

**Energy Poverty and the Green Transition
in Sub-Saharan Africa:**
A Qualitative Analysis
of Africa-EU Cooperation on SDG7

Thesis submitted for assessment with a view to obtaining the
degree of Master of Arts in Transnational Governance of the
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European University Institute
School of Transnational Governance

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ABSTRACT

This research looks at Africa-EU cooperation on SGD7 in Sub-Saharan Africa (SSA). It analyzes their history and evolution, exploring the reasons why they have not achieved their maximum potential. It finds that their full success has been hindered by five main factors. First, Africa-EU intervention has focused on small-scale residential access to energy, rather than on large-scale energy infrastructure. Secondly, wrong and not ambitious indicators have been used to define energy poverty. Third, the EU has avoided addressing the bad governance problem in SSA. Fourth, the green transition has been initially framed as a climate policy rather than as an economic opportunity. Fifth, the African Union was not the right interlocutor for the relations with the EU. To conclude, this research has issued recommendations to the EU, discussed the main challenges to achieving SDG7 in SSA, and explained the strong interests that both actors have in this partnership.

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Introduction

Energy is a very topical issue in international development and cooperation debates, as it is key to achieving sustainable economic development. Indeed, the United Nations Agenda 2030 dedicated its Sustainable Development Goal number 7 (SDG7) to “ensuring access to affordable, reliable, sustainable and modern energy services for all” (UN, 2015). SDG7 consists of three sub-targets: universal access to affordable, reliable and modern energy services (t.1), increase in the share of renewable energy in the global energy mix (t.2), doubling the improvements in energy efficiency (t.3), all by 2030¹. Deploying renewable energy and reducing energy poverty is an urgent issue in Sub-Saharan Africa (SSA), where clean energy supply for both residential and industrial use is largely unavailable, inaccessible, and unaffordable. In light of recent natural disasters, to which SSA is particularly vulnerable, and of recent geopolitical events, such as the Russian invasion of Ukraine, the environmental and the security dimensions of energy are more evident than ever.

The European Union (EU) has historically engaged in development cooperation with Africa, and both actors are increasingly interested in pursuing these inter-continental relations, which can bring mutual benefits and gains. This research looks at Africa-EU cooperation in the energy sector, with a focus on the promotion of targets 1 and 2 of SDG7 in SSA. Energy-wise, SSA is a paradoxical case, as the abundance of natural resources is met with low levels of both access to energy and renewable energy capacity (UNIDO, 2009). The choice of SSA is driven by three factors. First, by the great potential impact that action in the energy field can have in this region. Second, by its strategic geopolitical importance, which is derived from its young and growing population and its abundance of natural renewable and non-renewable resources. Third, by the fact that supporting the green energy transition in SSA is for the EU both a moral imperative and a far-sighted policy strategy, due to the two continents’ historical, cultural and geographical ties.

While extensive research has been conducted on Africa-EU relations, most studies have focused on migration, trade and security. Although an increased interest in Africa-EU cooperation on climate change has recently emerged, there seems to be a gap regarding the energy sector, which is indeed the focus of this study. Similarly, when explaining the successes and failures of Africa-EU relations, previous research has focused on issues such as problematic narratives and

¹ <https://sdgs.un.org/goals/goal7>.

power imbalances, without dealing with other complementary factors that are explored in this work. In an attempt to (at least partially) fill these gaps, this paper investigates the reasons why Africa-EU cooperation on energy has been little successful and offers some insights on how to maximize its impact in the future.

Therefore, this research is structured as follows. First, the literature review maps the history of Africa-EU relations, showing their evolution from a continuation of colonial ties to a partnership based on mutual interests. Then, a background section provides an overview of the current state of the art regarding targets 1 and 2 of SDG7 in SSA. Finally, the third section presents the research findings on the main intrinsic challenges to Africa-EU cooperation on energy and on the reasons for its limited success, and it proposes some recommendations for a way forward. This study argues that the main challenges are related to SSA's political instability, its fossil-fuel abundance, and its low historical contributions to climate change. Additionally, it claims that past relations have not been fully successful because the wrong definitions, indicators, interlocutors and conceptual frameworks have been chosen to define energy poverty and inform energy policy, and because the most significant issues of the SSA's energy sector, namely bad governance and the lack of large-scale infrastructure, have not been effectively addressed.

Methodology

This study is exploratory and interpretative in nature. It uses a holistic qualitative approach to investigate the nature, the evolution, the outcomes and the future prospects of Africa-EU cooperation on energy, with a geographical focus on Sub-Saharan Africa and a thematic focus on SDG7.

The main methodology used is document analysis, as several documents from many different sources have been reviewed and analyzed to “elicit meaning, gain understanding, and develop an empirical knowledge” (Bowen, 2009, p. 27). This has included academic and policy papers, official documents issued by governments and international organizations (IOs), and in-depth reports published by international institutions, research institutes, policy centers, and think tanks. Additionally, data has been collected from online conferences and from some expert interviews, which however were not systematic and therefore have not been used as a central method. Furthermore, a discourse analysis of the above-mentioned sources has also been conducted (Van Dijk, 1985). This has been useful to analyze and interpret the meaning and the evolution of the language and narratives that have been used to communicate, formulate and implement Africa-EU relations.

The main strength of document analysis is that it allows to integrate information and data extracted from different sources, allowing to draw a comprehensive picture of Africa-EU cooperation on energy. Moreover, incorporating discourse analysis allows for a critical interpretation of this cooperation and its evolution, and of the different ways in which the two actors have framed it. Indeed, some scholars have outlined that this kind of analysis implies a broad coverage and a large flow of information that cannot always be captured through quantitative analysis (Yin, 1994).

However, the selected methodologies also present several limitations, one being the risk of “biased selectivity”, which occurs when documents are selected in an incomplete or biased manner, i.e., reflecting the pre-existing views of the researcher (Bowen, 2009; Yin, 1994, p. 80). It is for this reason that, for the purpose of this research, documents and declarations issued by both the EU and the African Union (AU) were selected, to include the perspectives of both actors. Additionally, the background research was based on independent sources published by IOs, such as the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), the United Nations Industrial Development Organization (UNIDO), the World Bank

(WB) and Our World in Data, in order to be as objective as possible. Another limitation of the selected methodology is that it might have been more solid, had it been complemented by some quantitative elements and/or by other research methodologies, including participant observations and more expert interviews.

Literature review

Africa-EU relations have been extensively discussed in several fields of academia, including International Relations (IR), Foreign Policy and Development Studies. This section draws from the existing literature to trace the history of Africa-EU cooperation, including on energy, to analyze its evolution over time. This is a fundamental step to eventually be able to understand the current state of Africa-EU relations, the reasons why they have been only partially successful, and the possible ways in which they could be improved in the future.

An IR interpretation of Africa-EU relations

Africa-EU relations can be interpreted according to different IR theories. First, realist theory explains politics as an anarchic space where states are driven by national interests and where the stronger power dominates (Waltz, 2001). Therefore, Africa-EU cooperation is understood as a Eurocentric, imperialist project, based on colonizer/colonized power relations that reflect the priorities of the EU while neglecting African interests and relegating Africa to a condition of underdevelopment (Eyinla, 2004; Faleye, 2021; Rodney, 1972). Thus, these agreements are perceived as a neocolonial mechanism that serves the EU's interests and expands its influence beyond its borders (Price & Nunn, 2016). Secondly, liberal theory explains inter-continental cooperation as a result of globalization and economic interdependence, which force states to cooperate to survive in the global arena (Keohane R. , 1989). Therefore, IOs are perceived as a forum for the peaceful interaction of different actors in the global space and Africa-EU relations as a means to advance European interests and Africa-EU peaceful coexistence (Keohane & Nye, 1977; Wendt, 1992; Faleye, 2021). Third, constructivism emphasizes the importance of ideational and normative structures and reciprocal interactions in shaping international politics (Reus-Smit, 2013; Wendt, 1999). Therefore, Africa-EU relations are seen as a stable, enduring structure that is built on socially constructed identities, interactions and perceptions and that aims at pursuing common interests in a mutually beneficial manner (Faleye, 2021).

Moreover, inter-regionalism, which analyzes interactions between regions, focuses on the power asymmetries that exist between the EU and Africa, which are (at least partly) caused by colonial legacies and risk makin Africa-EU cooperation unidirectional and increasingly reflective of the EU's interests (Mattheis, 2021; Taylor, 2006). Furthermore, postcolonial

scholars focus on the role of African agency and the need for a decentering process, which moves away from Eurocentrism and recognizes that the EU has needed Africa as much as Africa has needed the EU, as securing access to African resources and markets was always a central objective of the European project (Fisher Onar & Nicolaïdis, 2013; Sebhatu, 2021).

While these theories provide five interpretations of Africa-EU relations, these can only be fully understood by combining all the different arguments and by analyzing the history and evolution of Africa-EU cooperation, which is provided in the following section.

