SAHEL ALLIANCE CONFERENCE

ACCESS TO ELECTRICITY IN THE G5 COUNTRIES

Paris, October 9 and 10, 2019

AFD · THE WORLD BANK IBRD • IDA · ALLIANCE SAHEL · ESMAP · AFRICA RENEWABLE ENERGY SCALE UP

SYNTHESIS OF THE CONFERENCE

ACCESS TO ELECTRICITY IN SAHEL DOUBLED BY 2022

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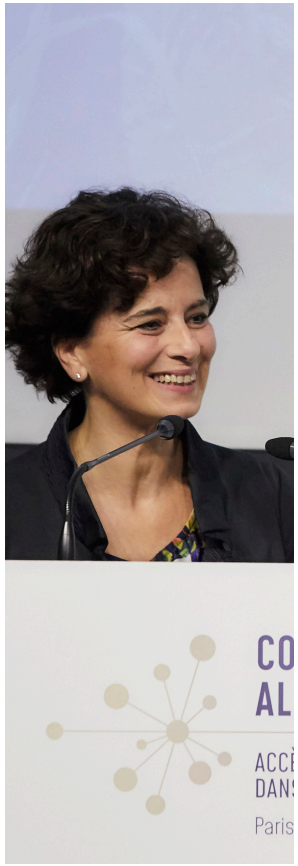

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INTRODUCTION

The "Energy Access in the G5 Sahel Countries" Conference is the first edition of an annual meeting organized by the Energy Group of the Sahel Alliance, which aimed at strengthening the coordination of the various actors and contributing to experience sharing and innovation.

Coordinated by AFD in partnership with the World Bank, the European Union and the Coordination Unit of the Sahel Alliance, it gathered in Paris more than 195 participants: Ministers of Energy and representatives of government agencies of the G5 Sahel countries, intergovernmental agencies, donors active in the sector, public and private operators of energy projects, technical experts.

> *"This event is important and illustrates the interest of the international community for the Sahel."*

It was with these words that the French Special Envoy for the Sahel, Christophe Bigot, opened the conference.

Access to energy is a crucial factor in poverty reduction, sustainable development and stability, but it has also become "*a basic right that can change people's lives*" (Hovig Etyemezian, United Nations Refugee Agency). The electrification rate in all G5 Sahel countries (Burkina Faso, Mali, Mauritania, Niger and Chad) was 26.3% in 2017, with a significant disparity between urban and rural areas, compared to an average of 49% for Africa and 89% worldwide.

The Sahel Alliance, a platform for international cooperation, was established on 13 July 2017 to deploy a collective security and development approach. It has identified energy as one of its six priority fields of action. The Alliance, made up of 12 donors, is the result of a political commitment at the highest level, but which is nevertheless extremely operational, with an "obsession with results" and a concentration of efforts in the priority areas.

It has set three objectives for 2022:

- doubling the rate of access to electricity, an intermediate target to achieve universal access by 2030 as stated by SDG7;
- doubling installed renewable energy production capacity;
- increasing interconnection systems to facilitate cross-border exchanges.

As Rémy Rioux, CEO of the Agence française de développement (AFD) explained, "*these objectives are within our reach, but they are ambitious and call for appropriate policy frameworks, government commitment and a combination of all forces*". The Alliance is therefore committed to mobilising the community of technical and financial partners and the private sector around a common programme.

While progress in the region has been notable over the past decade, the progress towards the target of doubling access to electricity by 2022 is insufficient. Roger Coma Cunill, senior energy specialist at the World Bank, pointed out that the projects currently being implemented by the Sahel Alliance will only achieve 35% of the target; the financing gap to reach the target is between 2 and 4 billion euros.

Alongside public aid, private sector involvement is essential in a market where there are many opportunities and where the Sahel is also experiencing innovations, "with the paradigm shift brought about by photovoltaic panels and the digital revolution" (Jean-Pierre Barral, Director of the Department of energy and digital transitions, AFD).

Faced with the multiple challenges of access to electricity in the G5 countries, this conference, with the presence of the French Special Envoy for the Sahel, Ministers of Energy and Directors of the national electricity companies of the G5 countries, representatives of the donors but also of the private sector and NGOs, aimed to take stock of the actions undertaken by the various stakeholders, to reflect on ways to strengthen the commitment, to identify concrete solutions, to imagine procedures to speed up electrification, or even to pool strategies at the G5 Sahel level.

