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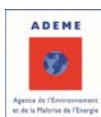


Group of African Agencies and Structures in
charge of Rural Electrification (Club-ER)



Public-Private Partnership in rural electrification programs in Africa

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Organizational schemes of rural electrification

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This document was written based on experiences of CLUB-ER members and exchanges during thematic workshops organized by CLUB-ER, with the help of the CLUB-ER Secretariat and of experts. It is intended as a work paper to feed think tanks and to share experiences between African institutions in charge of rural electrification.

The contents of this document are the sole responsibility of the CLUB ER and may not, under any circumstances, be considered as a reflection of the opinion of the European Union or the official position of CLUB-ER members.

LIST OF ABBREVIATIONS

| | |
|--------------------|--|
| AFD | Agence Française de Développement (French Development Agency) |
| ASER | Agence Sénégalaise d'Électrification Rurale (Senegalese rural electrification agency) |
| EIB | European Investment Bank |
| IDB | Islamic Development Bank |
| BOT | Build, Operate and Transfer |
| BPA | Bonneville Power Administration (USA) |
| CEEAO | Compagnie des Eaux et Electricité de l'Ouest Africain (West African water and electricity company) |
| CEFORE | Centre de formalités des entreprises (Burkina Faso) (Formalities center for enterprises in Burkina Faso) |
| CIE | Compagnie Ivoirienne d'Electricité (Ivory Coast Electricity Company) |
| COOPEL | Coopérative d'Electricité (Electricity coop) (Burkina Faso) |
| CNDC | National dispatching committee (Bolivia) |
| CNEE | National commission for electric energy (Guatemala) |
| EAP | East Asia and Pacific |
| ECI | Enquête sur le Climat des Investissements (Investment Climate Assessment, Senegal) |
| EDC | Electricity Development Corporation (Cameroon) |
| EDF | Electricité de France (French utility company) |
| EECI | Energie Electrique de la Côte d'Ivoire (Ivory Coast Electric Energy) |
| RE | Rural electrification |
| AFESD | Arab Fund for Economic & Social Development |
| FDE | Fonds de Développement de l'Électrification (Electrification Fund) (Burkina Faso) |
| FEMA | Forum of Energy Ministers in Africa |
| KF | Kuwait Fund |
| FNCCR | Fédération Nationale des Collectivités Concédantes et Régies (National Federation of Conceding Entities and Local Authorities (France) |
| GIA-USA LLC | American consortium specializing in air transportation and investments |
| GRET | Groupe de Recherche et d'Echanges Technologiques (Technological Research and Exchange Group) |
| IGD | Institut de la Gestion Délégée (French Institute for PPP) |
| INDE | Instituto Nacional de Electrificación (Former Public Utility Company) (Guatemala) |

| | |
|-----------------|--|
| JBIC | Japan Bank for International Cooperation |
| KFW | Kreditanstalt für Wiederaufbau, German Development Bank |
| LAC | Latin America and Caribbean; |
| MENA | Middle East and North Africa |
| MPDC | Maputo Port Development Company |
| ONE | Office National d'Electricité (National Electricity Agency) (Morocco) |
| ONEA | Office National de l'Eau et de l'Assainissement (National agency for water and sanitation (Burkina Faso) |
| PER | Rural electrification program (Guatemala) |
| PERG | Programme d'Electrification Rurale Globale (Global rural electrification program) (Maroc) |
| SME | Small and Medium Enterprises |
| PPP | Public-Private Partnership |
| PRONER | National rural electrification program (Bolivia) |
| REA | Rural Electrification Authority (USA) |
| SA | South Africa |
| SDE | Regulation structure (Bolivia) |
| SDE | La Sénégalaise des Eaux (Senegalese water company) |
| SEEG | Société d'Énergie et d'Eau du Gabon (Gabonese energy and water company) |
| SEM | Société d'Économie Mixte (Mixed enterprise) |
| SICAE | Sociétés d'Intérêt Collectif Agricole d'Électricité Electricity companies for collective farming interest (France) |
| SITARAIL | Société Internationale de Transport Africain par Rail (International African railway transportation company) |
| SNI | Société Nationale d'Investissement (national investment company) (Cameroon) |
| SOFBEL | Société Burkinabé des Fruits et Légumes (Burkinabe produce company) |
| SOGEL | Société Générale d'Electricité de Guinée (Guinea general electricity company) |
| SOGEPE | Société de Gestion du Patrimoine de l'Electricité (Electricity resources management company) (Ivory Coast) |
| SOTRACO | Société de Transport en Commun de Ouagadougou (Ouagadougou collective transportation company) (Burkina Faso) |
| SSA | Sub-Saharan Africa |
| TDE | Transportation regulation company (Bolivia) |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| VEOLIA | sWater Formerly Compagnie Générale des Eaux (France), subsidiary of Groupe VEOLIA (French water company) |

MEMBERS OF THE THEMATIC GROUP PARTICIPATING IN THE WORK

| | |
|--------------|--|
| ACER | Central Africa agency for rural electrification (Cameroon) |
| ADER | Development agency for rural electrification (Mauritania) |
| AER | Rural electrification agency (Cameroon) |
| ANER | National agency for rural electrification (Congo) |
| ASER | Senegalese rural electrification agency |
| CER | Rural electrification work group (Niger) |
| CNE | National energy commission (DRC) |
| DE | Energy agency (Chad) |
| DGE | General energy management agency (CAR) |
| DNE | National energy agency (Guinea) |
| FDE | Electrification fund (Burkina Faso) |
| FDSEL | Electricity sector development fund (Congo) |
| SOPIE | Ivoirian electricity operation company (Ivory Coast) |

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Executive summary

The Club of National Agencies and Structures in charge of Rural Electrification is a network of over thirty public entities responsible for rural electrification in Africa. By sharing members' expertise and experience feedback, the CLUB-ER intends to reinforce capacities of African rural electrification entities and to provide adequate solutions to this issue.

This document is a summary of exchanges and studies on "Public-Private Partnerships for rural electrification" completed within "**Organizational schemes of rural electrification**", a thematic Group coordinated by Cameroon's Rural Electrification Agency (AER) over the period 2008 to 2010.

www.club-er.org

Why rely on PPPs in the rural electrification sector?

In comparison with other continents, Africa's electrification rates are lowest. The situation is most serious in Sub-Saharan countries where the global (rural and urban) access rate is under 30%. All studies, such as the study completed by UNESCO, unequivocally demonstrate that it will be impossible to reach the Millennium Development Goals in these African countries without increasing access to electricity. In fact, rural electrification meets needs for economic development, social equality, and land-use planning: Highly political issues! According to many public servants in local communities, there can be no local development without electrical energy. Therefore, this socio-economic objective could justify the need for subsidizing investments or even, as in Burkina Faso, consumption, when rural electrification is not financially profitable for an operator. Consequently, financial profitability should not be a prerequisite to an investment in rural electrification: What is important is its economic and social profitability. Long term should overrule short term.

Learning from past accomplishments in industrialized countries, some African countries such as Algeria and Morocco have been able to auto-finance their rural electrification programs: Concretely, they had to rely on sovereign guarantee to secure concessional loans to pre-finance investments (as in Morocco with PERG). However, in other developing countries, the public investment budget is not always sufficient to sustain the necessary financial effort towards the development of rural electrification programs. Therefore, these countries need to secure other public and private financing resources from international cooperation institutions and from the private sector. These new partnerships are created under specific conditions. In particular, bilateral and multilateral cooperation entities have conditioned their financial contribution to the opening of the rural electrification sector to the private sector, based on two primary arguments: The sector professionalization and, more importantly, the mobilization of private financing. These cooperation entities consider that, by subsidizing part of the investments, private operators will take the risk of contributing the additional funds with their own funds. As a result, the public financial contribution would trigger, by leverage, mobilization of private funds which would make it possible to raise the large amounts of funds required for these (numerous) national programs. The Public-Private partnership (PPP) appears then to be an essential tool to involve the private sector in rural electrification.

Which PPP models for rural electrification in Africa?

Public-Private Partnership models and definition greatly vary from one linguistic and cultural environment to another; There is not ONE single, official legal definition. However, all PPPs are long-term contracts whose objective is a definition of private sector participation terms in the implementation and/or management of a public service, which in this case is the distribution of electricity in rural areas. They generally aim to involve, at various degrees, private businesses in most infrastructure financing, building and maintenance operations and in the operation of an electricity provision service. In Africa, PPPs implemented to promote rural electrification generally are contractual, public service delegation type PPPs. Community approaches have also been promoted, as in Burkina Faso, although they remain marginal.

Public and private sector entities bring different types of value and operational strategies, which sometimes conflict: The challenge for a PPP is to generate, despite differences, a synergy to enhance everyone's specificities for the entire term of the contract. This first experience feedback highlights the multiple difficulties encountered by the public partners, members of Club-ER, in the development and implementation of PPPs.

Summary of PPPs in the rural electrification sector

More than 10 years after the first reforms that gave birth to a Public-Private Partnership in the electricity sector, we observe the following:

- **Weak contribution of private financing:** Private financing was one of the primary reasons for opening the rural electrification sub-sector to private enterprises; Results are few and far between:
 - Whether electricity supply companies or electric equipment (conventional or solar) suppliers, national and international private operators do not seem eager to enter this market, despite sometimes highly incentive regulatory conditions (in terms of techniques, prices, and fiscal benefits) and the granting of subsidies for investments;
 - National and international commercial credit institutions are not willing to take financial risks in a new sector in which, lacking reference points, they cannot assess the risks. This unwillingness is enhanced by the lack of a guarantee mechanism to support them and share the risks.

Many countries fail at mobilizing private funds in favor of rural electrification and seem to lack the means to do so.

