

Request Submission Form for CTCN Technical Assistance (version 1.0 - January 2014)

Country:	Senegal	Date	25 December 2014
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Title	Development of energy efficiency projects in industries and services
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Contact information:

Please fill in the table below with the requested information. The request proponent is the organization that the request originates from, if different from the National Designated Entity (NDE).

	Request Proponent	National Designated Entity
Entity	AEME (national energy efficiency agency)	CEREER
Contact person	Mame Coumba NDIA YE	Pr. Issakha YOUM
Position	Director of planning and studies	Director
Phone	+ 221 77 819 54 07	+221 33 832 10 53
Fax	---	+221 33 832 10 53
Email	coumba_ndiaye@yahoo.fr	iyoum2@yahoo.fr
Postal address	15, Bd de la république, 2ème étage, BP: 4021 Dakar SENEGAL	CERER-UCAD, Route du service géographique (HB-87) x Rue HB-478, Hann Bel-Air, BP 476, Dakar, SENEGAL.

GEOGRAPHICAL FOCUS: {Select the most relevant geographical level}

☐ Community-based ☐ Sub-national ☒ National ☐ Multi-country

{If sub-national or multi-country level, please indicate here the concerned areas (provinces, states, countries, regions, etc.)}

SECTOR/THEME {Select the most relevant sector}

Mitigation:	☒ Energy ☐ Transport ☒ Industry ☐ Agriculture ☐ Forestry ☒ Waste ☒ Cross-sectoral	☐ Forestry ☐ Water Resources ☐ Coastal Zones/Oceans ☐ Terrestrial Ecosystems ☐ Human Health ☐ Infrastructure/Human Settlement ☐ Tourism
Adaptation:	☐ Early Warning/ Disaster Reduction ☐ Agriculture/Fisheries	☐ Businesses ☐ Education ☐ Cross-sectoral

OTHER RELEVANT SECTORS:

{Indicate relevant sectors, only from those included in the list above}

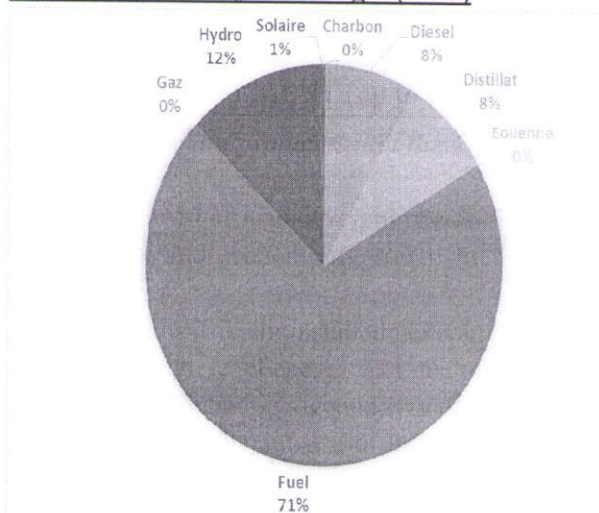
PROBLEM STATEMENT (up to half a page)

{Describe the main problems that the CTCN assistance will help address.}

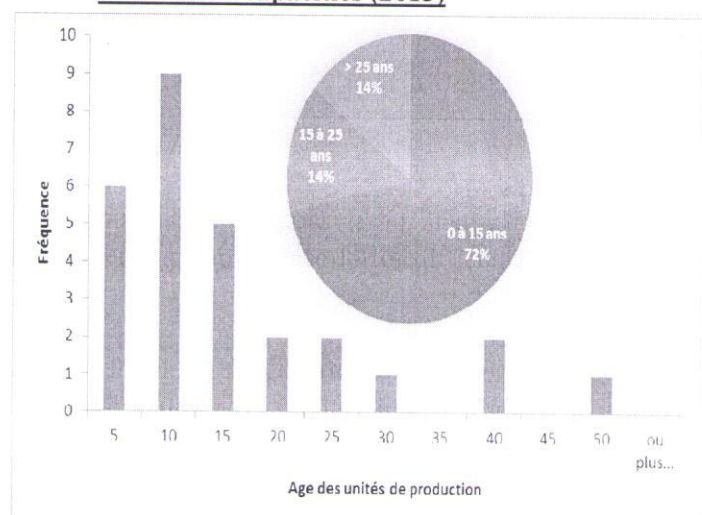
Senegal is a west african developing country where energy demand is growing fast (4%), mainly due to the demographic and economic growth. At the other side, the energy supply face lot of difficulties and is characterized by:

