Transparency in the Dark – An Assessment of the Cameroonian Electricity Sector Reform*

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Biographical notes

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Abstract

In 2001, AES Corporation was the sole bidder in the sale of the Cameroonian electricity company. In accordance with the World Bank's third structural adjustment credit project, the state-owned company was sold. Since then, consumers face regular blackouts and tariff increases and some investment has been made in new generation capacity. A new regulatory body has been set up, but it is not fully operative. With many Sub-Saharan countries under similar pressure to sell their public utilities, this paper contributes to the understanding, assessment and analysis of privatization reforms. After describing the reform process, the paper assesses the results three years later and a general "institutional endowment" analysis of the power sector is presented. The main conclusion is that due to the weak institutions, competition and private ownership cannot be fully relied on, and that government involvement is unavoidable. Some recommendations are made to move beyond the many failures of privatization.

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Network utilities pose special problems of ownership and regulation whose solution is constrained by the institutional endowment of the country.

Newbery (2000, p. 2)

1. Introduction

Numerous jurisdictions have now implemented electricity sector reforms. In developed countries, some governments acting solely on their own took the initiative, as in England and Wales or California.[1] In many developing countries, however, these reforms are implemented as conditions to loans and are designed by the World Bank and the International Monetary Fund. An important dimension of these reforms is *privatization*. Along with the introduction of competition in the electricity sector, the ownership is also required to be transferred to private interests. This is the story of Cameroon since 1989, with privatization finalized in 2001.

The objective of this article is three fold. First, to document and put in perspective the Cameroonian electricity reform process. Second, to assess the reform from a general set of criteria and from its own objectives. Finally, to develop a general framework to help understand what type of electricity market reforms are desirable in Cameroon and other Sub-Saharan countries in a similar situation. Directly related to the two first objectives, the main research question is "what are the results of the privatization of the Cameroonian electricity company?" Two subsidiary research questions aim at achieving the third objective: what should have been done and what can still be done? The answer to these questions provides a better context to understand the reform's results.

The contribution of this paper is therefore both at an empirical level, on the factual assessment of privatization three years after it happened, and at a more prescriptive level, on the general recommendations that can be made given the characteristics of the country. Relatively little research is done on electricity reforms in Sub-Saharan Africa, in comparison to other regions. Books like Zaccour (1998) or IEA (2001) are only two examples of a large literature mostly oriented towards developed countries, with bibliographies pointing at numerous references. Contributions on Africa are much less numerous. Turkson (2000) is probably the only book on electricity reforms in Africa (covering only six countries: Côte d'Ivoire, Ghana, Kenya, Zimbabwe, Uganda and Mauritius). Some other case studies of African reforms in Ghana, South Africa and Senegal can be found in Dubash (2002) and Wamukonya (2003). A special issue of *Energy Policy* on energy in Africa also has case studies on Zimbabwe, Ethiopia, Kenya and Cameroon (see Karekezi, Mapako & Teferra 2002). This short list completes the overview of academic case studies on electricity policy for about forty Sub-Sahara African countries. There are, however, many ongoing reforms, as in Nigeria and Cameroon. The electricity reform in Cameroon is particularly interesting because it represents the only privatization of the *entire* power sector in Africa to date. It was also done in an impressively short period of time: the new sector's structure was put into law late in 1998 and the sale of the integrated company was done in mid-2001. The only academic publication on this reform is the one on Cameroon mentioned previously. That paper, Pineau (2002a), analyzed the

[1] Developed (and developing) countries are however at risk of progressively losing their power to not liberalize their electricity sector, as energy services may be included in the General Agreement on Trade in Services (see Pineau 2003; 2004). Countries in the European Union (EU) already have no choice to comply with the *Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996* concerning the gradual opening of their internal electricity market to competition.

privatization's potential to be a solution to Cameroon's electricity problems. Many issues were identified, including policy incoherence problems and lack of historical evidence supporting full-scale privatization. The current paper looks at the privatization results, three years after. Apart from studying a country seldom considered in the electricity policy literature, another specific characteristic of this paper is the focus on the national and international institutions involved in the reform. The few other African case studies do not cover how the reforms came about from the strategic point of view of the players involved. An effort is made here to understand their strategic position, which is a novel approach in the analysis of African power reforms.

Section 2 presents the context of the Cameroonian electricity reform, mostly consisting in the sale of the state-owned company Sonel. Then, in section 3, the state of the electricity sector in 2004 is studied and assessed, using different sets of standards. In section 4, a general framework is developed to analyze the reform from a global perspective. The institutional context of the electricity market and significant players are studied, establishing the strategic strengths and weaknesses of these players. This analysis helps to understand what structure and ownership is most appropriate for Cameroon's electricity sector. We use the concept of "institutional endowment" (Newbery 2000), which provides a framework of analysis specific to network utilities.

2. The Cameroonian Electricity Reform

2.1 General Context

Cameroon is a West African country just North of the equator with a population of 16 million.[2] It was created in 1961, from the union of a former French colony with part of a British one. French and English are both official languages, but French is the dominant language in public life. The gross domestic product (GDP) per capita in 2003 was US$1,800, ranking 176th in the world (on a list of 231 countries). Its main exports are crude oil, petroleum products, lumber, cocoa beans and aluminium, and the main export partners in 2002 were Italy, Spain, France and the U.S. The main import partners were France, Nigeria, the U.S. and Belgium.

Its electricity production was 3.535 TWh in 2001 (114th in the world), coming from 725 MW of hydroelectric capacity and 94 MW of thermal (diesel) capacity, for a total of 819 MW (EIA 2001). It is noteworthy to mention that the hydroelectric capacity, representing 88.5% of the total capacity, produces almost all of the energy (97.3%). This production comes from a wholly integrated electricity company, along with small industrial private producers. This integrated company, Sonel (Société National d'Eléctricité), was created from the merger of three companies, ENELCAM and EDC in 1974, and Powercam in 1975. Until the reform, the government owned 95% of Sonel and the French development agency "Caisse française de développement" 5% (World Bank 1996, §1.48).

2.2 Why Privatizing Sonel?

The recent economic history of Cameroon can be divided into four periods (Ghura 1997): the pre-oil periods (1963-77), the oil boom period (1978-86), the recession period (1987-93) and the post-devaluation period (1994-…). During the oil boom period, the state had the financial means to start ambitious economic policies, which transformed the state into

[2] All statistics in this section are from the World Fact Book (2004) unless otherwise indicated.

an omnipresent player in the economy. State companies were indeed involved in all sectors and state revenues kept rising until 1984. Decreasing world prices for oil, cocoa and coffee (among the main exports) created a budgetary crisis that peaked in 1987 with a deficit of approximately 13% of the GDP. If macro economic conditions were clearly playing against Cameroon, the state-owned companies have not been able to adapt to new market conditions and the government did not adjust expenditures to reflect its lower income.

The catastrophic fiscal situation of Cameroon at the end of the 1980s explains the first structural adjustment program set up in 1989 by the World Bank and the International Monetary Fund (IMF), followed by two others similar programs. The World Bank started its activities in Cameroon before 1989. Since 1967, it has lent money for 89 projects, committing in each of them from US$0.6 million to 180 million, for a total of US$2,630 million (World Bank 2004a). However, the largest projects financed by the World Bank are these "Structural Adjustment Credit (SAC)" projects:

- SAC I: 1989-1994 (US$150 million),
- SAC II: 1996-1999 (US$150 million),
- SAC III: 1998-2004 (US$180 million).

SAC I and II focused on price reforms, new legislation and on the creation of governmental institutions to implement the privatization, such as the "Commission technique de la privatisation et des liquidations" (Technical Commission on Privatization and Liquidation) (World Bank 1996, §2.1). The Cameroonian government advertised the objectives and virtues of privatization (Republic of Cameroon 1990a; b) and 48 privatizations of public enterprises have been conducted between 1990 and 1998, for a total proceeds of US$72 million (World Bank 2002). State-owned companies in all sectors, from sugar to airports, bananas to insurance, have been sold to national and international interests (see World Bank 2000b, p. 31 or Bagui Kari 2001).

In SAC III, starting in 1998, the focus was on four areas (World Bank 1998, p.3): (a) the transport sector; (b) the privatization program; (c) the financial sector; and (d) the forestry sector. Reducing corruption was also an objective, by increasing transparency (World Bank 1998, §16). Pineau (2002a) covers in more details the objectives of this World Bank-IMF reform.

In this context, the privatization of the state-owned electricity company Sonel was not a decision based on the specific situation of the company, but a commitment to comply with one of the requirements of SAC III. This quote illustrates the situation well (World Bank 2004b, p. 1):

> [SAC III's] primary objectives were to help improve Cameroon's competitiveness through support for: (a) completing the privatization program, especially with regard to public utilities (…).

In fact, the only assessment of Sonel's situation made by the World Bank is a very general one where the following issues were identified (World Bank 1996, p. 16): (a) state interference in the day-to day management; (b) lack of transparency; (c) lack of competition; (d) weak ministerial oversight; and (e) high costs.

In other terms, the objectives of this privatization in the electricity sector were standard goals of liberalization/privatization programs, which can be stated as follows (IMF 1999, §17): to stimulate investments, to develop competition and efficiency and to decrease

prices. Regulatory agencies were also presented as key to improve governance and fight corruption (World Bank 2000a, p. 25).

A web document of the Cameroonian government states the following objectives of the electricity reform (Republic of Cameroon 1998):[3]

1. To use private sector investment and to benefit from its expertise.
2. To improve service quality.
3. To increase access to electricity up to 31% in 1999 and 49% in 2019. Increase efficiency in production, transmission and distribution.
4. To supply electricity at a competitive price.
5. To take advantage of the national hydraulic resources.
6. To involve the national private sector in the electricity sector and in Sonel's capital.

It should be noted that there is no evidence that the Government of Cameroon, the World Bank and the IMF assessed the proposed electricity reform against other strategies to achieve these goals. Indeed, achieving these goals does not require, neither as a necessary or sufficient condition, competition or a majority sale of the state-owned company. It can even be argued that this strategy is actually a bad one, see Pineau (2002a) for more on such a contention.

2.3 The Cameroonian Government Initiatives

The privatization of the electricity sector came with the SAC III "privatization of public utilities" objectives. A series of specific laws and decrees were enacted between 1998 and 2000 to set a new electricity regulatory framework, where competition principles and private involvement could be developed under the supervision of the Electricity Sector Regulatory Agency (ARSEL). One law and three decrees set the legal framework of the electricity sector in Cameroon. Appendix 1 provides a detailed analysis of these law and decrees, which establish the structure of the sector and create two agencies: one to regulate the electricity sector (ARSEL) and one for rural electrification (AER). The electricity sector's structure, according to the 1998 electricity law, is divided into four sub-sectors (generation, transmission, distribution and retail sales), for which companies need to hold a concession right before starting their activities. In effect, concession rights have never been issued to different companies, and only Sonel –even after being privatized– got the concession rights to operate in all four sub-sectors. Indeed, decree n°2000 (see appendix 1), established that the buyer of Sonel would get a generator's concession, a 20-year concession for transmission and distribution, a 5-year concession for system operation and also a 5-year exclusive sales right to all consumers (continued indefinitely for consumers smaller than 1 MW).