Africa-EU cooperation: History and evolution

From Rome to Yaoundé: An unbalanced, neocolonial partnership

Africa-Europe relations date back to the funding of the European Economic Community (EEC) through the 1957 Treaty of Rome², when a formal association was established between the EEC and the former colonies, which focused on trade and financial aid in the form of grants (Raimundo, 2020; Rempe, 2011). This Treaty was defined as a form of “unilateral associationism” and of “collective colonialism”, as its features were unilaterally decided by the EEC and imposed on the African counterparts, making it more difficult for them to achieve independence (Lister, 1988, p. 13; Raimundo, 2020, p. 59). However, decolonization took place in the 1960s, and a need to rethink the association agreements emerged, leading to the 1963 Yaoundé Convention³, signed between the EEC and 18 African countries. While this Convention was freely negotiated and ratified and recognized the newly achieved independence of African states, the negotiations and the decision-making processes were still dominated by the EEC, hence disproportionately reflecting European interests (Grilli, 1993; Twitchett, 1978). However, its main achievements were political: it adapted Africa-EU relations to the post-colonial era (Lister, 1988), it provided a stable multilateral framework for future dialogue on several issues (Twitchett, 1978) and it symbolized the interest of the EEC to partner with Africa (Cosgrove & Twitchett, 1970).

²https://www.cvce.eu/en/obj/treaty_establishing_the_european_economic_community_rome_25_march_1957-en-cca6ba28-0bf3-4ce6-8a76-6b0b3252696e.html.

³<https://www.cvce.eu/en/education/unit-content/-/unit/dd10d6bf-e14d-40b5-9ee6-37f978c87a01/c303f9ae-1356-4fd2-ad61-b650f07f10ec>.

Lomé and Cotonou: reminiscences and novelties

In the 1970s, Britain's entered the EEC the African, Caribbean and Pacific (ACP) Group⁴ in 1975 was created (Raimundo, 2020). Subsequently, the Lomé Convention⁵ was signed in 1975, introducing the ideas of a partnership of equals and of North-South solidarity, as well as an increase in the international aid flows (Lister, 1988; Twitchett, 1978). While international aid increased and African priorities were increasingly addressed, the power unbalance in decision-making remained largely unchanged (Grilli, 1993; Dolan, 1978; Gruhn, 1976). Additionally, after the Washington Consensus, aid began to be directed toward structural adjustment programs and to be attached to conditionalities, hence increasing the ECC/EU's control over development programs (Brown, 2002). In 2000, when the Lomé Convention expired, the EU and 77ACP countries signed the Cotonou Partnership Agreement⁶, which was centered on political dialogue, sustainable development, international trade, and aid. It established a fund allocation mechanism that gave more consideration to recipient demands, but the relevant financial decisions were taken by the EU and tied to conditionalities such as good governance, hence contributing to spreading the EU's values beyond its borders (Hurt, 2003). However, in the Cotonou reviews issues of security, climate change and regional integration were addressed for the first time, and the African Union (AU) was recognized as the main interlocutor to the EU (Akokpari & Bimha, 2020).

The Joint EU-Africa Strategy: the shift to a "partnership of equals"

During the 2007 Lisbon Summit⁷, the Joint EU-Africa Strategy⁸ (JEAS) was adopted⁹, which became the main framework for the relations between the EU and the AU, who jointly defined specific targets, objectives and action plans to "strengthen political dialogue and cooperation at all levels" and to "reflect the Euro-African consensus on values, joint interests and common strategic objectives" (EU Commission, 2019). The JEAS adopted the language of a "partnership

⁴ <http://www.acp.int/content/secretariat-organisation-african-caribbean-and-pacific-states-oacps>.

⁵ <https://www.cvce.eu/en/education/unit-content/-/unit/dd10d6bf-e14d-40b5-9ee6-37f978c87a01/9a69c7f9-1ea2-4e6c-8cdb-1dee40ac5714>.

⁶ <https://www.consilium.europa.eu/en/policies/cotonou-agreement/>.

⁷ https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/er/97494.pdf.

⁸ https://knowledge4policy.ec.europa.eu/publication/joint-africa-eu-strategy_en.

⁹ This strategy was the result of a long negotiation process started in the 2000 EU-Africa Summit in Cairo and followed by the 2005 EU's Strategy for Africa and the AU's New Partnership for Africa's Development.

of equals”, reflecting the attempt to move away from the paternalistic donor-recipient relationship of previous partnerships to a people-centered partnership, which implied the involvement of several stakeholders (Kell & Vines, 2020, p. 107). Within the JEAS Strategic Framework, the EU Africa Action Plan (2008-2010)¹⁰ established eight priority areas to enhance cooperation, including on energy and climate change (EU Parliament, 2008). However, some significant shortfalls limited the JEAS success: falling political engagement, ineffective implementation, and the absence of a specific financial instrument (Kell & Vines, 2020). In response, individual European and African countries engaged in bilateral partnerships and the EU Pan-African Programme¹¹ was adopted in 2014, funded by the Development Cooperation Instrument (DCI) and targeting the African continent as a whole for the first time.

Agenda 2063 and the increasing role of the African Union

In 2015, the AU released the “Agenda 2063: The Africa We Want”¹² with a ten-year implementation plan and a Declaration of Self-Reliance. In the meantime, Africa’s strategic importance for stability and prosperity in Europe was becoming increasingly clear, and in the 2017 Abidjan Summit¹³, the JEAS was adapted to the issues expressed in the Agenda 2063 (Pirozzi, Sartori, & Venturi, 2017). This resulted in the 2018 joint declaration by the ACP and the AU on the African Common Position for Negotiations¹⁴, which appointed the AU as the main interlocutor to the EU (Kell & Vines, 2020). The aim was to define a cooperation policy framework that aggregated African interests and allowed Africa to act as a single, strong and dynamic force in the international political arena (AU, 2018). This decision was the result of two assumptions: first, that the ACP Group had achieved limited progress and had become outdated; second, that it had contributed to fragmentation rather than integration of the African continent (Carbone, 2020). This decision allowed the AU to increase its legitimacy and receive millions of euros of EU’s ODA through the EU Delegation (Akokpari & Bimha, 2020).

¹⁰ [https://www.europarl.europa.eu/cmsdata/122474/FIRST%20ACTION%20PLAN%20\(2008-2010\).pdf](https://www.europarl.europa.eu/cmsdata/122474/FIRST%20ACTION%20PLAN%20(2008-2010).pdf).

¹¹ https://ec.europa.eu/international-partnerships/africa-eu-cooperation_en.

¹² <https://au.int/en/agenda2063/overview>.

¹³ https://www.consilium.europa.eu/media/31991/33454-pr-final_declaration_au_eu_summit.pdf.

¹⁴ <https://au.int/en/pressreleases/20180327/african-union-executive-council-adopts-african-common-position-negotiations>.

The EU's new instruments for the partnership with Africa

In the last decade, the EU has become keen on strengthening relations with Africa, including through the European External Action Service¹⁵ (EEAS), instituted in 2010. It has established new instruments for its external action in Africa, the most important being the European External Investment Plan¹⁶ (EIP). With its own financing mechanism, namely the European Fund for Sustainable Development (EFSD), the EU EIP aims at encouraging public and private investment in Africa. This plan reflects the EU's perception of the relations with Africa as a political and economic opportunity to advance development and cooperate on mutual interests (Kell & Vines, 2020). The EU EIP allocates €5.4 billion in EU funds to the African continent, and it aims at mobilizing additional investment in the region for over €54 billion, by mitigating the risk of investment and increasing transparency and effectiveness of projects (European Commission, 2017; OECD, 2016). Moreover, in March 2020, the EU Commission released a communication entitled "Towards a comprehensive Strategy with Africa"¹⁷, which set five pillars for Africa-EU cooperation, including green transition and energy access (Commission, 2020). This strategy talks about the "respective interests" of the EU and Africa, stressing again the commitment to move away from a paternalistic narrative (Byiers, 2020; Parliament, 2021). Additionally, a 30% increase of the EU's budget for external action in 2018 reflected the EU's ambition to be Africa's main development partner (Bassot, 2020). This has been complemented in 2021 by Global Europe¹⁸, which merges various EU's external financing instruments and allocates at least €29.18 billion to projects in SSA (Roba, 2021; DG NEAR, 2021). The Global Europe strategy devotes a minimum of 20% of the funds to human development and 30% to climate change, and it is supported by the External Action Guarantee, which reduces the risk of investing in developing countries (Roba, 2021; DG NEAR, 2021; EU Commission, 2020). With increased references to the EU's interests and priorities, this instrument further recognizes the strategic importance of the African continent for the EU's external and development policy.

To conclude, Africa-EU relations are increasingly frequent, institutionalized and politicized. They began as a paternalistic, neocolonial arrangement and they slowly evolved to be defined as a "partnership of equals", based on common objectives and shared responsibilities. They

¹⁵ <https://www.eeas.europa.eu/en>.

¹⁶ https://ec.europa.eu/eu-external-investment-plan/home_en.

¹⁷ https://ec.europa.eu/international-partnerships/system/files/communication-eu-africa-strategy-join-2020-4-final_en.pdf.

¹⁸ https://ec.europa.eu/neighbourhood-enlargement/funding-and-technical-assistance/neighbourhood-development-and-international-cooperation-instrument-global-europe-ndici-global-europe_it.

moved away from being “for” Africa to being “with” Africa and, while significant power imbalances arguably still exist, this partnership is currently beneficial for both parties: the EU is pursuing its external policy goals, and Africa is pursuing its development ones. Although there are still some concerns regarding the extent to which this partnership is achieving its stated objectives, the increased commitment of both actors and the newly established instruments have the potential to produce significant progress.

