and consumption is lower than in other African regions.

Table 1. Total electricity production and consumption in Africa in 2017.

Region	Production (GWh)	Consumption (GWh)
East Africa	47,265	34,753
West Africa	68,620	54,731
Central Africa	35,235	27,954
North Africa	346,702	282,647
Southern Africa	320,953	318,595

In six countries the electricity access rate is lower than 50%. The power transmission and distribution systems often do not expand to rural and remote areas and are characterised by high electricity losses, load shedding and blackouts. Existing electricity infrastructure and hydropower generation capacity is also facing challenges by the impacts of climate change. The regional power market remains weakly developed. The majority of the population does not have access to modern cooking services and relies on traditional biomass in rural areas, or charcoal in urban contexts.

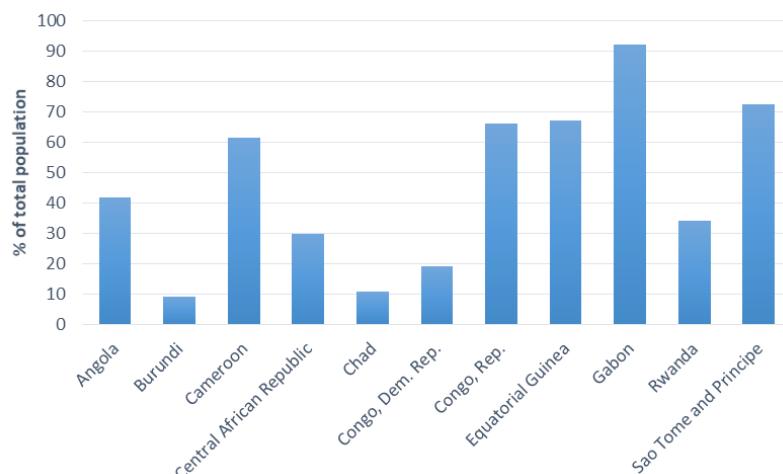


Figure 1. Electrification rates in Central African nations (2017).³

Of the 11 ECCAS member countries, seven (i.e. Angola, Cameroon, Chad, the Democratic Republic of Congo, the Republic of Congo, Equatorial Guinea and Gabon) are net exporters of energy (crude oil products). Apart from fossil fuel resources, the region has vast renewable energy potential, particularly large hydro, but also small hydro, solar, wind, geothermal and bioenergy. Already in 2015, around 50% of the electric generation capacity was based primarily on large hydropower. Hydropower resources of the region alone would be sufficient to meet the power needs of the entire African continent. Only a fraction is provided today by other renewable sources.

To achieve the energy access, energy security, environmental (GHG emissions, local pollution) and socio-economic development goals simultaneously, significant financing for ECCAS sustainable energy infrastructure is required in the upcoming years. The *Renewable Energy Road Map for Central Africa*, developed by IRENA and ECCAS, demonstrates that around 80% of the electricity mix could be provided by renewable energy sources (around 25% by non-large hydro) by 2030. Moreover, the area of distributed renewable energies in urban settings and the area of mini-grids and stand-alone systems for rural energy could play an important role. Similarly, the area of energy efficiency is important. Existing data indicates that all dimensions of energy efficiency are a challenge for ECCAS

³ World Bank, Global Development Indicators. <https://data.worldbank.org/>

countries. This includes the area of technical and commercial generation/transmission losses as well as efficiency standards for lighting, appliances, buildings and key industries. Only a few ECCAS countries have adopted effective policies, regulations and standards incentivising the use of renewable energy and energy efficiency solutions. Only three countries (Angola, Cameroon, Rwanda) have set concrete targets of achieving 100% electricity access by 2030.⁴

The establishment of an integrated and inclusive ECCAS market for renewable energy and energy efficiency products and services by 2030 is facing manifold barriers, which need to be addressed simultaneously in all countries. These barriers exist in the areas of planning, policy and regulation, qualification and certification, knowledge and data management, as well as financing, entrepreneurship and innovation. The IRENA road map document identifies priority actions to address the existing barriers for renewable energy markets on a regional level. One key recommendation includes the establishment of a dedicated regional entity to promote renewables and energy efficiency.

With the creation of the Central African centre, the Global Network of Regional Sustainable Energy Centres (GN-SEC) would cover all parts of Africa. The centre could closely cooperate with RCREEE, ECREEE, SACREEE and EACREEE, the regional economic communities and the power pools on intercontinental issues under the African Union (AU) framework. GN-SEC examples have proven, that the strengthening of regional capacities through a dedicated institution can help to accelerate national efforts and contribute to better coordination, coherence and equal progress, as well as economies of scale. The centre will remain in full ownership of ECCAS. UNIDO will provide mentoring and technical services for the establishment of the centre and its technical program throughout the first operational phase.

