

ENERGY SECURITY IN SOUTH SUDAN: POTENTIALS AND CHALLENGES

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Abstract

The article deals with the energy security dynamics in South Sudan. It aims to shed a light to the different energy potentials that South Sudan possesses and to subsequently analyze the conditions that constitute the challenges disrupting the country's energy security. Despite being a young nation, South Sudan has an enormous and diverse energy potential, ranging from nonrenewable energy sources to renewable energy sources. It holds not only a huge amount of oil resources but also has considerable potential in solar energy, wind energy, hydropower, geothermal energy. But despite this enormous advantage in energy resources, the South Sudanese state faces numerous obstacles undermining its energy security. Among these challenges figure the lack of energy infrastructures, the continual internal instability, the mismanagement of the energy resources and the high dependence on its external partners. In this study, it is aimed to evaluate the current status of South Sudan's energy resources by considering the energy security issue.

Keywords: Energy Security, South Sudan, Energy Potentials, Energy Challenges, Energy Sustainability.

GÜNEY SUDAN'DA ENERJİ GÜVENLİĞİ: POTANSİYELLER VE ZORLUKLAR

Öz

Bu makalede, Güney Sudan'daki enerji güvenliği dinamikleri ele alınmaktadır. Güney Sudan'ın sahip olduğu çeşitli enerji potansiyellerine ışık tutmayı ve daha sonra ülkenin enerji güvenliğini bozan zorluklara sebep olan koşulları analiz etmeyi amaçlamaktadır. Genç bir ülke olmasına rağmen, Güney Sudan yenilenemeyen enerji kaynaklarından yenilenebilir enerji kaynaklarına kadar muazzam bir ölçekte ve çeşitlilikte enerji potansiyeline sahiptir. Sadece büyük miktarda petrol kaynağı barındırmakla kalmayan Güney Sudan, aynı zamanda güneş, rüzgâr, hidroelektrik ve jeotermal enerjilerde de önemli bir potansiyele sahiptir. Ancak enerji kaynaklarındaki

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bu büyük avantaja rağmen, Güney Sudan devletinin enerji güvenliğini zayıflatan birçok engel ve zorlukla karşı karşıya olduğu gözlenmektedir. Bu zorluklar arasında enerji altyapısı eksikliği, devamlı bir iç istikrarsızlık, enerji kaynaklarının zayıf yönetimi ve dış ortaklarına ağır bağımlılık bulunmaktadır. Bu çalışmada enerji güvenliği konusu dikkate alınarak Güney Sudan'ın enerji kaynaklarının mevcut durumu değerlendirilecektir.

Anahtar Kelimeler: *Enerji Güvenliği, Güney Sudan, Enerji Potansiyeli, Enerji Sorunları, Enerji Sürdürülebilirliği.*

Introduction

The significance of energy, as we know it today, started taking shape since the 19th century in the USA (United States of America), as the use of oil and the increasing demand from its derived products sparked the beginning of a major industry that not only kept improving itself but would be at the very center of our modern civilization (BBC, 2019). The 19th century's technological breakthrough and the two World Wars showed that energy represents for states an indispensable element for their progress and development. The necessity for oil initiated a course for its acquirement, as the powerful nations, over time, perceived it to be crucial for their military activities and other important sectors of their society (Cherp & Jewell, 2011:1). The traditional conception of security, which was mainly focused on military security issues, extended to new dimensions in which energy became part of. The Cold-War, during which the world was bipolar, constituted a period of intense competition among nations for the acquisition of nuclear power, which in turn represents both a military asset and a source of energy.

The rivalry among nations, the advanced technology and the always-changing internal dynamics of states led humans to improve their environment, creating conditions in which energy sources become a necessity. This necessity of (assuring) energy is not related only to industrialized nations. Underdeveloped regions such as Sub-Saharan Africa are also in need of energy security that would help tackle their development challenges. In this regard, the question of energy security is crucial in African countries, such as South Sudan, despite being located in a continent depicted as unstable and conflict-prone.

