RECP Scoping Mission

Senegal

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ABBREVIATIONS

AEEP	Africa-EU Energy Partnership
AFD	Agence Française de Développement - French Development Agency
ANER	Agence Nationale pour les Energies Renouvelables - National Agency for Renewable Energy
ASER	Agence Sénégalaise d'Électrification Rurale - Rural Electrification Agency of Senegal
CRSE	Commission de Régulation du Secteur de l'Electricité - Regulatory Commission for the Electricity Sector
COPERES	Conseil Patronal des Energies Renouvelables du Sénégal – Council of the Renewable Energy Private Sector
ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Center for Renewable Energy and Energy Efficiency
EU	European Union
EUD	European Union Delegation
EUEI – PDF	European Union Energy Initiative – Partnership Dialogue Facility
FiT	Feed in Tariff
GDP	Gross Domestic Product
GNP-SN	National Biogas Program of Senegal
GWh	Gigawatt hour
IFC	International Finance Corporation
IPP	Independent Power Producer
KfW	Kreditanstalt für Wiederaufbau - German Reconstruction Credit Institute
LCOE	Levelized Costs of Electricity
MEDER	Ministère de l'Énergie et du Développement des Énergies Renouvelables – Ministry for Energy and Renewable Energy Development
MW	Mega Watt
OMVG	Organisation pour la Mise en Valeur du Fleuve Gambie - Gambia River Basin Development Authority
OMVS	Organisation pour la mise en valeur du fleuve Sénégal - Senegal River Basin Development Authority
PASER	Plan d'Action Sénégalais d'Électrification Rurale – Rural Electrification Action Plan
PPA	Power Purchase Agreement
PSE	The Emerging Senegal Plan - Plan Senegal Emergent
PV	Photovoltaic
RE	Renewable Energy
RECP	Renewable Energy Cooperation Program

REFiT	Renewable Energy Feed-in-Tariff
SENELEC	Société National d'Électricité du Sénégal – Senegal National Electricity Company
SE4All	Sustainable Energy for All
SHS	Solar Home System
T&D	Transmission and Distribution
TA	Technical Assistance
toe	Ton oil equivalent
vRE	Variable renewable energy
WB	World Bank

1 Executive Summary

Senegal's population stood at 15.1 million people in 2015 with a national GDP of US$ 13.8 billion. Senegal is classified as a low income economy and in this decade the annual GDP growth (averaged 2010 – 2015) was 4.1%. However, 66% of the population remains below the poverty line and 38% are in extreme poverty. This is particularly the case in rural areas, where about 56% of the population lives.

The Plan for Emerging Senegal, adopted by the government in November 2012, constitutes the main document on social and economic policy in the medium and long-term (2035). The Government has set energy targets that can place renewables in a prominent position in the energy system, and specifically:

- Achieving a self-supply energy rate, excluding biomass, of at least 15% by 2025, thanks to the contribution of renewable energy and biofuels;
- Obtaining, in 2017, a rate of 20% renewable energy in overall installed generation capacity.

Renewable energy legislation has been approved, the renewable energy Law 2010-21 includes three topics IPP, self-generation, decommissioning. There are no outcomes from this Law. Main implementation pieces missing are:

- A compelling tendering scheme for RE utility scale grid connected RE;
- The publication of a tariff for the surplus electricity generated by self-consumption RE project.
- The definition of other possible support mechanisms for RE such as: fiscal incentives.

Despite regulatory efforts the results have been very poor and renewables have only 5% of the installed capacity for power generation.

There is no renewable energy feed-in tariff in Senegal. The Law established tendering as the way to set the tariff for RE projects. During the transition to tenders and until December 2013, the RE Law authorizes SENELEC to sign PPA with prospective RE IPP. After the publication of the RE Law, SENELEC received 112 spontaneous projects that were evaluated internally by a technical committee. The 31th of December 2013, ten PPA contracts were signed with IPPs. None of these contracts are on-line yet. Two of these contracts (20 MW each) are showing some progress in construction and may be on-line this year or during first half of 2017. It is not clear whether the other projects will be developed. It is not clear when first tendering for renewable energy capacity will be launched.

The RE Law defines self-producers as the companies or households that produce electricity from renewable energy sources for their own needs and whom can sell their surplus to the network operator. Tariffs and procedures for selling surplus form self-generation still pending.

From 2008 Senegal is implementing an innovative approach, by assigning, to private operators, rural electrification concessions. The Senegalese territory (rural/beyond the grid) has been divided into ten concessions, six of which were awarded to a private operator. The concessionaires received financial support in the form of grant for the investment and fiscal incentives. Nevertheless, for different reasons the results achieved by concessions are disappointing.

The mission witnessed considerable private sector interest in PV, both MW-scale and off-grid equipment/ applications. The private sector is being present and very active doing prospective works in the last years. To lobby for improving the enabling environment for renewable energy in Senegal, the private sector has come together under the Council of Professionals of Renewable Energies in Senegal (COPERES).

The Government of Senegal has many programs and projects in the energy sector and receives considerable support from development partners. This support is focussed on infrastructure and rural electrification mainly and, to a lesser extent, enhancing capacity in the institutions to develop the MW-scale grid-connected renewable energy sector.

The scoping mission identified gaps and opportunities in the meso-scale renewable energy markets in Senegal where RECP may add value and to the existing programs. Main areas and gaps are:

1) Grid connected, MW-scale. RE African markets have small scale (sometimes for limitations like the grid). The development of the RE national African markets will benefit from a supranational initiative that could address common challenges and opportunities as access to the climate finance of an industrialization strategy for the different African regions.
2) Decentralized grid connected. There is a need for a regulatory framework (technical and financial schemes).
3) Off-grid:
    - Need to promote quality standards.
    - Opportunity to promote demand driven productive applications.
4) Awareness and Education. There is the possibility to complement comprehensive, but always limited, activities on RE education. There is a great opportunity to stimulate demand for RE equipment by increasing awareness and information.

Working principally with a local partners the RECP could undertake a number of activities to provide this assistance including:

Utility scale renewables

- Exchange between African RE private sector associations on finance and industrialization.
- Cluster for RE in Senegal, gathering all the RE actors in Senegal (public, private, non-governmental) to improve participation of the private sector in the decision making process.

Decentralised grid connected renewables

- Regulation for decentralized generation, both for self-consumption and to feed at distribution level (technical documentation and possible support schemes).
- Identification, assessment of the economic and social impact and dissemination of successful projects.
- Market study for PV for water pumping (mainly for irrigation).
- Trade mission on SHS markets (European and African companies).