Africa-EU cooperation on energy

Energy has always been a priority of both the internal and external policies of the EU and, while the initial focus was on traditional energy sources, such as hydrocarbons, the attention has now shifted to renewable energy and low-carbon technologies (Beringer, 2019). References to sustainable development and clean energy have been at the center of the EU strategy since the 1992 Maastricht Treaty and the 1977 Amsterdam Treaty (Farmer, 2012). The first EU-led initiative on energy was the Energy Initiative for Poverty Eradication and Sustainable Development (EUEI)¹⁹, launched in 2002 and focused on reducing energy poverty in developing countries through decentralized energy systems; it paved the way for a solid Africa-EU partnership on energy, which was used as a basis for future EU’s energy aid programs (Beringer, 2019).

In the 2000s, Africa-EU cooperation intensified. In 2005, the ACP-EU Energy Facility²⁰ was established, with a total budget of almost €400 billion and more than 170 projects implemented and focused on residential access to energy (Nolasco, 2021; Søndergaard & Sørensen, 2019). In 2007, the Africa-EU Energy Partnership (AEEP)²¹ was launched, focusing on political dialogue, joint action, and know-how exchange, and becoming the main platform for Africa-EU cooperation energy (AEEP, 2022). Simultaneously, the EU-Africa Infrastructure Trust Fund (EU-AITF)²² was established to increase investment in energy, water, transportation and ICT infrastructures in SSA. The fund was active for 12 years and it financed more than 120 projects for a value of €763 million, which in turn leveraged investments worth €11.4 billion (EU-AITF,

¹⁹ https://ec.europa.eu/environment/archives/wssd/documents/energy_initiative.pdf.

²⁰ <https://europa.eu/capacity4dev/public-energy/wiki/acp-eu-energy-facility>.

²¹ <https://africa-eu-energy-partnership.org/>.

²² <https://www.eu-africa-infrastructure-tf.net/>.

2019). Finally, the Global Energy Efficiency and Renewable Energy Fund (GEEREF)²³ was introduced in 2008 to finance sustainable energy projects in poor communities in developing countries (Beringer, 2019). Advised by the European Investment Bank (EIB), it leveraged public sector funds to catalyze private investments into small- and medium-sized energy projects (GEEREF, n.d.r.). This innovative model is key to enable the implementation of projects that would otherwise be too risky, and it is becoming increasingly common (UNFCCC, n.d.r.; Behrens, 2009).

More recently, in 2021, the EU Commission launched Global Gateway²⁴, a new European Strategy that, through a Team Europe²⁵ approach, aims at mobilizing up to €300 billion in investments between 2021 and 2027 to support the green and digital transitions in partner countries (EU Commission, 2022). It relies on some new financial tools, such as the African Investment Package, worth €150 million, which funds the Africa-EU Green Energy Initiative²⁶ (AEGEI), a program to increase renewable energy capacity and access energy in Africa (EU Commission, 2022). In parallel, the Africa Renewable Energy Initiative (AREI)²⁷ was set up under the mandate of the AU: it is an Africa-owned and Africa-led initiative to accelerate the green transition and scale up renewable energy in Africa, to achieve an additional 10GW of renewable energy generation capacity by 2020, and 300 GW by 2030 (Warrick, 2015).

To conclude, since 2007, more than 60% of EU-funded projects focused on “responding to climate change”, including through energy initiatives (Bridle & Gagnon-Lebrun, 2017). This way, the EU has long been the largest donor of energy aid and has played a fundamental role in integrating SDG7 targets into the multilateral development agenda (Beringer, 2019). As mentioned, the language of the EU’s external energy strategy has become increasingly self-interested and results-oriented, but at the same time the African energy needs and priorities are increasingly being addressed, and African stakeholders are playing increasingly relevant roles.

²³ <https://geeref.com/>.

²⁴ https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6433.

²⁵ Team Europe includes the EU, its Member States, and their financial institutions, such as the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD). The Team Europe approach consists in these institutions “working better together” to maximize their impacts, implement coherent policies, and enhance the geopolitical power and credibility of the European project.

²⁶ https://ec.europa.eu/commission/presscorner/detail/en/fs_22_1120.

²⁷ <https://arei.org>.

Conceptual framework, background and relevance of the topic

This section presents the definition, indicators, and data of energy poverty and its manifestation in SSA. In this research, the terms “access to energy” and “access to electricity” will be used interchangeably.

Energy poverty: definition

Energy poverty can be defined in different ways, with different policy implications. In the EU, it refers to the inability to access sufficient energy to meet the household’s basic needs, such as cooking, lighting, and heating/cooling (EU Commission, n.d.r.). Similarly, the International Energy Agency (IEA) defines energy access as “a household having reliable and affordable access to both clean cooking facilities and to electricity, which is enough to supply a basic bundle of energy services initially, and then an increasing level of electricity over time to reach the regional average” (OECD/IEA, 2017, p. 21). This basic bundle includes powering several lightbulbs, charging a phone, or powering a television or a fan for a few hours per day (IEA, *Defining energy access: 2020 methodology*, 2020). In these definitions, energy poverty overlaps with fuel poverty, which is an application of energy poverty to the residential sector, i.e., the lack of access to the energy needed to the home (Sy & Mokaddem, 2022). However, measuring access to energy at the household level ignores two significant features of energy poverty: the access to the energy needed to power productive economic activities (i.e., industrial centers) and to run public facilities (i.e., hospitals, street lighting, telecommunication) (IEA, *Defining energy access: 2020 methodology*, 2020).

SSA is the most energy-poor region in the world, as half of its population did not have access to electricity in 2016 (Gafa & Egbendewe, 2021). Out of 20 “high-impact” countries²⁸, identified by the World Bank as the ones where energy poverty is most severe, 15 are located in SSA (WB 2. , 2019). Globally, per-capita energy consumption has been constantly growing since the 1970s, including in transitioning middle-income countries, but not much in SSA (Ritchie & Roser, 2020). Moreover, according to some estimates, around half of the African population will

²⁸ They are called “high-impact” countries because they are the ones where the potential to make rapid and meaningful progress towards SDG7 is the highest.

still lack access to electricity and clean cooking in 2040 (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022).

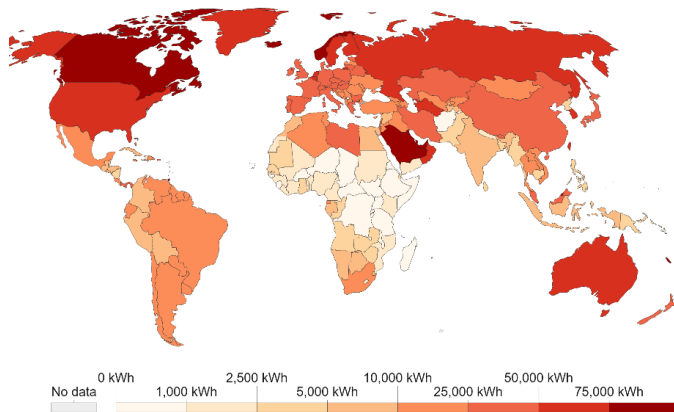


Figure 1: Energy use per person, 2020.

Source: Our World in Data, 2020 based on BP and Shift Data Portal

Figure 1 shows a wide inequality in terms of per capita energy consumption between developing and developed countries and between SSA and the rest of the world. For example, the average Ugandan used around 862 kilowatt-hours in 2019, compared to the average Canadian, who used 100.310 (Ritchie & Roser, 2020).

Access to electricity

Access to electricity is defined as having an electricity source that can provide very basic lighting and charge a phone or power a radio for 4 hours per day (Ritchie & Roser, 2020). The number of people living without access electricity fell from 1.2 billion in 2010 to 700 million in 2019; then it rose to 770 million in 2021, due to Covid-19 pandemic and to the fact that, in poor countries, demographic growth has outpaced the progress in electricity access (IEA, 2022; WB & IBRD, 2021).

In general, electricity generation is very low in SSA, as it is more than 100-fold lower than in wealthy nations and indeed Africa accounts for less than 4% of global electricity production (Denton, 2021; Ritchie & Roser, 2020).

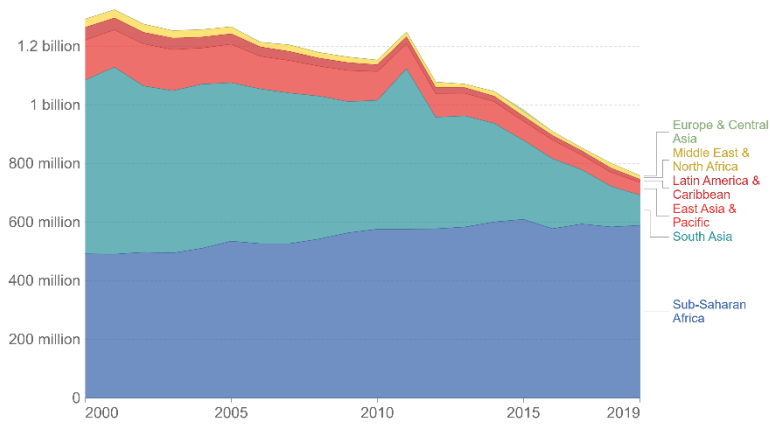


Figure 2: Number of people without access to electricity, 2000-2019. Source: Our World in Data, 2020 with data from the World Bank

As *Figure 2* displays, improvements in access to electricity have been registered in all regions of the world, except for SSA, which is home to 80% of people without access to electricity (Ritchie & Roser, 2020; IEA, 2022).