Located in Central-Eastern Africa, South Sudan gained its independence after decades of a military struggle and political orchestration against its rival Sudan. But the afterward of the independence was immediately marked by internal armed conflict and instability that made it considerably fragile as a state. Yet, the question of energy remained crucial in

the country both before and after its secession from Sudan. Oil appeared as among the most important factors in South Sudan's fight for independence. It was crucial in its relations with external partners and was at the heart of its internal instability. That is why, it is essential to analyze the question of energy security in South Sudan in terms of potentials and challenges, as the future of the country seems to be inseparable from its energy situation.

This paper is threefold. First, a historical and theoretical approach to the concept of energy security will be tackled. Second, the different energy sources available in South Sudan will be assessed to analyze the country's energy situation. Third, the focus will be on the possible existing challenges that undermine South Sudan's energy security.

1. Energy Security: A Theoretical and Historical Framework

1.1. The Evolution of the Energy Security Approach

From the historical perspective of the question of energy security in the international system, it is possible to determine three main trends. The first trend of energy security goes back to the period around the two World Wars. It represents a moment in which Western nations were distrustful among each other and were more moved by the idea of strengthening their military capacity. Oil supplies became a central element for armies and constituted an important factor of competition among warring factions especially during World War II (Cherp & Jewell, 2011:1). The British did play a pivotal role in bringing oil into the forefront of the global contest. To outwork the German rivals, under Churchill's leadership, the British Royal Navy's decision to adopt oil instead of coal as a power source for its vessels transformed the energy question to a national security matter (Yergin, 2006:69). As the sources of military domination of the Western states were tied to their military firepower which in turn became dependent on oil, the question of energy supply became inseparable from security. Hence was born what could be perceived as the classical approach of energy security, which was defined along with Western powers' interests and viewed as the assurance of oil supply for their armies. During World War II, the constant supply of American oil to the Allies is said to be decisive in achieving victory against Germany (Miller). The shortage of energy supply for warring parties during that conflict represented a great obstacle for their military forces. Especially in the case of the German army, oil constituted for its military advances a constant constraint (Gordon, 2008:8). This classical conception survived throughout the Cold-War during which "securing" energy supply was still a priority. But that period was also dominated, especially from the 1940s to the 1970s¹, by the race for the

enhancement of nuclear energy. Though nuclear energy was developed intensely for military purposes, it constituted for nuclear Powers a new source of energy.

The second trend, which opened a new conception of energy security, started with the 1973 oil embargo which was the result of a radical decision of oil-exporters Arab countries to use their energy resources as a political tool (Yergin, 2006:75). Aware of the Western countries' high dependence on energy, oil-exporters Arab states decided to restrict the use of their natural resources as a tool of pressure to "punish" the Western world, especially the US, for their foreign political stance on Israel. This created a completely new configuration in the international system, because it was a situation that escaped the prediction of industrialized countries. The "weaponization" of oil as a mean of political pressure not only exposed the acute dependence of industrialized countries on foreign oils but also proved to be an efficient tool capable of hurting their economy (Paust & Blaustein, 1974:411). From this situation, a new concept of energy security was elaborated. It was based on new energy policies that would guarantee the cooperation and collaboration of industrialized countries to prevent both energy shocks and oil politicization. As an "emergency system", this new energy strategy aimed to create conditions that would help protect the world economy from the negative repercussions of energy insecurities. In this regard, several principles were also to be considered to assure energy security (Yergin, 2006:75-76). Firstly, the sources of supply ought to be diversified. It would help nations find alternatives to shield their economy in cases of energy disruptions. The second principle is related to the idea of resilience, which means building energy systems capable of absorbing unexpected energy shocks. The third principle is the recognition of the reality of integration, which asserts that countries should build their energy policies based on the idea that there is "one oil market" in the world. The fourth and last principle deals with the obtaining of real information on the energy market, as it is crucial for a state to access accurate information in period of crises so that it becomes able to adjust itself accordingly (Yergin, 2006:75-76).