Off-grid rural electrification

- Identification, assessment of the economic and social impact and dissemination of successful projects.
- Support the use of standards for solar equipment and appliances / household products.

Increasing renewable energy awareness and education

- Support PESEREE in on-line RE&EE education. There is a comprehensive initiative with local universities on increasing, adapting to local market need and harmonizing RE curricula in existing master's program. Nevertheless, the on-line component is missing.
- Create a one stop shop of RE information, specifically aimed at project developers.

2 RECP in Brief

The European Union Energy Initiative – Partnership Dialogue Facility (EUEI PDF) was founded in 2005 by the European Commission and six EU Member States. The EUEI PDF focuses on the policy and regulatory environment and institutional and thematic capacity for effective partner structures. EUEI PDF also supports the Africa-EU Energy Partnership (AEEP) and has in that role developed the strategy[1] for the Africa-EU Renewable Energy Cooperation Program (RECP), which was launched on 2010. RECP focuses on the meso-scale segment of multi-million dollar investments in renewable energy. RECP supports activities in four Action Areas:

1) Policy advisory services
2) Private sector cooperation
3) Access to finance
4) Innovation and skills development

[1] http://www.africa-eu-renewables.org/index.php?lang=eng&page=21

3 Background

3.1 Country profile

Senegal's population stood at 15.1 million people in 2015 with a national GDP of US$ 13.8 billion. Senegal is classified as a low income economy[2] and in this decade the annual GDP growth (averaged 2010 – 2015) was 4.1%. However, 66% of the population remains below the poverty line and 38% are in extreme poverty. This is particularly the case in rural areas, where about 56% of the population lives.

In Senegal, biomass and petroleum products still account for 95% of the energy balance, renewable energy (including hydropower) cover 0.6%, while mineral coal that made its appearance in 2004 in the energy balance, makes 4 %. The capita energy consumption is still very low, 0.206 ton oil equivalent (toe) in 2009, well below the African average (over 0.5 toe) and the global average (1,2 toe).

Detailed country profile in annex 2.

3.2 Stakeholders in the power sector

Ministère de l'Énergie et du Développement des Énergies Renouvelables (MEDER) - Ministry of Energy and Renewable Energy Development

The Council of Ministers takes the major decisions related to energy, especially in terms of on-grid electricity. The Ministère de l'Énergie du Développement des Énergies Renouvelables is the lead agency in charge of formulating, coordinating and setting overall objectives, policies, strategies, and general directives for the entire energy sector and the renewable energy sub-sector. Furthermore, it is authorized to issue directives to SENELEC. The acting minister is Thierno Allassane Sall.
The ministry is divided in five Directorates: Electricity; Hydrocarbons; Strategy and Regulation; Renewable Energy and General Administration. In addition, the Ministry is responsible for the following public entities:

- Agence Nationale de l'Electrification Rurale (ASER) ;
- Commission de Régulation du Secteur de l'Electricité (CRSE) ;
- Comité National des Hydrocarbures;
- Agence pour l'Economie et la Maîtrise de l'Energie;
- Agence Nationale pour les Energies Renouvelables (ANER).
- Société Nationale d'Electricité (SENELEC);
- Société PETROSEN;
- Société Africaine de Raffinage (SAR).

http://www.gouv.sn/spip.php?page=article&id_article=201

Commission de Régulation du Secteur de l'Électricité (CRSE) - Regulatory Commission for the Electricity Sector

The CRSE has the role of promoting competition, efficiency and economy in bulk power markets, as well as protecting consumers through regulating electricity tariffs and improving the quality of supply. It was formed in 1998 in order to ensure a fair and equitable treatment for all market players. The CRSE became fully functional with a chairman and technical members and advises the government on the

[2] https://datahelpdesk.worldbank.org/knowledgebase/articles/906519

removal of institutional barriers to bridging the supply/demand gap and foster the interests of consumers.
http://www.crse.sn/

Agence Nationale pour les Energies Renouvelables (ANER) - National Agency for Renewable Energy

The National Agency for Renewable Energy, has been created to support the promotion and development of these alternative energy in all their forms: solar, wind, biomass, tidal and small hydro. The ANER is striving to materialize the vision of an emerging Senegal which requires energy supplies in sufficient quantities at affordable prices and in accordance with sustainability requirements for households, businesses, community institutions and infrastructure. ANER is working in RE applications for public lighting, for pumping and in public buildings. In addition, they have developed the concept for a RE cluster in Senegal to gather all the RE actors in Senegal (public, private, non-governmental). They have looked to international experience as the one in Morocco. They will provide advisory support to the government and it is expected that it could (partly) generate their own income by doing consultancy.
http://www.aner.sn/

Agence Sénégalaise d'Électrification Rurale (ASER) - Rural Electrification Agency

ASER is responsible for Senegal's off-grid rural electrification and power generation, although some projects still fall under the utility's authority. ASER, which was established in 2000 but only became fully operational in 2005, has been given the responsibility of implementing the strategy for rural electrification (PASER). Villages close to the grid and the ones electrified before year 2000 fall under SENELEC's responsibility while all new rural facilities fall under ASER's.
http://www.aser.sn/

SENELEC (Société National d'Électricité du Sénégal)

National Electricity Company

The national electricity utility, Société Nationale d'Électricité du Sénégal, is a state owned enterprise which holds a monopoly for the transmission and distribution of electricity. The utility also owns about half of the generation capacity. The remaining is owned by Independent Power Producers (IPP) that sell exclusively to SENELEC. The utility has been through several phases of privatization. Its priority is to strengthen the capacity of power generation and implement organizational restructuring.
http://www.senelec.sn/

IPPs and Private Distribution Companies

Senegal was among the first countries in Sub-Sahara Africa to introduce private sector participation in the power sector in the late 1990s. At present there are six IPP operating a total of 365,5 MW. IPPs face challenges such as variations in the quality of fuel delivered, grid instability and other technical difficulties which have reduced electricity output from their plants. Some of these issues have been resolved and the Government of Senegal remains committed to relying on private sector investment to bridge the generation gap.