- insufficient installed generation capacities;
- high level energy cost due to the important use of fossil fuel for electricity production;
- high energy dependency of the country due to fossil fuel imports (no local production);
- not efficient use of energy in some sectors coming from not efficient appliances, processes and technologies.

Energy dependency in Senegal (2013)



Generation capacities (2013)



Lot of investments are planned each year for generation capacities which are not environmental friendly (fossil fuel, coal) and if nothing is done at the demand side, these one will be increasing at the long run.

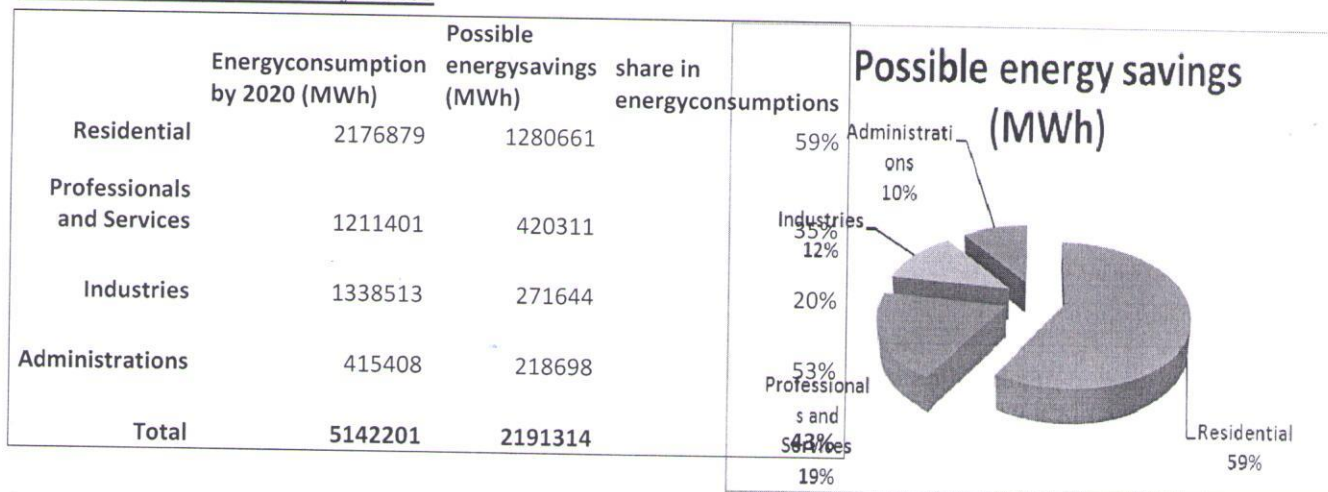
Energy efficiency is one of the key component of the national energy policy. The potential is very high and the studies already done, show 43% of energy savings that is possible to realise on energy demand.

Industries represent only 0.2% of the consumers but 36% of the consumptions (2013) and the energy saving potential is very important since they mostly have inefficient processes and equipments. An energy efficiency program dedicated to them was already designated and consisted of a group of 7 technologies to develop. But, this program needs to be developed for its implementation (more studies).

At the other side the share of industries in the energy saving potential is quite important (12,4%) for less efforts (0,2% of the targeted). Also, energy efficiency improvement in industries have lot of benefits such as the cost reduction and the competitiveness improvement.

Services account also a lot in this energy savings (10% for public and about 19% for privates).

Energy savings potential by sector



If nothing is done, the situation of 2013 will increase in the coming years because of the important industrial projects in the country (ZESI Diamniado, Diass) and the development of services in the country. In fact, under the framework of the Plan Senegal Emergent (PSE), one of the 27 core projects is related to the development of integrated industrial zones.