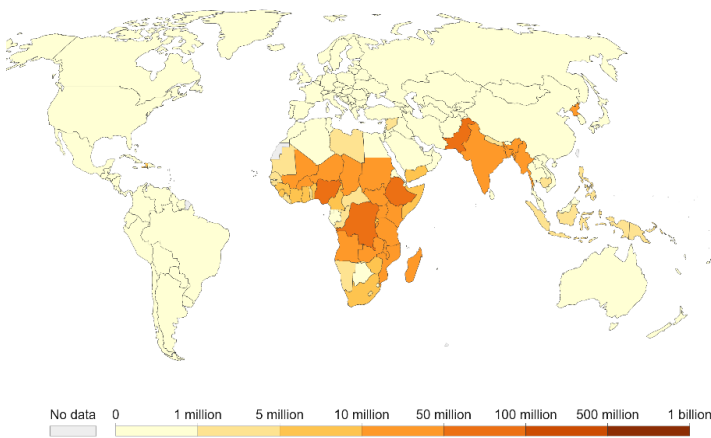


Figure 3: Number of people without access to electricity, 2019 Source: Our World in Data, 2020 with data from the World Bank

Figure 3 shows the sharp contrast that exists between SSA and the rest of the world, as access to electricity is as low as 6.7% in South Sudan, compared to 100% in developed nations (Ritchie & Roser, 2020). If higher standards were used to define access to electricity, some Southeast Asian and Latin American countries would show lower levels of electricity access, but the contrast would still not be as sharp as the one with SSA (WB & IBRD, 2021).

In SSA, more than half of the population does not have access to electricity (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022). As *Figure 4* shows, even countries that have made significant progress, such as Ethiopia, Kenya, and Rwanda, are still very far from providing universal access to electricity (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022). Moreover, in many Central African countries, the share of the population that does not have access to electricity is higher than 75%, with significant negative implications on human development outcomes (OECD/IEA, 2017).

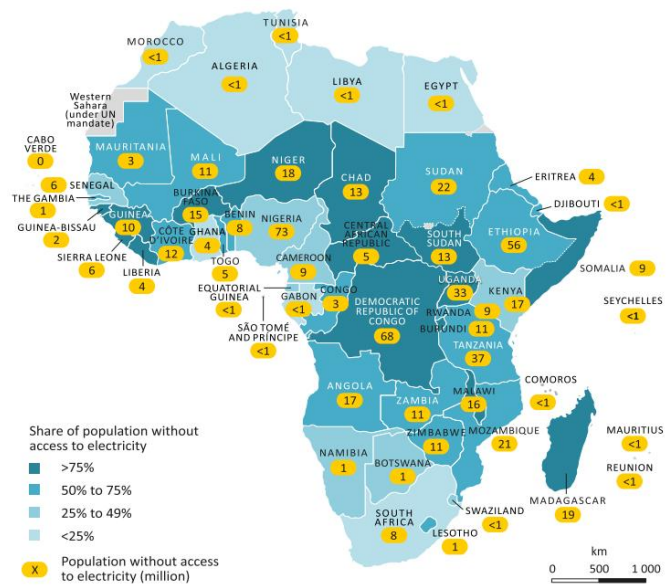


Figure 4: Share of the population without access to electricity in Africa by country, 2016. Source: IEA, 2017

Access to clean cooking fuels

Access to clean cooking technologies is a relevant component of energy poverty, as it is estimated that 2.8 million premature deaths per year are caused by the indoor air pollution associated with the use of traditional cooking fuels in enclosed spaces without proper ventilation (González-Eguino, 2015; OECD/IEA, 2017). Progress in this area was reversed by the Covid-19 pandemic, and the health risks associated with the lack of clean cooking technology hinder socio-economic development and have a disproportionately negative impact on women, who spend more time cooking (IEA, 2021).

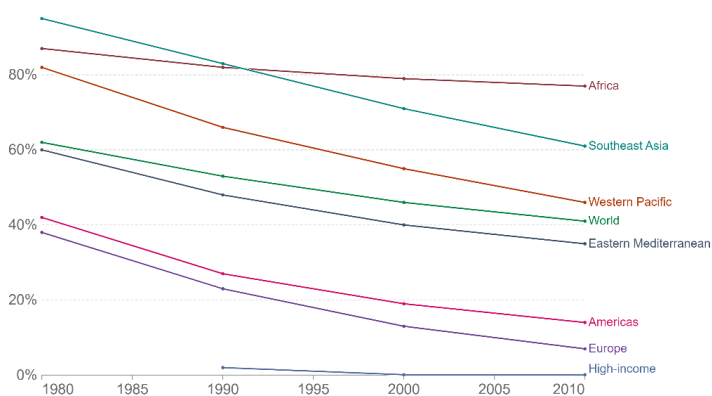


Figure 5: Percentage of population using solid fuels as the main cooking fuel, 1980-2010. Source: Our World in Data, 2020 with data from Bonjour (2013)

Globally, 3 billion people, corresponding to 40% of the global population, do not have access to clean cooking fuels (Ritchie & Roser, 2020). Figure 7 shows that the percentage of population using solid fuels for cooking has fallen steadily over the last decades (Bonjour, 2013). However, progress in the access to clean cooking fuels has been very slow in Africa, and many countries in SSA display levels of access below or around 20% (OECD/IEA, 2017; Ritchie & Roser, 2020).

Moreover, under current policies, 1 billion African people might still lack access to clean cooking fuels, mostly in SSA, where policy efforts are outpaced by population growth (IEA, 2022).

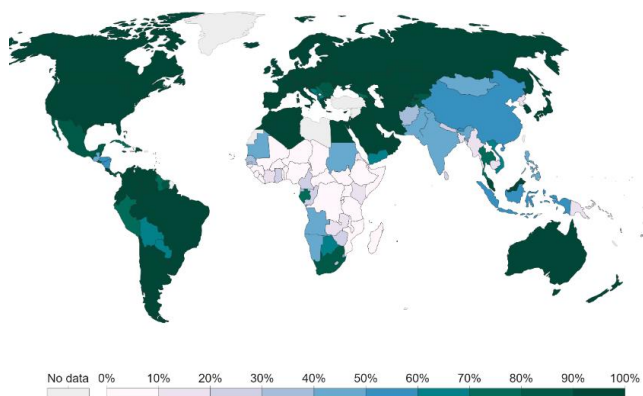


Figure 6: Population with access to clean cooking fuels, 2016. Source: Our World in Data, 2020 with data from The World Bank

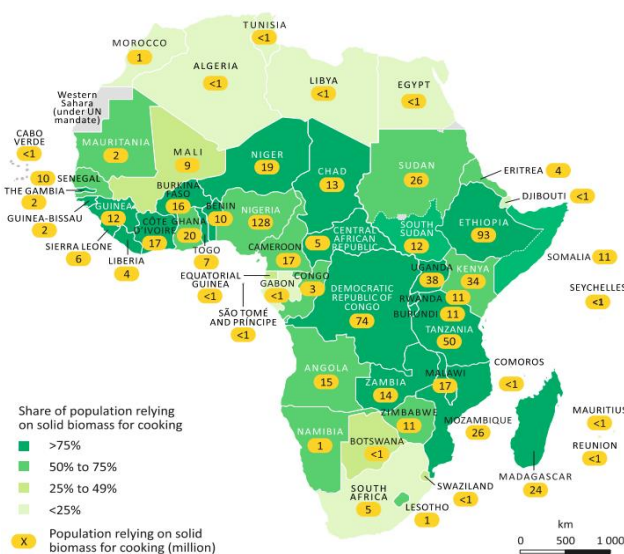


Figure 7: Population relying on solid biomass for cooking in Africa by country, 2015. Source: IEA, 2017 with data from the WHO

A Sub-Saharan interpretation of energy poverty

Several scholars have opposed these indicators, claiming that they are more appropriate to discuss energy poverty in developed nations, where a large-scale energy infrastructure already exists, on which the smaller-scale energy infrastructure that is needed to improve the living standards of individual households can rely (Bouzarovski & Petrova, 2015). In developing nations, instead, building efficient and high-quality small-scale energy infrastructures is much more complex, due to the lack of a reliable, large-scale energy infrastructure to sustain them (Sy & Mokaddem, 2022; Bouzarovski & Petrova, 2015). In developing countries, therefore, it is more appropriate to refer to energy poverty as the general lack of large-scale energy infrastructures, well-functioning energy markets, and adequate governance and institutional apparatus for the implementation of energy policy; all of which causes high levels of energy poverty among the population (Njenga, 2022).

The concept of energy poverty does not exist in a vacuum, and it must be contextualized and adapted to the context of analysis (Anuga & Njenga, *Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors*, 2022). Thus, following “African interpretation” of energy poverty, this condition exists when “there is a lack of access to adequate, affordable, reliable, quality, safe and sustainable energy services to support development” (Anuga & Njenga, *Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors*, 2022, p. 3). This implies that energy poverty does not only apply to the household level, but also and most importantly to the entire economy, and that the most urgent challenge is to scale up access to energy in order to power the productive centers of developing economies (Anuga & Njenga, *Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors*, 2022). This is the kind of energy that eradicates energy poverty and allows the African population to reach its development ambitions and enjoy energy services of the same quality as the ones provided in wealthy nations (Anuga & Njenga, *Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors*, 2022).