Promotion des Investissements et Grands Travaux (APIX) - Investment Promotion and Major Works Agency

APIX is a private company, of which the State of Senegal is the main shareholder. Its main objective is to promote investment in Senegal, both from local and international companies. APIX provide support for all administrative procedures needed to establish a company in Senegal as well as to apply for the different benefits provided by the government for the establishment of new companies in Senegal. APIX helps, as well, in the research and identification of local partners.
http://investinsenegal.com/

3.3 Policy framework

Senegal is engaged in the development of renewable energy since 1962, having a rich history in almost all fields of renewable energies. However, initiatives are often pilot projects conducted in compartmentalized manner.

The development of renewable energy in Senegal is driven by security of energy supply and reducing dependence on fossil fuel imports.

PSE (Plan Sénégal Emergent)

The PSE, adopted by the government in November 2012, constitutes the main document on social and economic policy in the medium and long-term (2035). It is recommended, through this plan, a more equitable geographical distribution of energy services and a better coordination of the energy sector with other strategic development sectors (education, health, agriculture, water and industry) to effectively fight against poverty and preserve the environment, in particular through the promotion of clean energy. With this new framework, the Government of Senegal is firmly committed to implement an approach with clear and identifiable energy targets that can place renewables in a prominent position in the energy system, and specifically:

- Attaining a contribution from renewable energy and biofuels of 15% from the commercial energy (excluding biomass);
- With respect to electricity, the objective is to achieve a rate of about 20% in installed capacity by 2017.

Senegal has tried to promote renewable energy by developing a regulatory framework to enable the private sector to invest in energy sector with notably:

- Loi d'orientation sur les énergies renouvelables (Loi 2010-21) - Law for the promotion of renewable energy (Law No. 2010-21 of 20 December 2010) and the bylaws:
    - The adoption of Decree No. 2011-2013, as part of the implementation of the renewable energy Law, on the purchase conditions and remuneration of electricity from utility scale renewables. Décret n° 2011-2013 relatif aux conditions d'achat et de rémunération de l'électricité produite par des centrales à partir de sources d'énergie renouvelables ainsi que de leur raccordement au réseau;
    - The adoption of Decree No. 2011-2014 as part of the implementation of the renewable energy Law, on purchase conditions and remuneration of electricity for the generation surplus from renewable energy decentralized self-consumption projects. Décret n° 2011-2014 relatif aux conditions d'achat et de rémunération du surplus d'énergie

électrique d'origine renouvelable résultant d'une production pour consommation propre.

- Law for the promotion of biofuels (Law No. 2010-22 of 15 December 2010). Loi d'orientation de la filière des biocarburantes (n° 2010-22);
- The creation in 2010 of a ministerial department exclusively dedicated to renewable energy;

- The establishment, by Decree No 2013-684 of 17th May 2013, of the National Agency for Renewable Energy (ANER) whose primary mission is to promote the use of renewable energy in all sectors (Décret n° 2013-684 du 17 mai 2013 portant création, organisation et fonctionnement de l'Agence nationale pour les Energies Renouvelables).

3.4 Financial support to utility scale grid connected renewables

REFiT

There is no renewable energy feed-in tariff in Senegal. The Law established tendering as the way to set the tariff for RE projects. During the transition to tenders and until December 2013, the RE Law authorizes SENELEC to sign PPA with prospective RE IPP. There is nothing in the Law, or in the bylaw, on the selection and conditions of these contracts. After the publication of the RE Law, SENELEC received 112 spontaneous projects that were evaluated internally by a technical committee. The 31th of December 2013, ten PPA contracts were signed with IPPs. None of these contracts are on-line yet. Two of these contracts (20 MW each) are showing some progress in construction and may be on-line this year or during first half of 2017. It is not clear whether the other projects will be developed.

Scaling Solar

To promote deployment of utility scale renewables the regulatory authority CRSE is preparing a tender. IFC is providing TA for the preparation of the tender within its program Scaling Solar. A committee with the main actors from the electricity sector and donors, and chaired by CRSE is in place. The committee is finalizing the selection criteria, thereafter the prequalification will be announced.

At present, main barriers in this tender are the decision on the capacity to tender and the site selection, since there are concerns on the amount of variable renewable energy capacity that the grid can absorb. It will be between 50 and 200 MW, depending on the capacity of the grid to absorb vRE.

IFC will offer to winning bids a package to promote bankable projects: standard terms of references for the tendering, standard PPA, MIGA guarantee, debt finance etc., equivalent to the process in Zambia. Therefore, relatively low kWh prices can be expected.

The tentative schedule for the Scaling Solar tender will be to have solved the tender in ten months, the winning bids will have three months to close the finance and 12 more months for the construction of the plan, which will lead to finalization of the project by mid-2018.

3.5 Support to decentralised self-generation

The Law defines self-producers as the companies or households that produce electricity from renewable energy sources for their own needs and whom can sell their surplus to the network operator. The RE capacity installed by a self-producer should not be higher than the contracted power.

As per Article 14 of RE Law (21-2010), the CRSE must publish purchase prices of surplus producers. In November 2015 the CRSE finished a study on possible ways to determine the remuneration of the

surplus from self-generators. It is still unclear when the Decision will be published, RECP will follow up with SENELEC on this question.

3.6 Rural Electrification

From 2008 Senegal is implementing an innovative approach, by assigning, to private operators, rural electrification concessions. The Senegalese territory (rural/beyond the grid) has been divided into ten concessions, six of which were awarded to a private operator. The concessionaires received financial support in the form of grant for the investment and fiscal incentives. Each concessionaire will propose their tariffs to final consumers (there is no uniform tariff as of now). CRSE will approve these tariffs after making sure that they are based only in justifiable costs.

The results achieved by concessions are nevertheless disappointing. Expected electrification rates were set at 60% in 2017. Theoretical electrification rate today is around 25%, actual electrification rates may be lower, as the number is based on new electrification only, and does not take into account that areas may have de-electrified. Among the difficulties faced by the concession, it can be quoted: tariff disparities between areas "on-grid" and "off-grid" and, making potential consumers reluctant to connect; low income households; precarious financial balance of electric operators that do not ensure provisions for infrastructure maintenance and renewal; inadequacy of part of supply with demand needs and the limited capacity of the Senegalese Agency for Rural Electrification to address difficulties.

For the regions that were not awarded to a concessionaire or for the zones within the concessions that are not considered a priority for the concessionaires, it is allow for local groups from the civil society to promote their own rural electrification projects. This approach is known with the name of ERIL (Electrificacion Rurals d'Initatives Locales). The ERILs have proven to be more efficient in increasing access. Nevertheless, there is further disparity of tariffs and creates a new challenge for the future integration of these ERILs in the concessions.