- **Risks related to flaws in PPP contract drafting:** Project specifications underlying PPP contracts are often vague and imply risks such as:
 - Existence of political risks, or currency risks: Guarantees could partially offset these risks incurred by private investors:
 - Difficulty in anticipating hazards that could affect the completion of the contract project: In an area as innovative as rural electrification, it is impossible to anticipate all events an operation will encounter for the duration of the concession granted. Consequently, drafting PPP contracts is extremely difficult because it determines the rules imposed to both partners for as long as ten to twenty years. More than in other sectors, the flexibility and adjustability of the procedures are crucial ingredients to PPPs' success.
- **The lack of a business-oriented legal framework in Africa:** This is one of the main obstacles to the risk involvement of private operators (particularly international). According to the "Doing Business" report published by the World Bank in 2009, Sub-Saharan Africa is the region that, globally, has the most unfavorable business regulations in the world! For example, the corporate income tax is in the high range of rates applied in the world; The "other tax" items are the highest in the world, with rates more than double those applied in the region in second place, Southeast Asia. Improving this general business environment is often a prerequisite to the expansion of the private sector involvement in the rural electrification sub-sector. In addition to these weaknesses in general business regulations, the lack of specific laws and regulations to better support PPPs adds to the issue.
- **The need for a necessary return of Governments to the front line of RE investments:** In many developing countries, the private entrepreneur has become increasingly reluctant to engage in long-term investments facing greater risks. Logically, commercial enterprises want to secure fast returns on investments, which the rural electrification market cannot provide in Africa. Therefore, public funds have to contribute more than ever to infrastructure financing with subsidies and/or concessional loans, to attract private investors to rural electrification. African countries are becoming increasingly aware of this reality. More members of the Club-ER are considering the necessity of more actively involving of the Government in coordinating efforts to boost investments in the electricity sector, and particularly in the rural electrification sub-sector, as well as maintaining affordable services to the largest number of consumers. Once restricting themselves to the role of promotion and arbitrage, Public authorities (including local authorities) are increasingly visible on the front line for financing RE infrastructures.

The need to define a new PPP approach for rural electricity: Since the private sector involvement did not contribute significant additional funding or bring technical expertise to professionalize the sector, it is necessary to examine whether this approach should be maintained and, if yes, to define its new reasons and rules. For members of

Club-ER, PPPs are still justified, although as a management delegation tool in an outsourcing, gearing down and acceleration of electrification rationale to create value and promote development.

Conclusions and recommendations

- The four following PPP success key factors in rural electrification have been identified:
 1. Regarding **“Politics”**: The need for a clear vision/strategy at the scale of the national territory and with a given horizon, precisely describing the role of public authorities in all their instances (central government, local authorities, RE institutions, etc.) to enable private operators to sustainably position and project themselves;
 2. Regarding **Regulations**: The need for a regulatory and fiscal framework, sufficiently transparent and incentive for the private sector: simplified authorizations and transparent contractual terms for PPPs, lighter standards, prices that match payment capacities of the greatest number of potential clients while guaranteeing acceptable profits for the operator, etc.
 3. Regarding **Financial assistance**: The need for adequate public instruments and means to ensure the financing, not only of part of RE investments, but also of necessary guidance measures during the operation phase.
 4. Regarding **Technical assistance**: Technical assistance services to truly boost the RE sector and generate effective capacities within national SMEs who must be mobilized: Preliminary studies, feasibility studies, low-cost construction, impact studies, management and system maintenance tools, etc.

The following general recommendations by CLUB-ER are as follows:

- **Rural electrification will not be completed only with private funds: It needs significant public funding**

While it is indispensable to economic and social development, rural electrification is, as a general statement, structurally unprofitable. Therefore, it will not be completed without significant public funding. As a matter of fact, rural electrification has never been the result of a strictly commercial approach in any country, even in developed countries. The role of public authorities in mobilizing investment funds is therefore crucial.

- **Re-examine financing schemes and adapt PPP frameworks**

According to CLUB-ER members, PPPs are still justified, but their approach should be refined, taking into account profitability criteria with, at a minimum, two entry keys: project sizes and segment envisioned. Subject to comprehensive economic and financial studies, the conventional concession schemes should only be considered for independent production or distribution systems designed for areas of a sufficient size, integrating large consumers' centers, which would make them attractive. However, leasing appears better adapted to small, integrated, decentralized production/distribution, often at the scale of a single village, structurally unprofitable and often based on fossil energy. In such a case, the PPP becomes a management delegation tool in an outsourcing approach and a gearing down and acceleration tool for rural electrification designed to create value and promote development.

Consequently, the need for a greater financial involvement of public authorities requires a new analysis of current financing mechanisms for rural electrification to effectively generate leverage on private funds, particularly for independent production and/or large-scale distribution projects^[1]. Additionally, for smaller size projects requiring, in practice, almost full financial support during the start-up phase, this situation requires the analysis of PPPs' operating mode, particularly by comparing concession schemes, often incorrectly used, to leasing models, which are more appropriate. This is even more necessary because of the need for public authorities that would, in this case, bear the greatest part of start-up investments, to have control over financial reserves for amortized equipment replacement and service extension in communities already electrified.

[1] In addition, CLUB-ER has produced a thematic document on rural electrification financing.

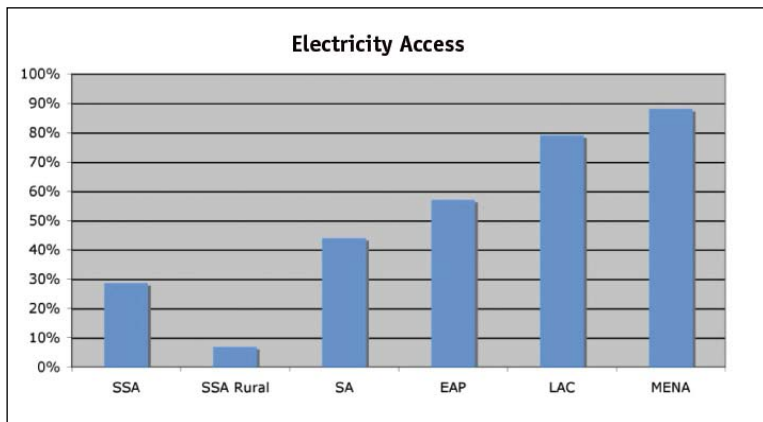
Initial reasons to use PPPs

1

In the late nineties, most countries were undergoing structural adjustments and facing investment restrictions, particularly those with a primarily social purpose. Bilateral and multilateral cooperation agencies conditioned their financial contribution to investments in rural electrification upon the opening of the electric sector to private operators in order to: professionalize the sector and, more importantly, to generate large-scale mobilization of private equity in the framework of Public-Private Partnership Contracts.

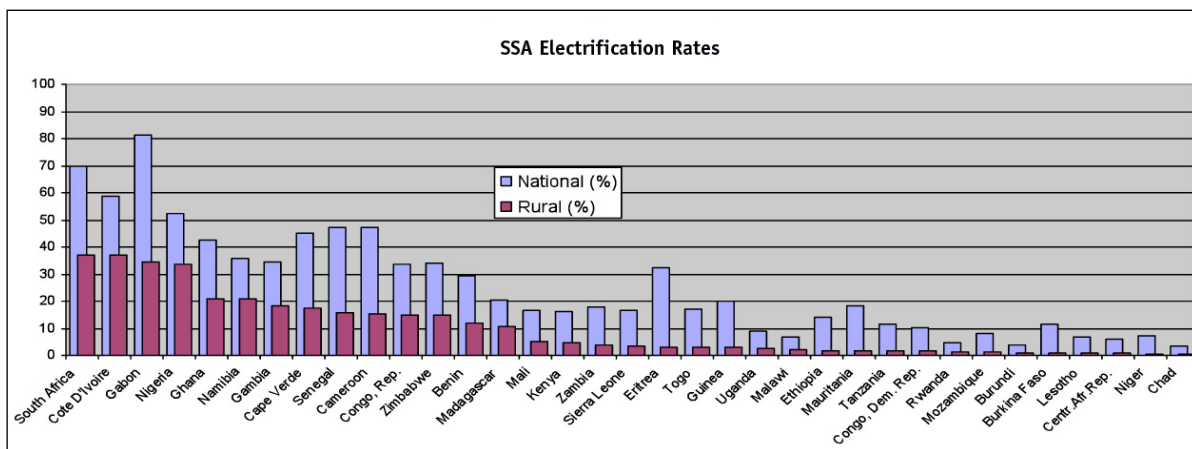
1 1 The need for accelerated development of rural electrification in Africa

In comparison with other continents, Africa is the continent with the lowest rates of access to electricity. The situation is most serious in Sub-Saharan countries (SSA) where the global (rural and urban) access rate is under 30%, as shown in the diagram^[2] below:



Abbreviations: SSA: Sub-Saharan Africa; SA = South America; EAP = East Asian and Pacific; LAC = Latin America and Caribbean; MENA = Middle East and North Africa

In these countries, the global rate is drawn downward by the rural electrification rate, which averages 11%. However, this average conceals wide disparities between countries, as shown in diagram^[3] below:



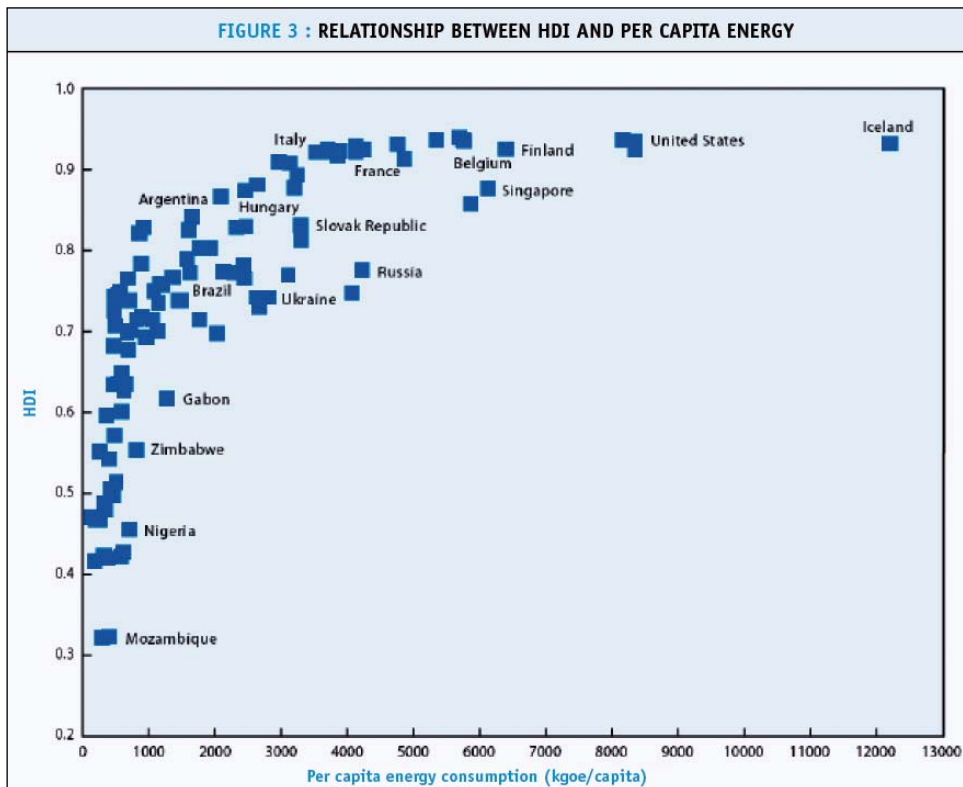
[2] Dana Rysankova, Kilian Reiche, Witold Teplitz, Raluca Golumbeanu, "Africa Electrification initiative: What the data show", World Bank, June 2009.