The most interesting point in the analysis of the legal structure is that the last section of the last decree (enacted in 2000) invalidates some principles of the initial 1998 electricity law and of the previous sections of the same decree. This last section (articles 32 and 33, see appendix 1) protects the monopoly powers in retail sales of the electricity company and withholds the application of accounting rules to the electricity company. These rules, on

[3] The author's translation from French.

separate accounting for the activities of a company in different sub-sectors and on data sharing with ARSEL, would have been necessary to ensure a transparent sector.

2.4 The Concession Contract

As mentioned above, although the legal structure was written for many different concessions, a de facto unique, integrated concession has been up for privatization: Sonel's concession. Sonel has activities in all electricity sub-sectors, from generation to retail sales. It effectively controls the whole electricity sector in Cameroon, except for a few independent industrial self-generators.

Five international companies initially expressed interest for Sonel (Bagui Kari 2001, pp. 36-37): the state-owned French company Electricité de France (EdF), the state-owned Canadian company Hydro-Québec, the publicly traded American company AES Corporation, the state-owned South African company Eskom and the publicly traded Spanish company Union Fenosa. AES Corporation was the only one to bid in November 2000 and "was designated as successful bidder in February 2001" as the World Bank (2004, §14) reports. No further comment on the lack of competition in the bidding process could be found, although this is clearly problematic as competition was an important objective of the reform. The fact that two traditional Sonel partners, EdF and Hydro-Québec, chose not to bid is a good indication of their assessment of the difficult situation. Similar scenarios are frequent in developing countries. Senegal, for instance, struggled with three different buyers between 1999 and 2002, to eventually put an end to the electricity privatization process because it couldn't agree on a contract with the buyers (Fall & Wamukonya 2003). In Nigeria, in the telecommunication sector, the state-owned company Nitel could not be sold because of the lack of interested buyers (EIA 2003a). It is possible that the Cameroonian government accepted the sole bid only to follow the schedule set in SAC III, in order to receive World Bank's credits, conditional on progresses made in the privatization program (see World Bank 2004, §2).

On July 18, 2001, the Government of Cameroon and AES Corporation signed a concession contract defining the terms, conditions and obligations of AES-Sonel's operations. The evidences suggest that the government had to make concessions in the contract with the buyer, beyond the closed accounting and guaranteed monopoly during the first five years, already included in the last 2000 decree discussed above. The main evidence of these important concessions is that despite repeated claims of transparency (most notably in article 3, §2 of decree n°2000/464/PM, see appendix 1), the concession contract remains entirely unavailable for public scrutiny.

ARSEL, the regulatory agency using in its pamphlets the slogan "Transparency for an efficient electricity sector" (the author's translation), and claiming to work under the "noble values of transparency, objectivity, celerity, responsibility, discipline, trust" (among others), initially refused to collaborate in making the concession contract public, in contradiction to all principles and laws of the new sector. After many attempts to access the document, ARSEL's director, Ndouga Hell, faxed a letter on February 5, 2003, to announce that the concession contract would soon be publicly available on ARSEL's web site (see appendix 2). Not only has this never been the case, but ARSEL's web site is no longer online since at least January 2004 (last attempt to access was made on August 6, 2004).

Some elements of this concession contract have nevertheless been revealed in press releases, public speeches and conversations. Table 1 summarizes what is known about the concession contract.

Table 1. Some terms and conditions of AES-Sonel's concession contract

Aspect	Description	Source
Price increases	The schedule of price increases is as follows (outside inflation): July 18, 2001 5% July 18, 2002 7.5% July 18, 2003 7.5% July 18, 2004 7.5% July 18, 2005 0%	Le Messager (2003b) Pineau (2002c)
Service continuity	An initial 3-year penalty-free period was granted to AES-Sonel. After the 3-year period, a 700 FCFA / kWh penalty fee is charged for non supplied kWh.	Pineau (2002c)
Electrification	Every year, 68,000 new homes should be wired to the distribution network. Over 20 years, the objective is to have 1 million new homes electrified.	Dikalo (2003) Le Messager (2001) Pineau (2002c)
Investment	Investment of 1,000 billion FCFA (approximately US$200 million) should be made within 5 years in new capacity, including hydroelectricity. This investment would be financed through cash flows and loans. Investment in the Lom Pangar dam project has also been mentioned.	Le Messager (2001) Afrikeco (2002) Le Messager (2003c)
Profit margin	A guaranteed profit margin has been specified in the concession contract.	Pineau (2002c)

To conclude on the reform process, it can be said that the whole electricity reform, pressed by the World Bank in SAC III under the assumption that public utilities had to be privatized, was not made in a transparent way. The next section examines the results of the reform after its implementation.

3. State of the Electricity Sector in 2004

This section describes the situation of the sector three years after the privatization of Sonel. Multidimensional indicators are used, following dimensions commonly found in the energy sector review literature. For instance, the International Energy Agency (IEA) releases a yearly review of the *Energy Policies of IEA Countries* where extensive data on consumption and prices are compared, and where quality, environmental and regulatory issues are discussed (see for instance IEA 1999). Drafting of energy and electricity policies also includes these different elements. The 2001 U.S. energy policy (see NEPDG 2001) focuses on reliability, affordability and environmental issues related to energy (at least in its title). Investment considerations and regulation are also important aspects of the U.S. policy.

In this review of the Cameroonian electricity sector, an attempt to cover the same ground is made, although with limited data[4] and a slightly different focus. We described the sector along five dimensions: service quality (reliability), prices, financial performance of AES-Sonel, investment and legislation. Environmental considerations are excluded from the presentation because they are beyond the scope of this paper. The financial performance of

[4] Data in Cameroon, as in many developing countries, is extremely difficult to gather.

AES-Sonel and investment are given more attention because these two dimensions are particularly problematic in developing countries, and are indeed the reasons usually given to justify privatization.

After presenting facts on these dimensions, the sector is assessed against the objective of the privatization program stated in section 2.2 and some conclusions are drawn.

3.1 Service Quality

Since privatization, there is a unanimous agreement in Cameroon that the electricity service quality has never been worse. The main deteriorations are the power brownouts and blackouts that became extremely frequent, especially during the "dry" season, when there is no rain (December to June). This is indeed an important factor in explaining the power shortages: energy was missing because of two consecutive droughts, with record low rainfalls in Cameroon. Of course, the country's reliance on hydropower to generate electricity, and therefore on rain and water levels, has nothing to do with privatization. AES-Sonel is indeed explaining all the power cuts by the low rainfalls.

AES-Sonel has, however, some thermal (diesel) power plants, which are significantly more costly to operate than hydro plants because they are peak load plants. Under the 3-year penalty-free period in the concession contract (table 1), it would make economic sense for AES-Sonel to avoid using the more expensive power plants. The regulated selling price being below the operating cost of these units, and with no penalty for not supplying electricity, financial losses are avoided by AES-Sonel by having blackouts instead of generating from these power plants. ARSEL would theoretically be in a position to explore this issue, because of the technical data transparency articles in the law (decree n°2000/464/PM, article 32). However, ARSEL has never done so or, if it has, no report of it was made public.

The electricity service quality deteriorated so much that the country's productivity decreased (a report from the French Development Agency estimates that the electricity crisis reduced economic growth by 1%, see Massuyeau 2003, p. 25, or World Bank 2004, §4). The local media also reported the frustration of the population and the many economic losses incurred because of this power rationing. The Cameroonian lawyer Momo Jean de Dieu, in a letter to the newspaper *Le Messager* reports at least 57 court cases against AES-Sonel, seeking compensation for losses due to the power outages (Le Messager 2003a). For instance, a fish company lost its stocks because of its incapacity to refrigerate, electric equipments are damaged by the frequent electric current's problems and insecurity is rising because of the regular obscurity in streets at night.

Although more reliable data is missing due to the absence of public reporting from AES-Sonel and/or ARSEL, the outrage of the population is echoed in the media by an unparalleled level of complaints with regard to service quality.[5]

3.2 Price Levels and Electricity Tariffs

The evolution of price levels can be tracked because they are regulated and made public through ARSEL's decisions.[6] Two tables in appendix 3 present the price level and tariff

[5] One can consult, for instance, the 2001-2003 archive (in French) of the weekly press review made by the French embassy in Cameroon (www.ambafrance-cm.org).

[6] These decisions, published by ARSEL, can however be difficult to access because ARSEL website is not functioning and the staff does not always reply to e-mails.

structure in 2002 and 2004. Tariffs distinguish between three main types of consumers: low voltage consumers (households, small businesses and street lighting), medium voltage consumers (larger businesses) and high voltage consumers (industries). The main consumer in the high voltage category is ALUCAM, the aluminium producing company, which has a long-term contract for electricity.

In 2002, for low voltage users, a low "social" price was given to the first 110 kWh of monthly consumption. Above this, a higher price was charged. Medium voltage users had an incentive to reduce peak capacity by using less capacity during more hours, rather than subscribing to more capacity but using it less often. In the free trade zone, consumers benefited from significantly lower prices, in addition to the sales tax exemption. Finally, the main industrial consumer, because of its long-term contract, had access to electricity at a very low cost.

Innovative changes have been implemented in the tariff structure in 2004, with the introduction of different seasonal price levels for all customers and time-of-use prices for medium voltage customers. Because of the reliance on hydroelectricity, the wet (or "rainy") and dry seasons create significantly different production conditions, and price levels now reflect the lower production costs during the wet season. This wet season is from July 1 to December 31. The dry season is the remaining six months (ARSEL 2003). The more complex 2004 tariff structure is presented in table A3.2 of appendix 3.

Besides the new seasonal and time-of-use pricing, two sources of price increase should be noticed. The first is the lower monthly social consumption level for low voltage consumers (now 50 kWh, down from 110 kWh). The second is the extremely large increase in the fixed fee (per unit of capacity) for medium voltage consumers, going from a yearly 9.125 FCFA/kW to a monthly 2,500 or 4,000 FCFA/kW, depending on the number of hours this capacity is used.[7]

For high voltage consumers, an official tariff has been introduced. Nothing however indicates that ALUCAM has to pay this new tariff, because its previous contract still guarantees a price of 5 FCFA/kWh.

