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The Energy Partnership of Africa and the European Union

Joint Africa-EU targets

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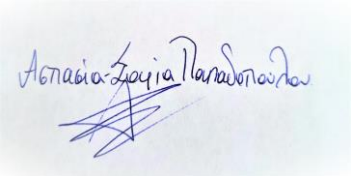

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Abstract

Energy sector of Africa is vital for its development in the future and remains one of the least understood areas of the international energy system. Africa is huge, around the size of the United States, China, India and Europe combined and although it has energy resources sufficient to meet domestic needs, more than two-thirds of its population lacks access to modern energy. Africa's energy resources effective development could exceed huge profits throughout the economy. How African emerging countries with rich resources can maximize their value? Whereas this in-depth study presents selected energy data and projections across Africa, the focus of the analysis and discussion is on the EU-Africa Energy Partnership and African energy institutions. There are areas in Africa such as rich natural resources and a growing working age population that have the potential advantage but have not yet been fully exploited. In addition, there are many other challenges, such as high levels of poverty and inequality, severe lack of infrastructure, poor governance and corruption, relatively low levels of productivity and skills, and unpredictable levels of political stability. Many of these factors contribute to a difficult and costly to operate business environment.

Keywords: Africa, E.U., African energy institutions, AEEP, Africa's Energy Mix, COMESA

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List of Abbreviations

AC: Alternating Current

ACP: African, Caribbean and Pacific countries

AEEP: Africa-EU Energy Partnership

AFD: French Development Agency

AfDB: African Development Bank

APSA: African Peace and Security Architecture

AU: African Union

AUC: African Union Commission

COMESA: Common Market for East and South Africa

CSOs: Civil Society Organizations

DAC: Development Assistance Committee

DG DEVCO: Directorate-General for International Cooperation and Development

DRC: Democratic Republic of the Congo

EAC: East African Community

EAIF: African Development Infrastructure Fund

EAPP: Eastern Africa Power Pool

EC: European Commission

EDF: European Development Fund

EEAS: European External Action Service

EIB: European Investment Bank

Endev: Energy Development Project

ENSAP: Eastern Nile Subsidiary Action Program

EPA: Economic Partnership Agreement

ERM: Early Response Mechanism

ESA: East and South Africa

ETS: Emissions Trading System

EU-AITF: European Union Africa Infrastructure Trust Fund

EUEI PDF: EU Energy Initiative Partnership Dialogue Facility

FLNG: Floating Liquefied Natural Gas

GDP: Gross Domestic Product

GHG: Greenhouse Gas

GNP: Gross National Product

IEA: International Energy Agency

IGMOU: Inter-Government Memorandum of Understanding

ILO: International Labour Organization

IPCC: International Commission on Climate Change

JAES: Joint Africa-EU Strategy

JEG: Joint Expert Group

JICA: Japan International Cooperation Agency

KfW Bankengruppe: German development bank

LNG: Liquefied Natural Gas

LPG: Liquefied Petroleum Gas

MW: Megawatt

NELSAP: Nile Equatorial Lakes Subsidiary Action Program

NEPAD: New Partnership for Africa's Development

NSC: North-South Corridor

ODA: Official Development Assistance

OECD: Organisation for Economic Co-operation and Development

PDF: Partnership Dialogue Facility

PI: Implementation Project

PMU: Programme Management Unit

PTA: Preferred Trade Area

RAERESA: Regional Association of Energy Regulators for Eastern and Southern Africa

SADC: Southern African Development Community

SDGs: Sustainable Development Goals

SSAs: Sub-Saharan Africa

Tcm: Trillion Cubic Meters

TWh: TeraWatt Hour(s)

USD: US Dollars

ZIZABONA: Zimbabwe-Zambia-Botswana-Namibia Transmission Interconnector

ZTK: Zambia-Tanzania-Kenya Interconnection Line

Chapter 1: Introduction to the Energy Partnership of Africa and the European Union

Africa's demand for reliable and sustainable energy supply will be greater than ever as its population grows and urbanises rapidly. This energy is needed not only to boost the continent's economic growth, but also to provide modern energy services to many Africans living without them today. Africa is expected to be a major driver of global energy demand growth, which will host plentiful reserves of fossil fuels, solar energy and minerals needed to move to clean energy worldwide (Cholteeva, 2019).