The third and last trend, which is shaping the current energy security approach, doesn't represent a radical change from the second trend. It rather adds new elements to the evolving energy policies. This trend has been mainly shaped by two important phenomena: the adoption of protective measures against man-made and natural disruptions; and the spectacular rise of emerging economies such as China and India (Yergin, 2006:76-77). The 9/11 attacks showed that countries' national security was at risk against global

terrorism. The impact of that threat goes beyond traditional security issues, it also represents a great danger for global energy security (Toft, et al., 2010:4411). Indeed, pipelines, energy systems, and other important mechanisms assuring the supply of energy are crucial for countries in maintaining their energy flows. So, when these energy infrastructures become the target of terrorist activities, it would disrupt energy security immediately at a large scale (Yergin, 2006:69-70). Natural events also may prove themselves to be very harmful to the energy sector, because the disaster they bring can make energy infrastructures very vulnerable or, worse, nonoperational over a long time (Yergin, 2006:78). Besides, the emergence of China and India as new economic powers caused a considerable rise in the world's energy demand (Yergin, 2006:10). So, a scenario in which a global energy demand surpasses the available supply – as turmoil in exporting countries or incapacity in oil manufacturing industries can happen – is more likely to impact negatively economies at a global scale due to their dependence on energy. Global terrorism, natural threats and the emergence of new energy importers led to the consideration of two dimensions crucial for the current energy security approach. First, ‘‘the globalization of the energy security system’’ is a reality that all countries must accept, as it integrates Third-World countries in a global energy system so far dominated by Western countries. Second, there is an indispensable necessity to properly protect the ‘‘entire energy chain’’ from man-made dangers and natural catastrophes, to assure both the demand and the supply of global energy (Yergin, 2006:76-77).

1.2. The Concept of Energy Security and Its Current Dimensions

Today, energy security is as much important as military security itself, because all the world's nations, from the richest to the poorest ones, are all depending on continual energy flows for their survival. Energy is what keeping national economies alive, as the growth of mostly all economic sectors depends on it (Bauman, 2008:4). That's the reason why the classical approach of energy security remained relevant for a very long time because it meant ‘‘stable supply of cheap oil’’ for the industrialized countries. As global energy supply came to a point where the interests of under-developed and developing countries had to be considered as well, the current energy security's approach became based on the idea that energy should be ‘‘sustainable and reliable supplies at reasonable prices’’ (Bahgat, 2006:965). In other terms, assuring energy security nowadays for all countries implies sustainability, reliability, and affordability of energy supply.

Another dominant aspect of the current approach to energy security lies in the idea that energy policies cannot be separated from the global context of

the world economy. From the perspective of energy security, globality is not limited to oil-importer industrialized countries' interests; it includes all "nations of all levels of development" (Chero & Jewell, 2014:417). A global perspective of energy security also encompasses non-states actors' needs. Because as much as states discuss and implement policies regarding energy security, the consumption of energy involves private companies, citizens, etc. In this regard, when a situation of energy insecurity occurs, it is not only states' economies that can be potentially disrupted, every energy consumer in the society is affected in consequence. Therefore, attempts to discuss and implement energy policies today take into consideration a multidimensional perspective, from local consumers to national actors, to global non-state actors. This leads to the existence of a variety of interpretations and perspectives on energy-related issues, such as the environmental impacts of energy (Chero & Jewell, 2014:417). Contemporary energy security policies encompass a moral dimension, as they should be implemented in a way that preserves social and economic values (Chero & Jewell, 2014:418). When thinking of valuable and sustainable energy security, it shouldn't be limited to mere geopolitical calculations or security concerns, but it should also consider social and economic development.

