

**MINISTRY OF MINES
AND ENERGY**

**GENERAL
SECRETARIAT**

**GENERAL
DIRECTORATE OF
ENERGY**



BURKINA FASO
UNITY - PROGRESS - JUSTICE

Expression of Interest in SREP Financing

April 2014

Plan for the Expression of Interest in SREP Financing

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I. NATIONAL SREP TENDER AGENCY

The agency responsible for the submission of tenders is the Burkina Faso Ministry of Mines and Energy, 01 BP 644 Ouagadougou 01, website: www.mines.gov.bf, represented by Mr. R. SAWADOGO Narcisse, Director General of Energy Phone: +226 50 31 74 89, Email: sawadogo_nar@yahoo.fr.

II. DESCRIPTION OF THE NATIONAL ENERGY CONTEXT

The Burkinabe energy situation is characterized by: (i) a predominance of the use of energy from biomass; (ii) the country's dependence on fossil fuels; (iii) low and unequal access to modern energy; and (iv) very limited development of endogenous renewable energy.

2.1. National Energy Balance

Burkina Faso's energy situation is characterized by a low per capita energy consumption level, about 0.180 *toe* (tons of oil equivalent) in 2008, broken down as follows:

- Electricity: 2%;
- Hydrocarbons: 16%;
- Biomass: 82%.

2.1.1. Access to Electricity

Electricity is provided by two companies:

- *Société Nationale d'Electricité du Burkina* (SONABEL, the country's National Power Utility) for the electrification of urban and semi-urban areas; and
- the Electrification Development Fund (EDF) for the promotion of rural electrification.

Regarding access to electricity, in late 2012, 579 localities with a population of 4,723,605 inhabitants out of a national total of 16,779,202 inhabitants had access to electricity. That amounts to a coverage rate of 28.15%. As at that date, the national electrification rate stood at 6.38%. However, there are disparities between urban and rural areas. Thus, in urban areas, the electrification rate is 54.2%, compared to only 1.92% in rural areas.

2.1.2. Access to Hydrocarbons

The country's hydrocarbons supply is provided by Société Nationale Burkinabé d'Hydrocarbures (the National Hydrocarbon Company of Burkina Faso - SONABHY), which has a monopoly on the importation and storage of petroleum products.

2.1.3. Access to Biomass

Biomass in the form of fuel wood (firewood and charcoal) is produced through the exploitation of the country's forests by Forest Management Groups (GGF) brought together at the national level under the banner of the National Federation of Forest Management Unions (FNUGGF). The exploitation of wood energy is regulated by the Ministry of Environment and Sustainable Development (MEDD) through its decentralized forest services. This form of energy is the most widely used, estimated at 90% of the population.

2.2. Renewable Energy (Exploitation, Potential, Regulation)

2.2.1. Exploitation

The share of renewable energy in national energy consumption is marginal. The main sources are:

- SONABEL's operation of four (04) hydroelectric plants (Bagré, Kompienga, Tourni and Niofila) with a combined capacity of 35.4 MVA; and
- the implementation of various electrification projects through photovoltaic systems set up by the Directorate General of Energy (DGE) and the Electrification Development Fund (EDF).

However, in recent years, there is a clear interest in promoting Solar Photovoltaic Plants (CS-PV). The following table provides details on the CS-PV.

Table 1
Functional Solar PV Plants in Burkina Faso

No.	Location	Commissioning Date	Capacity (kWc)	Total Cost (CFAF 10 ⁶)
	Burkina Faso Presidency, Ouagadougou	31 May 2013	201.72	656
2	Ministry of the Environment Building, Ouagadougou	24 February 2012	78.11	225
3	International Institute of Water and Environmental Engineering (2IE)	16 March 2012	20.00	-
4	<i>Société Générale des Banques du Burkina</i> (SGBB), Ouagadougou	April 2010	85.00	420
5	Dassasgho B School, Ouagadougou	March 2013	6.50	37

2.2.2. Potential

The main renewable energy sources (RES) in Burkina Faso are: solar, hydro and biomass.

a) Solar

In Burkina Faso, solar energy is one of the most abundant resources. The average daily sunshine is estimated between 5.5 and 6.0 kWh/m² and the annual sunshine duration exceeds 3,500 hours. The table below shows the monthly variations of sunlight hours in five (5) synoptic stations in Burkina Faso.