> *"We are present today to lay the foundations for the pooling of strategies at the G5 Sahel level and to move forward quickly. Discussions with technical and financial operators and the private sector are important, in order to clarify the essential issues and move faster. Our presence today, all together, bears witness to the common desire to move forward together and align our approaches."*
>
> **Amina Moumouni, Minister of Energy, Niger**

Part I:
National electrification strategies in the G5 Sahel countries: implementation and main challenges

Energy Ministers and CEOs of the national electricity companies of the G5 Sahel countries spoke during the first day of the conference about electrification strategies, their implementation and the main challenges they faced in these vast, sometimes landlocked territories, with low population density and energy consumption, but exponential needs given the population growth.

I - NATIONAL POLICIES AND THEIR IMPLEMENTATION

Niger has more than 15,000 localities. In 2018, just under 1,000 were electrified. To speed up the rate of electrification, the government has developed a National Electricity Access Strategy (SNAE) aimed at increasing the electricity access rate from 12.93%, of which 1% in rural areas in 2018, to 22% in 2021, of which 10% in rural areas. The master plan for access to electricity, drawn up on the basis of this strategy, aims to achieve 80% electrification by 2035. The estimated budget is €1.8 billion.

The strategy provides for three technical procurement options, differentiated according to the areas:

- extension and densification of the network;
- development of mini-grids;
- dissemination of individual solar systems (solar kits), in order to ensure access to basic services for the entire population.

The acceleration has begun thanks to projects carried out in collaboration with the partners of the Sahel Alliance and the implementation by the Nigerien Electricity Society (NIGELEC) and the National Agency for the Promotion of Rural Electrification (ANPER). 11 projects are currently being carried out in 963 localities.

In **Mauritania**, the rate of access to electricity is 43%, but remains very low in rural areas. The main areas of focus of the strategy are as follows:

- increasing production capacity by favouring local hydroelectric and gas resources;
- developing interconnection networks, both urban and with neighbouring countries;
- increasing the share of renewable energies in the energy mix;
- doubling the rate of access to energy in rural areas.

Since 2010, the country has made significant investments to develop the network and the energy mix, increasing production from 74 MW to 512 MW, covering 44% of annual demand through renewable energy.

In **Mali**, the rate of access to electricity has reached 43%, but only 12% in rural areas. A National Energy Policy Document, adopted in 2006, is currently being revised by the Ministry of Energy and Water, which is responsible for the Malian Agency for the Development of Rural Electrification (AMADER) and the electricity company Energy of Mali (EDM).

The energy mix is very unbalanced since fossil energy, at a very high cost, is predominant. In addition to the interconnected network in urban areas, the country aims to develop mini-grids in rural areas and renewable energies, given its solar and hydro potential. Its objective is to reach an access rate of 80% by 2030 or 2035.

Burkina Faso's model is original in that, alongside the national electricity company SONABEL, a community model was developed in rural areas from the 2000s, through the Electrification Development Fund. This model has made it possible to triple the rate of access to electricity, but the task remains very significant given the 872 localities electrified to date.

As part of the National Economic and Social Development Plan, Burkina Faso has set itself the challenge of achieving the objective of 40% access to electricity by 2020 (compared with 23% in 2015) and 20% in rural areas. Its roadmap is based on a mix between national generation and imports thanks to interconnections and on a reduction of kWh costs thanks to renewable energies. The Yeleen project, which aims to speed up electrification in rural areas, is essentially based on solar energy.

Since 2017, a number of pilot projects have been started, using a holistic approach, with the aim of creating an attractive market for energy production and distribution through a strengthening of the legal framework, the promotion of clean and innovative technologies and the stimulation of productive use.

In **Chad**, the rate of access to electricity is 11% and only 2% in rural areas. In this country which does not yet have interconnections with its neighbours, generation is essentially based on thermal energy. The future lies in the use of renewable energies. A study focuses on the creation of networks within seven decentralised centres, making it possible to use different resources (gas, biomass, solar, fuel oil, etc.).