The recent political conditions on the continent will not be enough to put it in the right direction to meet development needs and provide consistent and up-to-date energy services to all, despite the transition to current and more efficient energy sources. Effective energy policy options are essential to meeting Africa's ambitions for inclusive growth and other important sustainable energy and development goals. Therefore, Africa is on the verge of an exceptional opportunity: the opportunity to become the first continent to grow its economy mainly through energy efficiency, renewable energy and gas, which offer enormous potential and economic benefits.

Energy sector of Africa is vital for its development in the future and remains one of the least understood areas of the international energy system. Africa is huge, around the size of the United States, China, India and Europe combined and although it has energy resources sufficient to meet domestic needs, more than two-thirds of its population lacks access to modern energy. Africa's energy resources effective development could exceed huge profits throughout the economy. (IEA, 2019).

While this in-depth study presents selected energy data across Africa, the focus of the analysis and discussion is on the EU-Africa energy partnership and African energy institutions, the main stakeholders of Africa-EU partnership, the energy resources and capabilities.

There are areas in Africa such as rich natural resources and a growing working age population that have the potential advantage but have not yet been fully exploited. In addition, there are many other challenges, such as high levels of poverty and inequality, severe lack of infrastructure, poor governance and corruption, relatively low levels of productivity and skills,

and unpredictable levels of political stability. Many of these factors contribute to a difficult and costly to operate business environment.

1.1. Objective and Research Questions

This study aims to analyze the recent development of EU-Africa Energy Cooperation. Rapid economic and population growth in Africa, especially in the developing cities of the continent, will have insightful effects on the energy sector, both regionally and universally. This phase is designed to create a new wave of dynamism between African policymakers and business communities and the declining cost of key renewable technologies opens different avenues for innovation and development. One of the main challenges is to ensure worldwide access to reliable, modern, affordable and sustainable energy. An additional crucial challenge is exploitation of the potential of gas and mineral resources for Europe (IEA, 2019).

Thus, this thesis will intend to answer the following questions:

a) Why energy cooperation between Africa and EU is important?
b) What are the joint targets of the EU-Africa energy alliance?
c) Is the initiative between Africa-EU in the energy sector aiding both parts?
d) How the Africa-EU energy partnership is developed?
e) What is the role of African energy institutions and how do they support the EU-Africa energy partnership?

1.2. Methodology- Theoretical framework

Although this is a currently transnational cooperation issue, regarding the fact that has started in 2008, the question of cooperation among nations is an old and multidimensional debate starting from the late 1960's with Haas and Hoffmann dialogue and later with Grieco and Keohane for the progress of regional integration. With the end of the post-WWII international order, the need to devise new cooperative arrangements among nations has become crucial. The literature reviewed here tries to identify the systemic conditions under which collaborative activity may be promoted. Common definition comes from Keohane: cooperation occurs *"when actors adjust their behavior to the actual or anticipated preferences of others through a process of policy coordination"*. The disagreement is not what cooperation is but what causes it. Definition

consists of two important elements: It adopts that each actor's behavior is directed towards some goal(s) and it implies that cooperation provides the actors with gains or rewards that are mutual (Keohane, 1984, p. 51).

Along these lines and in an effort to illustrate the causes and effects of energy cooperation between the states of North Africa and the EU, we will use the theoretical consideration developed between neoliberal-neo-realists on the role of international institutions and their effectiveness in developing cooperative actions between states and between the latter and non-state actors.

According to neo-realists, states are trying to survive in an anarchical system. What happens in the international system depends on the distribution of power among states, which determines their behaviour in a given situation. States are concerned about the relative gains (as opposed to the absolute) and interact with other states so as to secure their survival and to promote national interests. In quest for security, states try to confront their threats by means of external (i.e., forming alliances) or internal (i.e., creating military capabilities) balancing (Grieco, 1990).

For neo-realists, international politics is a zero sum game played by unlike units (states). The functional similarity of states degrades the unit level of analysis as an intervening variable to explain and understand the logic of states' interaction. It is solely the nature and structure of the system within which these units coexist, determine their behaviour, and mediate the results.