3.7 Renewable energy potential in Senegal

Solar

Senegal has an average solar insolation of 5.43 kWh/m²/day. The annual theoretical production from photovoltaic systems, standardized per kW peak is estimated in 1,650 kWh/kWp/year.

The use of renewable energy has long been marginal, including solar photovoltaic, with an installed capacity in 2000 of 850 kWp. Total installed capacity was 2.3 MWp in 2005 and is estimated at about 4 MWp in 2010 (0.7% of the overall installed capacity).

However, is in the context of rural electrification programs that the development of renewable energy has the most success with the installation of nearly 25,000 SHS[3], around 2,000 community photovoltaic systems, 4,563 solar lights and near 150 PV solar mini-power plants and/or hybrid connected to low-voltage mini-networks (BT). The distribution of the use of solar is:

- 37% for SHS;
- 24% for pumping water;

[3] MEDER-ECREEE ; December 2015. Plan d'Actions National des Energies Renouvelables (PANER) – SENEGAL. Période [2015-2020/2030]. Dans le cadre de la mise en œuvre de la Politique d'Energies Renouvelables de la CEDEAO (PERC).

- 19% for telecommunication applications;
- 15% for photovoltaic grid-connected;
- 5% for community applications (education, health, etc.).

There is no operational MW-scale grid-connected PV project. The will of the government is to tender 200 MW in the coming three years. A committee supported by the Scaling Solar program of the IFC is supporting the tendering process and the potential bidders. The final capacity to tender will be decided depending on grid security and absorption.

Finally, the German Development Bank (KfW) has provided a grant to fully finance a 15MW PV project at the airport in Dakar.

Wind

Senegal has an interesting wind potential, including the entire coastal strip with a width of 50 km from Dakar to Saint Louis, where mean wind speeds at 50 m high are between 5.7 and 6.0 m/s.

Today, wind power use is still very low, if we judge by the total installed capacity not exceeding 0.5 MW on the national territory are:

- Wind turbines in Niaga Wolof, Mboro, Louly Ngogom and Louly Bentegné from the 1980s;
- 200 Pumping windmills installed in 1982 (FIASA project);
- 45 Pumping windmills installed in 1997 (Alizés-Sénégal project);
- Mboro wind farm operating since 1989 with ten wind turbines of 6 kVA each.

One of the ten PPA signed at the end of 2013 by SENELEC was for a wind farm. American Capital Energy & Infrastructure ("ACEI") announced in June 2015 a commitment to invest in Senegal's first industrial-scale wind power project. The total capital cost of this facility is estimated at €305 million, with ACEI anticipating to provide an estimated €76 million of equity and the remaining amount expected from senior and mezzanine lenders. The project is a 151.8MW wind farm under development, which will be located in Taiba Ndiaye in Senegal, approximately 75km northwest of Dakar. Construction on the plant is scheduled over three years in three phases of 50.8MW. The project has not reached financial close. It is not proven that the grid can absorb the 150 MW variable generation capacity.

Biomass

Senegal has a significant sustainable biomass resource estimated at 331.3 million m^3. The main programs on biomass are targeting the use of residual biomass to produce biogas:

- The National Biogas Program of Senegal (GNP-SN) has the target of dissemination of 8,000 biodigesters. The biogas is to provide rural households with energy for cooking and for lighting and to support agricultural activities (supply of organic fertilizer). In the pilot phase, and until 2014, at least 875 domestic biodigesters were built. The second phase is running with support from the European Union;
- THECOGAS project generates 1,500 m^3 of biogas per day from the waste of abattoir of Dakar. The biogas produced is purified and converted into energy in a CHP plant. The energy produced is used to cover part of the electricity needs for cooling and lighting in the abattoir. In addition, the unit produces hot water for cleaning;

- The abattoir of St. Louis, in partnership with a NGO, has also installed a biogas plant. The biogas produced is sold to nearby households. The substrate from the biodigester is sold as fertiliser.

Hydro

Studies conducted in the mid 80's, show that hydroelectric resources in Senegal are small. The relatively flatness of the country does not allow the development of this form of energy, except for the eastern part, near Kedougou. However, it should be noted that Senegal shares, with its neighbors, within the framework of the cooperation on the use of the Senegal and Gambia rivers (OMVS and OMVG) an estimated potential of nearly 1,400 MW untapped to date.

Geothermal

No high temperature geothermal resources are expected to be found in Senegal. The exploitation of low temperature geothermal resource has not drawn any interest.

4 Scoping Mission

4.1 Purpose of the scoping mission

The scoping mission travelled to Senegal to collect information for the decision on whether Senegal is to be included in the RECP as a focus country; and to identify added value activities as well as possible implementing partners. Therefore, the immediate objectives of the scoping mission were:

- To obtain an overview of relevant stakeholders (government, donors, private sector, financial sector) and their mandates and capacities, resulting in a comprehensive stakeholder landscape;
- To gather information on markets, potentials, current private sector activities and constraints, enabling the design of a coherent package for support to the private sector.

The scoping mission team composed of Ina de Visser, Project Manager RECP, EUEI PDF and Hugo Lucas, Consultant at Factor. The mission visited Dakar from the 27th of June to 1st of July, inclusively. The mission's schedule and the list of institutions visited and people met are annexed to this report.

4.2 Donor support to the renewable energy sector

Annex 3 provides an overview of the development partners' support for RE and rural electrification in Senegal[4], excluding hydro.

The programs that are of immediate importance to the RECP are:

- The European Union. Among the cooperation projects implemented by the EUD, in direct relation with RECP, the following can be highlighted:
    - Sustainable development through renewable energy. Through the initiative of the EuropeAid Energy Facility, whose second call for proposals was launched in March 2013, the European Union has awarded a grant of 74% of the cost of project submitted by the ECREEE and its partners (R & Solar Energy 23) called for Sustainable Development through Renewable Energy in South East Senegal (DPER-SE, Senegal). The project will: (i) Scale up of ERIL; (ii) Ensure access to energy for remote rural populations; (iii) Promote the creation of rural micro-enterprises with a strong involvement of women and youth; (iv) Improve the living conditions of rural populations; (v) Contribute to strengthen the emergence of strong leaders, officials engaged in the promotion of renewable energy.
    - Kolda et Vélingara concession (M€ 6,4 grant). Development access of Senegalese rural population to electricity services. This project aims to improve people's access in Kolda-Velingara region to electricity services to strengthen their livelihoods. The aim is to provide access to electricity to 225,500 rural inhabitants via, either extension of the grid, or solar mini-grids for the more isolated villages.
      Sustainable access to electricity distribution services for Matam, Kanel, Ranerou, Goudiry and Bakel (M€ 8 grant). Implemented by ASER, the project aims to ensure access to a sustainable electricity service. At least 50 000 people living in the most isolated villages will benefit. An installation of a 1 050 kilowatts photovoltaic project.