The creation of ESEC is fully in line with the regional policies of ECCAS and the Economic and Monetary Community of Central Africa (CEMAC). It is part of the ECCAS efforts to establish an integrated and inclusive single market for products and services in traditional and emerging sectors, including sustainable energy and cleantech. The establishment of the centre will complement and significantly contribute to the existing efforts of ECCAS to promote energy and transport connectivity in the region. It is also part of strategies, which aim to diversify the economies and reduce the dependency on the export of raw materials and primary products (incl. fossil fuels).

Important reference documents are the ECCAS Green Economy and Renewable Energy Vision, the ECCAS Vision 2025, as well as the CEMAC White Paper and Energy Policy 2035. The establishment of ESEC is complementary to the efforts to expand the regional power market through the Central African Power Pool (CAPP) and the Southern African Power Pool (SAPP). Some of the countries are also part of the Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE) and the East African Centre for Renewable Energy and Energy Efficiency (EACREEE).

UNIDO and ECCAS have agreed to implement a comprehensive consultative preparatory process, which will determine the added value, feasibility as well as the technical and institutional design of the centre. The process includes the preparation of a needs and feasibility assessment, a project document on the first operational phase, as well as broad stakeholder consultations and a validation workshop. The goal is to submit the project document for consideration by the Energy Ministers and Heads of State in June 2020. The project document will include the technical and institutional design of the centre. The UNIDO model foresees that the host country for the centre be selected through a competitive bidding process, in line with a mutually established evaluation framework.

To ensure timely finalization of the process, UNIDO and ECCAS seek services from a qualified team of consultants.

⁴ Sustainable Energy for All Agenda Objectives (2019). <https://www.se4all-africa.org/seforall-in-africa/country-data/>

4. Objectives

The objectives of the assignment are as follows:

- a. Review existing literature and reports, and complement the IRENA Roadmap with a short chapter on energy efficiency (max. 7 A4 pages). The chapter will inform briefly on the status and main barriers for the creation of energy efficiency markets. It will provide recommendations for potential regional interventions to complement and accelerate national efforts. The assignment does not include the development of another RE&EE baseline report.
- b. Undertake broad stakeholder consultations and develop a needs assessment report to determine the added value of the centre, and to identify the priority needs of various public and private key stakeholders;
- c. Based on the results of the needs assessment, elaborate a feasibility analysis and project document on the first operational phase of the centre. The feasibility analysis will determine the most effective/optimal institutional/technical design of the centre and its financial sustainability. The project document will be based on the UNIDO templates of other centres;
- d. Assist in the preparation of the contents of the validation meeting, scheduled to take place in May/June 2020 in conjunction with a meeting of ECCAS Energy Ministers. Participate and present the results of the draft needs and feasibility analysis, act as moderator in working groups, develop the meeting minutes and incorporate changes in the documents;

5. Scope of the required consultancy services

Due to time and budget constraints the scope of the assignment will be limited. In case local experts are included, it is estimated that two missions to the ECCAS region be required.

Tasks	Deliverables	Indicative scope of the assignment in working days	
		Inter national Cons. (intern. rates)	Local Cons. (local ECCAS rates)
1. Preparation of an inception report on the assignment (including detailed time schedule, mile-stones, needs assessment and feasibility analysis methodology, planned stakeholder meetings and interviews); participate in a physical kick-off meeting at ECCAS; it should include: <ol style="list-style-type: none"> a. A table of contents of the needs assessment report and project document (incl. feasibility analysis); b. A list of documents to be reviewed; c. A list of stakeholders to be contacted and interviewed; d. Final questionnaire to be used for interviews (based on the provided UNIDO template) 	- Inception report (incl. UNIDO and ECCAS comments)	3 w/d	3 w/d
2. Review existing literature and reports and complement the IRENA Roadmap with a short chapter on energy efficiency (max. 7 A4 pages). The chapter will inform briefly on the status and main barriers for the creation of energy efficiency markets. It will	- Energy efficiency chapter in English, French and Portuguese fully edited and ready to be	6 w/d	10 w/d