Assuring energy security is to assure a "low vulnerability of vital energy systems" (Chero & Jewell, 2014:419). Vital energy systems refer to the energy resources available, the necessary infrastructures that ensure energy manufacturing and an energy flow "that supports critical social functions" (Chero & Jewell, 2014:419). The proper identification of vital energy systems can make it easier to target convenient energy security policies. The potential vulnerabilities capable of disrupting vital energy systems are very diverse (Chero & Jewell, 2014:419). Physical risks, such as terrorist attacks, represent a challenge to energy security. Economic risks can also constitute a source of vulnerability. Energy consumption has to be affordable to the consumers, otherwise, it could lead to social unrest. Vulnerabilities of energy security can also originate from geopolitical threats, in the case of the use of energy as a means of political pressure. Technological and natural threats such as the aging of the infrastructures or natural disasters represent other sorts of vulnerabilities as well. Therefore, assuring energy security for a state is to keep all these vulnerabilities as low as possible (Chero & Jewell, 2014:419).

2. South Sudan and Its Energy (Re)Sources

For decades, a civil war occurred in Sudan between the central government and its southern region. That conflict officially ended with the

2005 Peace Agreement that ensured a peaceful resolution and brought about real steps towards the southern Sudan's region liberation (Ahmed, 2009:134). The peace deal did contain an important element that gave a considerable economic advantage to South Sudan: an agreement on the sharing of oil revenues with Sudan (Garth, 2011). As it became independent, South Sudan inherited 75% of oil resources from Sudan, while the pipelines and oil manufacture remained in the latter's territory. This situation, naturally, created a huge energy potential in the newly born country.

At the time that South Sudan become newly independent, in 2011, the oil production reached a considerably high level, allowing the country to generate approximately 500 million US dollars from its share (Adeba & Enough Project, 2019:1). Even though the civil war that it experienced afterward caused a halt of half of the oil production, South Sudan still possesses the third-largest oil reserves in the African continent with a potential of 3.5 billion barrels of oil. The fact that only 30 percent of the South Sudanese territory has been explored so far, shows the enormity of the country's available oil resources (Barigaba, 2018).

Because of the enormous oil resources available, the energy sector constitutes the most important asset for the development of South Sudan. The oil sector dominates the entire economy of the country, as it constitutes the only source of income for the government. 98 percent of South Sudan's national budget is recovered from the oil revenues (Mbah, 2018). Before the civil war that started in 2013, oil production generated \$13 billion in revenue. But the outbreak of the conflict affected oil production by causing a loss of \$4 billion in terms of revenue (Mednick, 2018). There are also proven reserves of natural gas located in the oil-rich Muglad and Melul basins that both South Sudan and Sudan share in their borderlands. Those reserves do represent an opportunity for South Sudan to put on strategies to develop a gas sector (US Energy Information Administration, 2018).

Renewable energy sources are part of South Sudan energy's ecosystem. Biomass, which consists of charcoal, wood, grass, cow dung, and agriculture residues, represents the most predominant source of energy consumption in South Sudan. Just in 2014, biomass constituted 70 percent of the country's energy consumption (Minister of Electricity and Dams, 2014:1). The South Sudanese people mostly rely on traditional sources of fuel, such as firewood, to sustain their needs in their daily life. The natural conditions of the country do favor the development of biomass energy. 33 percent of the entire South Sudanese territory is covered by forests to date, making access to biomass

energy the fastest and safest way to maintain the sustainability of energy consumption of the population in South Sudan (Xinhua, 2018).

The heavy reliance of the population on biomass cannot be explained by the natural conditions alone. The country's electricity sector being severely underdeveloped, the majority of the South Sudanese dependence on biomass, as the easiest alternative source of energy to consume, is quite understandable (United Nations Environment Programme, 2017:274). A World Bank report shows that from 2011, the date of independence, to 2017, there is a progressive improvement of the population's access to electricity. While in 2011 only less than 6 percent of the South Sudanese population benefited from electricity, in 2017 the access rate was more than 25 percent (World Bank, 2019).