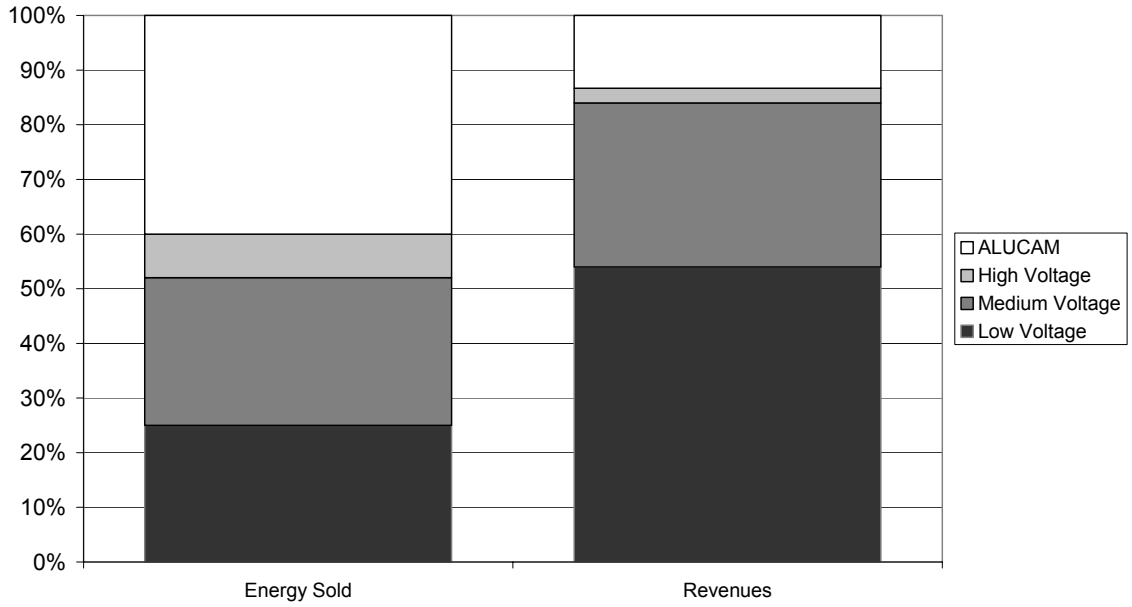
These numerous changes in the tariff structure make it hard to estimate directly whether the yearly price increases allowed in the concession contract (see table 1) are respected or not. It is ARSEL's role to monitor these issues. But in any case, prices have increased for all consumers after privatization, except for ALUCAM, which is protected by its previous contract with Sonel. Furthermore, prices are not "competitive" because there is no competitive market but rather price regulation with scheduled increases, independent of cost levels and efficiency (see table 1).

The irony of the situation is that in 2004, as for many years before, low voltage consumers still subsidize industrial consumers. Figure 1 shows that although they only use 25% of the energy, low voltage consumers account for 54% of the revenues. As an indicative benchmark, in another developing country such as Peru, low voltage consumers also accounted in 2001 for 54% of the sector revenues, but received 38% of the energy (OSINERG 2002, pp. 58, 66). Even if higher distribution losses and costs justify a higher price per kWh, the revenue differential is too important to explain this imbalance.[8] This

[7] The Cameroonian currency is the "Communauté Financière Africaine Francs BEAC", commonly called the CFA franc (or FCFA). 100 FCFA = US$0.189 or US$1 = 528.85 FCFA (March 2004 exchange rate).
[8] In the U.S., industrial consumers represented 28% of energy use and 19% of revenues in 2002 (EIA 2003b). In Cameroon, they used 48% of the energy but only represented 16% of the revenues (AES-Sonel 2004b).

issue of cross-subsidy has been raised in none of the Cameroonian government, World Bank and IMF documents consulted by the author. Only the Canadian engineering firm Lavalin describes this subsidy in its 1990 report to the Cameroonian government (Lavalin 1990, p. 59). Cross-subsidies, as any subsidy, are usually considered inefficient in economic theory.[9]

Figure 1. AES-Sonel Sales and Revenues Shares by Customer Type (AES-Sonel 2004b)



3.3 Performance of AES-Sonel

Historical overview of Sonel's performance

Since its creation in 1974, Sonel was considered by many to be a "good", relatively well-managed company. Sonel's Accounting and Finance Director from 1974 to 1981, Garga Haman Adji, recalls in his memoir the profits of the company during the 1974-81 period, and beyond (Haman Adji 2001, p. 107): 286 million of FCFA in 1974, 890 in 1975, 3,000 in 1976 and 4,000 between 1977 and 1981. These profits were re-invested in the company and in electrification projects, with the additional support of international funds (mostly European, Arabic and Chinese). Later, even during the late 1980s, Tchapga (2002, p. 75) estimates that the profitability of Sonel was positive, above 4%, as opposed to the other eight West and Central African electricity companies used in his comparison. The World Bank reports that Sonel was not only covering its debt, but paying a dividend to its shareholder until 1992 (World Bank 1996, p. 54). However, according to Garga Haman Adji (2001, p. 315), the state started to use Sonel's profit in the late 1980s and 1990s for other purposes than investment, making the maintenance and development of the electricity sector very problematic.

[9] This is because in most cases subsidies have negative efficiency consequences. See for instance Stiglitz (2000, pp. 254-8). Cross-subsidies may be explained by the power of some interest groups to influence tariff design (Newbery 2000, pp.141-4). In Cameroon, the main industrial consumer, ALUCAM, a governmental company, was probably in a better position to influence tariff design than residential consumers.

An independent assessment of the electricity sector in Cameroon was made in a 1990 diagnosis (see Lavalin 1990). At that time, the main problems identified were:

- Higher than typical losses in the low and medium voltage networks: 23.3% and 6.6% respectively, against typical values of 10 to 20% for low and 3.5 to 6% for medium voltage (p. 47).
- Subsidy of industrial users by low voltage users (p. 59).
- Complex tariff structure (p. 76).
- Delays and/or cancellation of mandated electricity price increase (p. 77).
- Complex institutional structure, with different ministries pursuing conflicting goals (p. 91, 94).
- Absence of a central energy planning body (pp. 91, 94).
- Lack of Cameroonian sub-contractors for energy-related products and services (p. 92).
- Weak investment practices (p. 94).

It is interesting to note that "ownership" is not mentioned as a problem for Sonel, but that some specific issues are identified, both technical and institutional. Some of the problems, such as the complexity of the tariff structure were taken care of through the 1989-1994 performance contract Sonel signed with the government, but many remained.

AES in Cameroon

The performance of AES-Sonel since the privatization in July 2001 cannot be assessed directly, because AES-Sonel benefits from a delay before implementing the accounting rules specified in the electricity law. There are a few elements that can, however, be inferred from the accessible data: initial management difficulties, relatively generous human resources policy, record revenues.

Before Sonel's privatization, its management had been stable under the general manager Marcel Niat Njifenji (1989 – 2001 period). He implemented the performance contract signed in 1989. Since 2001, however, AES-Sonel has known three different general managers: Mark Miller (2001 – 2002), Helen Tarnoy (2002 – 2004) and Jean David Bilé (2004 –). The first two were Americans, and only the second spoke French, the language spoken by the majority in Cameroon. Jean David Bilé, a Cameroonian working with Sonel since 1977, has been appointed to the highest position in February 2004. No reason was given for the latest change (see AES-Sonel 2004a), but it must be interpreted as a vote of confidence in the Cameroonian management capacity, otherwise a manager with a longer work history with the owner, AES Corporation, would have been put in place.

The human resources policy of AES-Sonel has been relatively generous. At the time of the privatization, it was widely expected that 50% of the work force of almost 4,000 employees would be laid off. However, no massive lay-off occurred and only 360 voluntary pre-retirement packages were offered (Afrikeco 2002).

In terms of technical and financial results, capacity has slightly improved, as for energy sales and revenues. Table 2, although incomplete because of the difficulty of accessing data, shows the recent positive evolution of all indicators. In 2003, the revenue of 108 billion FCFA (approximately US$200 million) represents a historical record, as it is the

first time the company had revenues over 100 billion FCFA (AES-Sonel 2004a). Investment will be discussed in section 3.4.

Table 2. AES-Sonel Capacity, Sales and Revenues

	2001	2002	2003
Capacity (MW)	800	850	850
Sales (GWh)	n.a.	2,582	2,812
Revenues (FCFA Billion)	n.a.	n.a.	108

Source: AES (2002a 2003a), AES-Sonel (2004a)

No indication of AES-Sonel profitability is easily available from AES-Sonel or ARSEL. However, as we will see in the next sub-section, financial data from AES Corporation clearly indicates that AES-Sonel is profitable.

AES Corporation: A World Corporation

In 2002, the capacity of AES-Sonel represented 1.37% of the total generation capacity AES Corporation owned, either totally or partially (61,931 MW, AES 2002e). The contribution of AES-Sonel to the overall AES financial results can therefore only be very small. However, as AES-Sonel is classified in the "growth distribution" line of business, and in the region "Europe/Africa" (with only two other subsidiaries), it is possible to track down how well AES-Sonel has performed since its privatization. But before looking at the financial data, some details on the AES Corporation are briefly presented.

According to AES corporate profile,

> the Company's goals are to help meet the world's need for electric power in ways that benefit all of its stakeholders, to build long-term value for the Company's shareholders, and to assure sustained performance and viability of the Company for its owners, employees and other individuals and organizations who depend on the Company (AES 2004a).

The AES Corporation is listed as "AES" at the New York Stock Exchange and its headquarters are in Arlington (Virginia, U.S.A.). Its operations are classified in four lines of business, as table 3 shows.

Table 3. AES Total Revenues (in % of lines of business and million of US$) and Net Income (million of US$)

Lines of business	2000	2001	2002
Contract generation	23%	27%	29%
Competitive supply	32%	29%	21%
Large utilities	28%	26%	36%
Growth distribution	17%	18%	14%
Total Revenues	6,206	7,645	8,632
Net Income (loss)	795	273	(3,509)

Source: AES (2002a; 2003a)

AES-Sonel revenues can be estimated from AES's Quarterly and Annual report (see AES 2002a, b, c, d and 2003a, b, c, d). As mentioned above, AES-Sonel is classified in the "growth distribution" line of business, in the "Europe/Africa" region. As AES-Sonel is the only subsidiary in this line of business in this region, financial information given for the growth distribution activities in Europe/Africa should be AES-Sonel's results. However, AES Corporation also has growth distribution activities that are initially presented to be located in Asia (in Telasi, Georgia and in Kievoblenergo and Rivnooblenergo, Ukraine).[10]

[10] See AES (2003a, p.14) where worldwide AES generation and distribution facilities are detailed.

These "Asian" activities (at least Ukrainian and Georgian) appear to be bundled with the European/African financial results for the growth distribution activities. This is not the case for other lines of business (contract generation and competitive supply), which have Asian entries.[11]

As a result, the data presented in table 5 are AES-Sonel's financial results combined with the Ukrainian and Georgian activities. The table shows some progress in the revenues, and important gross margin (profit before tax) for the year 2002.