	<p>provide recommendations for potential regional interventions to complement and accelerate national efforts to address the barriers.</p>	published (incl. design)		
3.	<p><u>Stakeholder consultations and development of the needs assessment report</u> (maximum of 30 A4 pages) to determine the need and added value of such a regional RE&EE centre, which will serve as a basis for the feasibility analysis; map out the most important public and private RE&EE stakeholders and analyse them according to their interests, positioning and possible roles regarding the centre; clearly identify the individual priority needs of relevant stakeholders in the RE&EE sector; consider particularly the views of the private sector and civil society (e.g. gender groups); identify possible fields of cooperation and synergies exploring inputs from other relevant institutions within the ECCAS region and outside (e.g., IRENA, UN, EU, IFIs, GIZ, GEF and other environment-related facilities, etc.); The report will be produced through a desk review of existing publications, policy documents and studies, as well as via the collection of inputs from key stakeholders by using a questionnaire; If the scope of the assignment and the team structure of the contractor allows, the stakeholder consultations could include a number of national workshops with key players in the respective countries (working on the questionnaire in groups); UNIDO will provide a draft questionnaire for the needs assessment to be adapted by the consultants;</p>	<ul style="list-style-type: none"> - Validated final needs assessment report in English, Portuguese and French (incl. received comments from key stakeholders); the report will be provided fully edited and ready to be published (incl design); it shall be written in a form that it can be easily integrated into the ECCAS Energy Centre project document later on; - List of contacted stakeholders and reviewed literature; - Photo documentation on meetings and potential national workshops; - Statistical analysis of the received results through the interviews based on a questionnaire (the latter in .xls format and including graphs); 	10 w/d	12 w/d
4.	<p>Develop the project document on the first operational phase of the centre, based on a feasibility analysis (maximum 40 A4 pages) identifying the most (cost-)effective and feasible technical and financial design. The project document will be developed based on the provided UNIDO template and will include a well formulated results framework on the first five years of operation of the centre. Major parts of the project document will remain the same. The feasibility analysis will include at least the following elements/tasks:</p>	<ul style="list-style-type: none"> - Validated final project document (including the feasibility analysis) in English, Portuguese and French (incl. received comments during the validation meeting and partners); the study will be 	10 w/d	10 w/d

<ul style="list-style-type: none"> a. Map out the most effective and feasible institutional and technical design of the centre; the design shall be guided by the principles of relevance (for the needs of the population and private sector), local ownership, socio-economic and environmental sustainability and impact (see guiding principles of the UNIDO regional centres model); review and consider the lessons learned of UNIDO and other regional sustainable energy centres and incorporate them in the design; undertake a risk analysis and propose risk mitigating activities for each of the potential risks identified during the stakeholder and SWOT analysis, incorporating them into the design; b. Propose the most effective and feasible scope of mandate, strategic positioning, areas of intervention, key functions and services of the ECCAS Sustainable Energy Centre; the mandate and focus of the centre should demonstrate strong added value (relevance), contribute to the ECCAS energy agenda and complement or up-scale other regional and national programs or projects in the short-term and long-term; define a clear comparative advantage of the centre and specify the fields in which it should not work; clarify its connection and relevance to the ECCAS private sector and industry; c. Outline the most effective and feasible integration of the centre in the existing ECCAS institutional structure; define the cross-cutting areas with other thematic and regional programs; work out a suitable governance structure and internal decision making process, as well as internal rules and procedures (e.g. procurement, staff); define the relationship between the centre and other regional organizations (incl. CAPP, SAPP); identify the division of labour between the centre and other institutions or the private sector (what should the centre do and what others can do better); d. Develop the result framework (incl. measurable gender-sensitive indicators) for the recommended list of technical activities of the centre during the first operational phase for each of the areas of intervention to be defined (e.g. technology demonstration, promotion of trade, investment, entrepreneurship and innovation, policy development and implementation, capacity development, knowledge management and awareness raising); the framework shall aim 	<p>provided fully edited and ready to be published;</p>		
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<p>at high impact; propose a cost estimate for each of the activities for the first operational phase of the centre (expected to be four years); UNIDO/ECCAS will provide a template for the result framework;</p> <ul style="list-style-type: none"> e. Based on the result framework for the technical program and the ECCAS resource planning concerning its energy agenda, develop an estimation of needed administrative and staff resources required for the first operational phase of the centre (for five years); develop a staff chart for the first operational phase; f. Based on the result framework, and administrative and staff resource planning, elaborate an indicative budget for the first operational phase of the centre (60 months); it should include running costs (e.g. office, staff, equipment), as well as technical operational costs (technical activities); determine the financial feasibility of the centre based on the funding and available resources (equity, donor commitments, in-kind contributions); define different financial scenarios; g. Suggest a financial sustainability/fund mobilization strategy for the first operational phase; propose different business models to ensure the long-term financial sustainability of the centre; propose revenue generation activities; h. Identify development partners with interest to support the first operational phase of the centre financially and technically (e.g. seconded experts). 			
<p>5. Contribute to the execution and follow-up of the regional validation meeting to be organized by UNIDO and partners in conjunction with a ECCAS meeting of Energy Ministers in May/June 2020 (costs of the meeting are not part of the consulting assignment); present the results of the assessments; develop the minutes of the meeting; incorporate the comments into the documents; contribute to the agenda-setting, power point presentations and other necessary proceedings; act as moderator in working groups; the contractor will develop and hand-over a photo documentation of the meeting;</p>	<ul style="list-style-type: none"> - Meeting report and documents - Incorporated comments - Presentations - Photo documentation 	6 w/d	5 w/d
TOTAL		35 w/d	40 w/d