There are other types of renewable energy sources available in South Sudan, such as solar energy, wind energy, geothermal energy, and hydropower. These energy sources are yet to be developed, but they do have sufficient potentialities to help South Sudan achieve sustainable energy security (Minister of Electricity and Dams, 2014:2-3). Hydropower, for example, represents a great opportunity for renewable energy source, because South Sudan is one of the countries through which flows the River Nil (United Nations Environment Programme, 2017:274). The government pays particular attention to the development of small hydro to facilitate the local communities' access to electricity. The country has also a potential to develop wind energy, especially for the electrification of rural zones (United Nations Environment Programme, 2017:275). The location of South Sudan at the proximity of the East African Rift System also represents an opportunity to invest and develop geothermal energy. As for solar energy, it is being used in households and serves as a power source for the use of different devices (Minister of Electricity and Dams, 2014:2-3). For the population in rural zones, the use of solar energy appears even more practical than other energy sources, as it facilitates the provision of daily needs, such as supplying hot water or lightning.

3. Challenges Related to Energy Security in South Sudan

3.1. Domestic Dynamics of South Sudan's Energy Challenges

The 2005 Comprehensive Peace Agreement is a peace deal that not only conceded to South Sudan its right to self-determination but more importantly allowed the country to inherit a tremendous amount of oil resources (Arbetman-Rabinowitz & Johnson, 2008:387). And as already mentioned, after South Sudan's secession in 2011 from Sudan, the presence of oil reserves

represented a crucial opportunity to create wealth and develop the country (Pederson & Bazilian, 2014:163). But at the same time, oil wealth can constitute a source of instability, especially when its control becomes a source of competition between local actors. Aware of this situation, the then-US Secretary of State Hillary Clinton explicitly warned the new South Sudanese authorities about the potential double effect of oil wealth:

We know that it will either help your country finance its path out of poverty or you will fall prey to the natural resource curse which will enrich a small elite, outside interests, corporations, and countries and leave your people hardly better off than when you started (Quinn, 2014).

The statement of Hillary Clinton underlines the great opportunities that oil could offer as a “blessing” or the instability it can bring about as a “curse”. Unfortunately, the second situation prevailed in South Sudan: the country plunged in a civil war with power struggle over the share of oil resources as (one of) the main cause(s) (Pederson & Bazilian, 2014:172).

The period that immediately followed South Sudan's independence was deeply marked by the elites' struggle over the control of oil resources. Oil constituted a resource over which severe competition was occurring between warring factions, becoming a means of power rather than social and economic development (Adeba & Enough Project, 2019:15). Oil constituting the country's only economic asset, the dominance over it represents hence a source of economic and political power. In this situation, oil resources turned out to be an incentive for violent conflict and internal instability. The civil war that occurred became extremely violent, intensified by intercommunal violence, ruining chances to implement conditions for energy security in the country (Adeba & Enough Project, 2019:16). Energy resources became tantamount to violent conflict, causing thousands to die and turning the country to a war-torn zone.

Besides the human casualties, the conflict turned out to be devastating for South Sudan's energy sector, in terms of productivity and output. Before the civil war, oil production was estimated around “ 250,000 to 350,000 barrels” a day (Aljazeera, 2013), which was a favorable situation for the country since 98 percent of its revenues come from that production (Larwood, 2013). Following the impact of the armed conflict, oil production waned to 20,000 barrels a day (Cirino, 2019). But in a recent development, the government of South Sudan reached an agreement with Sudan that would allow the country to add 16,000 barrels per day to the existing production

(Takpiny, 2019). Nevertheless, the devastating impact of the conflict on energy production is still to be absorbed, because even now there is a huge gap between the oil production output before and after the civil war.