[4] Extracted from the development partners' activity matrix on energy updated by members of the Donor Coordination Group on Power in 24 October 2013

- The National Biogas Program of Senegal (GNP-SN) has the target of dissemination of 8,000 biodigester. The biogas is to provide rural households with energy for cooking and for lighting and to support agricultural activities (supply of organic fertilizer). In the pilot phase and until 2014, at least 875 domestic biodigesters were built. The second phase is running with support from the European Union.

- Regional Program to extend opportunities in the value chain of milk through access to sustainable energy services (PROGRESS-Milk) together with the NGO ENDA.

- The French Development Agency (AFD) is working in three lines that address RE:
  - Technical assistance to MEDER, by providing a consultant to support in the deployment of renewables and, in particular, in the implementation of the RE Law. Besides, AFD provides TA to SENELEC on drafting a capacity building strategy.

  - SUNREF Financial Facility. Orabank and the French Development Agency (AFD) signed a partnership agreement in August 2014, worth an initial €5 million to implement the SUNREF (Sustainable Use of Natural Resources and Energy Finance) program. Thanks to the SUNREF program, Orabank can support personal and business banking customers within the West African Economic and Monetary Union (UEMOA) with sustainable development projects relating to energy efficiency and renewable energy. To achieve this, Orabank is able to offer financing to prospective and existing customers who are eligible for the program, with the technical support of the AFD.

  - A grant to the rural electrification concession Kaffrine-Tambacounda-Kédougou. Initially they were prioritizing SHS in their concession but now the priority is on extension of the grid. The logistics of the SHS are very complicated. It takes a very long time to reach the households to install or to do O&M. For village from 500 inhabitants they prefer mini-grids. They are promoting 72 solar mini-grids.

- GIZ is implementing a long list of capacity building activities in the renewable energy sector within their two main programs:
  - PERACOD develops capacities for sustainable development of the energy sector in Senegal. The program works mainly in the areas of advisory support through the implementation of methodological tools and concepts but also in strengthening the capacity of partner organizations and the definition of policies and strategies. Main fields of intervention are: (i) Energy policy and planning; (ii) Renewable energy and energy efficiency; (iii) Sustainable supply of household fuel; (iv) Rural Electrification.

  - PESEREE is a comprehensive capacity building program that aims at strengthening the practical focus of university programs in the field of renewable energy/ energy efficiency at the higher education institutions in Senegal. This will benefit young graduates, whose job chances will be improved, as well as the Senegalese labour market, that will profit from the increased access to skilled workers.

- IFC. Scaling Solar is a “one stop shop” program aims to make privately funded grid-connected solar projects operational within two years and at competitive tariffs. The package includes:
  - Advice to assess the right size and location for solar PV power plants in a country's grid.
  - Simple and rapid tendering to ensure strong participation and competition from committed industry players.

- Fully developed templates of bankable project documents that can eliminate negotiation and speed up financing.
- Competitive financing and insurance attached to the tender, delivering competitive bidding and ensuring rapid financial close.
- Risk management and credit enhancement products to lower financing costs and deliver power at lower tariffs.

A steering committee for Scaling Solar is in place, chaired by CRSE. It is unclear when the tender will be launched. The main obstacle identified is the uncertainty of the maximum vRE the grid can absorb.

- WB. The Second Sustainable and Participatory Management Project Traditional Energy and Substitution is an institutional capacity building project that has as main goal to promote a more sustainable use of biomass resources and diversification of energy source.

  Through civil society WB is also supporting the development of the GNP-SN, as well as promoting the use of energy for productive uses in new electrified areas, by means of a market study and support to ASER.

- KfW. the German Development Bank (KfW) has provided a grant to fully finance a 15MW PV project in the airport in Dakar. KfW is also providing grant funding to the rural electrification concession of Kaolack Fatick, Nioro, Gossas.

4.3 Private investments in renewable energy

The mission witnessed considerable private sector interest in PV, both MW-scale and off-grid equipment/ applications. The private sector is being present and very active doing prospective works in the last years. After the publishing of the RE Law in 2010, 112 potential projects were presented to SENELEC to get a PPA. As mentioned 10 of these projects were awarded with a PPA and, at present, not a single one has started operations. The main reason is that most of those projects were not initiated by project developers but by a "middle man", looking to advance in the administrative procedures and to sell this "progress" afterwards. But there are other barriers faced by private sector.

To lobby for improving the enabling environment for renewable energy in Senegal, the private sector has come together under the Council of Professionals of Renewable Energies in Senegal (COPERES).

COPERES has been created to federate all the activities of the private sector along the value chain (technicians, service providers, lawyers, equipment providers, etc.). Main challenges faced by the private sector are the following:

- There is an increasing informal RE sector, particularly in rural areas. There is a need to better structure and organise the sector to go against informality, since low quality creates bad reputation to RE.
- The private sector is not present in the decision making process on regulatory frameworks for RE in Senegal. They have not been consulted in the discussion on REFiT. They are not part of the Scaling Solar committee.
- The RE Law recognize fiscal incentives for RE but there is the need to develop and implement these fiscal benefits.
- The local participation/content in the projects is minimal. Project developers and technologies are coming from abroad. The role of the local companies is only as facilitators. They would like to have the mandatory participation of local developers (e.g. 30%) in the Law.

- Access to finance is a challenge. There are great opportunities for Africa on accessing international funds from different global initiatives mainly after COP21. While there an emerging African private sector in different countries and at regional level, they don't have (a unique) voice in these international discussions. Support for their coordination is needed.
- One important barrier is the lack of knowledge in the commercial financial institutions on the RE sector. They provide loans for not less than 14% interest. There is a need that banks with experience come to train African institutions. Bankers to train bankers.
- Funding for (pre)feasibility studies is a major barrier.