6. Deliverables and indicative time schedule

The contractor will be required to deliver the **following outputs in accordance with the time schedule:**

• Item	Final Inception report - incl. table of content of the EE chapter, needs assessment report and the project document (including the feasibility)	<i>Within one week</i>	<i>1st payment 20%</i>
• Item	First progress report in the form of the draft EE chapter, needs assessment report and project document	<i>By end of April 2020</i>	<i>2nd payment 30%</i>
• Item	Final report in the form of the final EE chapter, needs assessment report and project document	<i>By end of May 2020</i>	<i>3rd payment 50%</i>

In addition, the consultant will be required to deliver the following to the partners:

- Item **High-resolution photographs (min. 3 MB, at least 20 photos)** – that illustrate the undertaken activities. The consultants will cede all appertaining rights to unlimited use of the respective pictures to UNIDO, ECCAS and ADA.

The reports should be submitted in English, Portuguese and French language in MS Word and PDF format. All documents, including the raw files and data, become the property of UNIDO and ECCAS.

7. Coordination and Reporting

The main working languages are English and French. The experts/consultants will work under the supervision and guidance of the UNIDO and ECCAS Project Managers. During the assignment, the consultant will coordinate closely with development partners and other regional and national key stakeholders. Close coordination of the desk study with the project partners, at their discretion, is required to the extent needed to ensure the study's relevance to the ECCAS Region.

8. Qualification and Evaluation Criteria

QUALIFICATION AND EVALUTION CRITERIA

- Registered company or organisation with at least seven (7) years of international energy consulting experience, incl. in the Sub Sahara Africa;
- Immediate availability of the contractor;
- Ability to provide the deliverables within the given short time-frame and ability to regularly engage in skype meetings with the core team and relevant partners;
- Completeness of the offer as described below;
- The multi-cultural project team includes international expert(s) not from the ECCAS region (to ensure independence) and local experts from one or various ECCAS countries;
- The project team is fluent in English and French; Portuguese is a strong added value;
- The project team demonstrates strong academic background in energy technologies, energy policy and/or energy economics;
- The team leader has at least 10 years of consulting experience in energy policy and hold at least a Master degree in energy economics, engineering, renewable energy or environmental technologies; experience in Sub Sahara Africa is a requirement;

- Overall quality of the technical offer and the proposed implementation methodology and strategy;
- Scope and quality of track-record of the project team in renewable energy and/or energy efficiency particularly with regard to energy policy and sector planning;
- Scope of work experience of the project team with regard to the development of project documents;
- Scope of work experience of the project team in the ECCAS region;
- Work experience of the project team regarding regional technology centres and policies is an asset;
- Strong problem solving, communication, research and outstanding analytical writing skills, with a proven ability to write analytical reports;
- Ability to communicate effectively in order to communicate complex and technical information to technical and general audiences;
- Proven ability to lead and coordinate multidisciplinary teams;

9. Application Procedure

Applicants shall submit their written proposals in English:

- Short technical proposal (including proposed approach and methodology, work plan, detailed CVs of experts, copies of university degrees, certifications, licenses as well as proven track record of implemented assignments).
- Separate financial proposal in Euro including all costs and taxes (includes a detailed work-time-expert-diagram indicating daily rates for individual team members, travel costs).
- In general, the financial and technical offer should focus more on local experts in various ECCAS Member States rather than high travel budgets.

10. Further information

Applicants are requested to submit their proposals in English no later than **March 08, 2020, (23:00 hrs. CET time)** by registering on the UNIDO procurement system (www.unido.org/procurement). In case of difficulties, submissions could exceptionally be sent to procurement@unido.org and m.lugmayr@unido.org by providing an objective and convincing explanation for doing so.

11. Annexes

- Draft IRENA-ECCAS Renewable Energy Roadmap for Central Africa
- <http://www.gn-sec.net>
- <http://www.ceeac-eccas.org>
- <http://www.unido.org>
- Various business plans and project documents of the GN-SEC centres