Table 4. AES Europe/Africa growth distribution activities – Quarterly Revenues (million of US$) and Gross Margin (% of revenues)

	2001		2002				2003		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Revenues	62	97	91	66	72	148	108	86	81
Cumulative Yearly Revenues	100	197	n.a.	138	210	358	n.a.	173	254
Gross Margin	(16%)	n.a.	18%	12%	7%	n.a.	6%	7%	(1%)

Source: AES (2002a; b; c; d; 2003a; b; c; d)

It appears certain that AES-Sonel operations quickly became profitable, as this series of quotes taken from AES Annual and Quarterly reports shows (emphasis added):

> In Europe/Africa, growth distribution margin decreased $10 million and was negative **due to losses at SONEL** – Year 2001 (AES 2002a, p. 45)
>
> Europe/Africa, Caribbean and Asia [growth distribution] **gross margin increased** – First Quarter 2002 (AES 2002b, p. 19)
>
> **Europe/Africa** [growth distribution] **gross margin increased $10 million** mainly due to Kievoblenergo and Rivnooblenergo contributing a full three months of margin in 2002 – Second Quarter 2002 (AES 2002c, p. 25)
>
> The decline in the South America and Asia [growth distribution] gross margins were offset by **increases in Europe/Africa** and the Caribbean – Third Quarter 2002 (AES 2002d, p. 31)
>
> The decline of $310 million in South America gross margin was offset in part by **increases of $72 million** […] **in Europe/Africa** […] – Year 2002 (AES 2003a, p. 59)
>
> Europe/Africa gross margin decreased $10 million mainly due to an inventory adjustment and change in tax laws at Telasi offset by **improved gross margin at SONEL** – First Quarter 2003 (AES 2003b, p. 36)
>
> Generally, regulated revenues increased due to the 2002 provision for the Brazilian regulatory decision at Sul, and **greater 2003 revenues at Sonel in Cameroon** – Second Quarter 2003 (AES 2003c, p. 36)
>
> Europe/Africa gross margin increased $4 million mainly due to **improved gross margin at SONEL** – Second Quarter 2003 (AES 2003c, p. 43)
>
> Regulated revenues increased most notably at Eletropaulo, EDC, **Sonel** – Third Quarter 2003 (AES 2003d, p. 39)
>
> Europe/Africa gross margin decreased $2 million mainly due to **weaker gross margin at SONEL** – Third Quarter 2003 (AES 2003d, p. 46)

As a conclusion on the AES-Sonel performance, it can be said that in terms of management and financial results, the company is now doing well, and this with local managers in charge of the profitable company. AES Corporation shareholders can be reassured that the

[11] There are also other sources of confusion in AES financial reports. For instance, in AES (2002d), the third 2002 quarter revenues for the growth distribution Europe/Africa activities are US$82 million (p. 29), but in AES (2003d) the revenues for the exact same period and location are US$72 million (p. 39). No explanatory note is provided. The reported gross margin nevertheless remained at US$5 million in both documents.

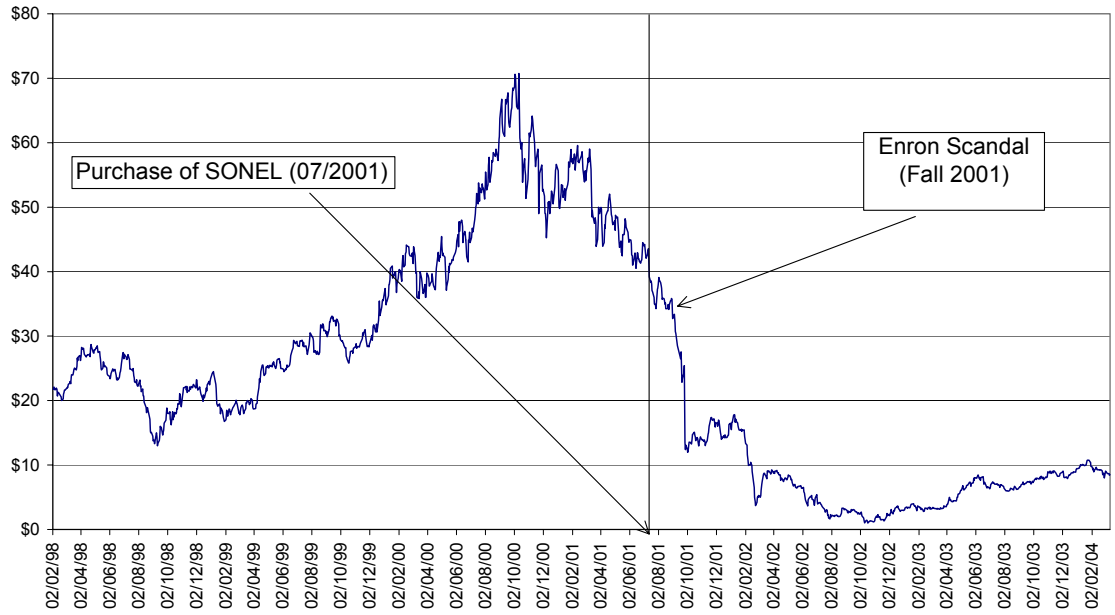
value of their subsidiary in Europe/Africa is increasing and will continue to generate an acceptable return on investment.

3.4 Investment

AES-Sonel has invested 35 billion FCFA (US$65 million) in almost 50 MW of additional generation and plans to invest a further 58 billion FCFA (US$109 million) in 2003-2004 (AES-Sonel 2003). The second investment is a 80 MW, heavy fuel oil power plant near an oil refinery, in the city of Limbe.

In the concession contract, investments of US$200 million were mentioned for the first five years. They were much needed due to the lack of investment during the previous years and, as the weather proved, high dependency on insufficient water reserves. AES-Sonel's investment program was, however, affected by the stock market problems of AES in the fall of 2001, with the Enron scandal bringing the whole energy industry down. Figure 2 illustrates the evolution of the value of AES shares.

Figure 2. AES Share Value (02.02.1998 to 10.03.2004) (Yahoo Finance 2004)



Investments have stopped in 2001 because AES uses an investment policy that puts the emphasis on the cash flows generated by projects and the value of its capital stock. The following excerpt from the 2002 AES annual report illustrates AES investment policy.

> The Company attempts to finance each domestic and foreign project primarily under loan agreements and related documents which, except as noted below, require the loans to be repaid solely from the project's revenues and provide that the repayment of the loans (and interest thereon) is secured solely by the capital stock, physical assets, contracts and cash flow of that project subsidiary or affiliate. (AES 2002a, p. 7)

Given the important fall in the stock market value of AES, and the need for the corporation to increase its liquidities to face near-term debt maturities, AES had to stop or delay all its investments in 2001 and 2002, and to pressure its subsidiaries to send their available liquidities to the headquarters. The exact amount AES-Sonel sent to the headquarters is unknown because no accounting data is available (see section 2.3), but AES-Sonel certainly participated –as any AES subsidiary– to the solution of AES liquidity problems. Investment

in new capacity in Cameroon was certainly not a priority for AES during the simultaneous periods of financial and water drought.

The Limbe project is, however, under way. It started in September 2003 with financing from AES-Sonel and the World Bank, according to Le Messager (2003d). The project is predicted to be completed in ten months, according to an executive summary document on the project (Black & Veatch 2003). This means it would be online in June, at the beginning of the rainy season, when the additional capacity is less needed.

The Cameroonian government has understood that, given the context, AES-Sonel or any other private investor could hardly be relied on to take care of the long-term development of the electricity sector's capacity needs, even if it was written in the concession contract (see table 1). The government has therefore started new initiatives to insure long-term investments in Cameroon's most promising energy source: hydropower.

New dams are indeed possible, even if the World Bank appears to be opposed to this (Africa Monitor West & Central Africa 2003). Table 5 displays five hydro sites that have already been studied. The Cameroonian government and the French and German Development Agencies have created an expert panel in December 2003 to consider a dam on the Lom river (IUCN 2003). Discussions with China are also under way to build three different dams and hydropower plants (Ndika 2004). A preliminary agreement has been signed with the China International Water and Electrical Corporation, China granting 46 million euros (AFP 2003).

Table 5. Possible Hydro projects in Cameroon

Name	River	Capacity
Lom Pangar	Lom river with major reservoir	56 MW (could be upgraded)
Bini a Warak	Vina-North river in the north	75 MW
Nachtigal	Sanaga river	267 MW
Memve'Ele	Ntem river	202 MW
Kader		15 MW

Source: International Small-hydro Atlas (2004)

3.5 Electricity Regulation: ARSEL and the AFUR

ARSEL was created in June 1999, when the decree n°99/125 was passed (see appendix 1). The agency is composed of approximately twenty professionals (engineers, economists, lawyers, public relations professionals) hired in 2000. The same year, a 4-year project started with the primary goal of enhancing competitiveness, notably through "institutional support to consolidate the activities of the new regulatory agencies" (World Bank 2000b, p. 39). This project was financed through a new loan, credited to Cameroon by the World Band. New regulatory agencies in the electricity sector, but also in other reformed sectors (telecommunications, railways, water, and air transport) were attributed a budget of US$3 million to support different areas of activities (World Bank 2000b, pp. 29-30).

At the end of the project (end of 2004), success will be measured through some outcome/impact indicators. These indicators are: new investment related to the project (a target amount of US$600 million is set) and an unexplained "weighted infrastructure index", that should grow from 100 to 140 (see World Bank 2000b, p. 20). Regulatory agencies and utilities should also publish an annual report.

By April 2004 AES-Sonel invested or planned to invest US$174 million. It would however be audacious to link the amount to this specific World Bank project, as a commitment of

US$200 million was discussed in the concession contract (table 1). Also, if one can base predictions on past behaviour, an ARSEL 2004 annual report is highly unlikely, as none was published since 2000. So far, for at least two of the three outcome/impact indicators, targets have not been achieved.

One dynamic support activity of the World Bank is the help given to the African Forum for Utility Regulation (AFUR), officially established in 2002 through AFUR's constitution (AFUR 2002a). This forum was created on a NEPAD impulse (see NEPAD 2001, §110). The forum has 47 members, all utility regulatory agencies of 27 African countries, in the telecommunication, electricity, water and transport sectors. AFUR has a series of guiding principles based on cooperation and African initiatives (AFUR 2002a, article 4).

An important contribution of the forum is to promote good governance, which seems to be much needed. Indeed, AFUR (2002b) reports a survey of its members and identifies the challenges faced by African regulators. Among these challenges are political and financial independence, accountability and the proliferation of regulatory agencies.