- There is an opportunity to industrialize Africa. The strategy should be to adapt the existing RE technologies to the African conditions. This demands cooperation with the R&D sector. There is the need to discuss on industrialization policies at regional level.

4.4 Banking sector

From the ten renewable energy projects approved by the government at the end of 2013, during the transitory period from the RE Law to the future tender process, only one project of 20 MW PV seems to have reached financial close. It is a general agreement that the unclear, non-transparent and inefficient way projects were selected has contributed to this. Nevertheless, it is clear that the commercial financial institutions are not used to these type of projects and demand higher guarantees for its financing. As any other entrepreneurial activities, renewable developers are offered very high interest rates and short pay back times, which risk the profitability of projects.

4.5 Observations from the scoping visits

Main findings from the interviews with the stakeholders can be summarised as follows:

- In this century the electricity per capita consumption in Senegal has multiplied by 2.2. Population grew from 10 to 15 million during the same period.
- In Senegal, biomass and petroleum products still account for 95% of the energy balance. All the oil consumed in Senegal is imported. The consequence of the prominent role of diesel in power generation is to have one of the highest electricity tariffs in Africa. Besides, there is the impact in the economy due to volatility of prices.
- The Plan for Emerging Senegal, adopted by the government in November 2012, constitutes the main document on social and economic policy in the medium and long-term (2035). This document sets energy targets that can place renewables in a prominent position in the energy system, and specifically:
    - Achieving a self-supply energy rate, excluding biomass, of at least 15% by 2025, thanks to the contribution of renewable energy and biofuels;
    - Obtaining, in 2017, a rate of 20% renewable energy in overall installed generation capacity.
- The RE Law 2010-21 includes three topics IPP, self-generation, decommissioning. There are no outcomes from this Law. Main implementation pieces missing are:
    - A compelling tendering scheme for RE utility scale grid connected RE;
    - The publication of a tariff for the surplus electricity generated by self-consumption RE project.
    - The definition of other possible support mechanisms for RE such as: fiscal incentives.
- One of the main barriers preventing the implementation of support schemes for grid connected projects is the need for a grid stability study to identify the maximum vRE the grid can absorb.

- There is not a long-term generation plan from SENELEC. Besides the investment in transmission infrastructure, the penetration of RE will depend on what other capacity SENELEC is planning to develop and what is going to happen with the 10 PPA for RE projects already signed.
- While there are not specific fiscal incentives for RE, standard fiscal incentives exist for priority sectors and energy is one of them. In addition, the Agency for the promotion of investments and main works (APIX) provides the full service for companies, locals and foreign, to establish in the country, including getting the tax exemptions.

MW- scale renewables

- By Law, the regulator, CRSE, is mandated to launch a tender for RE. Government target is to tender 200 MW PV and 200 MW wind. The TSO and single off-take, SENELEC has concerns of the capacity of the grid to absorb vRE. Main energy actors and donors are working, within the Scaling Solar initiative, in a compelling tendering process.
- In the best case scenario the first tender process can be solved in ten months, the winning bids will have three months to close the finance and 12 more months for the construction of the plan. Regarding the capacity, it doesn't seem efficient to do the tender for less than 50 MW.
- There is on-going TA at the Ministry for the overall strategy and the implementation of the RE Law, to the CRSE for the RE tenders and to SENELEC in a capacity needs assessment.

Decentralized generation

- Relevant actors are aware of the benefits of decentralized RE generation: it reduces the peak demand and the T&D losses and can relieve the shortage of electricity on the grid.
- By RE Law (2010) CRSE has to publish a standard PPA including, besides the price, the technical requirements for connecting and feeding power to the distribution grid.
- SENELEC has officially asked, 15th July 2015 to CRSE to have feed-in tariffs to be pay to self-producers for their surplus and the date of coming into force.
- CRSE has finalized a paper on the different tariff calculation methods. There is not a clear calendar for its publication.
- There is a great market for decentralized RE, linked to productive users. There are a lot of business that need security of the supply and are looking to RE.
- A part from having the possibility of selling the surplus, the main challenge is the access to finance. A national financial mechanism, to avoid commercial loans with high interest rates (25%) and short pay back periods that are not suitable for RE, is missing. In addition, domestic financial institutions don't know how to do the due diligence of these projects.

Rural electrification

- Government is highly committed with the great challenge of achieving 60% access by 2017. All main donors are strongly supporting the government in this challenge.
- In Senegal the top-down approach of the concessions to a PPP is working together with the bottom-up approach of the ERIL by the civil society. Different technological approaches are present in both of them.
- Harmonization of the tariff in all the concessions with the SENELEC tariff is key for wider adoption of electrification, cross-subsidizing the electricity prices in the concession areas over a rural electrification fund. EUD is working on this.
- A socio-economic assessment of the different approaches is missing.
- There is a very active private sector working in RE off-grid applications from lanterns, to productive uses or as service providers "power centers".
- The increasing informality in this market may lead to deployment of low quality products and services and bad reputation.

- The use of RE for cooling (ice production) or for pumping water are very promising applications in the rural areas. Main barriers for their dissemination are lack of awareness and need for a targeted finance instrument.

Renewable energy awareness and education and training

- Small RE applications could easily improve quality of life of the population. Lack of awareness and difficult access to information is a major barrier for a wider adoption of RE technologies.
- One of the objectives of the RE agency ANER is increase awareness and facilitate information.
- On stop shop of RE information with information on equipment and suppliers, the benefits of these technologies, how to use it, prices, etc. could facilitate the access of the population to these technologies.
- The lack of qualified professionals is often a barrier for scaling up renewables. Education sector is aware of the increasing needs of the RE sector.
- Curricula exists in Universities and vocational training institutions. The comprehensive PESEREE project is trying to increase, improve and facilitate access to RE and EE education.

5 Opportunities for RECP support

The Government of Senegal has many programs and projects in the energy sector and receives considerable support from development partners. This support is focussed on infrastructure and rural electrification mainly and, to a lesser extent, enhancing capacity in the institutions to develop the MW-scale grid-connected renewable energy sector.

RECP targets the development of viable and sustainable renewable energy markets. RECP does not provide access to capital or investments in hardware but cooperates closely with international financial institutions that are interested to invest in the renewable energy sector.