Focusing on residential rather than large-scale energy poverty is misleading for three main reasons. First, because human basic needs and the energy needed to satisfy them vary significantly across regions (Pachauri, Mueller, Kemmler, & Spreng, 2004). Secondly, residential access to energy will not lift low-income countries out of the development trap, as that would require a productive local economy, which in turns requires an adequate large-scale

energy infrastructure to power economic activities (Njenga, 2022). Third, focusing only on the household level ignores other sectors of the economy, such as firms, schools, and hospital, whose ability to operate is constrained by the lack of access to high-quality, reliable energy (Bazilian & Pielke, 2013).

Renewable energy generation and deployment

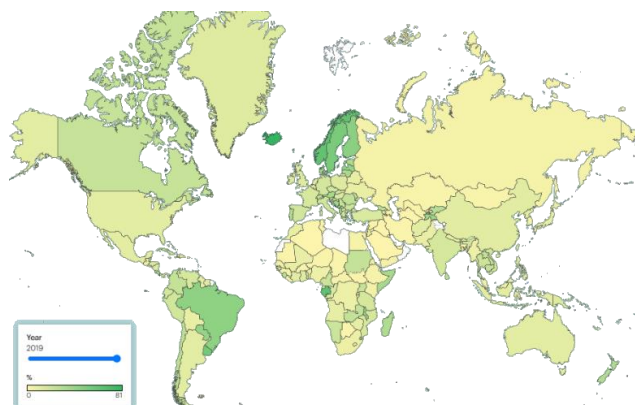


Figure 8: Share of renewable energy in total energy consumption, 2019.
Source: IEA, 2022

Since the early 2000s, the share of renewable energy in the global energy mix has been increasing, reaching 11.5% in 2019 (IEA, 2022). Although renewable energy generation capacity in Africa has increased by 7% between 2010 and 2020 (IRENA, 2022), *Figure 8* shows that SSA is still falling behind the rest of the world. Indeed, currently over 80% of Africa’s energy consumption is generated from natural gas, coal, and oil, (Ndung'u & Shimeles, 2022).

Figure 9 shows the global renewable energy capacity²⁹ in 2022 by region, and again Africa has one of the lowest capacities in the world (IRENA, Renewable Energy Capacity Statistics 2022, 2022). *Figure 10*, however, shows that the share of electricity generated from renewable sources is much higher in some SSA countries than in many developed nations (Ritchie & Roser, 2020).

²⁹ Which must be distinguished by the share of renewable energy in the total energy mix, mentioned above.

Global Renewable Energy Capacity (in MW)
by Region, 2022



Figure 9: Global renewable energy capacity (in MW) by region, 2022.
Source: IRENA, 2022

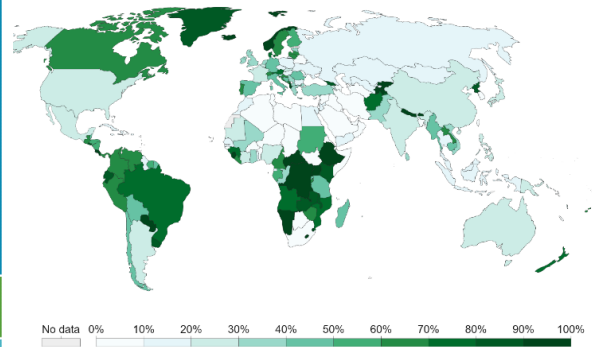


Figure 10: Share of renewable electricity, 2021.
Source: Our World in Data, 2020
with data from the BP Statistical Review of World Energy

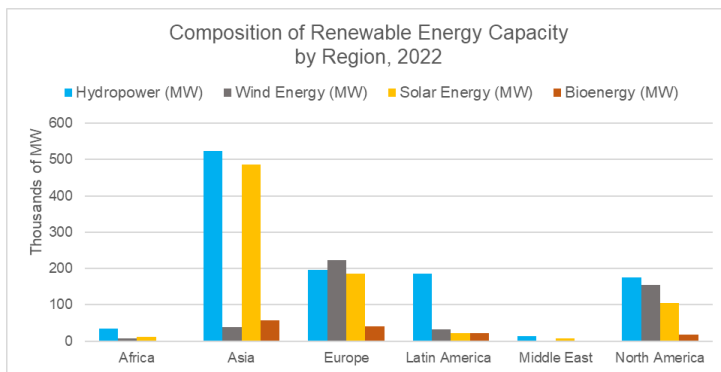


Figure 11: Composition of renewable energy capacity by region, 2022
Source: IRENA, 2022

Figure 11 displays the share of hydro, solar and wind power in the total renewable energy capacity³⁰. Hydropower is the most deployed renewable energy technology in Africa, with a capacity of 35 GW, which is responsible for the generation of the great majority of its renewable electricity (IEA, 2019; IRENA, 2022).

In terms of hydropower, Ethiopia is a virtuous example, as it has reached a capacity of almost 4 GW³¹ and relies on it for most of its electricity generation (IEA, 2019; IRENA, 2022). Senegal has the highest solar capacity (238 MW) in SSA, followed by Kenya (147MW) and Namibia (145 MW) (IRENA, 2022), while wind power has its highest theoretical potential in North and in South Africa (IRENA, Estimating the Renewable Energy Potential in Africa, 2014). Finally, Africa has a large geothermal power potential, that could achieve as much as 15 GW, but is still largely untapped (IEA, 2019). Kenya is the only SSA country that is exploiting its geothermal power,

³⁰ This graph excludes traditional biomass, which is the most used renewable energy source in SSA, making up for almost three quarters of the total energy mix (IEA, 2019). While it is a renewable resource, it is often used in very inefficient devices, hence its exclusion from this graph (Karekezi, Lata, & Coelho, 2004).

³¹ Other hydropower developments are planned, such as the Grand Ethiopian Renaissance Dam, Africa's biggest hydroelectric project, which started operating in February 2022 and has a capacity of 6 GW (IEA, 2019).

with an installed capacity of almost 700 MW, although other countries such as Ethiopia, Uganda, and Tanzania, are planning on following its example (IEA, 2019).

In any case, even countries that are making significant efforts are still very far from reaching their full potential capacity, and large sectors of their populations, as well as their productive sectors, are still lacking reliable, affordable access to (renewable) energy (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022). In SSA, the low levels of renewable energy generation and of access to energy are not caused by a lack of resources, but rather by an inefficient institutional setting (UNIDO, 2009; Anuga, 2022). Exploiting this huge, untapped potential is key to respond to the energy needs of the African growing population and economy. It will require a long-term vision, effective planning, adequate policies and significant investments, including in the framework of Africa's relations with international partners, such as the EU, which can offer financial and technical support. These efforts will bring significant benefits in terms of human well-being, socioeconomic development, and the environment, as renewable energy has proven to be more environmentally sustainable than traditional sources, and more resilient (WB & IBRD, 2021).

Relevance of the topic

Improving the quality and the effectiveness of Africa-EU cooperation on SDG7 is of fundamental importance for several reasons.

First, at the household level, eradicating energy poverty is key to achieving human development and decent living standards (OECD/IEA, 2017). Indeed, there is solid evidence proving that access to clean energy is positively correlated with increased human welfare (Gafa & Egbendewe, 2021). Secondly, at the firm level, access to reliable and affordable energy is key to the carrying out of all business activities. In SSA, 40% of firms experience long and regular power outages (the highest percentage in the world), which are estimated to reduce Africa's annual GDP by around 2% (IRENA, 2022). Third, at the industry level, underperforming energy systems hinder SSA countries' ability to adequately power their productive activities, hence hampering economic development (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022). The lack of energy for development purposes is a crucial issue, as arguably all sectors of the economy are dependent on it. For example, in SSA, progress in agricultural mechanization has either

stagnated or retrogressed, and the transportation system is dangerous, inefficient, carbon-intensive and predominantly road-based (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022). Thus, “energizing development” is key to reduce the development gap between energy-rich and energy-poor countries (OECD/IEA, 2017, p. 75; Anuga & Njenga, 2022). Additionally, the young SSA population is expected to double by 2050, and so are incomes and living standards (though at a slower pace) (IEA, 2021). This will lead to a significant rise in energy demand and, in order to meet it, Africa will need to double its energy supply by 2040 **Specificata fonte non valida..** Therefore, deploying renewable energy in SSA is crucial to ensure that increased demand is not met by fossil fuels, which would imply a catastrophic impact on the environment (IEA, 2021).

For all these reasons, (clean) energy is the “golden thread that ties together global efforts to alleviate poverty, level inequalities and cut pollution” (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022, p. 3), and as such it needs more attention from policy makers and IOs to increase the number of targeted, context-specific interventions and improve their effectiveness.

Analysis: Findings on Africa-EU cooperation on SDG7

This section presents the main findings of this research, which are related to the inherent challenges to achieving SDG7 in SSA, to the shortcomings of Africa-EU cooperation over the years, and to the mutual interests that keep both the EU and Africa into this partnership.

Three inherent challenges to achieving SDG7 in Sub-Saharan Africa

While scaling up renewable energy and addressing energy poverty in SSA would yield economic, environmental and human development gains, this section identifies three main challenges to achieving SDG7, which are related to SSA's instability, its fossil-fuel endowment, and its low contribution to global greenhouse gas (GHG) emissions. As shown in the next two sections, these are structural and persistent challenges that shaped the outcomes of Africa-EU cooperation in the past and continue to do so today.