Neorealism focuses on the material components of power, while liberalism is centred on rules, institutions and economic interdependence. Realism includes five core assumptions. First, states are the main actors in world affairs (Waltz, 1979, p.95). Secondly, the international environment severely hurts states if they fail to protect their vital interests or if they pursue goals beyond their means. As a result, states are 'cost sensitive' and behave as single-rational agents (Waltz, 1979; Keohane, 1986, p.331). Third, international anarchy is the main force shaping states' motives and actions (Waltz, 1979, pp. 79-128). Fourth, the organizing principle of international system– international anarchy, is lead states to act in terms of power and security, are prone to conflict and competition, and often do not even co-operate in the interests of common interests (Gilpin,

1984, pp. 287-304). Finally, international institutions influence prospects for cooperation only marginally (Waltz, 1979, pp. 115-116).

On the other side of the spectrum, neoliberals accept the anarchist premise of neo-realists but do not share the resulting pessimism (Keohane, 1984; Powell, 1991, pp. 1303-20; Snidal, 1991, pp. 701-26). They place particular importance on non-state actors and their significant influence on the political sphere, in particular by leveraging the latter in the economic field. Multinational companies, banks and other networks are important players and international affairs are not limited to the "military sector" of Buzan terminology. Keohane and Nye stated that, although states are still important factors, their autonomy is eroded by transnational forces and cites "interdependence" as a "relatively underdeveloped and undervalued concept" with high potential (Keohane and Nye, 1987, pp. 725-753). A set of rules and institutions affects relations between states and pushes the international system towards pluralism and diversity. Neoliberalism considers that transnational contacts and coalitions have transformed national interests and attitudes (Tarzi, 2004, pp. 115–128). Contrary to the emphasis on neo-realism in the states, neoliberalism reflects an international system that also includes competition and cooperation between states and transnational institutions (Nye, 1988, pp. 235-251). Emphasizing on multiple channels of association, no hierarchy between on the issues and lack of dependence on violent power, neo-liberals diverge significantly from neo-realists.

Neoliberalism, state, "transnational actors will pursue their own ends" and recognize the significance of "link with the subject", creates space for religious organizations and groups that seem to go beyond any realistic strand. Reflecting the general view of neoliberalism, does Nye find the modification of the unit-system superfluous? (Nye, 1988, p. 243). Even if one can accept the unitary character of a foreign policy theory, it is difficult to see how "demographic trends, transnational flows, and military technology affecting many states" have been assigned to the unit. With an emphasis on international institutions and rules, Liberal tradition is the most attractive framework for scholars exploring transnational aspects and the influence of religion.

Analytically Neoliberalism evaluates neorealism core assumptions in the following way:

First, they rejected the proposal of realism for the central position of the states. To the functionalists, the new influential actors in international system will be specialist international organizations and their technical experts. For neo-functionalist, they were labour unions, political parties, trade associations and transnational bureaucracies and for the school of interdependence, they were multinational corporations and transnational alliances (Mitrany, 1966, p.211; Haas, 1964, p.152; Keohane and Nye 1977, pp.371-98; Grieco, 1988, p.489).

Secondly, the liberal institutionalism attacked the realistic view that states are uniform or rational agents. The authority was already decentralized within the modern states, supported by functionalist and subjected to a similar process internationally (Mitrany, 1966, pp. 54-55, 63, 69-73, 88, 134-38; Grieco, 1988, p. 489). "Multiple access channels" which, in turn, gradually weakened the foreign policy experience previously held by central decision-makers increasingly characterized modern states, according to interdependence theorists (Mitrany, 1966, pp. 20, 32-38; Grieco, 1988, 489).

Third, the neoliberals have claimed that states are less concerned about power and security. Globally, nuclear weapons and mobilized national populations have made war prohibitively expensive increasingly dependent on one another to achieve such national goals as growth, full employment and price stability. Internally, industrialization had created today's "social century": advanced democracies (and later socialist and developing countries) became states of social concern less power- and authority-oriented and more about economic growth and social security (Mitrany, 1966, pp. 131-37; Keohane and Nye, 1977, p. 228; Grieco, 1988, p. 489). Thus, the neoliberals rejected the fourth proposition of realism that states are reluctant to cooperate, finding instead that states do not see each other as enemies more and more, but as partners needed to provide greater comfort and prosperity (Grieco, 1988, pp. 489-490). As Keohane and Nye, described: *"In a world of multiple issues imperfectly linked, in which coalitions are formed transnationally and transgovernmentally, the potential role of international institutions in political bargaining is greatly increased"* (Keohane and Nye, 1977, p. 35; Grieco, 1988, p. 490).