In order to develop and implement energy efficiency programs in the country (including the designed program for industries that can be replicated for some big services), the national energy efficiency agency (AEME) was created in 2011 and the government, under its policy letter for energy sector development of 2013, assigned to AEME an objective of 40% of energy savings by 2020 for the country.

At this stage, the global studies of the program dedicated to industries (to replicate for some services) have been done but not the detailed one. And, due to its important technology transfert component (with new energy efficient technologies that are not well known in the country), it is worth to develop it because of the multiples benefits it can generate for the economy, the industrials and environment.

DEVELOPMENT OF THE REQUEST (up to half a page)

{Explain how the request was developed at the national level and the process used by NDE to approve before submitting it (who was the lead organization, who were the stakeholders and what were their roles, and describe any meetings or other consultations that took place to develop and select this request).}

The energy efficiency program for industries was first proposed under the activities of a national work group on energy saving that was created in 2007 to establish a national action plan for energy management. Members of this group were representatives of all the ministry departments with a link in the energy sector in their activities. Several meetings were organized and conclusions of the group came mainly from

previous studies and lessons learning. The national action plan was then shared at a wider level through a workshop for validation and appropriation.

In 2009 a more detailed study related to the development of a national energy efficiency program in the electricity sub-sector was done and from this, the pilot project was well described and all the conclusions of this study were transferred to AEME once created, for implementation.

The study was conducted by a consultant with an involvement of all the stakeholders in the electricity sector. Those one was responsible for providing all the needed informations and for the validation of some conclusions. Surveys among industries and some buildings had also been done and a committee with representatives of all the surveyed institutions was also held.

Seven key technologies for industries were identified but this request will focus on one of them which has been identified in this study and in others (document related to the technology needs assessment for the country, TNA).

Then the proposed technology for consideration is cogeneration/trigeneration systems. AEME wants to promote it for new and existing industries (not only new industrial zones) all over the country and for some services. It will of course depend on the industrial activities (manufacturing, agriculture, etc.) and on the possibility to use waste, gas or other fuels for power generation. For services, this kind of technology will be dedicated to big hospitals, clinics, hotels, universities and airports (a new one is under construction in the country).

For the implementation of this project, AEME has updated the results of the previous studies and submitted it to the NDE. Then the NDE through its procedures (meeting of different committees), considered this project as a good one to be considered under the technology transfer portfolio for climate change mitigation.

ASSISTANCE REQUESTED (up to one page)

{Describe the purpose of the technical assistance requested from the CTCN and the results expected from the assistance.

The assistance that is requested consists on:

- The development of an additional study and monitoring/evaluation tools : the available study for this program is not detailed and didn't focus only on the proposed technology. Also, it didn't fully considerate the services for promotion of these technologies. The additional study will be a way to highlight analysis related to the project, constraints, required investment, detailed implementation strategy, appropriate monitoring/evaluation tools, financing scheme and resources recovery, environmental issues ;
- capacity building for the project management: since the proposed technology is not well known in the country, for its effective promotion, the project team needs to be trained well in order to master the subject and be able to manage well the project;

- technical advices on policies for the technology adoption : this will help the project management team to identify the other measures to undertake or to propose to the government in order to back the development of the project. Sometimes, policy measures are much more important for the adoption of some practices and technologies than demonstration and communication;
- project development : this will help to prepare, for specific industries and services, the project documents for its implementation and the financial scheme for the required investments;
- adaptation to the local context: cogeneration/trigeneration can be adapted to specific needs of industries and services in the country and also the fuel that will used can be adapted to the local existing materials. The adaptation of this technology to the local context will improve its benefits and can reduce its costs.

The level of development of cogeneration and trigeneration systems is very low in the country. They are not well developed because of many reasons: not well known, lack of engineering for their development, funding, etc. There is only 2 cogeneration plants implemented (in 2 slaughterhouses) and most of the industries or other sectors don't know these technologies. Some of them have heard about it but are not yet convinced because they don't know or master the technology and they also want to be sure of the benefits (savings) before investing important money on it. They also want to make sure of all the risks and how to overcome them before getting involved.