[3] Source identical to previous diagram.

These values would already be enough to explain the African governments' will to promote access to electricity on their entire territory, particularly in rural areas.

■ **Socio-economic development depends on access to electricity**

There is a parallel progression between the lack of electrification and the backwardness of the economic and social development in these countries. In fact, rural electrification meets needs for economic development, social equality, and land-use planning: Highly political issues! According to many public servants in local communities, there can be no local development without electrical energy. World-scale projections clearly show the tight link between energy consumption per person and human development level, as shown in the graph^[4] below:



Improving existing infrastructure management is a serious challenge. According to the investment climate assessment (ECI), problems related to electricity provision are among those significantly affecting business competitiveness in Sub-Saharan Africa. They are considered as major or very severe by 44.5% of companies in Uganda, 48.1% in Kenya, 57.6% in Tanzania, 64% in Mozambique and even 69.3% in Benin, compared to only 28.1% in China. Only South Africa is ahead of the game with less than 10% of companies considering access to electricity as a blocking factor for their growth. According to African companies surveyed during ECI, the lack of electric energy is more detrimental

[4] Source: AFD presentation at the Energy-Africa Forum in Nice, July 2008.

to their development than the lack of road transportation infrastructure, which only represents a major or serious constraint for the development of their activities for 30% of these companies on average.

Therefore, these socio-economic objectives could justify the need for subsidizing investments or even, as in Burkina Faso, consumption, when rural electrification is not financially profitable for an operator. Financial profitability, originating from a political impulse, should not be a prerequisite to an investment in RE: What is important is its economic and social profitability. Long term should overrule short term.

■ **The Millennium Development Goals will not be reached without access to electricity**

UNESCO studied relationships between the rates of access to electricity in various countries and their Human Development Index, to demonstrate the impact of access to energy, particularly electricity, on the possibility of reaching the Millennium Development Goals. The study includes very explicit graphs proving direct relationships between the rate of access to electricity and the rates of life expectancy at birth, adult literacy, as well as the total rate of fertility (per woman) and the GDP per capita^[5].

These studies clearly show that it is impossible to reach the Millennium Development Goals without increasing access to electricity in African countries.

1 2 **PPPs: A conditionality imposed by donors**

In the late nineties, most countries were undergoing structural adjustments and facing investment restrictions, particularly those with a primarily social purpose. As a result, bilateral and multilateral cooperation agencies conditioned their financial contribution to investments in rural electrification upon the opening of the electric sector to private operators.

Under pressure by international donors, Governments lacking resources to implement large scale rural electrification programs agreed to open rural electrification to the private sector.

At the time, this trend towards liberalization was based on two primary arguments: The need to professionalize the sector and, more importantly, the opportunity generated by a large-scale mobilization of private equity.

■ **Professionalizing the sector**

At the time, most African national electricity companies were (and still are) often disorganized, in a chronic deficit situation, and considered by international donors incapable of implementing large-scale rural electrification programs. In addition, they were facing serious issues of supply deficit compared to demand, production equipment maintenance and repair, transportation, etc. As a result, international donors recommended that governments separate the rural electrification sub-sector from the scope of the national electricity companies who had often considered privatization or lease for this sub-sector. Rural electrification was then opened to other private operators, with new game rules (technical regulations, client management methods, pricing systems, etc.) and an arbitrator (a regulation agency made necessary by the large number of operators on the market).

From the donors' point of view, involving private operators in rural electrification programs should be highly beneficial, with, among others, the following advantages:

[5] Presentation by Mr. Osman Benchikh, Head of the Energy program at UNESCO, during the Conference titled «Access to all forms of energy in Africa: What are the solutions?», organized on Thursday, June 4, 2009 in Paris by ADEA (Association for the Development of Energy in Africa) in collaboration with AOGREEN (African Oil Gas and Renewable Energy Network), the AEE (Association for Energy Economists) and IFP Training (French Oil Institute).

- A more efficient use of public funds: One of the expectations most frequently expressed is the hope for higher efficiency in the use of public funds. As they have a better sense of the markets, private companies should make the right - technological and managerial - decisions easier and faster since their equity is involved;
- The mobilization of the private sector technical expertise and human resources: Technical expertise and human resources originating from the private sector can benefit developing countries that have a structural lack thereof. The local private sector also could play a role: It offers lower structural costs, knows the local constraints and practices, and is economically driven to bypass those that are detrimental to the sustainability of the service;
- Additionally, the recourse to the private sector can result in the emergence of a network of expertise within the country. The goal is to facilitate the transfer of knowledge and to introduce management methods and new technologies;
- The knowledge and management methods of the private sector should improve the management of existing infrastructures, which should infer, at constant quality, a cost reduction in offering electrical services to clients;
- Involving private companies is also expected to contribute to reducing corruption, if only because it is much less frequent than in public companies;
- Obtaining a better price-quality ratio for some other collective interest services.

■ Mobilizing private equity

In consideration of access to these new markets, private commercial operators were expected to contribute to investment financing. However, since rural electrification was not profitable, the private financial sector was not expected to finance the entire amount of required investments. At the time, cooperation entities hoped that, by subsidizing part of the investments, private operators would take the risk of contributing the additional funds with equity. As a result, the public financial contribution would trigger a leverage on private funds, making it possible to raise the large funding amounts required for these (numerous) national programs.

Typology of most common PPPs

2

Public-Private Partnership models and definition greatly vary from one linguistic and cultural environment to another; There is not ONE single, official legal definition. However, all PPPs are long-term contracts whose objective is defining private sector participation terms in the implementation and management of a public service. They generally aim to involve, at various degrees, private businesses in most infrastructure building, operation and maintenance.

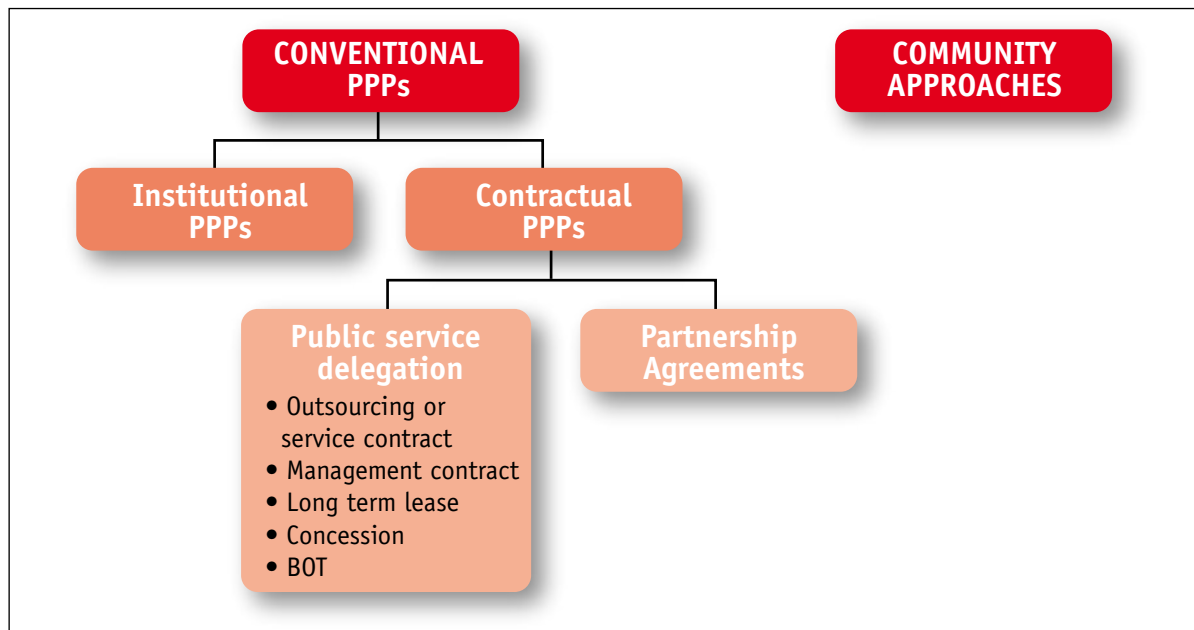
2 1 What is a Public-Private Partnership?

Public-Private Partnership models and definition greatly vary from one linguistic and cultural environment to another; There is not ONE single, official legal definition. However, all PPPs are long-term contracts whose objective is defining private sector participation terms in the implementation and management of a public service, which in this case is the distribution of electricity in rural areas. They generally aim to involve, at various degrees, private businesses in most infrastructure financing, building, and maintenance operations and in the operation of an electricity provision service.

According to IGD^[6], “A PPP is a long term contractual agreement between a public service and a co-contractor (public, private, mixed, associative) for the transfer of the right to operate an activity according to the fundamental principles of a public service, within a mission falling under the purview of the public service”. The notion of “risk” is central: The co-contractor bears part of the risks, whether within a transfer or sharing agreement.

“Public markets” are excluded from this definition. The main difference between a public market and a public service delegation is based on the remuneration method used. In a public market, payment is in full and immediate, and made by the public buyer. In a public service delegation, compensation is obtained through service operations.