II - COMMON CHALLENGES TO MEET ENERGY ACCESS OBJECTIVES

"*For once, the world has the opportunity to ensure that people have access to energy. Needs are minimalist in our villages and cities. A little more solidarity in the world would solve problems and leave a better world for our children. Technology now makes it possible to do so. The resources are sufficient. We also have human capital. All we have to do is assemble all the pieces of the puzzle, in order to enable sustainable development.*"

Bachir Ismaël Ouedraogo, Minister of Energy of Burkina Faso, President of the G5 Sahel

1) Main challenges

The Sahel countries are facing a number of challenges to develop access to energy, both regionally and socially. In order to reduce the costs of electricity production, which is currently very high and mainly based on fossil energies (251 FCFA per kWh in Chad, for example, while the selling price is subsidised to 85 FCFA for the social level and 125 FCFA for the rest), it is important to develop a **continuum of solutions** between the grid, which is optimal for areas with high population density or close to regional connections, and mini-grids and individual solar systems, which are more suitable for areas far from the grid, but also to **increase the share of renewable energies**. As Nicolas Guichard, Deputy Head of the AFD Energy Division noted at the end of the first day, "*The Energy Ministers of these countries are now addressing the subject of off-grid electrification, with an integrated vision of a continuum of solutions*".

Another issue is the **renovation and development of the existing network**, whose obsolescence leads to technical losses. As Sambou Wagué, Minister of Energy and Water of Mali, noted: "*the effort to increase supply may suffer from the dilapidation of the networks (...). We need to improve transport capacity in cooperation with international institutions and other countries in the framework of regional programmes*". Bachir Ismael Ouedraogo invited the private sector to invest in strengthening the existing network. The World Bank is supporting Niger to rehabilitate its transmission and distribution network.

The G5 Sahel countries must also take advantage of existing **interconnections** or those under construction to increase their capacity. To this end, the **WAPP** brings together 35 national electricity companies and a private company from the ECOWAS area, in order to create an electricity market. The 2019-2023 master plan includes 75 priority projects (28 transport and 47 production projects), for an estimated cost of $36.39 billion, with renewable energy accounting for 69% of additional production. At this stage, 9 countries out of the 14 mainland countries in West Africa are interconnected; the other 5 will be interconnected by the end of 2020.

Given the scale of needs and investments, it is important to attract, in addition to public aid, **private investors** in a «win-win» partnership (Aoudi Aliou Diallo, Adviser to the Minister of Energy of Niger). In order not to exclude national operators from the market, a fear expressed on several occasions during the conference, one of the avenues designed by the Mauritanian Minister of Energy, Mohamed Abdel Vetah, is to open up large international infrastructure projects and to find niches that are easier to access for local private players.

An important issue is the **pricing policy** because prices often do not cover service costs. Subsidies remain high, at this stage favouring urban rather than rural areas, where needs are the greatest. As Vincent Butin pointed out, accessibility to energy services for all can only be achieved through external subsidies or urban-rural equalisation at the national level. In Niger, the reforms led to the creation of a regulator, which in 2018 proposed a tariff structure enabling

the balance to be reached. A social tariff has been set for the first 50 kWh, targeting the most vulnerable sections of the population, which represent one third of consumers.

All of these challenges require countries to engage in **reforms**, designed in particular to:

- establish a long-term vision through an **integrated planning** at the national level;
- **improve the performance of the national electricity companies** via, in particular, performance contracts with the State as in Niger;
- focus efforts, by designating **a leader in each country** for rural electrification;
- have a regulatory framework **to attract and secure investments in the private, local and foreign sectors**.

For the World Bank, the reforms needed to achieve financial equilibrium more precisely require the input of three major players (Charles Cormier, World Bank Energy Sector Director):

- the Ministry of Energy, in order to reduce energy production costs;
- the Ministry of Finance, to ensure income at appropriate rates;
- the national electricity companies, in order to improve and maintain performance.

2) Focus on human capital and gender

a) GENDER CHALLENGES

In the Sahel, energy poverty has a different impact on men and women, given the time that women spend to supply the household with fuel and the risks to their health. **The voice of women must be heard**, in order to take into account their needs and their future. In addition, **they must be supported in their training** in order to become actors in the energy field.