ARSEL shares these problems. It suffers in 2004 from low political independence (5 out of 9 board members are appointed by the government), low consumer representation (only one board member), unclear accountability measures and possible overlap and/or conflicts with other regulatory agencies (the Electricity Administration, AER and the Cameroonian Competition Commission).[12] Another problematic issue for ARSEL is its location in Yaoundé, while the main player in the industry, AES-Sonel, is located in Douala. The bad condition of the road between the cities adds a significant transaction cost to in-person contacts between ARSEL and AES-Sonel. This complicates AES-Sonel monitoring by ARSEL. The financial independence of ARSEL is somehow established by the industry levy (see appendix 1 for more details), but ARSEL still has to rely on World Bank-borrowed money to participate in training/development activities such as AFUR meetings.

3.6 Assessment: Results compared to Objectives

Section 2.2 presented the six general objectives of privatization of the Cameroonian government and the five issues privatization was supposed to address, according to the World Bank. Table 6 presents the assessment of the achievements made, based on the current situation presented in the previous sub-sections.

Table 6. Assessment Table

Objectives from the government Republic of Cameroon (1998)	**Results and comments**
1. To use private sector investment and to benefit from its expertise	**This objective was only partly achieved**. Private sector investment was hard to attract (only one bidder in the privatization process) and proved to invest less than planned, as detailed in section 3.4. The exact contribution in expertise from the private sector cannot be evaluated, as some new managers and local ones participate in the management of AES-Sonel.
2. To improve service quality	**This objective was not achieved**. Service quality

[12] See appendix 1, notably the discussion of article 5 of decree n°99/125 creating ARSEL.

	is worse since privatization, as section 3.1 documents.
3. To increase access to electricity up to 31% in 1999 and 49% in 2019. Increase efficiency in production, transmission and distribution	**It is impossible to assess the achievement**. Data is not collected and/published by ARSEL. Section 3.3 on the performance of AES-Sonel, however, shows that operations in the sector are efficient enough for the company to be profitable (unless profits only derive from price increases with no efficiency gain).
4. To supply electricity at a competitive price	**This objective was not achieved**. No competition takes place and prices increase on a scheduled basis, despite possible efficiency improvements (section 3.2).
5. To take advantage of the national hydraulic resources	**This objective was not achieved**. Investment was made in a heavy fuel oil project and the government took the initiative on hydro projects (section 3.4).
6. To involve the national private sector in the electricity sector and in Sonel's capital	**This objective was not achieved**. No national private actor entered the sector.
Issues identified by the World Bank to justify privatization World Bank (1996, p. 16)	**Results and comments**
(a) State interference in the day-to day management	**This issue was solved**. Privatization gave total operational control to AES, despite a remaining share of 44% of governmental ownership.
(b) Lack of transparency	**This issue was not solved**. A law was even passed to protect the lack of transparency in accounting (decree n°2000, article 33, see appendix 1 for more details). The regulatory agency ARSEL is not in a position to perform its mandate (section 3.5).
(c) Lack of competition	**This issue was not solved**. By design of the reform and concession contract, the implemented changes could not promote competition (section 2.3. and 2.4).
(d) Weak ministerial oversight	**This issue was not solved**. The new regulatory agency, ARSEL, is not in a better position to oversee the sector (section 3.5).
(e) High costs	**This issue was not solved**. For consumers, cost of electricity has never been higher, while service poorer (section 3.1. and 3.2)

Results in table 6 clearly show that privatization achieved none of the objectives it was supposed to, except, but only to a limited extent, in attracting investment. Also, it did not solve any of the issues it was supposed to, except the "day-to-day" interference of the state in the operation of the electricity company.

Further observations can be made, based on the description of the sector made in the previous sub-sections.

- **Service quality has deteriorated under privatization**. Although low rainfall can account for an important part of the supply problems in Cameroon, the business decisions of not running diesel peak units could have played a role.
- **Prices have increased, but tariffs are more rational**. The objective of reaching lower prices with privatization is certainly missed, but through AES-Sonel and/or ARSEL, a more rational tariff structure has been established.
- **AES-Sonel rapidly became profitable**. Through price increase and management decisions, AES-Sonel rapidly became profitable. This is indicated by the analysis of the multiple AES financial reports.
- **Government intervention in investment is unavoidable**. The private sector will not make all the investments that are deemed necessary by the government. Beyond rural electrification, which is an obvious example, the lack of efforts to build new dams is another illustration of the low commitment (or lack of possibility) of private sector players to develop long-term energy infrastructure.
- **Regulation is problematic**. ARSEL can hardly claim political independence and is certainly not behaving in a transparent manner. The fact that the concession contract remains secret illustrates ARSEL's difficult position.

Beyond these five dimensions on which the review of the electricity sector was based, two other observations can be made.

- **Sector integration has some benefits**. The fact that the integrated monopoly has been maintained and protected for at least 5 years, proves that there are benefits from integration in the electricity sector. Before forcing unbundling to capture some theoretical benefits of a disintegrated sector, the benefits of integration should have been recognized and weighted against the possible benefits of the new structure.
- **Privatization was not a solution**. In its 2003 *Poverty Reduction Strategy Paper*, written with the assistance of the World Bank and IMF staff, the Government of Cameroon acknowledges significant deficiencies in the electricity sector, despite the privatization, as the following paragraph illustrates (emphasis added).

> As regards the electricity sub-sector, despite the privatization of the power utility, *Société Nationale d'Electricité* (SONEL) and the existence of a legal and regulatory framework liberalizing and introducing competition in the electricity sub-sector, **the supply of electrical energy and the quality of service rendered to the public in general still have huge shortcomings**. (Republic of Cameroon 2003, §294)

Now that the state of the electricity sector in 2004 has been reviewed and the success of privatization assessed, the next section develops a more theoretical perspective to understand how the strategic forces in the sector have led to such a failure.

4. Institutional Endowment Analysis

4.1 Literature Review

As mentioned in the introduction, the backgrounds and contexts of electricity sector reforms in Sub-Saharan countries is only covered in few publications. Turkson (2000),

Karekezi et al. (2002) and Dubash (2002) provide descriptions and analyses of power sector reforms in some Sub-Saharan African countries, among other countries. Pineau (2002a; b) cover the pre-privatization case of Cameroon. Wamukonya (2003) also includes European and U.S. cases. In this stream of literature, the motivation and objectives of the reforms are reviewed in their local context and in the context of the larger theory and history of electricity policy. When enough data is available, some social, environmental and economic indicators are used to assess the reforms. Country case studies are the most privileged methodologies, because the number of contextual variables is too important to allow more general inferences to be made. In any case, the lack of longitudinal data, due to the heterogeneity of cases and novelty of the reforms, usually severely limits the use (and validity) of more formal methods of analysis. This paper, a case study of the Cameroonian electricity sector, naturally belongs to this stream of literature. It adds to it by going into much more details about the specific forces that have led to the reforms.

Some contributions on developed countries can be found in the econometric and cost-benefit literature. In the econometric literature, three explanatory variables are usually identified: ownership, competition and integration. They explain to some extent the main dependent variables of interest, such as electricity price, production cost, efficiency or total social welfare. These models tend to focus on economic variables and leave out social and environmental ones, again partly because of the lack of available data. Newbery (2000, chapter 3), reviews the conclusions of approximately twenty different papers on the impact of these three variables in jurisdictions where enough data was available (all in developed countries). He concludes that if competition often explains improved performance of electricity companies, the evidence on ownership is, however, inconclusive. See also Kwoka (2002) for some econometric evidence on the benefits of integrated companies in the electricity sector. The cost-benefit literature on electricity reforms is more restricted. This is due to the high data requirements and difficulty of the task. Domah and Pollitt (2001) are among the few who proposed such a cost-benefit analysis. They studied the restructuring and privatization of the distribution sector in England and Wales. Their social cost-benefit analysis results in a positive outcome for the society only under a low discount rate (6%), which is below what is usually deemed acceptable for countries and for companies. For instance, the Government of the United States use 7% (see U.S. Government 1992), and private companies are systematically evaluating projects at higher discount rates. Domah and Pollitt (2001) also found that prices increased after privatization in 1990, to decrease only in 1994 after important pressures from the local regulator. This literature never focuses on developing countries due to the lack of available data.

4.2 The "Institutional Endowment" Framework of Analysis

Institutional capacity is increasingly being recognized as a cornerstone of sustainable progress in developing countries. See for instance Betancourt (1997), Bossuyt (2001) or Graham (2002), for contributions describing the importance of institutional capacity developments within reforms and development strategies. The World Bank also acknowledges the concept, notably through the *Capacity Enhancement Briefs* (see for instance Nair 2003) and through some specific programs, such as –for instance– the support given to regulatory agencies in Cameroon discussed in section 3.5 (World Bank 2002b). However, institutional capacity and other capacity enhancement activities are certainly not a priority for the World Bank. Indeed, "capacity enhancement" is only one of the 219

"topics in developments" listed on its web site.[13] Furthermore, it is neither classified in its "Major Topic Areas" nor in its "Hot Topics" section.

To analyze the privatization of the electricity company in Cameroon we use an institutional capacity approach based on the closely related concept of "institutional endowment" developed by Newbery (2000), a network utility economist.[14] See Bergara et al. (1997) or Cowan (2001) for two analyses using the concept of institutional endowment.

The institutional endowment in Newbery's approach corresponds to the regulatory credibility institutions have when trying to attract investors and to ensure that consumers' demand is met. This credibility problem should guide the regulation of network utilities, according to Newbery (2000). More precisely, the regulation of the electricity sector should be designed to adequately answer the following two fundamental problems (Newbery 2000, p. 3):

1. Utilities should be able to finance their investment and meet the demands made upon them.
2. Operations should be efficient and responsive to new technological possibilities.

The choice of the sector's regulation should answer these problems before anything else, and this may lead to different solutions for economies with different "institutional endowments". The level of institutional capacity in a country limits the type of regulation it can implement. Institutional endowment is closely related to the answers to the following questions: Can investors be confident that their investment will be profitable under the regulation? Can consumers be confident that their demand will be met under the regulation?

If the first question is not answered satisfactorily, which is a sign of low institutional endowment, investors will be reluctant to invest. The state consequently has a greater role to play in investment. In the case of the second question, there are political costs (and sometimes even crises) that the government should be prepared to face if electricity demand is not met. If institutions, like the market or a regulatory agency, do not have the strength to ensure that consumers' demand is met, then the state also has a greater role to play in supply.

Indeed, as network utilities provide critical infrastructures, these questions, both related to the first fundamental problem of financing investment and meeting demand, have to be answered positively before the second problem can even be considered. The second problem, efficiency and responsiveness to technologies, also relies on the institutional endowment, as either competition or regulation (a second best if competition is not possible) have to lead the sector to as much efficiency and responsiveness as possible.