Table 2
Variations in Monthly Sunshine in Five Synoptic Stations in Burkina Faso

Month/Station	Gaoua	Bobo	Ouaga	Fada	Dori
January	9.7	9.2	9.1	9.8	9.6
February	9.1	9.0	9.1	9.7	9.7
March	8.3	8.5	9.0	9.2	9.4
April	8.0	7.7	8.3	8.3	9.0
May	8.8	8.1	8.6	9.1	9.6
June	7.8	7.8	8.4	8.8	9.7
July	6.3	6.6	7.6	7.6	9.0
August	5.1	5.1	6.2	6.7	8.5
September	6.4	6.4	7.5	7.3	9.0
October	8.5	8.5	9.0	9.4	9.6
November	9.4	9.0	9.3	9.9	9.9
December	9.1	8.7	9.2	9.4	9.3

Source: Alhadi WEREM's Thesis, National Institute of Applied Science and Technology (IRSAT)

b) Water

SONABEL uses water to generate power in four hydroelectric plants. An inventory of potential hydroelectric sites in Burkina Faso is presented in the table below.

Table 3
List of Potential Hydropower Sites in Burkina Faso

	Producible [P GWh / year]	Number of Sites	Capacity
Micro-hydro	P < 5	27	6.5 MW
Mini-hydro	5 < P < 15	29	29.7MW
Hydro	P >15	14	101.8 MW

Source: SONABEL / EDF Study, 1990

c) Wind Energy

Burkina Faso's wind map shows winds generally having speeds lower than 5m / s, which is the minimum threshold for a profitable operation of wind energy, especially to produce electricity through the use of wind turbines.

Hence, in the face of more competitive renewable energy sources such as solar and hydroelectricity, wind energy in Burkina Faso's case is better viewed from a long term perspective that will undoubtedly benefit from the latest technological advances in wind turbine design (better adapted to low wind speeds, thanks to improved performance).

2.2.3. Regulations

Currently, there are no specific regulations governing renewable energy in general. The draft regulations are being prepared. Moreover, there are plans to create a National Agency for Renewable Energy and Energy Efficiency.

However, the Government has adopted a tax incentive to promote solar energy (PV and thermal). This measure involves eliminating customs duties and VAT on equipment and solar energy services (photovoltaic and thermal) for five years from 1 January 2013. It is endorsed every year by the Finance Law passed by the National Assembly.

III. REASONS / JUSTIFICATION/ RATIONALE FOR THE SELECTION OF DOMAINS / SECTORS PROPOSED FOR SREP FINANCING

3.1. Constraints on the Promotion of Renewable Energies

The promotion of renewable energy faces various kinds of challenges.

- **Financially:** investment costs in the development of renewable energy infrastructure (Solar, hydroelectric plants, etc.) remain high and require the input of several financial partners to support the State's efforts. At the national level, the lack of funding dedicated specifically to finance renewable energy operations does not favor the sector's development.
- With regard to **technology:** countries of the South hardly master the latest generation of renewable energy technologies. Therefore, there is a need to transfer

technology and build the capacity of local stakeholders.

- In terms of **regulation**: the absence of specific legislation on renewable energy does not promote the sector's growth (such legislation would allow for the adoption of measures that are favorable to the development of business in the area).

3.2. Technologies Proposed for SREP Financing

Priority MME renewable energy promotion projects include:

- **Solar energy**: the establishment of solar photovoltaic plants or solar photovoltaic systems to increase national power production capacity.
- **Hydropower**: the building of the hydropower plant on the Bagré dam with a 14 MW capacity and the building of mini hydropower stations at Bon, Bontioli, Folonzo Gongourou, with a total capacity of 28.7 MW.
- **Wind energy**: the establishment of an updated national wind resource mapping with a view to identifying areas that are likely to be exploited for power generation in light of recent progress in wind turbine design; and
- Energy from **biomass**: the implementation of projects to develop biomass into modern energy (biofuels, etc.).

IV. POLICY AND REGULATORY ENVIRONMENT

4.1. National Stakeholders and Reference Documents

Burkina Faso's national energy policy is driven by the Ministry of Mines and Energy. Synergies exist with other ministries (cross-cutting aspects of energy). Hence, various ministries are involved in the energy sector.