"*I think education will make a difference. The more women go to school and get higher education, the more they will be engineers. Specific allowances should be dedicated to girls.*"
Amina Moumouni, Minister of Energy, Niger

As Françoise Louveau of the European Commission explains, a Gender group has been set up within the Sahel Alliance, with specific objectives for the energy sector:

- promoting access to electricity to support women's empowerment;
- encouraging the active participation of women in the energy sector;
- increasing security through a gender-specific approach;
- supporting the economic empowerment of women.

In Niger, two World Bank projects have established mechanisms to take into account gender-related issues and women's aspirations in terms of access to electricity, through training and evaluation mechanisms. UNDP has developed a multi-functional platform project, which has encouraged the establishment of more than 350 mills in Nigerien villages. This project has allowed women to turn to production activities and girls to attend school rather than pounding millet.

In terms of clean cooking, Niger is taking action to replace wood energy with alternative local solutions. The experience of Menabe's "solar grandmothers" in Mauritania should be duplicated, according to the model of the Indian Barefoot College. However, funding must be mobilised to develop these types of projects, popularise them and bring them to scale.

b) CAPACITY BUILDING CHALLENGES

"*It is important to strengthen the capacity of the actors to prevent the network from collapsing.*"
Sambou Wague, Ministry of Energy and Water, Mali

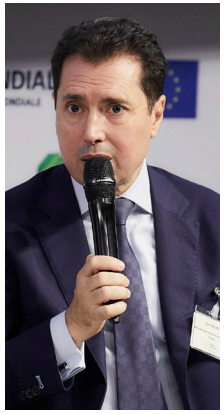
With regard to the ambitions in terms of electrification in the G5 Sahel countries as well as the technological revolution, a real challenge is to **strengthen the capacity of actors within the administration, project implementing agencies and the private sector**. The Inter-African Graduate School of Electricity (ESIE) in Bingerville, Côte d'Ivoire previously trained most of West African executives, but due to its closure, human resources are lacking. Charles Cormier called for it to be reopened.

The European Union supports a number of measures in the field of training for private operators in the area of renewable energies and mini-grids (cf. the regional certification system for installers of photovoltaic systems [ECREEE], starting by two pilot countries to certify installers and intended to extend to 6 ECOWAS member states).

In Niger, a project of the African Development Bank has helped train private developers on the establishment of decentralised mini-grids. The top five were selected for a World Bank project to create concessions.

Schneider-Electric aims to train, together with other partners, one million young people worldwide in the electricity professions before 2025.




Crédit AFD/Roland Zanré

Part 2: Technological innovation, an opportunity at the service of the electrification of fragile areas

Technological innovations represent an unprecedented opportunity to speed up off-grid rural electrification even though, as Vincent Butin, the Expert Director of BURGEAP pointed out, "*There is no magic solution. All models are of interest depending on the contexts in which they fit. We must adapt to the context, social and institutional conditions, territories and development prospects.*"

I - MINI-GRIDS

Yann Tanvez, Energy Specialist for the International Finance Corporation (IFC) explained that the African energy market will ultimately be divided into 45% for the network, 30% for mini-grids and 25% for individual solar systems. However, to date, only 1,500 mini-grids are active on the continent, mainly of old generation and 4,000 are planned for the next few years. A further 150,000 will be needed in Africa by 2030 to realise the potential for universal electrification. It is therefore important to build and develop 15,000 mini-grids per year.

In terms of market dynamics, governments have been very proactive on this issue for three years. The private sector is tending to grow, made up of local start-ups, large companies and some more traditional investors. Public concessional funding is also increasing exponentially. Lastly, the rapid reduction in the costs of technologies, which are not new in themselves, is now enabling widespread deployment of these technologies across the African continent. Today, the cost price is around 50-60 cents per kWh, but is projected to be around 20 cents in 2030, equivalent to the electricity tariffs in the sub-region. This means that the model will require some form of subsidies over the next five or ten years, but they should be degressive and then disappear.

Reducing costs is the real challenge. In addition to technical innovations (lower storage costs, a more advanced approach on the demand curve to develop productive activity, etc.), the change in scale will make it possible to achieve this. Inter-structure distance is also an important factor in the variation of costs; the management of demand, via energy efficiency and the adjustment of supply to needs, in particular, is a means of optimisation. Lastly, consumption is set to increase by 2030 as a result of population growth. All these dimensions point to a reduction in the costs of mini-grids in the long term.