1. Social, political and economic instability and uncertainty

The first main challenge that has hindered and continues to hinder progress in addressing energy poverty and enabling the green energy transition in SSA is related to the overall social, political and economic instability of the region (Raimondi, 2021; Acemoglu & Robinson, 2012). Political instability and corruption limit the scope for and the success of most policy instruments, which are often poorly implemented (Anuga, 2022; Njenga, 2022). Similarly, inconsistent legal and regulatory frameworks hinder the ability of SSA to attract domestic and private investments, which are fundamental for the financing of energy projects (Ndung'u & Shimeles, 2022). Social unrest and widespread poverty have the same effect, as the ability of consumers to pay for private services is often uncertain and this discourages private investors (Ndung'u & Shimeles, 2022). Finally, the unstable financial situation of these countries limits the ability of governments to finance interventions in the energy sector, whose infrastructure is very poor (Raimondi, 2021).

2. Local availability of abundant hydrocarbon resources

Secondly, due to their large reserves of oil and natural gas, SSA countries are at the crossroads of a dichotomy between exploiting their hydrocarbon resources to achieve socioeconomic growth or leaving them untapped to contribute to climate ambitions (Denton, 2021). This is a difficult trade-off for SSA countries. Indeed, on the one hand, renewable resources are widely available in SSA and the costs of generating renewable energy are falling, especially for what concerns solar power, which has become the world cheapest source of energy and is abundant in SSA (IEA, 2022; Masterson, 2021). On the other hand, however, the competitiveness of renewable energy in SSA is limited by two main factors. First, many long-term contracts for the production of fossil fuels have been signed in the past, often with foreign private companies, and are still valid today, and therefore they must be upheld at least until they expire, and their sunk costs³² disincentivize the switch to low-carbon technologies (Alova & Trotter, 2021; Novak, 2022). Secondly, around 20% of African countries are exporters of oil, and therefore the green energy transition will come at a heavier cost for their economies, both in terms of export revenue loss and in terms of jobs, as a large portion of workers would have to be transferred from the fossil-fuel industry to the renewable energy one (Ndung'u & Shimeles, 2022). These challenges make the green transition more difficult in SSA, and led some scholars to argue that the cost of renewable energy is only decreasing for developed nations, which have an infrastructure and a governance scheme that are ready for this transition, and these falling costs have not reached the African market yet (Njenga, 2022). In any case, 71% of projected oil and gas project in Africa risk becoming “stranded assets”, i.e., they have a diminishing potential to deliver economic benefits, because they are expected to become unusable and risky, as the economy decarbonizes (Denton, 2021; Bassegy & Lemos, 2022; Stein, 2021). Thus, investments in fossil fuels are increasingly considered risky, as the world economy moves towards a low-carbon future (Stein, 2021). Therefore, the EU funding represents a great opportunity for SSA to move away from a fossil future.

³² The money that has already been spent to build the infrastructure needed for fossil fuels extraction and production.

3. Disagreements over the distribution of responsibilities for climate change

Finally, although almost 20% of the world's population lives in Africa, the continent only accounts for 3% of global electricity demand; the entire SSA is responsible for only a quarter of that 3% (Denton, 2021; IEA, 2019). Additionally, while developed nations have long capitalized on hydrocarbons to fuel development, regardless of the environmental consequences, developing ones are only recently discovering significant fossil fuel reserves within their territories, and they are being asked to give them up for the sake of the environment, in spite of the fact that less than 50% of their populations have access to energy (Anuga & Njenga, 2022). Therefore, on the one hand, developed nations consume enormous amounts of energy and while demanding stronger mitigation efforts from developing countries (Mutiso, 2020). On the other hand, developing nations insist on the concept of “common but differentiated responsibilities” and on their right to develop and take advantage of their natural resources (Njenga & Temwanani, The chicken or the egg: which come first, addressing energy poverty or facilitating energy transitions?, 2022). This disagreement is a significant and persistent challenge to the African green transition, one that led some to call the EU's interest in the global green transition a form of “climate colonialism” (van Schaik, 2022).

Africa-EU cooperation on energy: Shortcomings of the past and recommendations for the future

While Africa-EU cooperation has arguably had a positive impact on the energy landscape in SSA, progress in this area has been limited. Indeed, as shown in the background section, access to energy is still very low in SSA, and the capacity for renewable energy generation is still very far from reaching its full potential. Being aware of the mistakes of the past is key to improving the outcomes of the future; in this case, it is key to ensuring that the shortcomings of past relations between Africa and the EU do not shape the current and future efforts for a more successful and effective partnership. Therefore, this section provides an overview of the main shortcomings identified in the past decades of Africa-EU cooperation on energy and suggests a way forward for the EU to maximize the future outcomes of this joint project.

1. Mistargeted intervention

The first and, arguably, most important reason why Africa-EU cooperation has not achieved its stated objective is that it has directed all its efforts toward the wrong target. That is to say that most projects implemented in SSA under the mandate of Africa-EU cooperation to eradicate energy poverty have focused on providing small-scale, residential access to energy rather than large-scale, economic access for development purposes (Njenga, 2022). They have brought power to small villages and communities through small-scale energy infrastructures, such as mini-grids and solar PV installations (Mutiso, 2019). However, due to the absence of an efficient and large-scale national energy infrastructure to sustain them, these instruments have often resulted in the provision of unreliable, intermittent, and inefficient energy, and only for a few hours per day/week (Njenga, 2022).

This idea that energy poverty can be solved by providing a few hours of electricity per day/week to a small village in Africa is the reflection of a Western-centric perspective on the issue of energy poverty (Njenga & Temwanani, *The chicken or the egg: which come first, addressing energy poverty or facilitating energy transitions?*, 2022). First, because it ignores the challenges of providing residential access to electricity without an efficient national energy system, or it takes its existence for granted. Secondly, because it assumes that African people will be satisfied with such a poor and low-quality electricity connection, hence depriving them of their dignity and their rights to high standards of living (Mutiso, 2020). Indeed, while any access is better than no access, it is ethically wrong to expect that Africans will settle for lower levels of development and human well-being. This is to say that, while residential access to energy is undoubtedly a positive step forward, it is not the kind of access that truly eradicates energy poverty and that is able to power development (Njenga, 2022; Mutiso, 2019).

All this means that current and past development strategies in the field of energy have been missing the scale of the challenge of providing access to energy in developing countries (Anuga & Njenga, 2022). Indeed, the EU has refrained from dealing with the core issue, i.e., lack of large-scale energy infrastructure, and it has focused on smaller, more commercial projects that yield an economic profit in the short-term but do not lead to a significant impact in the long-term (Njenga, 2022). The focus on residential access to energy has been evident in the projects implemented under the umbrella of Africa-EU cooperation since the implementation of the ACP-EU Facility, which focused on the electrification of small rural communities in Africa (Nolasco, 2021).

Therefore, the first recommendation to the EU is to commit to solving this problem of short-termism by investing in projects that yield a long-term positive impact and that focus on scaling up the infrastructure for renewable energy (Njenga, 2022). This implies prioritizing large-scale energy in SSA, and only focusing on energizing households once this “energy for growth” has been provided at the industrial level (Njenga & Temwanani, 2022; Mutiso, 2019). To do so, the EU must focus on mapping capacity, i.e., on identifying strategic energy sub-sectors and areas where projects would have the highest potential impact (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022). This approach is slowly being adopted, as more nuanced perspectives are being considered, thanks to the emergence of the voices of some representatives of the African intellectual/academic community (Njenga, 2022). This change is visible in recent programs, such as the Africa-EU Green Energy Initiative, which makes reference to several energy integration projects at the regional level, hence adopting a large-scale perspective (EU Commission, 2022).

2. Inappropriate definition of energy indicators

Another problematic aspect of energy projects implemented in SSA has been the incorrect definition of energy access (Levi, 2015). First, the binary distinction between having and not having access to electricity does not say much about the depth of energy poverty and it ignores the quality, reliability and utility of the power (Mutiso, 2019). Secondly, the energy poverty definitions adopted by several IOs, including the EU, have established a very low cutoff, which considers “electrified” households that can power a few lightbulbs and a phone for a few hours per day or that have a per-capita electricity consumption that is less than one-tenth of the per-capita energy consumption in wealthy nations (Bazilian & Pielke, 2013; Levi, 2015). These definitions are so little ambitious that they deprive the African people of their dignity and they lead to a romanticization of the situation of energy poverty in which many Africans live (Anuga & Njenga, 2022; Mutiso, 2019).

Additionally, they inevitably spark some questions. What does it mean for a household in a developing country to “have access to energy”? Can we truly define a household as “electrified”, if its electricity is unreliable and intermittent? Or if it is only sufficient to run a few lights, power a radio, and/or charge a phone for a few hours per day/week? These questions shed light on

the existence of double standards in the way in which we think about access to energy, as we assume that the average person in SSA should settle for an energy access level that is so low that, in developed nations, would be inconceivable (Njenga, 2022). By any standards, having a few hours of electricity per day/week still means living in energy poverty, and thinking that people in the Global South should accept low living standards because of climate change constraints is a form of racism and of “energy apartheid” (Mutiso, The energy Africa needs to develop -- and fight climate change, 2020).