Then, what is needed for the deployment of these technologies in the country is detailed studies and demonstration from pilot projects. These one will help to prove that these technologies are well working and can be implemented correctly and give the expected benefits.

ALIGNMENT WITH NATIONAL PRIORITIES (up to half a page)

{Explain how the assistance requested fits with documented national priorities (examples of national priorities are: national development, poverty reduction, climate change and technologies, plans and strategies, LEDS, NAMAs, TAPs, NAPs, etc.).}

This project, an energy efficiency one, will contribute to reduce energy consumption in the country thanks to the improvement of energy efficiency. This energy, coming from fossil fuel production will also help the country to reduce the emissions coming from this not clean energy production.

This will contribute to improve energy access and energy coverage and also will help the government to reduce the public expenditures due to oil imports and preserve as well environment.

In fact, energy efficiency is a very strategic component of the national energy policy and for its development at a widespread level, the government has created the national energy efficiency agency (AEME).

At the other side, the LPDSE of 2013, the policy letter for energy sector development highlighted the importance of energy efficiency in the energy sector and assigned to the national energy efficiency agency

a goal that consist on reduced energy demand by 40% in 2020. This energy efficiency has to be developed in all the sectors; residential, industries, buildings, services, administrations, etc.

That is why, accordingly to the national priorities, the national energy efficiency agency has defined, after a study, an energy efficiency action plan describing specific programs to implement to reach the goal of 40% energy demand reduction. One the main program is dedicated to industries and services and consists of the deployment of high energy efficient technologies like cogeneration and trigeneration systems.

It's also one of the national priorities and is well described under the SNDES that is the national strategy for economic and social development. Under this document there are two lines (line 173 and line 174) that address energy efficiency and describe how it could be developed. Also, the last, but not least document, related to the national development strategy "PSE", has put energy efficiency as a priority for energy sector development in the country though the line 287.

The proposed program is then well aligned to the national priorities in the energy sector and also for the environment.

It's important to note that, Senegal has something like 6,500 administrative buildings and 1497 industries and high level services (in terms of energy needs).

PAST AND ONGOING EFFORTS (up to half a page)

{Describe past and on-going national processes, projects and initiatives that the assistance could build on, or link to.}

Energy efficiency in industries and services is not yet well developed in the country. There are some existing projects and initiatives but they are at a small scale. These projects consist mostly on helping industries to conduct energy audit and after, they will have to implement measures themselves.

The most significant ongoing program for industries is related to the improvement of industries competitiveness (BMN). It is not dedicated to energy efficiency but since improving energy efficiency can help in that competitiveness, it becomes a component of the whole program. The problems coming from this situation are:

- this program has limited financial capacity and can't enroll many industries;
- the industries not interested in competitiveness but only in energy efficiency have no chance (not eligible) and no other possibility;
- all the industries are not aware of this program;
- all the industries are not concerned.
- this program conducts mostly energy efficiency actions in the existing equipments and does not introduce new and high level performance equipment;

Thus, with the proposed program which addresses specific technologies, it could be interesting to develop a link between the existing program in order to promote them much more.

Also, there is a need of energy efficiency in industries and services dedicated programs and dedicated funding that will be open to all the interested ones.

EXPECTED BENEFITS (up to half a page)

{Outline the long-term effects that will result from the CTCN assistance, including how the assistance will help in the transfer of climate technologies to mitigate and/or adapt to climate change, as well as the expected economic, social and environmental benefits.}

The program will be a way to introduce new technologies and develop existing ones (but not well known) in the country. These technologies are working well in some countries but due to lack of experiences in their implementation in the country, they are still undeveloped. The advantage of the pilot program is that, though demonstration, industries and services can see themselves that it works and be interested in investing in such technologies. There will then a transfer technology, at a wider level to mitigate climate change.

These technologies can be more affordable if local workforce is involved and trained in order to be able to implement and do installations maintenance.