In the meantime, **models** must be found to make this activity viable. In Niger, a regulatory incentive framework is now offered, with all possible financing options. A significant subsidy is provided to the operator.

FEEDBACK ON THE PRODUCTIVE USE OF ELECTRICAL ENERGY, ELECTRIFIED ACTIVITY ZONES (ZAE) IN MALI

Grégoire GAILLY, Regional Director for West Africa, GERES association

ZAEs have been an experiment in Mali for five years, with interesting impacts in terms of employment, income generation and economy, thanks to energy but not only. This solution aims to promote the ecosystem for small rural enterprises, often very informal and generally supported by women, by working on professional and bioclimatic infrastructures, renewable energies and support for rural players, so that they can keep their data to convince microfinance or banking players.

This experiment is based on:

- a range of energy solutions;
- a public/private partnership (the infrastructure belongs to the municipality but is managed by a private party);
- support for entrepreneurship and investment in human capital;
- scalable solutions depending on the growth of the business.

GERES is currently considering how to work with the private sector to leverage. After obtaining support from the AFD and the European Union for the first two pilot projects, it obtained help from Sweden to initiate a change of scale, in partnership with public agencies, operators and private investors.

The pilot projects were carried out in complementarity with the Decentralised Services Company (SSD) Yéelen Kura since in the first village, the SSD rented SHS kits but did not have a power station. The GERES therefore provided an additional energy solution. In the second village, the ZAE is interconnected with the Yéelen Kura power station, which only supplies electricity 10 hours a day, mainly in the evening.

II - INDIVIDUAL SOLAR GRID-CONNECTED SYSTEMS

"*Solar is, in my opinion, not a solution. Solar combined with digital are the solution*".
Gilles Vermot-Desroches, Director of Sustainable Development and Public Affairs, Schneider-Electric

As Mansooor Hamayun, General Director of BBOXX, a British company specialising in the supply of solar kits, explains, technological advances are now making it possible to consider electrifying large parts of the world, following four changes:

- mobile money and digital finance;
- energy efficiency, which makes it possible to do more with less electricity;
- internet service providers, which provide remote services;
- big data, enabling efficiency gains thanks to the use of data.

The report of the second half of 2018 by GOGLA, an industry association with 160 members in the field of non-solar networks, shows that 4 million products had been sold globally in the second half of 2018 (50% in India and 50% in Africa, a large share of which in East Africa).

Almost 75% of the products sold by its members are sold in pay-as-you-go (PAYGo). The cumulative installed power of these low power systems reaches 30 MW every six months. PAYgo continued to gain momentum in the mix in 2019, including in West Africa.

TESTIMONY FROM ALEXANDRE COSTER, GENERAL DIRECTOR, BAOBAB PLUS,

member of GOGLA

Baobab Plus, incubated by Microcred four years earlier, sees access to energy as an important development factor, which must nevertheless be accompanied by other elements, in particular new digital technologies. It operates in these two areas in four countries (Senegal, Côte d'Ivoire, Mali and Madagascar) and has 150,000 customers. €10 million has been invested in total, mainly from the private sector.

Individual solar system solutions can reach a large number of people faster than mini-grids (more than 500 households per day). The average energy expenditure according to traditional practices amounts to 40 cents per day. The PAYGo business model, which allows a person to lease their solar kit, is based on this amount. The kit is controlled remotely, in order to secure payment. Once the total cost of the kit is covered, the person becomes the full owner.

The systems are scalable according to needs (from lighting coupled with phone charging to more productive uses).

By paying via mobile money (offered by operators such as Orange), users are creating an initial financing track record. However, most microfinance banks in Africa face major difficulties in reaching rural populations, given the lack of visibility on their repayment capacities. This experience therefore becomes a gateway to access to financing.

Technical solutions make the models profitable. Two out of four subsidiaries are now independent of subsidies. Only facilitation is now required from the government.

While the PAYGo system allows wide access to individual solar systems, Raihan Elahi, Head Specialist on Energy, Lighting Africa, World Bank notes that **subsidies** are necessary to enable households that do not have the 40 cents a day to equip themselves but also to attract companies to countries where the risks or barriers are the highest. In addition, companies can, with their own financing, create 10 or 20,000 systems per year; it would then be possible to provide individual systems to half of the 200 million people without electricity. In order for businesses to grow, **financial institutions** must take into account this sector.