Furthermore, the prospect of sustainable energy security is undermined by the existing rentier system in the country. Rentierism enables the elites to amass oil revenues in a way that serves their interests. The government appears to be more focused only on collecting the oil revenues than using it for purposes that could benefit the country in the long term. The wealth made from oil in large part, first, is diverted to the personal finances of the elites, and second, goes to the military budget (Adeba & Enough Project, 2019:17). In other words, instead of serving as a key to the country's development, the available energy resources are used for purely personal interests and political reasons.

As South Sudan inherited oil resources at its independence while the energy manufacturing industry remained in Sudan, it was clear from that point that oil wealth should have served, in part, to build an independent South Sudanese energy sector. Oil resources being the most important economic asset in South Sudan, it was indispensable for the government to envision an energy management based on sustainability, transparency, and social responsibility. However, during the first years that followed South Sudan's independence, the country started facing fuels shortage due to the oil production shutdown that followed its disagreement with Sudan. To avoid an acute energy crisis, the government of South Sudan decided to import fuels through an agreement with Qatar National Bank (Mai et al., 2016:8-9). In spite of the allocated budget for the operation, fraudulent approaches and administrative loopholes led to the misappropriation of funds by companies and individuals. This mismanagement contributed to causing a fuel shortage at the end of 2014, hurting the country's economy in the process (Mai et al., 2016:8-9).

Another internal dynamic representing a challenge to South Sudan's energy security is the heavy reliance on biomass. Since non-renewable energy sources are costly, the use of renewable sources of energy, such as biomass, does represent, in general, an economic advantage for the consumers (National Renewable Energy Laboratory, 1997:2). South Sudan is rich in both types of energy, but the population's energy consumption comes mainly from biomass energy. The vast majority of South Sudanese use traditional fuels in their daily life, making the country's dependence on biomass energy extremely high. However, this high dependence on traditional fuels could lead in the long term to environmental issues, such as soil erosion or desertification (United Nations

Development Programme, 2013:12). The use of biomass requires in many occasions a considerable amount of effort from its consumers, especially in rural zones of South Sudan. To be able to use traditional fuels in their households, South Sudanese women can spend a long time foraging for firewood and are highly susceptible to be exposed to toxic smoke from the firewood. The constant exposure to toxic smokes can cause serious respiration diseases such as bronchitis or pneumonia (United Nations Development Programme, 2013:31).

Finally, the unequal or the absence of distribution of modern power supply in the country also constitutes a serious challenge to its energy security. In 2016, the total access of South Sudan to electricity was estimated to be around 9 percent. While 22 percent of the urban population benefited from electricity, almost only 6 percent of the rural population had access to it (Trading Economics). This non-access to electricity has the potential to constitute a vicious circle leading to energy insecurity. The inability of the majority of the population to access modern power sources, which represent a necessity for their daily lives, constitute an apparent failure of the government's energy policies. As a consequence, the population would tend to rely intensely on alternative sources of power supply such as power generators, which could, in the long-term, cause other energy issues like oil shortage. South Sudan happens to be facing that situation, as the power source of the majority of the South Sudanese depends on the use of power generators (Mai et al., 2016:13). Power generators supply households and businesses, leading to excessive consumption of oil fuels. This high reliance on generators contributes to energy waste, increases the cost and demand for fuel, and could impact the environment negatively because of the air and noise pollution generated (Mai et al., 2016:13).

3.2. External Dynamics of South Sudan Energy Challenges

South Sudanese dependence on Sudan's oil pipelines, through which it exports its energy to external markets, created serious issues regarding the country's energy security. In the very early moments of its independence, the South Sudanese state benefited considerably from oil production. The country was estimated to gain in a monthly average 500 million U.S dollars from its share production (Adeba & Enough Project, 2019:1). However, after dissension with Sudan over transit fees and transfers in 2012, South Sudan halted its oil production for 15 months as an act of defiance against its neighbor (International Monetary Fund, 2017:6).