The diagram below shows a brief classification of the various contractual approaches that could be considered to involve private entities in public service activities:



[6] IGD, Institut de la Gestion Déléguée (French Institute for PPPs) <http://www.fondation-igd.org/html/part/>

2 2 Conventional PPPs

2 2 1 Institutional PPPs

Their objective is to create an independent entity jointly owned by the State and private operators (for example, a mixed enterprise corporation): The public entity and the private partner are bound by the status and capital of the company. This company's mission is to ensure the delivery of a structure or services to the benefit of the public. Contracts based on an institutional PPP are intended to entrust the private sector with the completion, transformation, maintenance, operation, and financing of equipments, or with the management and financing of services, or a combination of both missions. Direct cooperation between the public entity and the private partner within a specific corporate body enables the public entity to keep a relatively high level of control over operations, which it could even increase depending on the circumstances by subscribing for shares to participate in decision-making bodies. For example, the former EECI (Energie Electrique de la Côte d'Ivoire) was created in the Ivory Coast as a result of this mixed enterprise corporation trend. Generally, there are today several examples of mixed enterprise corporations in the air transportation sector: Following Ghana Airways failure, Ghana International Airlines, a mixed enterprise corporation, was created as a result of negotiations between the State and an American company, GIA-USA LLC. Mixed enterprise corporations also exist in port activities (for example, Maputo) or in production sectors (for example, SOBFEL, a Burkinabe produce company). Even though these contract types are not common in the African rural electrification sector, they could be considered at the level of local communities as part of decentralization programs currently being implemented in several African countries.

2 2 2 Contractual PPPs

A Partnership agreements

There is no example (yet) of the use of Partnership agreements to involve private corporations in the provision of electrical services in African rural areas.

However, Cameroon created the Support Council for the Realization of Partnership Contracts (decree 2008/035, January 23, 2008). This entity's mission is to "contribute its expertise to the creation or renovation of public infrastructures and equipment and to the improvement of public service quality in large scale technical and financial projects to be completed based on a partnership contract".

An example of a partnership contract for the provision of public services is the water provision and sanitation contract in Burkina Faso. The Burkina Faso National Water and Sanitation Office (ONEA), a public company in charge of water provisioning and sanitation in 36 urban centers in the country, signed a partnership contract with Veolia Water, in June 2001. This company contributes its technical expertise as part of a large investment program developed by the Burkinabe government and ONEA for the enhancement of water and sanitation services prior to the commissioning of the Ziga dam. Veolia Water is responsible for optimizing the commercial and financial management of ONEA, creating a customer service, enhancing customer satisfaction, reducing commercial management costs per subscriber, and implementing a knowledge transfer system to the benefit of ONEA staff. From 2001 to 2004, the number of connections in Ouagadougou grew by almost 20%, and the number of served customers grew by approximately 40%. (World Bank, 2007).

B Public service delegation

In African countries, local communities do not (yet) have the technical and organizational capacities required to directly manage their rural electrification program: Therefore, the most common public service execution mode is public service management delegation. It is also the best system to financially involve the private sector in the investment phase. In Africa, PPPs implemented to promote rural electrification generally are contractual, public service delegation type PPPs.

Public service delegation is the set of procedures used by a public entity to entrust a third party with the management of an activity under its responsibility, for an economical consideration. Management delegation implies the conclusion of an agreement for the completion of a public activity benefiting consumers, for the right to receive remuneration either from these consumers or directly from the public entity. Management delegation does not constitute a sub-contracting service, since the public entity entrusts the delegate with the development, management, operation, and, possibly, financing of a public service activity. Additionally, it is not a privatization because the public entity remains the organizing authority for the service and towards the delegate. For the management delegation character recognition, legal doctrine requires a contract between the public entity and the corporate body to whom the management delegation is assigned.

Public service management delegation is characterized by its objective, being the operation of the public service, and by the remuneration mode for the co-contractor (or delegate) of the administration, which must be substantially secured by the service operation results. This implies that the delegate bears part of the operation risk (commercial risk).

■ **Comparison between the various public service management modes**

Relationships between the conceding authority and the public service delegate are determined by contract. Actually, these contracts are drafted in each country on a case-by-case basis. Since operations are increasingly diversified, they require contractual frameworks reflecting the growing complexity of economic and financial relationships, which must be taken into account by these contracts. It is interesting to note that conceding authorities increasingly combine several types of contracts, combining public service delegations with public markets, public domain management mechanisms, financial contracts, etc. These complex schemes follow particular economic and operational standards. Therefore, it is difficult to classify PPP contracts because they no longer correspond to standard models, but rather constitute sets of contractual provisions borrowed from various branches of law.

However, this observation does not jeopardize the relevance of a description of PPP contractual types. Even though experts have not unanimously adopted it, the classification suggested in the table below is the most conventional:

| Comparison between the various public service types | | | | | |
|---|---------------------------|-----------------|--------------------|-----------------|-------------------------------|
| Contractual option | Operation and Maintenance | Commercial Risk | Capital Investment | Asset Ownership | Contract Duration |
| Publicly Owned | Public | Public | Public | Public | No contract |
| <i>Out Sourcing or Service Contract</i> | Public/Private | Public | Public | Public | 1 to 2 years |
| <i>Management Contract</i> | Private | Public | Public | Public | 3 to 5 years |
| <i>Long Term Lease</i> | Private | Private | Public | Public | 8 to 15 years |
| Concession | PPrivate | Private | Private | Public | 25 to 30 years |
| BOT <i>Build Operate Transfer</i> | Private* | Private* | Private* | Public/Private | 20 to 30 years |
| Privatization | Private* | Private* | Private* | Private* | Indefinite or limited in time |

*Or shared public/private in the case of mixed enterprise companies.

- **“Publicly owned”** refers to frameworks in which the public entity directly operates the public service without establishing a specific, independent, management entity;
- An **“Outsourcing or Service Contract”** is a contract with the same characteristics as a service public market with the exception that the service provision consideration is either the sole right to operate the service, or this right with a price⁷. It is a short-term contract, generally six months to two years. The public entity remains the primary service supplier, but sub-contracts some activities to a private operator generally selected through a competitive bidding system. This approach implies that the public company is generally efficiently managed. Moreover, the infrastructure required for the implementation of the activity is not provided by the operator, but made available by the public authority (the government).
- The **“Management Contract”** is a contract under which management and maintenance activities for a public company are assigned to a specific private company, who in exchange receives a payment. A management contract can cover several functions of the public company, such as equipment management, staff management, accounting, or marketing services. This type of contract is often short-term (three to five years or more) and is useful to enhance a company’s performance in a short time. It is based on performance indicator monitoring. However, the investment remains the responsibility of the public authority. As a result, efficiency benefits requiring new infrastructures remain under public control. For example, the water supply and sanitation contract in Burkina Faso, or the railway operation in Cameroon, are governed by management contracts.
- The **“Public ownership with private management contract”** is a contract under which the contractor agrees to manage a public service for a consideration based on a profit sharing system. The manager operates the equipment built

[7] See Website: <http://www.marche-public.fr/Marches-publics/Definitions/Entrees/Concession-services.htm>

by the public entity, but does not bear the related risks. A public ownership with private management differs from the long-term lease and from the concession by the way the manager is compensated^[8].

- The **“Long Term Lease Contract”** is a contract under which the contractor agrees to manage a public service, at his own risk, for a consideration paid by consumers. The capital of the company remains the property of the State, and an investment company is responsible for investments: This is the case for EDC - Electricity Development Corporation - in the electricity sector in Cameroon, and SOGEPE - Resource management company for the electricity sector in Ivory Coast. The Lessee is exclusively responsible for the management and maintenance of infrastructures and services entrusted to him. The Lessee can, in some cases, be involved in the infrastructure modernization or expansion^[9]. He repays to the State a fee for the right to operate its infrastructures and as a contribution to the amortization of investments made. This compensation is called surcharge. It is predetermined by the contract, or based on sales volume: In the first case, the commercial link related to sale uncertainty remains with the State; In the second, more frequent, case, it is borne by the private sector. One of the weaknesses of the long-term lease contract is the financing of new investments.
- The **“Concession”** and **“BOT (Build-Operate-Transfer)”** contracts: The main difference between concession and BOT contracts is that investment charges, operation and maintenance, commercial risk, and asset ownership for the duration of the contract are fully born by the private contractor in the case of the concession, while they can be shared between public and private entities as part of a mixed enterprise corporation for the BOT. Both systems were developed to attract private investments to the new infrastructure construction phase. Concession or BOT contracts allow the private sector to build a new infrastructure in compliance with standards established by the State, and to own exclusive operation rights for the concession area and for a sufficient period (generally ten to twenty years) to earn back the initial investment, plus a profit. The State becomes owner of the infrastructures at the contract expiration and then has the option to place them on a long-term lease contract, for example, with a private operator. The concession contract differs from other contracts, such as construction or public service contracts as follows:
 - The total or partial assumption of the investment by the contractor as part of a long term contract, necessary for the amortization of this investment and the execution of contractual commitments;
 - The transfer from the conceding entity to the contractor or public service obligations corresponding to a public responsibility and the sharing of the various risks between both parties;
 - The unique, global, and complex character of the contract including the development, financing, execution, maintenance, operation of the infrastructure, service to users, etc. which implies negotiation between parties to determine the contract terms;
 - The link between contractor compensation and performance, even though physical collection is not concerned (as for tolls paid by public authorities), the contract financial balance is the object of numerous national case laws, and the contractor’s participation in the infrastructure financing or operation, does not remove its characteristics as long as a risk (even if only operational) remains born by the contractor.
 - A long construction period before commissioning, which must be borne by the contractor and during which he will not receive any compensation. This is the case for a concession on the construction and operation of an infrastructure (and not only on the delegated management of an existing network): The financial profitability of the enterprise can only be considered within the concession duration.