The scoping mission identified gaps and opportunities in the meso-scale renewable energy markets in Senegal where RECP may add value and to the existing programs. Main areas and gaps are:

5) Grid connected, MW-scale. RE African markets have small scale (sometimes for limitations like the grid). The development of the RE national African markets will benefit from a supranational initiative that could address common challenges and opportunities as access to the climate finance of an industrialization strategy for the different African regions.
6) Decentralized grid connected. There is a need for a regulatory framework (technical and financial schemes).
7) Off-grid:
    - Need to promote quality standards.
    - Opportunity to promote demand driven productive applications.
8) Awareness and Education. There is the possibility to complement comprehensive, but always limited, activities on RE education. There is a great opportunity to stimulate demand for RE equipment by increasing awareness and information.

5.1 Suggested Activities and Inputs

Working principally with a local partners the RECP could undertake a number of activities to provide this assistance including:

Utility scale renewables

- Exchange between African RE private sector associations on finance and industrialization.
- Cluster for RE in Senegal, gathering all the RE actors in Senegal (public, private, non-governmental) to improve participation of the private sector in the decision making process.

Decentralised grid connected renewables

- Regulation for decentralized generation, both for self-consumption and to feed at distribution level (technical documentation and possible support schemes), precise activity to be defined after further discussions with SENELEC.
- Identification, assessment of the economic and social impact and dissemination of successful projects.
- Market study for PV for water pumping (mainly for irrigation).
- Trade mission on SHS markets (European and African companies).

Off-grid rural electrification

- Identification, assessment of the economic and social impact and dissemination of successful projects.
- Support the use/application of standards for solar equipment and appliances / household products.

Increasing renewable energy awareness and education

- Support PESEREE in on-line RE&EE education. There is a comprehensive initiative with local universities on increasing, adapting to local market need and harmonizing RE curricula in existing master's program. Nevertheless, the on-line component is missing.
- Create a one stop shop of RE information, specifically aimed at project developers.

Table 1: Opportunities and activities for RECP

Opportunities for RECP	Activities	Implementing partner
Utility scale renewables	➢ Exchange between African RE private sector associations on finance and industrialization.	COPERES
	➢ Cluster for RE in Senegal, gathering all the RE actors in Senegal (public, private, non-governmental) to improve participation of the private sector in the decision making process.	ANER
Decentralised grid connected renewables	➢ Regulation for decentralized generation, both for self-consumption and to feed at distribution level (technical documentation and possible support schemes).	CRSE
	➢ Identification, assessment of the economic and social impact and dissemination of successful projects.	PERACOD
	➢ Market study for PV for pumping.	
	➢ Trade mission on SHS markets (European and African companies).	APIX
Off-grid rural electrification	➢ Identification, assessment of the economic and social impact and dissemination of successful projects.	PERACOD
	➢ Support the use of standards for solar equipment and appliances / household products.	ASER
Increasing renewable energy awareness and education	➢ Support PESEREE in on-line RE&EE education.	PESEREE
	➢ Create a one stop shop of RE information.	ANER

Annex 1: Agenda: Scoping mission Senegal. Visit Schedule 27 June – 1 July 2016

Monday, June 27		
09:30 – 11:00 Direction du développement des Energies renouvelables Ministère de l'Energie et des Mines	**Ibrahima Niane** Directeur du développement des énergies renouvelables	Building administratif, 4e étage BP 4021 Dakar
13:00 – 14:00 Agence National des Energie Renouvelables (ANER)	**Aziz Fall** Directeur de la Promotion et de la Coopération	120 CITE ASECNA, Liberte 6 Extension Dakar Senegal
Tuesday, June 28		
10:00 – 11:00 Société National d'Électricité du Sénégal (SENELEC)	**Saer Diabou DIOP** Directeur de L'Administration, du Patrimoine et des Approvisionnements (DAPA)	Senelec – Hann, Route des Pères Maristes, BP 93 Dakar
11:30 – 13:30 Thecogas SN SARL	**LAMINE** Directeur	L'abattoir de Dakar
15:00 – 16:30 Programme for the promotion of renewable energy, energy efficiency and access to energy services (PERACOD)	**Mamadou SAMBOU** Coordinateur Ministère de l'Energie et de Développement des Energies Renouvelables	PERACOD à Hann Maristes Rue HB 422 ville lot 1A BP 3869
Wednesday, June 29		
09 :30 – 10:30 Commission de Régulation du secteur de l'électricité (CRSE)	**Paule Marie Antoinette Sagna LAKH** Electricien Senior	CRSE L'immeuble KEBE au 1er étage. Mme DIALLO Assistante du Président
11:00 – 12:00 Agence Française de Développement (ADF)	**Esther HAFTENDORN** Project Officer	AFD Dakar 15, Av. Nelson Mandela BP 475 Dakar
14:00 – 15:00 Agence sénégalaise d'électrification rurale (ASER)	**Alfred DIENG** Conseiller Technique Électrification Rurale	ASER Ex-Camp Lat Dior – BP. : 11 131 Dakar
16:00 – 17:00 Programme for the promotion of renewable energy, energy efficiency and access to energy services (PERACOD)	**Markus HAGENAH** Advisor Renewable Energy and Rural Electrification	PERACOD à Hann Maristes Rue HB 422 ville lot 1A BP 3869
Thursday, June 30		
09 :30 – 10:30 International Finance Coorporation (IFC)	**Nicolas SOUCHE** Principal Investment Officer & Hub Leader Infrastructure Africa	Rue Aime Cesaire x Impasse FN 18, Rue Aime Cesaire, Fann. Dakar.

11:00 – 12:30 Conseil Patronal d'Energies Renouvelables de Sénégal (COPERES)	**Abdou Fal** President COPERES **Ngone DIOP NIASSE** Directrice Solar Energy SN **Maguette THIANDOUME** Directeur Sénégal	
14:00 – 14:45 KfW Coopération allemande au Développement	**Marième Kane** Chargée de projets	Bureau de la KfW à Dakar Coopération allemande au Développement 109, rue Carnot x El Hadj Mass Diokhané B.P. 3869 Dakar Amandine HORO
15:00 – 16:00 EU Delegation	**Hugo van Tilborg** Head of Infrastructure	Délégation de l'Union européenne au Sénégal 12 Av. Hassan II (ex A. Sarrault), Dakar
Friday, July 1		
09:30 – 10:30 Promotion des Investissements et Grands Travaux (APIX)	**Adama Gueye** Business Line Manager, Investment Promotion and Major Projects.	Rue Mohamed V, Dakar
11:00 – 12:00 German International Cooperation (GIZ)	**Joerg Oelschlaeger** Main Technical Advisor **Cornelia Seck** Program Officer. Programme d'Enseignement Supérieur pour des ER et EE (PESEREEE)	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH Résidence les Mamelles lot n° 3 BP : 3869 - Dakar