Social benefits will be employment and new markets generation contributing then to the improvement of living conditions of some people. The impact on environment will mainly come from avoided energy production because of the energy efficiency. Since the production depends on fossil fuel, CO2 emissions will decrease.

The proposed technologies are sustainable and will generate very long term effects: benefits will be easily conserved because it comes from technologies not from behavior or some other sources. At the long run, with a wider implementation of these technologies (which will become much more affordable) there will be much important impacts (in energy savings) on environment and populations.

There are also lots of financial benefits either for the government (public services electricity costs reduction) or industries (operating costs reduction).

POST-TECHNICAL ASSISTANCE PLANS (up to half a page):

{Please describe here how the results of the CTCN technical assistance will be concretely used by the applicant and national stakeholders, to pursue their efforts of resolving the problems stated above after the completion of the CTCN intervention (list specific follow-up actions that will be undertaken).}

The results of this assistance will be use to :

- communicate with industries and services in order to develop widely these technologies and get more industries and services implementing these technologies;
- transfer technologies to a wider range and provide technical assistance for development of similar programs;
- learn more about technical and financial constraints for the development of these programs;
- prepare stakeholders and beneficiaries for the deployment of these technologies;
- create an appropriate climate (political, financial, institutional) for a sustainable development of these technologies and the environment protection.

This will contribute to develop in the country, new energy efficient technologies suitable for industries, buildings and services.

Improving energy efficiency will contribute to reduce energy use, create energy savings and greenhouse gas emission reduction for the country.

To follow up the results, a national committee will be created for the project promotion and fundraising. There will also be some workshops with industries and services in order to share with them the results and identify some demonstration sites

EXPECTED TIME FRAME

{Indicate the duration of the proposed request.}

Time frame	2015		2016		2017	
	Sem1	Sem2	Sem1	Sem2	Sem1	Sem2
Preparation : fund raising, TORs, Calls for proposals						
Studies development						
Capacity building						
Specific projects preparation						
Appropriate policy framework definition						
Project promotion						

KEY STAKEHOLDERS

{List the main stakeholders who would be involved in the implementation of the requested CTCN assistance, and what would be their role in supporting the assistance (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).}

Stakeholder	Role in the response
AEME	Project design, implementation, monitoring and evaluation
Senelec	Monitoring
DEEC	Project development assistance
MEDER	Monitoring and evaluation
Industries and services	Beneficiaries
Financial institution	fundraising

BACKGROUND DOCUMENTS:

{Please list here relevant documents that will help the CTCN understand the context of the request and national priorities. For each document, provide weblinks if available, to attach to the submission form while submitting the request. Please note that all documents listed/provided should be mentioned in this request in the relevant question(s), and that their linkages with the request should be clearly indicated.}

PLAN SENEGAL EMERGENT;

https://www.wko.at/Content.Node/service/aussenwirtschaft/sn/Plan_Senegal_Emergent_VP.PDF

LPDSE 2012

<http://www.crse.sn/upl/LettrePolitique-2012.pdf>

DSM STUDY

<http://www.senelec.sn/>

SNDES

http://www.gouv.sn/IMG/pdf/SNDES_2013-2017_-_version_finale_-_08_novembre_2012.pdf

MONITORING AND EVALUATION

☒ By signing this request, I affirm that processes are in place in the country to monitor and evaluate the assistance provided by the CTCN. I understand that these processes will be explicitly identified in the Response Plan in collaboration with the CTC, and that they will be used in the country to monitor the implementation of the CTCN assistance.

☒ I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

DATE AND SIGNATURE

NDE: CEREER

Responsible Person: Issakha YOUM

Date:

26/12/2014

Signature:

Pr. Issakha YOUM



****PLEASE LIST ANY RELEVANT BACKGROUND DOCUMENTS AND PROVIDE THEIR WEB LINKS (IF WEB LINKS ARE NOT AVAILABLE PLEASE ATTACH THEM AS PDF FILES TO THE APPLICATION)**

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

Need help? The CTCN team is available to answer questions and guide you through the process of submitting a request. The CTCN team welcomes suggestions to improve this form.

>>>Contact the CTCN team at ctcn@unep.org