The West Africa Regional Off-grid Electrification Project (ROGEP), with $200 million funded by the World Bank and implemented by ECREEE, aims to eliminate the constraints for off-grid solar scaling. It will ultimately consist of a deployment of a wide range of autonomous photovoltaic solar systems for households, public services and productive uses. It has two components: the first to support the acceleration of the market and the second to support and develop supply and demand.

Another issue concerns the **supervision of this exponential activity**. In addition to the essential issue of recycling, there is a need for regulation given the specificity of the offering, combining the sale of kWh and services. It is also necessary to monitor the quality of products and to reduce customs tariffs.

Source PNUD – Crédit photo PNUD

Part 3: The joint involvement of the public and the private sector, a key to enabling scale change in electrification

I - COORDINATING DONOR ACTION

The partners of the Sahel Alliance are heavily involved to provide access to energy in the G5 Sahel countries. Accordingly, the **European Union** has since 2014invested €154 million in sustainable energy, with the aim of providing electricity to an additional 900,000 people, through various initiatives: developing interconnections between countries; institutional support for improving governance and setting up regulatory frameworks; support for renewable energy production.

The **World Bank** has invested $1.8 billion in energy in the Sahel over the past two years through multiple projects. It also administers the Energy Sector Management Assistance Program (ESMAP), with 18 partners, which offers a number of tools and indicators: the «Tracking SDG7» report, which presents monitoring indicators for the three pillars of the energy sector (access, renewable energies and energy efficiency); the «Multi-tier Framework», which characterises certain dimensions of the electrical service and cooking appliances, such as reliability and cost; the RISE ratio (regulation indicators for sustainable energy), the objective of which is to assess the policies and legislative framework implemented to encourage access to energy; the global electrification platform, a decision-making tool providing simulations.

The Sahel is a historic area of involvement for the **AFD**, which places energy at the heart of its priorities. The Agency currently has a portfolio of €600 million committed to these five countries, including €120 million delegated by the European Union. 7 projects are underway in terms of access, targeting 1 million people.

The same applies to the **African Development Bank**, which is involved in two major projects, Yeleen in Burkina Faso, for mini-grids and solar kits, in collaboration with the AFD and the European Union and Djermaya Solar in Chad. It is also investing in the acceleration of off-grid electrification through the Green Mini Grids programme and offers a certain number of support instruments (SEFA, FEI and DESCO financing programme).

Within the **Sahel Alliance**, the Energy and combating climate change pillar is the most active of the six pillars, as Jean-Marc Gravellini, Head of the Coordination Unit of the Sahel Alliance commented: "an effort is made to share project portfolios, seek synergies and joint solutions".

To achieve its objectives, the Group has identified four key priorities:

- mobilising public and private investments;
- strengthening planning capacity and supporting the adoption of electrification strategies;
- strengthening project execution capacity;
- strengthening cooperation and collaboration between G5 Sahel countries and the Sahel Alliance.

The **Desert to Power programme** was launched in September 2019 in Ouagadougou at the initiative of the African Development Bank, with the support of the leaders of the G5 Sahel countries. It aims to exploit the solar potential in an area stretching from Senegal to Djibouti, with

a focus on the G5 Sahel countries, where five priority areas have been defined and summarised by Daniel Schroth, Director of the Renewable Energies and Energy Efficiency department of the African Development Bank:

- accelerating solar generation;
- strengthening networks;
- revitalising electricity companies;
- improving the business environment;
- harmonising standards, regulations and tax incentives.

The Heads of State of the five countries have decided to create a task force hosted by the African Development Bank, in charge of coordinating the implementation of the initiative and the mobilisation of resources.

One of the challenges facing donors is to **improve the coordination of their initiatives**. Some, such as the Minister of Energy of Burkina Faso, called for greater coordination around regional platforms, such as Desert to Power, as the countries in the regions are faced with a number of common challenges. Others, such as Jean-Pierre Barral and Christian Cormier, highlighted the specificities of each country and the need for coordination within them, but also recall that the Sahel Alliance was set up in 2017 to better coordinate donor action. For Daniel Schroth, this Desert to Power initiative complements the Sahel Alliance and "*aims to strengthen the momentum, with political support at the highest level and to identify points that have not been sufficiently addressed until now*".