Annex 2: Country profile

Socio- economic framework

	Year	Unit	Value
Population	2015	million	15.1[5]
Demographic growth	2015	%	3.1%[10]
Urban population	2015	%	43.7%[10]
Surface	2015	km²	196,710[10]
GDP	2015	M US$	9,780[10]
GDP per capita	2015	US$ per cap	910,8[10]
GDP growth (2010-2015)	2015	% /year	4.1%[10]
Fragile country status	2015	Index	No [6]
Governance	2015	Index	62.4[7]
Governance variation over 5 years	2015	Index	4.5[12]
Human development	2015	Index	0.466[8]

Energy[9]

Installed capacity and Generation			
Total Installed generation capacity	2015	MW	660
Generation capacity connected to the main grid	2015	MW	448
Generation capacity off-grid	2015	MW	212
Installed fossil fuel capacity in MW	2013	MW	594
Hydro capacity	2015	MW	66
Other RE capacity	2013	MW	0
Renewable electricity output in % of total electricity output excl. hydroelectric (2014)			0
Average distribution and transmission losses in % of output (2012)			16
Net electricity imported in GWh (2012)			0

Demand [10]			
Peak demand	2012	MW	466
Per capita electricity consumption	2013	kWh	171
Electrification rate, total	2012	%	56
Electrification rate, urban	2012	%	88
Electrification rate, rural	2012	%	27

[5] http://data.worldbank.org/country/senegal

[6]http://www.worldbank.org/content/dam/Worldbank/document/Fragilityandconflict/FY14FragileSituationList.pdf

[7] http://mo.ibrahim.foundation/iiag/data-portal/

[8] http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf

[9] http://www.africa-eu-renewables.org/market-information/senegal/energy-sector/

Annex 3: Overview of major donor projects for renewable energy and rural electrification (May 2016)

Institution / Agence	Nom du projet / région	type d'énergie	capacité installée	statut	Volume financier du projet	volume financé par l'institution ou agence
AFD	Concession d'électrification rurale de Kaffrine-Tambacounda-Kédougou	Électrification rurale		En cours d'exécution		€ 8M
AFD	Appui institutionnel au MEDER/SENELEC	Secteur Energie/Institutionnel		En cours d'exécution	1,0M€	1,0M€
BAD/AFDB	Projet d'électrification rurale dans la région de LOUGA	Électrification rurale	-	En cours d'exécution	18,01 MUC	9,58 MUC / 1,69 MUC
BEI	Aménagement Hydroélectrique de Félou	hydroélectrique	60 000	En cours d'exécution	€ 102.5M	
BEI	Projet SOGEM (AH de Manantali)	hydroélectrique	200 000	opérationnel	€323M	
BID/IDB	Electrification Rurale pour St Louis	Electrification		En cours d'exécution	€16.47 Moi	€6.7Mio
BID/IDB	Electrification Rurale Solaire de mini-réseaux	Electrification Rurale	5.2MWc	En cours d'évaluation	$59Mio	$27Mio
BM	Deuxième Projet de Gestion Durable et Participative des Energies Traditionnelles et de Substitution (Tambacounda, kolda, Sédhiou, Kaolack, Kaffrine, Matam, Kédougou)	Energies Domestiques		En cours d'Exécution	$19.37 M	$15 M
BM	Suitainnable Energie For All (SE4ALL)	Assiatance technique		En cours d'Exécution	$1.8 M	$1.8 M
BM	Aménagement Hydroélectrique de Félou	hydroélectrique	60 000	Clôturé	$241 M	$160 M

Institution / Agence	Nom du projet / région	type d'énergie	capacité installée	statut	Volume financier du projet	volume financé par l'institution ou agence
GIZ	Programme de promotion des énergies renouvelables, de l'efficacité énergétique et de l'accès aux services énergétiques (PERACOD)	Energie renouvelable Électrification rurale Efficacité énergétique Energies domestiques	-	En cours d'execution (Oct 2013 - Dec 2016)	€ 10,5M	€ 10,5M
KfW	Electrification rurale: Concession Kaolack Fatick, Nioro, Gossas	Electrification rurale		En cours d'exécution	€9,6M	€ 6,6M
KfW	Promotion des Energies Renouvelables: Centrales PV de Diass & centres secondaires Médina Gounass, Goudiry, Kidira + centrales hybrides Îles du Saloum	Energies Renouvelables	17 MW	en préparation, mise en service prévue en 2016	€ 30M	€ 27M
UE	Projet de développement de l'accès des populations rurales sénégalaises aux services électriques (Prodapes – Kolda/Vélingara)	Électrification rurale (PPER)	-	Concession signée avec ENCO/Isophoton le 29/07/2013 (en phase demarrage)	€ 13,1 M	€ 6,5 M
UE	Projet d'accès aux services électriques des localités de petites tailles de la Région de Sédhiou (PASES)	Électrification rurale (ERIL)	-	En cours d'exécution (fin prevu juin 2015)	€3,9 M	€ 2,3 M
UE	Developpement durable par les Energies Renouvelables (DPER -sud est Sénégal - Ziguinchor, Kolda et Tambacounda)	Électrification rurale (ERIL)	-	Phase demarrage 2015	€ 8,68 M	€ 6,42 M
UE	Dévéloppement de l'accès à un service électrique durable pour 50,000 personnes dans les zones de Matam - Kanel - Ranerou - Goudiry et Bakel	Électrification rurale (ERIL)	-	Phase demarrage 2015	€ 16,0 M	€ 8,0 M
UE	Programme d'implantation et de dissémination de Biodigesteur dans les zones rurales du Sénégal (PIDB) dans 9 régions du Sénégal	Bio gaz et Électrification rurale	-	Phase demarrage 2015	€ 9,95 M	€ 7,39 M
UE	Programme régional d'extension de l'horizon des opportunité de valorisation de la chaine de valeur Lait par l'accès aux services énergétiques durables (PROGRES-Lait) - Sénégal et Mauritanie	Développement Filière Lait	-	Phase demarrage 2015	€ 6,95 M	€ 5,21 M
UNDP-GEF	Promotion des Ecovillage	Électrification rurale	-	En cours d'exécution	US$ 16 M	US$ 4,2 M