[8] See Website: <http://www.marche-public.fr/Marches-publics/Definitions/Entrees/Regie-interessee.htm>

[9] See Website: <http://www.marche-public.fr/Marches-publics/Definitions/Entrees/Affermage.htm>

Concession is defined by multiple criteria. Consequently, the national law must offer a distinct legal framework to concessions, different from that of public markets, and with assignment and execution rules specific to these contracts. This is, for example, what Cameroon did on December 29, 2006, by voting Law 2006/12 governing the general foundation of partnership contracts. This law was completed by decree 2008/035 of January 23, 2008, creating the Support Council for the Realization of Partnership Contracts and the Law 2008/009 of July 16, 2008, on the fiscal, financial, and accounting framework applicable to partnership contracts.

In Africa, concessions date from the beginning of colonization: For example, the West African water and electricity company (CEEAO) was a private concession company. Today, concessions and BOTs have been developed in Africa in several sectors: For example, the SEEG (Gabon's energy and water company) is under BOT contract.

- **“Privatization”**: Privatization is the sale or concession of all or part of a public company by the State to private investors. Following a privatization, a company can remain under full or partial control of the State if the latter elects to remain a shareholder. In Africa, there is no rural electrification public company (yet) likely to be privatized.

In general, long term leases, concession, and BOTs are considered management modes “at own risks” as opposed to public ownership with private management and management which are considered less risky management modes. The notion of “at own risk” means that the operator bears the operation risk. However, this risk can be positive or negative. If the term “at own risk” weren't a stock phrase, it would be more appropriate to replace it with “risks and profit” or “risks and chances”. This being said, risk allocation is a crucial element of management delegation contracts.

PPP classification by economists is summarized in the “Public-Private Partnership Typology” table presented in Annex 1. This table characterizes each PPP contract type according to investment financing criteria; infrastructure ownership; infrastructure management; contract duration; risk sharing; benefits and weaknesses, and includes examples.

2 3 Community approaches

Community approaches refer to organization systems in which communities (individuals, families, associations, cooperatives, etc.) who do not have access to basic public services such as electricity, join forces to obtain and/or distribute these services. Territorial entities, development partners, and non-governmental organizations typically support these systems.

Even though it is somewhat marginal to structured contractual management types, community management is often advocated in Africa, rightly or wrongly. This model has the advantage of greatly involving the local population to the project operation. However, it is difficult to generalize: Operating an electrification service requires technical and managerial skills for electrical infrastructures, not (yet) sufficient in village populations or local authorities. Therefore, it remains indispensable to assign this type of management to professionals by choosing a public service management delegation.

There are, however, examples of community management approaches developed to facilitate access to public services in rural areas. For example, water distribution in rural areas in Ghana is exclusively based on a community approach. In the rural electrification sector, this approach has been successfully implemented in several North American and Asian countries. It is much more rare in Africa, for reasons described above. Burkina Faso promotes the creation of electricity cooperatives (COOPEL) at the level of rural communities. In this case, the cooperative is the contractor: It receives advice from the FDE (Fond de Développement de l'Électrification). However, in most cases, the operation of electrical infrastructures is done by private companies under a long term lease contract which defines electrical energy production, infrastructure safe management, invoicing and invoice collection regulations. This approach is no longer a community approach per se, but is more like a conventional PPP for public service delegation.

PPPs in rural electrification

3

Cross-analysis of five RE programs implemented in France and in the United States[10], in Guatemala, Bolivia, and Uganda[11] (countries not members of CLUB-ER) shows a variety of applications for PPPs in rural electrification and identifies four main axes:

- Political dimension
- Regulation aspects
- Financing
- Technical guidance

Which is the reality of PPPs in the RE programmes ?

[10] Source: «Comment se sont-ils électrifiés ? Deux études de cas de politique nationale d'électrification rurale : France, Etats-Unis» (How did they get electricity? Two cases studies of rural electrification national policy -France, United States), René Massé, GRET, 2003.

[11] Source: «Partenariats Public-Privé pour l'électrification rurale», (Public-Private Partnerships for rural electrification) Wolfgang Mostert 2003.

3 1 Revisiting experiences outside of CLUB-ER : a four-dimension analysis

A Political dimension

In France, contrary to most countries' members of CLUB-ER, developing rural electricity is the result of a deep involvement of local authorities: The fact is that rural electrification first was a political initiative of French rural public officers, guided then relayed by the government. As a result, RE was developed through multiple decentralized, technically independent programs, which resulted in the need to consolidate and harmonize standards for the various networks when they were progressively connected to each other following the creation of EDF in 1946;

In the United States, the REA – Rural Electrification Authority – was in charge of the rural electrification program on behalf of the Federal Government. President Roosevelt himself created this “Authority”, which shows his political commitment to the completion of RE throughout the entire federal territory. REA elected to technically and financially support electricity cooperatives initiated by the beneficiaries; this was done in agreement with Counties (the smallest administrative entity in the U.S.) to comply with electricity's characteristic as a public service. Consequently, even though the REA sets the federal objectives - electrification of all rural communities of less than 1,500 inhabitants - the project owners, i.e. the electricity cooperatives endorsed by the Counties, independently define their programs: This is a clearly decentralized approach, fairly rare in African developing countries;

In Guatemala, the PER (Rural electrification program), launched following the electric sector reform in 1997, was the rural electrification trigger. The technical committee, including delegates from the Ministry for Energy and Mines, from INDE (Instituto Nacional de Electrificación, formerly a national company), and from two private distribution companies, manages the fiduciary fund created as part of the PER and approves the annual work plan;

In Bolivia, even though the Government adopted a National Rural Electrification Program (PRONER) in 1997 with the objective of extending the national electricity coverage to 70% over 20 years, the decentralization policy (Laws of 1994 and 1995) is the actual acceleration trigger for rural electrification. As a matter of fact, the responsibility for identifying, developing, financing, and implementing rural electrification projects was largely decentralized and assigned to departments and municipalities who were granted appropriate funds to this effect;

In Uganda, the Government periodically presents the rural electrification strategy and an annual progress report to the Parliament: The objective of the underlying electrification program was to reach 10% coverage by 2010.

B Regulation aspects

In France, rural electrification history shows that, beyond contractual and pricing guidance, it would be appropriate to also work on technical standards to facilitate future consolidations and harmonization within a national interconnected network. The country's members of CLUB-ER are rather surprised to learn that, in terms of current trends and practices (which, by the way, progress slowly), the French network is the result of multiple, decentralized, mini-networks, instead of the result of expanding a central network. EDF is by no means an ex-nihilo creation: It is a consolidation of multiple private operators following the nationalization of electricity at the end of the second World War;

In the United States, the REA is the regulation authority. It innovates with regulations favoring the development of electrification cooperatives and awareness initiatives aimed at the States; It also innovates by adopting lightweight standards to reduce network and electrical connection costs; It fights production monopoly situations by inviting the Federal Government to invest (to avoid that rural distributors become hostages of corrupt private producers); It enforces distribution pricing compatible with the purchasing power of rural populations (which ultimately explains the choice of supporting cooperatives, rather than private corporations in the electrical sector), etc.

In Guatemala, the National Electrical Energy Commission (CNEE), created in 1996, is responsible for sector regulations in its quality of independent agency supervised by the Ministry for Energy and Mines. It implements market rules and procedures, supervises the behavior of the various entities and defines transportation and distribution prices (including social pricing). However, recruiting consulting engineers in charge of verifying the compliance of new connections (which determines the granting of a 80% subsidy) is the responsibility of the PER technical committee, established to manage the fund;

In Bolivia, regulations are rather complex. They are made by SDE, relayed by a transportation regulation company (TDE), a National dispatching committee (CNDC) and a National dispatching center. However, systems using less than 500 kW in maximum peak, which are the majority in rural electrification, are not regulated;

In Uganda, one of the major regulation elements is the cancellation of the national unique pricing system. New rural electrification operators were authorized to apply prices covering provisioning costs (after deduction of available subsidies). However, the existing concession is still regulated as a unique pricing zone. Only future rural electrification projects initiated by the contractor can benefit from differentiated pricing.

C Rural electrification financing

In France, regardless of the period in history, government subsidies are never directly intended for private companies (contrary to what is often recommended in models adopted by countries' members of CLUB-ER), but only for structures representing a collective interest: Towns and their various aggregations (intercommunal and departmental syndicates), Régies (public ownership) and Sociétés d'Intérêt Collectif Agricole d'Électricité (SICAE), which are rural electricity cooperative aggregations. The effective emergence of RE became reality when the Government contributed funds, but also took risks (government guarantee for medium and long term public or private loans);

In the United States, financing rural electrification is the central activity of the REA. Essentially, it grants long term loans (25 years) at a bonus rate (2% until 1993) in exchange for a mortgage taken only on networks and operation income, and never on farmers property (including land), for example. These loans are only intended for the financing of the entire (100%) investments in energy transportation and distribution while production is considered profitable;

In Guatemala, a fiduciary fund was created to support PER implementation, with the unique characteristic that 30% of the fund was fed with resources from the public service electricity company privatization; It finances 100% of investments in transportation infrastructure and grants 650 US\$ per connected household;

In Bolivia, rural electrification was primarily supported by decentralized resources: Municipalities receive 20% of the government annual resources while departments receive funds from hydrocarbon royalties and other sources;

In Uganda, an electrification fund was established, exclusively with international resources (mainly the World Bank, and additional funds from bilateral donors): It is now complemented with sustained resources including a tax on electricity consumption in urban areas, financial allowances from lenders, and subsidies from the national budget. The lowest price, at constant subsidy, is the selection criterion for rural electrification operators: However, regional equality is taken into account through establishing differentiated subsidy rates, which are probably higher in distressed areas. Subsidy granting occurs year-round, except for priority projects for which invitations to tender can be made by the government.

D Technical guidance for local communities and private operators

In France, the government services never offer technical assistance directly to private operators, but rather to municipalities and their various aggregations (intercommunal and departmental syndicates) to reinforce their capacity as project owners. It should be noted that the weakness of local communities' expertise is a historic reality, even in France; this did not prevent the Conseil d'État (State council) from promoting them to Conceding Authorities in 1906 and to maintain them in this quality until today. It should be noted also that the Génie rural des Eaux & Forêts entites, which are the technical services of the Ministry of Agriculture (and not Energy!) have greatly contributed to the reinforcement of local communities' capacities. Energy is not a purpose in itself, and France is primarily a farming, rural country (urban population only exceeded rural population in 1930; In 1928, agriculture represents 24% of the gross GDP for an active population of 32%). Consequently, the argument, often heard, that nothing can be entrusted to municipalities because of their incompetence, is defeated here.