After accusing South Sudan of unpaid fees regarding the share of oil revenues, the government of Sudan decided to confiscate the oil flowing through its pipelines. As a response to that situation, the South Sudanese authorities chose, in return, to use their available oil resources as a tool of political pressure against their rival, by shutting down the oil wells (Sudan Tribune, 2012). However, it backfired negatively on the young and fragile South Sudanese economy, which is entirely dependent on oil revenues. Indeed, the situation plunged South Sudan into a political, economic and humanitarian disaster (Adeba & Enough Project, 2019:1).

The dependence of South Sudan on its regional partners in the importation of processed fuel constitutes also a challenge undermining its energy security (Mai et al., 2016:11). East-African countries rely on each other to guarantee their oil supply. South Sudan mostly possesses crude oil, and because of its lack of infrastructure, it relies on regional neighbors such as Kenya to maintain its national energy supply. The problem is that the Kenyan energy infrastructures not only suffer from inefficiency but also are unable to satisfy the large demands of oil from the other East-African countries. This limited capacity of the Kenyan energy distribution system affects South Sudan's energy situation. A fuel shortage of South Sudan that occurred in November 2015 was related in part to the lack of sufficient petrol in Kenya. In other words, mismanagement or any kind of inefficiency in the Kenya energy sector is more likely to impact negatively the energy consumption in South Sudan (Mai et al., 2016:12).

Both the presence of enormous oil resources and the lack of oil infrastructures in South Sudan attracted upstream oil companies to operate in the country. The sector is dominated by Asian companies, such as Malaysia's Petronas, India's ONGC Videsh and the China National Petroleum Corporation (Africa Oil & Power, 2017:20). Their presence in the upstream sector suggests that they play an essential role in the country's oil supply chain through the extraction and recovery of oil from underground. But this presence can also constitute a disruptive factor to the country's stability. In the context of profound state fragility caused by the civil war, there have been allegations that these oil companies became complicit of war crimes (Cumming-Bruce, 2019). Since oil constitutes South Sudan's only source of income, it represents a political and economic leverage over which warring factions compete in order to further their goal. Despite the peace agreement that supposedly "ended" five years of civil war (Aljazeera, 2018), the international oil companies are accused to be allegedly fueling violence in the country, "as oil

proceeds are funding the government-controlled security forces in the country's brutal civil war'' (Stavis-Gridneff, 2019).

Conclusion

Our findings show that South Sudan possesses an immense energy potential, from non-renewable to renewable energy sources. Oil appears to be the country's greatest economic energy asset, as it constitutes the only source of revenue and the key to its development. The economic profit in oil alone covers mostly the entire South Sudanese national budget, showing how enormous are the energy resources in the country. The renewable energy sources, even if they are not as economically important as oil resources, represent in the country the most valuable energy sources, in terms of consumption and sustainability. The reliance of the majority of the South Sudanese on biomass for energy consumption and the possibility of developing renewable power supply through wind energy, solar energy, hydropower or geothermal energy constitute appropriate conditions for the creation of sustainable green energy in South Sudan. All these factors represent favorable conditions that could help the country set up a secure, sustainable and cheap energy system.

However, the country faces many challenges disrupting its energy potential. The outbreak of the civil war, the nepotistic and corruptive management of the oil resources, the heavy reliance of biomass which could in the long term endanger the environment, the profound gap between rural and urban zones in energy supply, the lack of energy infrastructures, the national energy consumption's dependence on external factors, and finally the potential destabilizing role played by the international oil companies appear as the issues thwarting South Sudan energy security. These vulnerabilities make it extremely difficult to achieve a stable energy system in the country.

It is, therefore, crucial for the government of South Sudan to actively look for strategies that would help the country create conditions for sustainable energy security. In order to keep energy vulnerabilities as low as possible, strategies that promote political stability and genuine management of oil resources are to be prioritized. Because, as long as the country remains unstable and prone to corruption in the managing of its oil sector, any strategy would be doomed to fail.

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¹ The 1940s mark both the end of WWII and the beginning of the Cold-war; while the 1970s represent the years of the nuclear non-proliferation regime.