Some operators in the G5 Sahel countries also raise the complexity of donor procedures, which is incompatible with the pace of projects that is essential to achieve the objectives. They call for a paradigm shift. While work is being carried out between donors to **standardise and facilitate procedures**, Jean-Pierre Barral emphasised that the AFD applies the procurement procedures of States, which are sometimes quite long and complex. He called on States to also change their procedures to speed up the implementation of projects.

II - THE ROLE AND CONDITIONS OF PRIVATE SECTOR INVOLVEMENT TO ALLOW A CHANGE OF SCALE

"*To meet all energy needs in the countries, public aid is no longer sufficient and the private sector must be successfully involved. The European Union has been actively working on this in recent years in order to reduce investment risks. Facilitation programmes have been launched. Involvement will also be important in the future.*"

Carla Montesi, Director for Planet and Prosperity, European Commission

1) Some tools offered by the donors to support private investment

As Stefano Signore, Chief of the Sustainable Energy and Climate Change Unit at the European Commission's Directorate-General for Cooperation and Development, explained, the European Union has found that the scale of the needs obliges it to identify tools to maximise private sector involvement (de-risking).

The **external investment plan of the European Union**, launched in 2016, aims to develop employment and growth, encourage private investment and improve the investment climate based on three pillars: finance; technical assistance; support for the investment climate. In financial terms, the plan is based on two components: the strengthening of existing investment facilities; a new guarantee instrument (for which €1.5 billion has been mobilised). Some guarantees relate to renewable energies in Africa and are intended to apply in the Sahel countries. Negotiations are under way with donors and banks on the technical arrangements for encouraging them to get involved in fragile countries.

This approach is combined with a smaller scale and more direct programme, **ElectriFI**. €200 million has already been invested in this model, which makes it possible to identify projects supported by private players, which are intended to be replicable but require support in terms of equity or loans.

Furthermore, **Africa Renewable Energy Scale Up Facility** (ARE Scale Up) is an initiative run jointly by the AFD and Proparco and supported by the European Union, aimed at promoting access to energy through innovative solutions in Africa. This facility has two components: technical assistance, managed by the AFD; a guarantee system of 50% of the amounts invested by Proparco in equity or quasi-equity in companies in the non-grid domain.

2) Problems encountered and expectations of private players

Proparco, which has been working on the facility for two years, has carried out a study on companies active in rural electrification in Africa. The Solar Home System (SHS) has posted strong growth in East Africa, with very innovative economic models. However, companies are unable to balance their model and be profitable. The distribution activity is very capital-intensive and costs are high. A sufficiently large customer base is required to support them.

Two trends should be highlighted: geographical diversification, with an emphasis on players in West and Central Africa; the strong presence of international utilities in the sector, leading us to believe in a possible concentration of the market in the future.

The players need capital. Their valuation is currently decoupled from the economic reality, leading Proparco to be very selective in its choices. There is also a need for debt financing. Even if companies are not profitable, Proparco tries, through various instruments, to offer them solutions, in particular for the financing of working capital requirements.

Mini-grids, which were in an embryonic state a few months earlier, tend to develop. Initiatives are still based on grant or equity financing, but with technological developments, cost reductions and the combination of productive and domestic uses, bankability is close as long as the scale is sufficient.

A boom has been seen in C&I, which requires a really solid regulatory frameworks, which the funders expect. A large part of the funding is in the form of equity. Local debt is very expensive, which is not sustainable for the business. Proparco tries to work towards the standardisation of contracts, the identification of performance indicators and the aggregation of projects, to reach critical sizes.

In conclusion, there is a market for off-grid solutions. Lower costs and technological innovations will make the models viable. There are many private players, but problems remain. The combination of productive and domestic uses and a continuum of solutions can help balance the models.

TESTIMONY FROM RAPHAËL TILOT, INNOVATION DIRECTOR OF ENGIE AFRICA

"*Investors need visibility and stability over time*"

ENGIE is a large energy player, the world's leading independent producer. It has been in Africa for a long time, where it has 3,500 employees. ENGIE is the only group that offers all solutions on the continent.

Its approach is that of a long-term private industrial investor. ENGIE acquired Fenix International and MOBISOL, with a view to industrialising and structuring these companies. 1,500 people are dedicated to SHS in 9 countries. An actor like ENGIE makes it possible to speed up the development. The margin per customer is very low and structural costs need to be absorbed. Hence the importance of having a critical size.