In the United States, the REA - once again - contributes various forms of technical assistance to electricity cooperatives (legal and technical assistance in creation phases, technical support in technical management phases, accounting and management training for customer service, implementation of low cost interior electrical installation kits, etc.), but also on a more global scale for developing rural electrification through training young engineers, promoting and financing applied research, developing productive use of electricity, etc.

In Guatemala, no technical assistance system was identified: The sole two companies retained are assumed to master their technical scope;

In Bolivia, no particular action was recorded in terms of technical assistance, even to the benefit of municipalities, who are the primary project owners and show structural needs for capacity reinforcement. As a result, negative effects on municipal project quality and cost have been observed.

3 2 Public and private entities, PPP procedures

A Public entities

In France, the public authority is primarily represented by cities, which progressively prepare to face challenges (economies of scale, but also power relationships with distributors, who are increasingly organized in actual trusts). Consequently, they consolidate, first into department groups of representatives of electrified communities, then, following the authorization by the Conseil d'État in March 1936, into electrification departmental syndicates. Switching from the intercommunal level to the department level, these syndicates reestablish a balance with distributors. In 1933, they establish themselves as Fédération Nationale des Collectivités Publiques Électrifiées, which becomes, in 1937, the Fédération Nationale des Collectivités Concédantes et Régies (FNCCR).

In the United States, the public authority is clearly in the hands of the REA federal agency and its various future versions. Following its recommendation, the government also invests in electricity production (Power Marketing Administrations) by creating, for example, the Bonneville Power Administration (BPA), the first federal agency responsible for marketing electrical energy production from the great federal Bonneville and Grand Coulee dams, to sell electricity at a reduced price, preferably to national and municipal public electric companies and to rural electrification cooperatives with the purpose of breaking the detrimental monopoly of some private operators.

In Guatemala, the PER fund is controlled by a technical committee including representatives of the Ministry of Energy and Mines, of INDE, and of two private distribution companies.

In Bolivia, the public authority is represented by departments and municipalities, in compliance with 1994 and 1995 laws on population participation and administrative decentralization, assigning them the responsibility of identifying, developing, financing, and implementing electrification projects.

B Private entities and PPP procedures

In France, private operators have invested all segments of the electrical sector (production, transportation, and distribution) since the beginning of the 20e century. There is no PPP contract until 1906. From 1906 on, the conceding authority is assigned to local communities and a detailed model of book of specifications is enforced. A concession contract is then established between the municipality and private distributors: These procedures are maintained until 1946, year of the electric sector nationalization. Since then, a long term lease contract binds municipalities who remain conceding authorities, and EDF: Local authorities are still in charge of completing electrification networks, which are then long-term leased to EDF, who in turn is responsible for operating and maintaining these networks. A few electricity cooperatives (Sociétés d'Intérêt Collectif Agricole d'Électricité, SICAE), municipal public ownerships, and mixed enterprise cooperatives (SEM) created by local authorities and excluded from the scope of the nationalization law of 1946 still remain next to EDF.

In the United States, counter intuitively, the non-profit farming electricity cooperatives achieved rural electrification instead of private companies who were rather reluctant to apply terms and conditions (with regard to pricing, cost, loans, etc.) set by REA. By the end of 1936, as many as one hundred cooperatives in 26 States had signed a loan agreement with REA. The PPP type used between REA and electricity cooperatives is similar to a concession except that it includes financial assistance from REA enabling the cooperative to secure 100% of the network construction costs, including transformers and connection lines to individual meters, in the form of a loan with bonus rate. In addition, County (the administrative entity) approval is required upon first contact between the cooperative and REA.

In Guatemala, despite privatization, there is a de facto monopoly of Unión Fenosa, a company combining both distributors of the western and eastern zones. However, the private sector does not contribute any investment financing into this atypical PPP (with the exception of existing asset replacement).

In Bolivia, several distributors operate within the National Interconnected System (SNI) and some companies, which could be vertically integrated, operate outside the SNI. For the implementation of the PRONER, RE concessions had to be assigned to operators asking for the smallest investment subsidy per connected client. In reality, most RE projects were implemented with 100% investment subsidies: Operation was later transferred (by means of long term leases) to the local distributor (with assets retained by the local government).

3 3 PPP reality in rural electrification programs

A The particular cases of the United States and France

The history of rural electrification development in France and in the United States is a mine of information for Africa today: In both cases, the public authority was the key driver by making medium and long term necessary funds for investments available to local authorities who assumed the role of conceding authorities, or to farming electricity cooperatives, and by ensuring a coverage for investment risks.

When the rural electrification sector was liberalized in the United States in the seventies, rural electrification had been completed for nearly 10 years: In twenty-five years, from 1935 to 1960, the electrical connection rate in rural zones went from 10.6% to nearly 97%. In France, where liberalization occurred in the eighties, rural electrification

had been completed for over 40 years: At the onset of World War II in 1939, rural electrification was already completed with 96% of the French population connected to the electrical network. Both examples are typical of this sub-sector in industrialized countries.

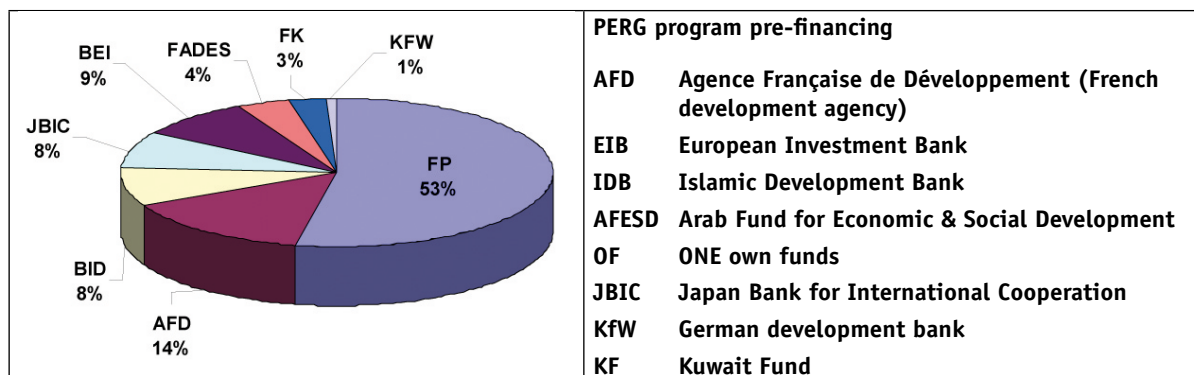
This leads to an important question: By opting for liberalization of the electric sector while the national electrification rates are not even 10% in Sub-Saharan countries, doesn't Africa "put the cart before the horse"? Even more so, since electricity access rates in rural areas are even lower, 8% on average? With this backdrop, how could PPPs contribute to the rural electrification effort?

B The case of African countries who completed their rural electrification programs

It is obvious that many countries that completed their electrification programs made greater use of public concession loans for financing investments and relied on their national electricity companies to implement rural electrification programs.

Indeed, all countries who already electrified their rural areas, as well as those who are in the course of doing it, only marginally used PPPs. This approach was not systematic and even less exclusive. In Africa, countries such as Algeria, Tunisia and Morocco were able to achieve rural electrification by assigning this electrification mission, as well as financial resources management, to their national electricity companies, who in turn were responsible for delegating part of the mission to the private sector (Solar PERG in Morocco, for example). To achieve this goal, these governments not only demonstrated a strong political commitment; They were also able to secure the greater part of the necessary funds, by means of medium and long term concessional loans and, in part, their own resources, to support this effort for decades.

Example: In Morocco, the financial arrangement of the global rural electrification program (PERG) included a 55% contribution by the Office National d'Électricité (ONE), a 20% contribution by local authorities, and a 25% contribution by the beneficiaries, securing a budget close to 1.8 billion Euros, to increase the global electrification rate from 18% in 1995 to 95.4% in 2008. In terms of investment pre-financing, and pending the effective receipt of contributions by the various stakeholders at a national level, the ONE contributed 53% from its own funds, while 47% were raised from international lenders (AFD, IDB, JBIC, EIB, AFESD, Kuwait Fund, KfW) in the form of concessional loans guaranteed by the Moroccan government^[12].



[12] « Financement du PERG », M. Abdessamad Saddouq, Director of Rural Electrification Valuation, ONE, CLUB-ER Dakar workshop, June 2009.

Against the background of reforms described above, and in the hope of raising private capital, few African countries have, until now, chosen a financing method for rural electrification based on a recourse to concessional loans: The mechanisms currently used are mainly aimed at obtaining national or international subsidies, with resource levels inconsistent with the level of needs and the governments' auto financing capacities^[13].

In Senegal, for example, the global need for financing to achieve the target of 50% rural electrification rate by 2012, or 365,000 households with access to electricity, compared to 20% today (120,000 households electrified), is estimated as 238 billion CFA francs or 363 million Euro^[14]. In September 2009, of the 125 million Euro raised, Senegal had secured 30 million Euro from the national budget^[15], which only amounts to 8.3% of the total budget required.

C The case of Sub-Saharan Africa: Finding models that work...

The structurally unprofitable character of rural electrification investments necessarily implies the financing contribution of the public authorities. Even more so since these are small, local projects, where the potential financial profitability is low and where no internal equalization is possible. This consideration should exclude schemes such as BOTs or concessions and promote long-term leasing- type contracts unless using service or management contracts in case of public companies responsible for rural electrification or with mixed enterprise companies.

In practice, various schemes are currently in progress in Sub-Saharan Africa:

- Many countries use concession contracts, regardless of project size. However, these contracts only require a low (or very low) contribution to investment financing by private operators (in some cases, less than 40% of amounts needed). Recently, Senegal assigned the Dagana-Podor-Saint Louis regional concession to Morocco's Office National d'Électricité for a relatively large participation of the ONE up to 66% of the investment needed^[16]: This is a first in this sector for a project of that size: Typically, concessions are limited to an area including only one community.
- In addition, there are long term lease contracts with a quasi-total investment commitment by the public entity or by independent private producers. This is the case in Ivory Coast with the Compagnie Ivoirienne d'Électricité (CIE) who owns exclusive electricity distribution rights over the national territory.
- So-called "community" approaches are also implemented in some countries such as Burkina Faso, with the creation of an electricity cooperative (COPEL) at the level of rural communities who sign long-term lease contracts with private operators for local system operation.