For both problems, solutions using different types of ownership, competitive structure and regulatory arrangements can still be found, according to Newbery (2000). The answer should depend on the institutional endowment of the country, which will give the country more or less bargaining power when dealing with investors and customers. For instance, if a country is considered too risky for an investor because of weak institutions, state ownership of the electric utility could be the optimal solution because financing the investment will be easier (private companies will always require a greater return, especially

[13] See section "Topics in developments" at www.worldbank.org (accessed April 19, 2004).
[14] Network utilities include telecommunication, electricity, gas, water and rail. Newbery (2000) focuses on the first three sectors.

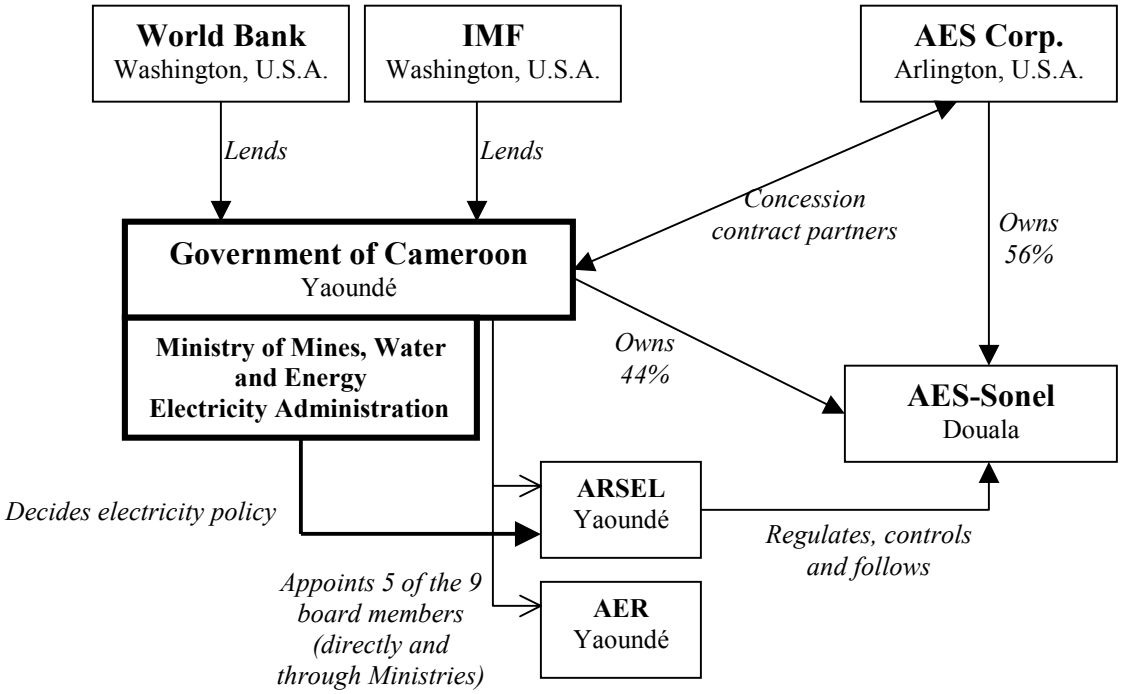
in risky conditions). Regulation under state ownership is also more straightforward, with lower transaction costs, and electricity demand may be met more often as profit motivations are not put first (even if financial sustainability remains a prerequisite). Similarly, if the institutional endowment is too low to secure a thriving competitive sector (because of deficient competition laws, a weak judiciary system or simply a lack of competitors), a regulated integrated company might be the optimal solution. Of course, state ownership and integration also face specific challenges. This is why a careful analysis of the available options should be made before opting for any specific electricity market structure.

In the next sub-sections, we analyse the institutional players, assess their position to establish the institutional endowment of Cameroon and conclude on the privatization strategy implemented in Cameroon.

4.3 Analysis of the Players

The main institutional players in the Cameroonian electricity sector are the Government of Cameroon, multilateral financial institutions, regulatory agencies, as well as Sonel and AES Corporation. Figure 3 shows the institutional map developed for the sector, where the relationship between players is indicated with arrows. The analysis of each player follows.

Figure 3. Institutional Players in the Cameroonian Electricity Sector



Government of Cameroon

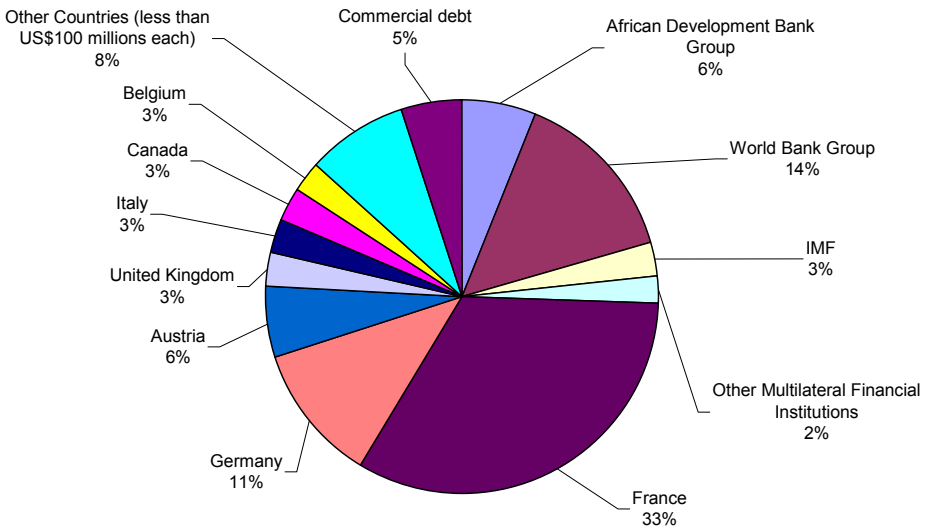
The Government of Cameroon is politically stable under the presidency of Paul Biya since 1982. However, accusations of corruption were frequent in the past and are still common (see for instance Ofege 2004). Transparency International (2003) ranks Cameroon at the 124th rank on their 2003 corruption perception index.[15] The position of the government is

[15] Bangladesh is last, at the 133th rank and a score of 1.3 on a 10-point scale (0 being "highly corrupted" and 10 "highly clean"). Cameroon has a score of 1.8. The only worse Sub-Saharan country is Nigeria, ranked 132th (score of 1.4). The highest ranked African country is Botswana (30th, score of 5.7).

furthermore weakened by the debt of the country. The external debt[16] of Cameroon reached US$8,495 million in 2002, which is equivalent to 90.6% of the GDP (World Bank 2003). The large involvement of the government in many economic sectors contributed to the creation of this high debt (World Bank 1996, §2.19, 3.13).

Figure 4 presents the share of each creditor in the external public and publicly guaranteed debt. As figure 4 shows, the main multilateral financial institutions lending money to Cameroon are the World Bank group, the IMF and the African Development Bank. These institutions take the lead in setting up Cameroon's reimbursement and development strategies. Other creditors usually require indebted countries to work in collaboration with the World Bank and IMF, as a condition for their loans. Consequently, this gives the World Bank and the IMF a crucial and decisive role as lenders and multilateral coordinators in shaping Cameroonian economic and development policies.

Figure 4. Cameroon's Creditors in 2000 (World Bank 2000a)



The difficult financial position of Cameroon puts the government in a very weak position against lending institutions and business partners, because it has very little leverage on financial issues. Corruption allegations also diminish the credibility of the government, as trust in transactions is difficult to sustain in a corrupted environment.

Multilateral Financial Institutions (World Bank and IMF)

The position of the World Bank was described in many sections of this paper. The IMF is less involved in specific projects but has supported the World Bank's SACs by financing two "Poverty Reduction and Growth Facilities" projects. Loans of US$219 and 144 million were approved in 1997 and 2000 to finance structural reforms.

Beyond the World Bank's development and poverty reduction mission and the IMF's macro-economic stability mission, these institutions are financial institutions that have to act in the interest of their shareholders. Conditions to loans are therefore not only designed

[16] Total external debt is the sum of public, publicly guaranteed, and private non-guaranteed long-term debt.

to support a country's welfare in a long-term perspective, but also to meet the interest of the shareholders. In this case, the shareholders are 184 countries that have bought shares in these institutions. Decisions are taken by a democratic vote of shareholders, weighted by their share of ownership (larger shareholders have therefore more weight in votes). The U.S.A., Japan, Germany, France and the United Kingdom are the five largest shareholders. They are also the only five countries to have permanent executive directors in these institutions.[17]

Because of their worldwide membership and important participation in developed countries, these institutions have a significant financial power, which gives them a key policy power. They might not, however, use their power for the best interest of the borrowing countries, as they are first accountable to the executive directors and most influential shareholders.

Regulatory Agencies (ARSEL and AER)

As recent creations of the government, with little experience in regulation, highly politicized board members and lack of external –non-national– board members, these agencies do not have the depth in expertise and power to influence the sector. The absence of foreign board members makes corruption easier because of the small, restricted group involved, with a majority directly appointed by the government. Consequently, accountability and transparency still have to be developed. Their financial independence is limited by the restricted funding they receive through the industry levy, and they have to rely on external donors' or lenders' financial resources.

As they face multinational companies such as AES with a much greater expertise in the energy sector, the national staff of the agencies can only have a limited influence on the sector. To sum up, ARSEL and AER are in a weak position due to the political weight they bear, their limited resources and expertise and geographical distance from the main player, AES-Sonel.

Sonel

Even with a relatively successful history as an electricity company, staffed with competent Cameroonians, Sonel never acquired its independence from the government (neither officially nor in practice). It remained subject to political use of funds and the management of the company appears to have deteriorated during the 1990s, weakening its position.

Its privatization occurred as part of a macro-policy, with no apparent fight to keep (or regain) its independence as an organization. Weaker management, political influence and corruption could explain its lack of leadership and limited role in shaping the sector.

AES Corporation

AES Corporation was initially, in 2001, a very strong player in the energy sector. It had an important market value and it was, and still is, geographically close to financial institutions favouring privatization. AES is also a private company, as opposed to the three state-owned companies, among the five initial ones interested in buying Sonel. This private ownership was more compatible with the objective of involving the "private sector" in Cameroon. The withdrawal of the four other companies in the purchase process gave AES even more

[17] The World Bank (www.worldbank.org) and IMF (www.imf.org) websites provide the list of member countries, their share in the two institutions and more on the organizational and decision making structure.

negotiation power, as privatization was the only option for the Cameroonian government. It was indeed an objective set by the World Bank and the IMF, whatever the market conditions were and whatever Cameroon's institutional endowment was. AES lost some strength with the 2001 stock market problems, but not much bargaining power in Cameroon because it is still the only alternative for the country.

4.4 Level of Institutional Endowment

Given this analysis of the players, the institutional endowment at the time of the privatization, and still in 2004, remains low in Cameroon. The following arguments detail the weakness of institutions.