Lastly, neoliberals rejected the pessimism of realism for international institutions. In particular, claim that institutions reduce the cost of verification, create repeatability and ease the

punishment of cheaters. As Keohane points out, "In general, regimes make it more prudent to work together, reducing the likelihood of double-crossing" (Keohane, 1984, p. 97). Likewise, Keohane and Axelrod argue that international regimes do not substitute for reciprocity. On the contrary, they strengthen and institutionalize it. Regimes embodying the rule of reciprocity illegally remove and make it more expensive (Axelrod and Keohane, 1985, pp. 226-54). In this manner, Arthur Stein argues that, just as societies "create" states to solve problems of collective action between individuals, other regimes are being created on the international stage to address the collective hypoxia that can result from individual behaviour (Stein, 1983, pp. 115-40).

As Ruggie defines: "*International regimes are defined as social institutions around which actors' expectations converge in a given area of international relations. Consequently, as is the case with every social institution and international regimes limit the discretion of their constituents to decide and to act on matters falling within the scope of the regime. The detailed constituents of the international regimes consist of principles, rules and procedures*." (Ruggie, 1982, pp. 379-415).

According to Haas, "*regimes are man-made arrangements for managing conflict in an interdependence setting because regimes are parts of a system*" (Haas, 1982, pp. 207-243). Moreover, regimes are peculiarities of the essential thematic areas in international relations characterized by a state of complex interdependence: neither hierarchy nor anarchy prevails, and states rarely exercise self-help. Schemes are all arrangements that reflect "emergency policy", the situation in which operators carefully consider the opportunity cost to disrupt a relationship before pursuing self-help. There are two types of emergency policies. Arthur Stein calls regimes of common interest and regimes of common aversion. In schemes of common interest, the actors agree that if everyone followed their own rational strategy, everything would eventually be worse. The second best strategy collaboration then becomes optimal policy (Haas, 1982, p. 211).

"Within this multilevel system, an important function of international regimes is to facilitate the conclusion of specific agreements on key issues within the area covered by the regime. International regimes help ensure that governments' expectations are consistent. The regimes are partly developed because global policy actors believe that these arrangements will allow

them to conclude mutually beneficial agreements that would otherwise be difficult or impossible to reach. In other words, regimes are valuable to governments where, in their absence, it would be impossible to conclude some mutually beneficial agreements. Schemes can facilitate agreement if they provide frameworks for establishing legal liability. Improving the quantity and quality of information available to operators or reduce other transaction costs, such as the cost of organizing or making secondary payments. Since international regimes can remedy the institutional defects of world politics in any of these three dimensions (liability, information, transaction costs), they can become effective devices for achieving state goals." (Keohane, 1982, pp. 325-355).

1.3. Scope and Delimitations

The purpose of this study is principally based on the fact that the concept of energy cooperation between EU and Africa is not well known and little has been written regarding that.

The reason for selecting the EU-Africa energy cooperation also lies in the will to question energy security facing its geographic advantage or disadvantage, the adequacy of its resources. In this sense, this thesis is scrutinizing the European aspects of energy security, which constitutes at the time a regional and a figurative approach of the issue.

Besides, this study aims at looking at the interrelation of different African energy institutions, which are relevant for the purpose of this study, taking a broad-picture approach, in preference to assessing the Africa-EU Energy Partnership.

1.4. The structure of the present study

The study will analyze EU-Africa energy Partnership, and will give a stable groundwork for the analysis of further related issues. In the first chapter, we introduce the subject matter of the study, which is the Energy Partnership of Africa and the EU. In particular we present the objective and research questions, the methodology and theoretical framework as well as the scope, the delimitations and the structure of the present study.

In the second chapter, attention will be given to the role of the strategic dialogue between the EU and Africa aimed at sharing knowledge, highlighting political priorities and developing joint programs on the main energy issues and challenges in the 21st century. Furthermore, both continents the Joint Africa-EU Strategy (JAES) sets out the intention of going beyond the donor/recipient relationship to long-term cooperation on mutually identified common and complementary interests and complements with other frameworks of cooperation at bilateral and regional level. The partnership is guided through formal dialogue at various levels between Africans and European bonds. It is a partnership with many partners, led by EU and AU Member States together with various non-state actors, such as civil society organizations, youth organizations, economic and social actors and the private sector. The EU is the largest donor to the African continent (Financing the Partnership n.d.).