A summary of these various PPP schemes for rural electrification is presented in the next chapter.

[13] See CLUB-ER thematic document on rural electrification financing.

[14] « Le modèle sénégalais d'électrification rurale : enjeux et modalités de la mise en œuvre d'un partenariat public-privé » (The Senegalese rural electrification model: Challenges and implementation process of a public-private partnership), M. Amadou Sow, ASER, September 2009.

[15] Source identical to previous quote. Other financing raised from the Kingdom of Spain (33 million US\$), the World Bank and FEM (30 million US\$), AFD (10 million Euro), the African Development Bank (UA 9.58 million), the European Union (6.5 million Euro), KfW (6.6 million Euro), Public Private Infrastructure Advisory Fund (1.5 million Euro).

[16] Source: M. Amadou SOW, ASER Assistant General Director, CLUB-ER Dakar workshop, June 2009.

PPPs summarized status since reforms

4

Which is the status of PPPs today? Which are the difficulties encountered by the countries in the implementation of these partnerships?

4 1 A globally lukewarm situation...

■ Internal reluctance towards reforms

Opening the market to private operators was the object of significant reluctance and was highly time and energy consuming.

Governments did commit with lenders and did modify electricity laws and codes in a majority of Sub-Saharan Africa: They created regulation agencies, rural electrification agencies, and even secured rural electrification funds. However, in practice, this principle of opening markets to the private sector is not fully admitted yet in all public entities in charge of managing the sector, such as national electricity companies; many decision-makers do not understand why the government subsidizes investments to the benefit of a commercial operator! Clearly, this is one of the reasons explaining why private-public partnership schemes have not been more and better prepared. Some issues observed in the involvement of commercial companies originate from the lack of preparation in the drafting of public-private contracts and from the cultural reluctance described above.

As in a vicious circle, this reluctance to reforms is exacerbated today by the difficulties faced in convincing private companies to enter the rural electrification sub-sector and, even more, to raise private equity. Even though some countries (Mali, Burkina Faso, Madagascar, etc.) can now state the existence of a network of "small" national private operators, progressively created as a result of the reforms, many other countries still do not have any operators other than the national electricity company. Worse: Financing by private operators is still marginal.

■ A specific difficulty to raise private capital

Raising private financing was one of the primary reasons for opening the rural electrification sub-sector to private enterprises; Results are few and far between. As a matter of fact, opening national electricity companies to private capital (as in Cameroon, Senegal, Mali, etc.) has not made it possible to raise massive private investments, even when they were provided for in PPP contracts. The situation is even more fragile in the rural electrification sub-sector:

- Whether electricity supply companies or electric equipment (conventional or solar) suppliers. national and international private operators do not seem eager to enter this market, despite highly incentive regulatory conditions (in terms of techniques, prices, and fiscal benefits) and the granting of subsidies for investments;
- National and international commercial credit institutions are not willing to take financial risks in a new sector in which, by lack of reference points, they cannot assess the risks. This is even more so since there is no guarantee mechanism to support them and share the risks.

During various meetings of the Club of African agencies and entities responsible for rural electrification (Nouakchott, July 2005, Tananarive, December 2006, Dakar, June 2009, and Douala, September 2009), several countries were able to express their confusion and dismay: Lack of private investors, difficulties to secure financial arrangements, infrastructure deficiencies, lack of expertise, financing options uncertainties, etc. This reality is preventing them from guaranteeing the success of their rural electrification programs.

Some countries (Senegal, Mali, Madagascar, etc.) are still succeeding in securing private funds to co-finance rural electrification investments. However, many countries have not been able to do it and do not seem to have the means to succeed.

■ Relatively insignificant results

In the sub-sector of rural electrification, it is obvious that, after a few years, PPPs have not met expectations of public authorities and international lenders, specifically the professionalization of the sector and the raising of private capital, during the initial phases of rural electrification.

Meanwhile, the need for electricity to improve the lifestyle and promote local economy in rural areas is still there. Therefore, public authorities are increasing their contribution to rural electrification infrastructure investments, up to subsidizing the entire investment in some countries or rural areas.

In addition, experience shows that national SMEs could play an important role in the implementation of PPPs for rural electrification because of the small size of rural markets and low structural costs of these SMEs. However, these SMEs need technical training and assistance: This is the price to be paid by governments to promote, over time, the emergence of a national capacity for implementation and management of electrification projects in rural areas. Consequently, the capacity reinforcement expected from the involvement of the private sector has not materialized either.

4 2 ... In an environment, however, twice as restrictive

4 2 1 Regulation frameworks detrimental to business in Africa

■ Lack of legal framework promoting business in Africa

The lack of a generally business-oriented legal framework in Africa is one of the main obstacles to the risk involvement of private operators (particularly international).

In general, it is more difficult to conduct business in African than in most other regions in the world. Each year since 2003, the World Bank publishes a report titled “Doing Business” describing the business environment per country and per region. It provides a numbered assessment of regulations applicable to small and medium-size enterprises in various areas including: Enterprise creation, building permit granting, recruiting staff, asset transfer, obtaining loans, investor protection, tax payment, cross-border trade, contract execution, and company shutdown. The underlying idea is that, to do business in a country, entrepreneurs-investors need fair and strong, favorable and enforced rules.

Improving this general business environment is often a prerequisite to the expansion of the private sector involvement in the rural electrification sub-sector. The lack of specific laws and regulations to better structure PPPs is a pity.

■ Lack of specific laws and regulations to better structure PPPs

Indeed, laws on contracts and services concluded with governments often are not flexible enough to meet all specificities of PPPs. For example, the existing contract regulation only rarely specifies the link between a payment and the quality of the performance. Additionally, it is based on a time horizon too short for rural electrification concession, i.e. typically less than five years. It is still vague on risk sharing between public and private sectors, which then impedes the settlement of any unexpected event since each partner’s logic is to point the finger at the other.

Today, it appears crucial to set specific regulations and laws to structure PPPs, including for concessions and long term lease contracts. Some countries initiated this approach, as did Cameroon where, in less than two years (December 2006 to July 2008), three important laws were voted on this issue:

- Law 2006/12 of December 29, 2006 defining the general structure of partnership contracts;

- Law 2008/009 of July 16, 2008 defining the fiscal, financial and accounting structure applicable to partnership contracts. This law grants significant fiscal, customs, financial and accounting benefits to companies involved in partnership contracts;

Creation of the Support Council for the Realization of Partnership Contracts (decree 2008/035, January 23, 2008) in Cameroon. This entity's mission is to "contribute its expertise to the creation or renovation of public infrastructures and equipment and to the improvement of public service quality in large scale technical and financial projects to be completed based on a partnership contract".

4 2 2 Risks resulting from deficient drafting of PPP contracts

Books of specifications for PPP contracts are often vague and run the risk of costly contract renegotiation during the operation phase. The main risks identified by public authorities are as follows:

■ Political risks, currency risks, breach of contract risks

Guarantees are required to offset these risks incurred by private investors. Even though international financial institutions have defined hedging mechanisms for part of these risks, these mechanisms are often inadequate or, at the least, difficult to implement. This is an object of consideration for rural electrification agencies: For example, they are studying the possibility of using local savings to limit currency risks.

■ Difficult to anticipate hazards that could negatively affect the completion of the mission object of the contract

In an area as innovative as rural electrification, it is impossible to anticipate all events an operation will encounter during the duration of the concession granted. Consequently, drafting PPP contracts is extremely difficult because it determines the rules imposed on both partners for as long as ten to twenty years and made even more difficult by the fact that contractual negotiations inevitably generate additional costs. Renegotiations also result in delays that could, in turn, generate additional costs or shortfalls.

For these reasons, it is crucial to take the time to carefully draft the PPP contract and add a provision for meetings, as did ASER in Senegal; This provision states that both parties, public and private, periodically meet to discuss and solve existing problems that could objectively weaken the operation's sustainability.

More than in other sectors, the flexibility and adjustability of the procedures are crucial ingredients of PPPs' success. None of the partners would benefit from a failure of the rural electrification program; It is important to preserve, throughout the project completion, the will to identify win-win solutions.

Additionally, the rural electrification project follow-up is often the responsibility of newly created and unreliable administrative entities (regulation agency or steering committee) who take the place of market mechanisms with which private partners are more familiar. This could weaken the credibility of public partners regarding their capacity to effectively enforce penalties or decisions provided for in PPP contracts.

To remedy the issues related to future hazards during the project's duration the Cameroon law of December 29, 2006, defining the general scheme for partnership contracts, submitted partnership contracts and co-contractors' performance of the public entity to a specific, stable, fiscal, financial and accounting structure^[17]. This stable and specific

[17] Art.14 of the Law 2006/12 of 12/19/06: «Partnership contracts and co-contractor performance of the public entity are submitted to a specific, stable fiscal, financial, and accounting structure defined by law».

character is stated again in the Law 2008/009 of July 16, 2008^[18]. This law actually introduced a fiscal, financial, and accounting structure that is beneficial to partnership contracts.

■ **Disputed claims in partnership contracts**

In the event a contract does not provide answers to a dispute, it is difficult to determine the competent jurisdiction - administrative or common law courts - and, in some cases, to identify the applicable law when one of the parties has a foreign nationality. This problem could be mitigated by inserting into the contract a choice of forum clause or an arbitration clause assigning the settlement of any possible dispute to an international arbitration institution.

[18] Law 2008/009 of July 16, 2008 defining the fiscal, financial and accounting structure applicable to partnership contracts.

Conclusions and Recommendations

5

5 1 The need for a return of public authorities

The reforms that resulted in opening RE markets to the private sector will not make it possible to secure enough private resources to complete RE in all national territories. The members of CLUB-ER are clearly aware that RE cannot be completed at the anticipated scale without a strong involvement of public authorities in the financing of investments.