ENGIE wants to integrate SHS with mini-grids and believes in complementarity. However, it is a private investor that has to generate profitability in order to have a significant and lasting impact. In solar kits, the group covers its costs. Mini-grids, which currently concern only two countries, are of great interest, but structural costs remain high. A new country must have 50 or 100 mini-grids in order to absorb structural costs. Donors and regulators must make it possible to reach this depth.

The regulatory requirements are important. In terms of solar kits, these are:

- developing minimum technical specifications to avoid flooding markets with poor quality kits
- proposing initiatives to ensure that the service is offered at minimum costs (e.g. tax incentives).

The need for regulation is greater on mini-grids, in order to:

- reduce the permitting process in terms of time;
- ensure that the private sector recovers its costs, via a rate that it sets itself or a clearing system at the time of the investment or over the long term;
- establish a master plan giving visibility to the depth of the market.

Yann Tanvez (SFI) identified several factors in order to achieve scale-up through market structuring and PPP.

The **private sector** should focus on **reducing technology and operational costs** and **better understand and apprehend demand**.

For the **public sector**, the challenge is to **strengthen institutional systems and political leadership**, but also **planning**, which is crucial for both the public and private sectors. **Regulations** must make it possible to provide a clear framework on a number of issues, such as pricing and the quality of infrastructures. It is also important to **increase the scale of transactions**, to make private investments possible and reduce risks, but also to **better prepare these transactions**, which involves information about demand. Also, work must be carried out on the **PPP model** itself, by highlighting best practices: pricing balanced between commercial viability and purchasing power; mechanisms to encourage the universality of the service for operators; etc.

ARE Scale up's study on mini-grids in the Sahel, presented by Vincent Butin, shows that the private sector alone is not sufficient, especially for the most vulnerable populations, with limited resources or living in complicated areas. Indeed, private actors need public funds, in particular as part of public service delegation. The public operator alone is not sufficient either. It does not always have the technical skills to work in off-grid rural electrification. Its recommendation is therefore to **gather the forces around a public institution designated as leader of rural electrification** that is able to develop technical skills and take over operations in the event of private sector shortcomings.

CONCLUSION

Mathilde Bord-Laurans, Head of the AFD Energy Division, Stefano Signore and Charles Cormier closed this very wide-ranging conference, which enabled rich interactions between Ministers and representatives of the various institutions, NGOs and the private sector.

The two days showed that major actions are currently being undertaken, but nevertheless remain insufficient. It is important to speed up and mobilise funding to achieve the objectives defined and established through the coordination of the Sahel Alliance and for which the members within the Alliance have committed themselves to increased efforts.

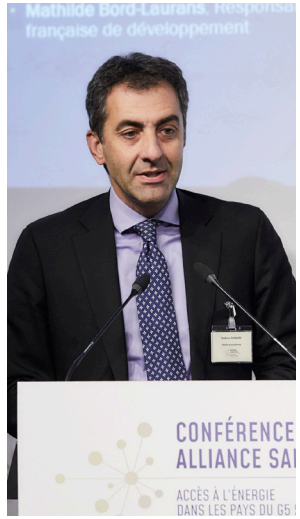
The importance and the urgency of this issue was emphasised on several occasions. Two areas of consensus emerged: the need for a technical continuum between the grid, mini-grids and individual solar kits; the importance of public and private involvement, with the support of international countries and operators.

A number of avenues were highlighted:

- better coordination of different bodies within each country;
- implementation of integrated planning;
- better regulation;
- tax policy reform;
- better coordination between donors;
- optimal use of funding;
- support for income-generating and job-generating activities;
- capacity building and gender equality, etc.

This set of ideas will inspire the World Bank in establishing IDA19 and, on a wider scale, the Sahel Alliance partners, who need to listen to solutions proposed by individual countries. Concrete progress can be measured at a new meeting scheduled for 2020.

www.alliance-sahel.org/en/the-first-conference-of-the-sahel-alliances-energy-group-to-be-held-on-9-and-10-october-2019-in-paris/



SAHEL ALLIANCE CONFERENCE

ACCESS TO ELECTRICITY IN THE G5 COUNTRIES

Paris, October 9 and 10, 2019