This is to say that the EU should find a more appropriate way to deal with energy poverty in SSA. First, it should devise its own definition of energy poverty, which should be more ambitious and consider factors such as the quality, reliability, affordability and sustainability of the energy services provided (Njenga & Temwanani, The chicken or the egg: which come first, addressing energy poverty or facilitating energy transitions?, 2022). Secondly, it should pay more attention not to romanticize the provision of a 4-hour-per-day access to unreliable and intermittent electricity, just as it should not consider a full success any type of access that would not be accepted by the average European person (Mutiso, 2019). Again, any access is better than no access, but full and efficient access must be the final objective (Njenga, 2022). Finally, the EU should continue to put forward the narrative according to which the emissions from residential energy use should not be reduced by preventing the African people from accessing modern energy services, but rather by providing energy in a sustainable way.

3. Unwillingness to address the governance challenge

Historically, one of the main obstacle to scaling up renewable energy and implementing large-scale projects in SSA has been the prevalence of corrupted governments and extractive institutions (Acemoglu & Robinson, 2012; Anuga & Njenga, 2022). Over the years, the EU has actively worked to improve governance outcomes in Africa, but it has not been able to fully fix this issue, which is an inherently indigenous one (Njenga, 2022). Thus, although the promotion of good governance is theoretically at the center of its external strategy, in the cooperation with SSA the EU has always refrained from seriously addressing the challenges posed by the inefficient and corrupted governance (Njenga, 2022; Mutiso, 2019). Consequently, to avoid dealing with this complex, systemic issue, it has favored quick, short-term fixes in the energy sector, which have not been fully effective because energy policy does not exist in a vacuum and

it cannot be properly and successfully implemented without sound governance and institutional structures (Anuga, 2022; Njenga, 2022). This is especially true when it comes to scaling up renewable energy, which requires an enabling institutional and economic environment that poor governance systems cannot provide (Mutiso, 2019).

The experiences of several SSA countries demonstrate this argument. For example, the case of Kenya shows how a whole-of-economy approach and a solid regulatory framework can attract domestic and foreign investment for a successful expansion of renewable electrification (Raimondi, 2021). Similarly, in Ethiopia, despite the existence of many pressing issues, policy makers have prioritized the development of the renewable energy sector and focused all their efforts on this objective (Anuga, 2022). In this case, the prioritization of objectives and the correct policy implementation were key to enable this transition, and today Ethiopia generates most of its electricity from renewable sources (Anuga, 2022; Njenga, 2022). Ghana, on the other hand, has chosen a shortsighted strategy: instead of planning a long-term energy transition, it has bought power-banks to support existing electricity systems (Anuga, 2022). These, however, are a temporary solution, as they will have to be replaced in a few years and they will not increase large-scale energy deployment (Anuga, 2022). Similarly, Nigeria is a large oil exporter, and yet most of its population does not have access to electricity (Brew-Hammond, Mensah, & Amponsah, 2014). This is because energy poverty has not been placed at the top of the policy agenda, and it has not been prioritized by policy-makers (Anuga, 2022). This shows that the problem is not a lack of finances but rather inefficient leadership, disorganized institutions and wrong prioritization of goals. While Nigeria is often mentioned to explain the paradox of resource-rich countries that have such low levels of local electrification, misplaced priorities have limited progress on energy in most SSA countries (Anuga, 2022).

Therefore, the EU should invest in effective leadership for SSA, without interfering with local politics or imposing its own ideology, but rather by training African leaders to find local solutions to their local problems, including those that are related to bad governance (Njenga, 2022; Anuga, 2022) Indeed, while there is no quick fix to governance and institutional inefficiencies, the solution to Africa's problems must be endogenous and tailored to the African context by African leaders (Njenga, 2022). Something that the EU can do, and is already doing, to foster good governance is involving African leaders in different dimensions of its activities in SSA and at different levels of governance, including at the local level (Anuga, 2022). Similarly, it should continue to fund programs that bring African leaders and policy-makers to European

institutions, for them to experience the way in which the EU works and eventually transfer and adapt some of the acquired knowledge to the African context (Anuga, 2022). Thus, the EU should continue to promote good governance in SSA while at the same time respecting the self-determination of its African countries by supporting them in terms of capacity building, training, and leadership development, in the government sector as well as in other sectors (Anuga, 2022).

4. Use of an inappropriate narrative

Most developing countries are little keen on the green energy transition, for three main reasons. First, because they have recently discovered large fossil fuel reserves that they want to exploit to respond to their desperate need for energy (Njenga & Temwanani, The chicken or the egg: which come first, addressing energy poverty or facilitating energy transitions?, 2022). Second, because developed nations have historically capitalized on fossil fuels to achieve their current development levels, and now they are not letting developing countries do the same (Anuga & Njenga, Why does an African interpretation of energy poverty matter? A note for Sub-Saharan energy policy actors, 2022). Third, because the world is incoherently encouraging Africa to grow, but to do so without producing dioxide emission, although African emissions only account for 3% of the global amount (Mutiso, The energy Africa needs to develop -- and fight climate change, 2020).

These considerations culminate in a disagreement over which the distribution of the responsibility to bear the burden of climate change action, a disagreement that has led to gridlock in international negotiations (Njenga, 2022). Developing countries argue that developed ones are adopting a privileged perspective, that different countries have different mitigation capacities and responsibilities, and that there no evidence exists of a country that has successfully developed without heavily drawing from fossil-fuel resources (Mutiso, 2020; Njenga & Temwanani, 2022). On this line, many have argued that developed countries should not dictate how the energy transition takes place in the Global South and that SSA and other poor countries should be prioritized in what is left of the carbon budget (Mutiso, 2020; Njenga, 2022).

In any case, the point is that SSA is not the culprit of climate change, but the victim of it, as it is the most vulnerable to its impacts, despite not contributing to it (Mutiso, The energy Africa

needs to develop -- and fight climate change, 2020). In the past, the EU's communication around the urgency of transitioning to a low-carbon future has often used paternalistic tones and focused on the climate rationale of the green energy transition. However, for SSA countries to get on board, the EU must frame this transition as the economic and development opportunity that it represents (Ross, 2022). Additionally, the narrative around it should focus on its numerous long-term benefits, which are enhanced by the fact that SSA is so vulnerable to the consequences of climate change (Mutiso, 2020). The EU is already shifting to this narrative, and it should continue to reinforce it. However, at the same time, the it should keep the "common but differentiated responsibilities" principle in mind, and it should ensure that this transition reduces, rather than widens global inequalities (Denton, *Bolstering Africa's green transitions: The role of an African-European partnership*, 2021). Indeed, the African green energy transition should be supported financially and technically by the EU, but it needs to happen at Africa's own pace and terms and it has to be home-grown and indigenously owned (Denton, *Bolstering Africa's green transitions: The role of an African-European partnership*, 2021).

5. Choice of the wrong interlocutor for Africa

Finally, one last factor to consider is that the AU might not be the best interlocutor to represent Africa in the international arena and in the relations with the EU (Akokpari & Bimha, 2020). The AU should be to Africa what the EU is to Europe, namely an integrated, harmonized trading and negotiating bloc and a strong power in the international arena, but it is none of these things (Njenga, 2022).

First off, the AU has a weak institutional structure: it does not have the strong support from Member States that the EU can enjoy, and it does not have a clear and well-established policy approach, hence making it very difficult to set targets, goals, and action plans (Anuga, 2022). Therefore, the AU lacks a clear outline of its energy policy, as well as a defined set of energy targets, goals, and action plans (Anuga, 2022). Secondly, the AU has an issue of authority and legitimacy: while it claims to be the legitimate representative of a united Africa, many African states bypass it by negotiating individually with the EU, and others even oppose some of its decisions without any consequences³³ (Akokpari & Bimha, 2020). This shows that the AU is not

³³ A relevant example in this sense is the fact that Nigeria, the biggest economy in West Africa, strongly opposed the implementation of the EPAs in the region, and so did Kenya, which the strongest economy of East Africa. They

perceived as a legitimate representative by many countries and that its laws are not enforced (Akokpari & Bimha, 2020; Anuga, 2022). Third, the AU lacks a certain degree of coherence, because its theoretical commitments to good governance, the rule of law, and human rights are strong on paper but are not enforced in practice, as many African states are still theaters of undemocratic practices and human rights abuses³⁴ and, again, impunity persists (Akokpari & Bimha, 2020; Mhaka, 2020). Fourth, the AU was created with the aim of reaching a certain state of cohesiveness and unity that it has not eventually achieved (at least not yet), and therefore it is not the adequate cooperation and negotiation instrument for Africa (Njenga, 2022). All these issues have hindered the AU's ability to negotiate with the EU on behalf of the African people (Faleye, 2021; Akokpari & Bimha, 2020). Finally, the AU cannot make the claim of being a truly independent regional organization, as the EU, China and the US have financed more than 60% of its operating budget since 2011 (Akokpari & Bimha, 2020).

In sum, these issues have often challenged the AU's interlocutory power and they contributed, at least partly, to hindering the progress of Africa-EU partnerships for energy, especially for what concerns their implementation. Therefore, the main recommendation for the EU is not to exclude the AU from the negotiation on energy policy, but rather to diversify its interlocutors and include some actors or instruments that are deemed more legitimate and that function more effectively (Anuga, 2022). One option is to make greater use of the African Common Free Trade Area³⁵ (AfCFTA), which exists under the AU umbrella but has the potential to be a better platform for the cooperation between Africa and the EU, especially when it comes to the trade of energy and of natural resources, which would be fundamental in the case in which the EU were to become an importer of African renewable energy (Kende-Robb, 2021). Similarly, the Africa-Europe Foundation³⁶, which is part of Friends of Europe, is well-placed to play a significant role in Africa-EU cooperation, as it is a great forum for a more inclusive multi-level and multi-stakeholder cooperation (Anuga & Njenga, 2022). Finally, the EU should make greater use of its bilateral agreement schemes, such as the Global Gateway and the Just Energy Transition Partnerships (JETPs). The latter have a significant potential to expand the green

did so regardless of the AU's formal acceptance of these agreements, and they did not face any consequence nor punishment.