- No tradition of private sector regulation, as the government was involved in almost all sectors.
- No tradition of competition, for the same reason.
- An important history of corruption at the government level.

The creation of regulatory agencies, aimed at establishing higher regulatory standards, did not significantly improve the institutional endowment of Cameroon, as they have limited power and their governance structure is still flawed.

To some extent, it could be said that despite the creation of ARSEL, the institutional endowment decreased since 2000, because the Government of Cameroon had to initiate new investment projects in the electricity sector. This goes against the free-market principles of the structural adjustment reforms, against ARSEL's objectives of promoting competition and private sector involvement and against other goals of the World Bank's structural adjustment projects. This government involvement contradicts many new institutions and policies in Cameroon. It cannot, therefore, help to build trust in the strength of the Cameroonian institutions in general, except in the government, but at the expense of ARSEL, AES-Sonel and the credibility of World Bank reforms. The Government of Cameroon nevertheless increased its own credibility in the eye of its population, which should also be considered in the policy analysis of the electricity sector.

The involvement was, however, required to make sure that someone dealt with the second part of the first problem (in bold):

1. Utilities should be able to finance their investment and **meet the demands made upon them**.
2. Operations should be efficient and responsive to new technological possibilities.

The low level of institutional endowment in Cameroon has led to a system where not a single problem identified by Newbery is solved. The main utility, AES-Sonel is barely able to finance its investments, demand is not met, the sector is not efficient because it is neither competitive nor adequately regulated and finally it is not responsive to new technologies, as an old technology –heavy fuel– power plant was started to be built, despite the important hydropower potential and natural gas reserves.[18]

Given this low institutional endowment, the government and its advisers should have tried to rebuild Sonel's strength by providing it with more independence and accountability, possibly with the help of technical and managerial foreign experts. Also, the competent

[18] See Black & Veatch (2003, section *4.2 Fuel Type Options*) for a succinct analysis mandated by AES-Sonel.

local Cameroonian staff should have been given from the start a greater role in the reform. If AES Corporation appointed an in-house local general manager less than three years after the privatization, it certainly shows that competent managers were already there.

4.5 Implications and Strategies

Are lessons learned?

Despite the amount of evidence and initial incoherence of the privatization strategy in the electricity sector,[19] the World Bank and IMF seem to have learned little from the privatization experience. The World Bank acknowledges that the "post-privatization performance has been disappointing" (World Bank 2004b, §14), but maintains a very strong position on the rationale of its reforms. Indeed, commenting the *Cameroon Poverty Reduction Strategy Paper* from the government (Republic of Cameroon 2003), the staff of the World Bank and the IMF succeeds in finding a way to write that

> The [Poverty Reduction Strategy Paper] underscores the role of the private sector as the main engine of growth and a key partner in the supply and delivery of basic social services (IMF 2003, §19)

How the World Bank and IMF could reach this opinion remains a great methodological and epistemological question. However, the Cameroonian government, by involving itself again in new investment, shows that some conclusions have been reached with respect to the role the private sector can play in investment. The government is, however, limited in its actions by the requirement of financing private companies' profit:

> In order to ensure that the [energy sector reform] program benefits both economic operators [i.e. AES-Sonel] and the population as a whole, the government is taking steps to strengthen the capacities of the regulatory agency (ARSEL) and to work closely with AES/SONEL (Republic of Cameroon 2003, §39)

The acknowledgment of the weakness of the regulatory agency is a positive point, showing the realistic assessment of the government.

Implications

Given the apparent diverging views of the Cameroonian government and of the multilateral financial institutions, and given the imbalance of power between the two, institutional progress will be very hard to achieve. On one hand, competition and private sector involvement will have to be promoted to comply with the World Bank and IMF conditions, and on the other hand, governmental initiative will have to be strong to ensure that some long-term solutions will be put in place, such as investing in new hydropower. This will likely result in conflicting policies and schizophrenic regulation, trying to put in place a competitive electricity market with private sector players, in a context where the government develops new capacity and regulates prices through ARSEL.

The lack of coherence in the current institutions will do little to help the institutional endowment of the country in this sector. Giving more power to non-national players and more opportunities for short-term behaviour benefits neither investors nor the population in the long run.

[19] The privatization strategy adopted by the World Bank is contrary, for a start, to NEPAD, which centers on African ownership and management (NEPAD 2001, §47). No African buyer could have indeed acquired Sonel. But it was also made in opposition to the own premises of competitive reforms and to the world history of electricity policy. See Pineau (2002a; b) for more on this.

Possible Strategy

The current situation of the Cameroonian government constrains its set of strategies to few options. It has to continue its relationships with the lending institutions and to respect the concession contract it has signed. More latitude is, however, available at the regulatory and investment levels, so Cameroon's strategy should focus on these points, as the government has already announced to do (see Republic of Cameroon 2003, and other projects mentioned in section 3.4). We now present our set of recommendations.

At the regulatory level, four changes should be made at ARSEL's level. (1) Merge the Electricity Administration with ARSEL and give to the new body some energy planning mission and authority. (2) Avoid political interference by decreasing the weight of governmental board members and add independent members, with some international presence in the board, to increase transparency.[20] (3) Make the publication of data and reports mandatory for ARSEL. Implement transparency requirements as already established in the laws and decrees. (4) Redirect ARSEL's mission to the control of AES-Sonel and electricity capacity planning, and remove any competitive market goal from its mandate. This should be done due to the lack of investment made by AES-Sonel and because the government has already started some investment plans (see section 3.4). Competition in electricity, problematic and controversial in countries that have implemented it, will not be feasible in Cameroon before a significant period of time. Stronger institutions have to precede competition. These four changes to ARSEL have the advantage of being possible without changing the concession rights already given to AES-Sonel.

At the investment level, the government should only provide some loan guarantees on projects approved by the independent, renewed, ARSEL. ARSEL should act as a central electricity planner, with the authority to negotiate joint-venture partnerships with international companies. Investments could be developed by independent power producers or within the umbrella of a new public generation company. In any case, the electricity production should be sold under long-term bilateral contracts to industries and the distributor (AES-Sonel). The government, possibly in partnership with some development agencies from interested countries, should create an engineering consultant company with Cameroonian and possibly foreign engineers to learn from the investment project and develop local expertise.

By adopting these changes, with transparency monitored by an external auditor with an international reputation (in the same way business companies have their book audited and countries are monitored before receiving rating from credit rating agencies), Cameroon could avoid much of the inevitably short-term behaviour of publicly traded investor-owned companies in imperfect markets. The international transparency monitoring body could be a private firm (such as an audit consultancy firm), or simply a panel of individuals from various backgrounds and countries, preferably African to foster collaboration.

[20] Many companies have international board members and use nationality as criteria. For instance, the energy company Halliburton states that "diversity in personal background, race, gender, age and nationality for the Board as a whole may be taken into account in considering individual candidates" (Halliburton 2004). AES Corporation itself has international members, such as Sven Sandstrom, a former Managing Director of the World Bank that retired in 2001 and joined AES in 2002, while staying an adviser for the African Development Bank (AES Corporation 2004). Prof. Leonard Waverman, currently a member of the U.K. Gas and Electricity Markets Authority (within Ofgem, Britain's gas and electricity regulator) was a board member of the Ontario Energy Board in Canada (Ofgem 2004). ARSEL should seek international board members notably through AFSUR. This would foster African collaboration and be consistent with NEPAD objectives.

4.6 Impact for other African and Developing Countries

Cameroon's experience is disastrous and costly, which perfectly illustrates how an ill-based electricity policy, in conjunction with an increased exposure to financial stock markets and a natural exposure to weather, did not solve any of the electricity sector's problem. On the contrary, the Cameroonian reform, due to the weakness of the institutional endowment, has led to many concessions given to the buyer, low investment, higher prices and a return of the government in the investment business.

Some involvement of the private sector is nevertheless unavoidable and even desirable in the electricity sector. But a strong governmental presence is also necessary in developing countries as well as in developed countries. If the government does not seem ready for such an involvement, then it is the government, and not the sector, that should be reformed.

Other African and developing countries should only accept reforms strengthening their own capacities. Problems should be analyzed and named, not covered under a general "structural adjustment" reform screen, making little distinctions between sectors and issues, and using generic fictive solutions called "privatization" or "competitive markets".

5. Conclusion

This paper has covered the Cameroonian electricity reform background and the state of the electricity sector in 2004. Through the description of the rationale of the reform and of the outcomes, six years after the new electricity law and three years after the sale of the electricity company, the failure of the reform can be observed from many angles. Only one bidder came forth to buy Sonel. The Cameroonian government was consequently not in a strong position in the sale. The concession contract was not made public, despite transparency objectives, suggesting that many advantages were given to the foreign buyer. These suspicions are corroborated by some terms and conditions of the concession contract that became known. Service quality, price levels, investment and regulation are all problematic and the government is not in a position to enforce its own laws, due to its own weaknesses and the ones of the regulator.

A more theoretical point of view has been taken to explain the reform and what could be done, where the institutional endowment of Cameroon was studied. The weakness of the Cameroonian institutional players, compared to their international partners, was described, explaining why the reform was meant to fail, by not providing an institutional ground strong enough to solve the two fundamental problems a network industry has to address: profitability of investment while consumer's demand is met and efficient operations and technological choices.

Even if the World Bank and the IMF do not fully acknowledge the failure of the reform, the Cameroonian government now takes some initial steps to rectify the situation. It seeks investment in partnership with international development agencies. Further and stronger steps are however recommended. The first ones are related to ARSEL, who's role should be strengthened and modified to give more focus on planning and control, and less on theoretical attempts to increase competition. This recommendation is made as institutions have to be strengthened before competition can work. Continued governmental initiatives in investment should be provided, with the creation and support of an independent national electrical engineering services industry. Transparency should be monitored by some independent international bodies as long as local institutions are lacking the capacity to do so.

Other countries involved in similar privatization reforms should draw lessons from the Cameroonian experience. They should carefully assess their own institutional endowment before embarking in a process that may create many new problems, without solving the initial ones.

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Appendix 1: Cameroonian electricity sector legal context

The text of these laws (except for the decree n°99/193 of September 8, 1999) is available online at the Prime Minister's web site (www.spm.gov.cm). However, only the French version is available "for the moment".

Law n°98/022 of 24 December 1998 governing the electricity sector

This law sets the structure of the electricity sector, where the electricity service to the population is defined as a "public service". The three main activities of the sector (production, transmission and distribution –retail sale is later established) are legally authorized under different regimes:

- *Concession regime*. All hydraulic electricity production, transmission and distribution activities have to be granted a concession, monitored by ARSEL. Production concessions have some public service obligations. Transmission concessions have some transparency and third access requirement. Distribution concessions are also subject to public service obligations.
- *Licence regime*. This regime concerns independent power producers and eventual power brokers.
- *Authorization regime*. Self-generation (> 1 MW), distribution networks of less than 100 kW or private electricity lines have to be authorized by ARSEL.
- *Declaration regime*. Self-generation consumers (between 0.1 and 1 MW) have to declare themselves to ARSEL.
- *Free regime*. For any generator of less than 0.1 MW, there are no legal requirements.