Today, experts are unanimous: Rural electrification, indispensable to economic and social development, is structurally unprofitable, particularly in the distribution segment. Therefore, it will not be completed without significant public funding. According to CLUB-ER, the notion of RE infrastructure financing exclusively or mainly by private investments is a true “illusion”, even more so in Africa. This is a universal reality that all countries that are electrified today - including in market economies - have taken into account: Industrialized countries in the past (France, United States, USSR, etc.) or more recently, developing countries (Algeria, Morocco, Tunisia, etc.). Rural electrification of a nation never resulted from a purely commercial logic: No country has ever expected that the market of electricity provision in rural zones would be attractive enough to motivate private companies in investing their own funds in this sector.

African countries are becoming increasingly aware of this reality: More countries are considering the necessity of more active Government involvement and coordination in boosting investments in the electricity sector, and particularly in the rural electrification sub-sector, as well as maintaining services at prices affordable to the largest number of consumers.

5 2 Reexamine financing schemes and adapt PPP frameworks

Even though the involvement of the private sector fails to contribute additional financial resources or anticipated technical expertise, it is necessary to examine whether it is appropriate to persist in the PPP approach, particularly in the concession management mode, or to define new, more realistic, operation modes.

According to CLUB-ER members, PPPs are still justified, but their approach should be refined, taking into account profitability criteria with, at a minimum, two entry keys: project sizes, and segment envisioned. Subject to comprehensive economic and financial studies, the conventional concession schemes should only be considered for independent production or distribution systems designed for areas of a sufficient size, integrating large consumers’ centers, which would make them attractive. However, leasing appears better adapted to small, integrated decentralized production/distribution, often at the scale of a single village, structurally unprofitable and often based on fossil energy. In such a case, the PPP becomes a management delegation tool in an outsourcing approach and a gearing down and acceleration tool for rural electrification designed to create value and promote development.

Consequently, the need for greater financial involvement of public authorities requires a new analysis of current financing mechanisms for rural electrification to effectively generate leverage on private funds, particularly for independent production and/or large-scale distribution projects^[19]. Additionally, for smaller size projects requiring, in practice, almost full financial support during the start-up phase, this situation requires the analysis of PPPs’ operating mode, particularly by comparing concession schemes, often incorrectly used, to leasing models, which are more appropriate. This is even more necessary because of the need for public authorities that would, in this case, bear the greatest part of start-up investments, to have control over financial reserves for amortized equipment replacement and service extension in communities already electrified.

[19] In addition, CLUB-ER has produced a thematic document on rural electrification financing.

Experience shows that there are uncertainties regarding the sustainability of infrastructures under concession today in several countries where operators state that they will not be able to replace them when necessary. Small existing rural operations, currently running as concessions, are showing multiple signs of vulnerability.

Additionally, in many cases, the operator struggles to develop his clientele throughout the duration of his PPP contract, even more so if he can't see the direct interest of the mission. However, it is as important for the public authority that made the investment to pursue the development of new rural electrification programs as it is to ensure the technical and financial sustainability of those already in service. Long-term loan contracts are more appropriate to allow the conceding authority to continuously monitor the infrastructure sustainability, particularly in the case of small, decentralized systems, while introducing incentives to farmers' compensation.

5.3 The four success factors for a PPP in rural electrification

The cross analysis of five RE programs presented above made it possible to identify four essential conditions to the success of a PPP in terms of its outsourcing objective, value creation, and business opportunities for national companies:

1. Regarding **"Politics"**: The need for a clear vision/strategy at the scale of the national territory and with a given horizon, precisely describing the role of public authorities in all their instances (central government, local authorities, RE institutions, etc.);
2. Regarding **Regulations**: The need for a regulatory and fiscal framework sufficiently transparent and incentive for the private sector;
3. Regarding **Financial assistance**: The need for appropriate public instruments and resources to ensure the financing of part of the RE investments and the need for necessary guidance during the operation phase.
4. Regarding **Technical assistance**: The need for technical assistance services to boost the RE sector and the emergence of effective capacities within national SMEs.

Without these prerequisites, the use of PPPs in the rural electrification sub-sector could prove to be unsuccessful, as concluded several CLUB-ER member countries, some of which are having to reexamine reforms implemented in the late nineties.

These four factors are detailed below.

1 Political will and vision

Regarding "Politics": The need for a clear vision/strategy at the scale of the national territory and with a given horizon, precisely describing the role of public authorities in all their instances (central government, local authorities, etc.) and enabling private operators to sustainably position and project themselves. The history of successful rural electrification programs also shows the importance of incentive initiatives that prompt local entities, communities, and private companies to suggest RE projects. Developing master plan type electrification programs could make it possible to anticipate future harmonization and consolidation needs, as well as economies of scale considerations while allowing local communities to contribute to the definition of detailed programs within their scope of competence.

2 Flexibility and facilitating character of regulations

Regarding Regulations: The need for a regulatory and fiscal framework, sufficiently transparent and incentive for the private sector, particularly, regulation mechanisms adapted to rural electrification specificities: Simplified authorizations and transparent contractual terms for PPPs, lighter standards, prices that match payment capacities while guaranteeing acceptable profits for the operator, etc. Disseminating public authority responsibilities in terms of rural electrification promotion, regulation and financing could prove counter-productive for the development of PPPs. Cost reduction at all levels, including regarding standards, should be one of the main concerns for rural electrification. In this area, innovation should be a main focus of the programs. The need for future harmonization should not constitute a restriction to the development of decentralized systems. Finally, rural electricity provision should be vertically integrated. Production and transportation segments must be monitored to prevent de facto monopoly situations and the blocking of rural distribution.

3 Mandatory intelligent guidance in terms of financing

Regarding Financial assistance, rural electrification PPPs require that public authorities develop instruments and means adapted to the pre-financing, at least partial, of investments and resources to financially support operators in the operation phases. Because of cost structure, required investment amounts, and rural electrification infrastructure amortization duration, a public financing strategy based only on capital contribution would be inefficient. The public authorities must demonstrate resourcefulness to diversify its financial support to the private sector: Capital subsidies and, more importantly, long term credit risk-taking, etc.

4 The need for technical assistance to communities and local private operators

Regarding Technical assistance, it is crucial to implement technical assistance services at various levels to facilitate the emergence of effective capacities, particularly when attracting national SMEs: Preparatory studies, feasibility studies, low-cost construction, impact studies, system management and maintenance tools, etc.

Appendix

Appendix 1. Public-Private Partnership Typology

| Services and management | Long term lease | BOT or concession |
|-----------------------------------|---|---|
| Financing | The private entity pays a price predetermined in the contract. Possibility to share profits between the government and the private entity. The public authorities remain responsible for capital expansion and maintenance and investment financing | The government delegates a public service management to a private company for compensation. The company capital remains the property of the government which is responsible for investments by means of a holding company |
| Ownership | Public | Public |
| Management | Shared | Private |
| Duration | 6 months-2 years (service); 3-5 years (management) | 8-15 years (long term lease) |
| Risk | Public | Shared or private |
| Advantages (+) and weaknesses (-) | (+) Skills and know-how transfer from private to public; A competitive type of PPP because service and management contracts can be open to several companies. (-) The capacity of the private sector to improve service quality remains limited to specific tasks. | (+) Better efficiency because the private sector is responsible for the entire management and maintenance of the service. (-) The capacity of the private sector to improve service quality remains limited by the capacity of the public service to develop infrastructures |
| Examples | Water: Ghana Water Company Limited; Management contract in Rwanda, Kenya or Burkina Faso. Electricity: Kenya, Rwanda | Railways: SITARAIL (Ivory Coast and Burkina Faso) ; Water: la Sénégalaise des eaux (SDE) ; Electricity : Société Générale d'Électricité de Guinée (SOGEL), Compagnie Ivoirienne d'électricité (CIE) |

(Footnotes)

1 Source : « Partenariat public privé dans le secteur de l'électricité. Maîtriser les relations contractuelles entre collectivités publiques et opérateurs privés ». Collection Points et Repères de l'IEPF.

| Mixed enterprise company | Community approaches | |
|---|--|--|
| <p>The private company is responsible for infrastructure and daily operation financing. Pricing rules are discussed in the concession contract.</p> | <p>Public and private sectors must finance the enterprise together. Risks and profits are shared.</p> | <p>Financial support by NGOs, foundations, lenders, and the private sector. The capital is already available.</p> |
| <p>Public</p> | <p>Public and private</p> | <p>Private and community</p> |
| <p>Private</p> | <p>Public and private</p> | <p>Private</p> |
| <p>20 to 30 years</p> | | <p>1 month to 3 years</p> |
| <p>Private</p> | <p>Shared</p> | <p>Private</p> |
| <p>(+) Substantial contribution of private capital; Combining private sector responsibilities in infrastructure development and daily management; Greater opportunities for innovation.</p> <p>(-) Implies a regulation capacity by the government; Contract complexity (combine foresight and flexibility); Process not very competitive.</p> | <p>(+) Common interest of the private and public sectors because of common investments; Reduction of transaction costs.</p> <p>(-) Transparency issue: Conflict of interest between the entrepreneur government and the publicly responsible government; Risk of corruption.</p> | <p>(+) Based on local knowledge and skills; Job and income creation; Services intended for the poor.</p> <p>(-) No scalability possible; Based on the informal sector, and the government could be reluctant to commit to this approach.</p> |
| <p>Gas: West African regional pipeline;</p> <p>Railways: Ghana Railway Corporation;</p> <p>Electricity: Concessions granted to cooperatives (COOPEL, Burkina); SEEG: Société d’Energie et d’Eau du Gabon (SEEG);</p> <p>Roads: Trans African for N4 highway (Mozambique- South Africa);</p> <p>Prison: South Africa; Water: Siza Water Company in South Africa</p> | <p>Air transportation: Ghana International Airlines; Société burkinabè des fruits et légumes (SOFBEL);</p> <p>Urban transportation in Burkina Faso : SOTRACO;</p> <p>Port: Maputo Port Development Company (MPDC);</p> <p>Environment: Namibia</p> | <p>Waste collection; Water in rural areas: Burkina Faso, Ghana;</p> <p>Electricity in rural areas: Burkina Faso, Ghana</p> |



Notes