³⁴ This includes civil wars, famines, repression of political oppositions, and so on.

³⁵ <https://au.int/en/treaties/agreement-establishing-african-continental-free-trade-area>.

³⁶ <https://www.friendsofeurope.org/initiatives/africa-europe-foundation/>.

energy transition in developing countries, as proven by the successful case of the South African JETP (Ross, 2022).

Africa-EU cooperation on energy: Mutual interests and common goals

The previous section has presented an analysis of the reasons why Africa-EU cooperation on energy has been only partially successful and has not been able to fully deliver on its stated objectives, and it has proposed a way forward for the EU to maximize the outcomes of its partnership with SSA. Considering the limited progress they achieved, one may wonder why Africa and the EU are still actively engaging in numerous partnerships and joint projects in the energy sector. Thus, this section presents the findings of this research regarding the interests of both actors in engaging in inter-continental relations with each other, arguing that this partnership is beneficial for both Africa and the EU, though for different reasons.

1. The EU's interests

There are three crucial reasons why the partnership with Africa is of strategic importance for the EU. The first is that extreme poverty and natural disasters in SSA will eventually translate into migration flows to Europe, and therefore the EU has an interest in preventing this scenario from happening by addressing energy poverty and supporting the green energy transition in SSA (Njenga, 2022). The second reason is related to SSA's strategic importance in terms of allowing the green transition in the EU. Indeed, with its huge potential for renewable energy generation, SSA might become the EU's main supplier of clean energy, which would help the EU to diversify its energy imports and achieve energy security³⁷. Similarly, SSA is extremely rich in strategic raw materials that are necessary for the development of the renewable energy industry and that cannot be found anywhere else in the world, such as arsenic, cobalt, cesium, rubidium, platinum, manganese and bauxite (Denton, Bolstering Africa's green transitions: The role of an African-European partnership, 2021). These resources are extremely valuable, as many of them are necessary for the production of technological devices and for the production and the large-scale deployment of renewable energy, which is the future of the energy sector

³⁷ This has become increasingly topical since the Russian invasion of Ukraine began threatening the stability and security of the EU's energy supply.

(Denton, Bolstering Africa's green transitions: The role of an African-European partnership, 2021). Therefore, the EU needs to support SSA in going beyond having these resources to understanding what it can do with them, which includes using them to generate renewable energy but also exporting them (Denton, Bolstering Africa's green transitions: The role of an African-European partnership, 2021).

On top of this, Africa's youngest and fastest-growing population in the world will become a huge emerging market with which European private companies can trade goods and services, including energy (Doens, 2021). Therefore, the partnership with Africa is beneficial to European investors, who are attracted by the high growth rates in this region (Denton, 2021). Additionally, SSA is currently experiencing (slowly) rising living standards, and a wave of industrialization, urbanization, and economic and demographic growth, which combined will lead to an exponential increase in the African demand for energy (Doens, 2021). Therefore, investing in the African energy sector is an economic opportunity for the EU as well as an opportunity to ensure that the increased demand is met with low carbon solutions (Doens, 2021).

Moreover, as the EU tries to take the lead in the race to net-zero, cooperation with Africa on SDG7 is a great way to showcase its commitment and it yields image and reputational gains (Doens, 2021). Since the EU has long claimed to be a pioneer in the green transition, it now needs to translate its communication into action, otherwise it will lose credibility (Mutiso, 2020; van Schaik, 2022). Additionally, due to Africa-EU's tight trade relations, the EU cannot fully move to net zero without bringing Africa along (Denton, Bolstering Africa's green transitions: The role of an African-European partnership, 2021). Furthermore, partnering with Africa makes the EU stronger in the international arena, including in the competition with other big powers, such as China. Cooperation on SDG7 in SSA is particularly important for the EU to dismantle the current narrative according to which the Chinese intervention in Africa is more efficient than the European one (Piana, 2022).

2. African interests

The African counterparts also have several interests in their cooperation with the EU on energy.

First, Africa can benefit from the partnership with the EU because it is tied to significant amounts of EU funding and EU-led development projects, and because it helps to attract FDI in the region (Njenga, 2022) – as high as €221 billion in 2017 (Denton, Bolstering Africa's green transitions: The role of an African-European partnership, 2021). Similarly, the EU is Africa's largest trading partner, as it accounted for 30.7% of its total trade in 2019 and for 36% of African total exports in 2017 (Denton, Bolstering Africa's green transitions: The role of an African-European partnership, 2021). To continue to trade extensively with the EU, Africa will have to subject its exports to the Carbon Border Adjustment Mechanism³⁸: if they are produced in a carbon-intensive way, then they will be subjected to a tax and become less competitive, and this is an incentive for Africa to switch to a decarbonized production (Tenti, 2021). Therefore, for SSA, the green energy transition includes an economic rationale: if its economy does not embrace the low-carbon model, it will risk becoming uncompetitive in the long term (Ross, 2022).

Secondly, the green transition in SSA will have a positive environmental impact but also other positive spillovers, such as the creation of green jobs for the youth and the positive social externalities deriving from the use of cleaner energy (Bernabei, 2021; Doens, 2021). From the environmental perspective, SSA is among the most vulnerable regions to natural disasters, and it is projected to lose significant portions of its GDP by 2050 due to the consequences of climate change (Denton, 2021; Ndung'u & Shimeles, 2022). On the one hand, this means that Africa has a lot to gain from the green transition, in economic and environmental terms (Denton, Bolstering Africa's green transitions: The role of an African-European partnership, 2021). On the other hand, it means that it needs extensive financial and technical assistance from the EU to set up a solid and resilient mitigation strategy, which is energy-intensive and requires significant energy deployments (Mutiso, The energy Africa needs to develop -- and fight climate change, 2020).

Finally, since the EU has the technical expertise and the financial availability to support SSA in enabling the green transition, SSA has an interest in taking advantage of these knowledge and policy transfers (Njenga, 2022). Indeed, SSA can benefit from the EU's offer to train its local labor force and to fund training opportunities in European countries for African scientists,

³⁸ The CBAM is part of the EU's attempt of delivering the external dimension of the EU Green Deal and of aligning trade policy to climate commitments, and it consists in a tax imposed on carbon-intensive imports to the EU, to reduce the carbon leakage from regions that have less restrictive climate standards (Tenti, 2021).

policy-makers, and entrepreneurs (Njenga, 2022; Anuga, 2022). Considering its natural renewable resource endowment and its huge and young labor force, taking advantage of this opportunity could allow some SSA countries to export and become a hub for renewable energy (Sanchez-Benedito, 2021). This gains importance as the Russian invasion of Ukraine shows the world the fragility of energy security and the fact that it is better provided by locally-produced renewable energy than by imported fossil fuels.

In sum, from both perspectives, the Africa-EU partnership of energy is convenient on many levels. For the EU, it is a matter of self-interest, self-preservation and long-sightedness (Njenga, 2022). For SSA, it is arguably an obligated choice but also an opportunity for sustainable economic development (Mutiso, 2020; Anuga, 2022).

Conclusion

This research has looked at Africa-EU cooperation on SGD7 in Sub-Saharan Africa (SSA), with a focus on the eradication of energy poverty and the promotion of the green transition in the region. The aim of this study has been to assess the outcomes of this inter-continental partnership, explain the reasons why it has historically been unable to deliver at its full potential, and propose a way forward to maximize its impact. To do so, the history of Africa-EU relations has been presented in detail and analyzed with a critical lens, and an overview of the state of the art on access to energy and on the energy transition in SSA has been provided, to draw a comprehensive picture of the current energy-related gaps and to demonstrate that Africa-EU cooperation has not been fully successful. Afterwards, the main findings of this research have been presented. First, the most significant structural challenges to promote SDG7 in SSA have been identified, showing how they have informed and continue to inform past and present cooperation between Africa and the EU. Then, the reasons why Africa-EU cooperation has not worked at its maximum effectiveness have been explained, and a set of recommendations to improve these relations in the future has been issued. Finally, the last section has engaged in a discussion on why, despite their limited progress, Africa-EU partnerships on energy have continued and will continue to exist.

In short, this research has argued that Africa-EU cooperation over the years has not been fully successful, and that this has been due to several structural challenges that are mainly related to the political instability of the region, to the disagreements on the responsibilities for climate change mitigation, and to a wrong choice of targets, indicators, interlocutors and areas of intervention by the EU. However, it has concluded that many vested interests exist in this cooperation, which allow for its continuation over time in spite of the limited progress and the significant challenges. Additionally, some recommendations have been provided for the EU to enhance the positive impacts of its external energy action toward SSA.

To conclude, there are still many aspects of this topic that this study has not been able to cover and that further research could focus on. One of these is target 3 of SDG7, which is concerned with energy efficiency. Alternatively, it would be insightful to focus on the African perspective and to focus the recommendations on African leaders and stakeholders rather than on the European side.

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