In this regard, the following ministries may be mentioned (non-exhaustive):

- **Ministry of Economy and Finance (MEF)** for **financial aspects** related to the implementation of energy projects;
- **Ministry of Industry, Trade and Handicrafts (MICA)** for **business aspects** related to products delivered by energy operations;
- **Ministry of Environment and Sustainable Development (MEDD)** for the consideration of the **environmental dimension** (Sustainable Development);
- **Ministry of Scientific Research and Innovation (MRSI)** for **research and development on energy technologies and processes**;
- **Ministry of Women's Empowerment and Gender (MPFG)** for the inclusion of **gender** in the design and implementation of energy projects;

- **Ministry of Territorial Administration and Decentralization (MTAD)** for consideration of the **decentralization dimension** through the involvement of local authorities in the implementation of energy projects.

In addition to the ministries, **Civil Society Organizations (CSOs)** are an integral part to factor in consumer expectations.

Burkina Faso's national energy policy is supported by various texts, especially:

- The Accelerated Growth Strategy for Sustainable Development (SCADD);
- His Excellency the President of Burkina Faso's Program "Building Together an Emerging Burkina Faso";
- National white paper on access to modern energy services;
- Millennium Development Goals (MDGs) to which Burkina Faso has signed up;
- The energy sector policy document adopted by the Cabinet on Wednesday, 16 October 2013.

To **make the environment part and parcel** of development project implementation in Burkina Faso, the legislator has provided for the completion of an Environmental Impact Assessment (EIA: Complete study) or an Environmental Impact Statement (EIS: Abridged study) through Decree No. 2001-342/PRES/PM/MEE of 17 July 2001.

In terms of energy project implementation, Annex 1 of the said decree under the "Energy" component stipulates that for:

- Works related to transportation and distribution of high voltage energy above or equal to 225 kV, the construction of nuclear power plants, management and storage of gas and oil are subject to an EIA;
- Works related to the transportation and distribution of high voltage energy below 225 kV, renewable energy installation and production, installation and modernization of energy infrastructure are subject to NIE;
- Maintenance and repair works of large energy infrastructure are not subject to an EIA or an NIE.

4.2. Regulatory Environment

In the absence of a specific framework governing renewable energy operations, the sector is under the national law on the creation of businesses. However, the establishment of new businesses benefits from favorable conditions in accordance with the Burkina Faso investment code and its implementing regulations.

V. INSTITUTIONAL AND TECHNICAL CAPACITY

5.1. Analysis of Technical and Institutional Capacity

With regard to operational capacity, the MME uses:

- SONABEL for the implementation of urban and semi-urban electrification projects;
- The Rural Electrification Development Fund.

Besides these two stakeholders in the electrification sector, the MME plans to set up a National Agency for Renewable Energy and Energy Efficiency (ANEREE) in 2014 in accordance with the directives of the Energy Sector Policy. The creation of this agency will increase MME's operational capacity to implement renewable energy and energy efficiency projects.

5.2. Risk Analysis

The institutional framework is adapting to the creation of a new SREP project with a view to establishing ANEREE. However, if ANEREE is not created, the DGE with its various technical departments may be requested to implement the SREP as a Category A project (managed by the government).

VI. PROGRAM IMPLEMENTED WITH THE SUPPORT OF TECHNICAL AND FINANCIAL PARTNERS

Several projects are ongoing or have been implemented in recent years in the energy sector with the support of various Technical and Financial Partners (TFPs). The following table provides some details on these projects.

Table 4
Major Energy Projects in Burkina Faso

Project Title	Implementation Period	TFP	Area of Intervention
Energy Services Access Project (PASE)	2008-2014	World Bank	- Rural and urban electrification - Forestry development - Alternative energy
Electricity Sector Development Project	2003 - 2011	World Bank	Electrification
PASEL	2014 - 2018	World Bank	Electrification
PRIELER	2012 - 2016	AfDB	Electrification
Spanish Project	1999 - 2003	Spain	Electrification
TEAM 9	2012 - 2015	India	Electrification

SREP financing would complement these projects in order to meet the major objectives outlined in the main energy sector policy documents.