The Electricity Administration, within the Ministry of Mines, Water and Energy, defines the country's electricity policy and writes the concession contracts (article 40). This policy is implemented by ARSEL, which also monitors the enforcement of the concession contracts, issuing penalties and fees if necessary (article 40, §6 to 11).

Tariffs are set in the concession contracts and are renegotiated every 5 years (article 50). Rural electrification is under the control of another agency, the Rural Electrification Agency (AER).

Two specific articles are also worth mentioning. Article 6, specifying that the state will financially support the public service of electricity if tariffs are lower than the real costs. Article 18 requires holders of the transmission concession to yearly report to ARSEL all technical data of the electricity network for publication.

Decree n°99/125 of 15 June 1999 to set up the organization and functioning of the Electricity Sector Regulatory Agency

ARSEL (French acronym for "Agence de regulation du secteur de l'électricité") is an agency based in Yaoundé, Cameroon's capital. Its main role is to regulate, control and follow all electricity sector operators (article 3). Many other objectives are also specified in the same article, such as promoting the rational development of electricity production, promoting competition and private sector participation in objective, transparent and non-discriminatory conditions and monitoring the application of environmental laws.

Its board of directors has nine members, five of which are directly appointed by the government. Two are from the private sector, one represents the consumers and one the electricity employees (article 5).

The agency is financed through a 1% levy on revenue of all electricity companies. This levy is shared equally with the Rural Electrification Agency. The level of the levy was determined in the *Decree n°2001/21/PM of 29 January 2001 to fix the rate, modalities for calculating, collecting and distributing the tax on activities of the electricity sector*.

Decree n°99/193 of 8 September 1999 to set up the organization and functioning of the Rural Electrification Agency

AER (French acronym for "Agence d'électrification rurale") is also located in the capital city, Yaoundé, and is in charge of planning rural electrification, negotiating funding and helping rural electrification through other possible activities.

It has the same board of directors' structure as ARSEL, except that two rural community members replace the two private sector members. This agency is funded through the other half of the 1% levy on electricity sector revenues.

The only major difference in the structure of AER, compared to the one of ARSEL, is that its books have to be publicly audited annually (article 25, §1), while no such requirement exist for ARSEL ("private accounting" rules should be enforced for ARSEL, article 19 of decree n°99/125).

Decree n°2000/464/PM of 30 June 2000 governing the activities of the electricity sector

This third major decree completes the structure of the electricity sector. It is the last legal document written before the concession contract was signed with an international investor (a year after the enactment of this decree). It secures the exclusive (monopolistic) nature of the transmission and distribution activities, and also of electricity sales to all final consumers. However, this monopoly is scheduled to last only 5 years in the case of medium and high voltage consumers (article 1). Article 3, §2, makes it clear that the public service obligations of the companies have "to be clearly defined, non-discriminatory, transparent and controllable" (the author's translation).

Articles 4 to 19 establish that the duration and exact obligations of concessions are defined in the concession contracts. The bidding rules under which concessions are assigned to potential buyers are set in this section. How concessions can be taken back from a company is also defined here.

Competition in the wholesale market is made possible by the policies on open access to the network and bilateral sales between any large producer and large buyer (greater than 1 MW of power). Third party access to the transmission network is provided by article 20 and 21, and the right for large users to buy electricity from any producer is granted by article 22.

Separate bookkeeping has to be maintained if a company holds concessions in different activities (production, transmission and distribution) or is trading electricity (article 23, §1).

Article 24 underscores the role of ARSEL to promote competition, as long as it does not contradict other commitments made with other concession holders. Article 26 states that competition is responsible in setting the price of any activity performed in non-exclusive areas of the electricity sector (exclusive areas are defined in article 1).

The last section of this decree, with only two articles, is probably the most important one, because it defines more precisely some concession details. However, in at least one case, an article contradicts a previous rule from the same decree. The two articles have a direct impact on transparency and on the future of competition in the electricity sector.

- **Data transparency** (article 32). Every year, all companies in the electricity sector have to provide the Electricity Administration and ARSEL with all data concerning their operation, in order to adequately plan the future electricity policy and eventually publish some aggregate sector data. This is a restatement of other articles, such as article 18 in the law n°98/022.
- **20-year concession of distribution and transmission services** (article 33, §1). The buyer of Sonel will have the right to provide distribution and transmission services, with the obligation to maintain and develop the network.
- **5-year role as system operator for the transmission network** (article 33, §1). After 5 years in the role of system operator, Sonel will have to set up a subsidiary for the system operations. The capital of that subsidiary will have to be opened.
- **5-year exclusive sales right to all customers** (Article 33, §2). During the first five years of the concession contract, Sonel will retain its exclusive selling right to customers of all voltage. After 5 years, this monopoly will only be protected for consumers using less than 1 MW of power. This is a restatement of article 1.
- **Accounting rules need not to be enforced for a period specified in the concession contract** (article 33, §4). Sonel gets a "delay" before implementing the accounting rules, in contradiction to what is specified in article 23, §1. The duration of the delay was not made public.

What is remarkable in these last articles 32 and 33 is that they protect the buyer of Sonel from transparent accounting rules for an initial undisclosed period of time and reinforce its monopoly powers, especially in retail sales, beyond the first five years of operations.

Appendix 2: ARSEL's fax on the concession contract

05-02-2003 19:45 DE ARSEL A 0012507218849 P.01

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie

Agence de Régulation du Secteur de l'Electricité
ARSEL
Electricity Sector Regulatory Agency

REPUBLIC OF CAMEROON
Peace-Work Fatherland

N°A21 /ARSEL/DG/DCE

Yaoundé, le 5 FEV. 2003

Objet : Mise à disposition du Contrat de Concession AES-SONEL

Le Directeur Général
A
Pierre-Olivier Pineau
Assistant Professor, University of Victoria, BC, Canada
Fax: 00 1 250 7218849

Monsieur le Professeur Assistant,

J'ai l'honneur d'accuser réception de votre e-mail du mardi,14 janvier 2003,relatif à votre demande d'obtention du Contrat de Concession et de Licence signé entre AES-SONEL et le Gouvernement.

J'ai le plaisir de vous informer que ledit document sera bientôt en ligne sur notre site : www.arsel-cm.com.

Veuillez agréer, Monsieur le Professeur Assistant, l'expression de mes salutations distinguées./-

LE DIRECTEUR GENERAL
ARSEL

Pierre Mbouga

Siège Social : B.P. 6864 Yaoundé. Tél : (237) 21 10 12 – 21 10 13. Fax : (237) 21 10 14. E-mail : arsel@cenadi.cm
Direction Générale située au quartier Bastos à proximité de l'Eglise Orthodoxe
Etablissement Public Administratif doté de la Personnalité Juridique et de l'Autonomie Financière

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Appendix 3: Electricity tariff structure in 2002 and 2004

Prices in Tables A3.1 and A3.2 are presented in the local currency (FCFA). The Cameroonian currency is the "Communauté Financière Africaine Francs BEAC", commonly called the CFA franc (or FCFA). 100 FCFA = US$0.189 or US$1 = 528.856 FCFA (March 2004 exchange rate). All prices are before tax.

Table A3.1. Tariff structure in 2002 (in FCFA)

Customers:	Low Voltage	Medium Voltage	High Voltage
	Domestic and Business Users	*General Tariff*	*Contractual Tariff*
Fixed fee	Meter Rental Fee (/yr) 400-6,000	Load Fee (yr/kW)9.125	
Variable fee (/kWh) *Monthly basis*	0-110 kWh 50.00 > 110 kWh 64.00	0-200 hours 40.50 201-325 hours 37.00 326-450 hours 33.50 > 450 hours 31.20	ALUCAM 5
	Street Lighting	*Free Trade Zone*	
Fixed fee	0	Load Fee (yr/kW) 0-3,900 hours 15.612 3,901-5,400 10.870 5,401-6,600 5.437 > 6,600 0	
Variable fee (/kWh) *Monthly basis*	*Between 18.30 and 6.00* 33.60	0-200 hours 23.10 201-325 hours 20.79 326-450 hours 16.17 > 450 hours 11.55	

Source: ARSEL (2002) and Mihamle (2002)

Table A3.2 Tariff structure in 2004 (in FCFA)

Customers:	Low Voltage	Medium Voltage	High Voltage
	Domestic Users	*General Tariff*	
Fixed fee	Meter Rental Fee (/yr) 668-7,084	Load Fee (/month/kW) 0-200 hours 2,500 > 200 4,200	Load Fee (yr/kW) 0-3,900 hours 14,869 3,901-5,400 10,353 5,401-6,600 5,178 > 6,600 0
Variable fee wet season (/kWh) *Monthly basis*	0-50 kWh 50.00 50-200 kWh 60.00 > 200kWh 65.00	*Base period (23h-18h)* 0-200 hours 43.00 > 200 40.00 *Peak period (18h-23h)* 0-200 hours 54.00 > 200 49.00	Consumption Fee 0-200 hours 25.88 201-325 23.30 326-450 18.12 > 450 13.15
Variable fee dry season (/kWh) *Monthly basis*	0-50 kWh 50.00 50-200 kWh 67.00 > 200 kWh 75.00	*Base period (23h-18h)* 0-200 hours 53.75 > 200 50.00 *Peak period (18h-23h)* 0-200 hours 67.50 > 200 61.25	
	Business Users	*Free Trade Zone*	*Contractual Tariff*
Fixed fee	Meter Rental Fee (/yr) 668-7,084 Load Fee (/month/kW) 2,000	Load Fee (/month/kW) 0-200 hours 2,500 > 200 4,200	
Variable fee wet season	0-180 kWh 63.00 > 180 kWh 55.00	*Base period (23h-18h)* 0-200 hours 30.00	

(/kWh) *Monthly basis*		> 200 25.00 *Peak period (18h-23h)* 0-200 hours 35.00 > 200 32.00	
Variable fee dry season (/kWh) *Monthly basis*	0-180 kWh 68.00 > 180 kWh 60.00	*Base period (23h-18h)* 0-200 hours 53.75 > 200 50.00 *Peak period (18h-23h)* 0-200 hours 67.50 > 200 61.25	
	Street Lighting		
Fixed fee	0		
Variable fee (/kWh)	*Between 18.30 and 6.00* 40		

Source: ARSEL (2003), based on AES-Sonel (2004b) and Moko (2004)