The third chapter refers to the Energy Resources and Capabilities. The purpose of this chapter is to provide an outline of contemporary energy concerns within the EU and Africa. The African continent is rich in hydrocarbons and some African countries are among the largest exporters in the world. Nevertheless, the fact that most African countries, especially in the sub-Saharan region, are at relatively lower levels of economic and technological development than their counterparts in the EU is undeniable. In general, energy plays an important role in economic growth, urbanization and industrialization, as well as labor, land and capital. This is a fundamental way of thinking for African nations to advance their productivity skill. Recalling the African competences through the completion of an interconnected market in energy sector will enable the understanding of the first part of this essay, focusing on the win-win situation of the partnership.

The fourth chapter focuses on the Development of the Energy Partnership from a historical point of view, before explaining how AEEP operates, together with its governance provisions. An energy partnership between Africa and the EU could have the potential to bring about significant mutual benefits. Apparently, the EU is particularly keen to improve its energy security, specifically in light of growing concerns about the availability of conventional energy sources, especially in the case of the liquid fuels needed for transport. On the contrary, Africa cannot invest sufficiently on its own to exploit the energy sources, in particular because of its under-

resourced banking and financial sector, despite the fact that is rich in energy potential. Generally, the EU comes from a specialized energy efficient business as well as infrastructure, while Africa represents the other way around.

In the fifth chapter, an emphasis will be put on African energy institutions, which are related to the EU-Africa Energy Partnership such as the Common Market for East and South Africa (COMESA), the Nile Basin Initiative (NBI), the future of EAPP and the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA).

We conclude in the sixth chapter answering the core questions of the study and verifying the theoretical working assumptions.

Chapter 2: Africa-EU Partnership on Energy

What are the structure and scope of Africa –EU partnership on energy?
The Energy Partnership between Africa and the EU (AEEP), as a social institution around which actors' expectations converge on the energy sector is a durable framework for a strategic dialogue between them aimed at exchanging knowledge, defining political priorities and the development of joint programs on key energy issues and challenges of the 21st century (The Partnership and Joint Africa-EU Strategy, n.d.). Consequently, as is the case with every social institution, consists of principles, rules and procedures, which are the detailed constituents of the international regime.

In the following lines we try to explain and understand the organizing principle of Africa-EU energy partnership so as to check the function of international institutions within the aforementioned issue area, in an attempt to determine whether institutions influence the prospects for cooperation and to what extent.

The official political channel through which Africa and the European Union cooperate, participate in political dialogue and define their cooperation relations is the Africa-EU Partnership. It was established in Cairo in 2000, at the first EU-Africa summit. The partnership

builds on the Joint Africa-EU strategy agreed at the second summit of EU-Africa in 2007 in Lisbon (EUR-Lex, 2007).

The Africa-EU Partnership aims to bring the African continent and European Union closer together by enhancing economic cooperation and promoting sustainable development, while the two continents live alongside in peace, democracy, solidarity, security, prosperity and human dignity. Within this frame of reference, both partners are determined to work together on a strategic and long-standing basis to develop a common vision for EU-Africa relations in a internationalized world. Issues such as climate change, global security and the Sustainable Development Goals (SDGs) are included as their common interests (The Partnership and Joint Africa-EU Strategy (n.d.).

The official site of the partnership points out that: *"The Joint Africa-EU Strategy (JAES) sets out the intention of both continents to move beyond a donor/recipient relationship towards long-term cooperation on jointly identified mutual and complementary interests. It is based on principles of ownership, partnership and solidarity and its adoption marks a new phase in Africa-EU relations. The joint strategy is implemented through multiannual roadmaps and action plans, adopted after each Africa-EU Summit of Heads of States and Governments. Three successive roadmaps and action plans have already been adopted and implemented since 2007."* (The Partnership and Joint Africa-EU Strategy (n.d.).

Leaders of Africa and the EU at the 2017 AU-EU Summit, focused on job creation, particularly for young people. Other issues discussed and restated were the need for greater interaction in political dialogue and improved collaboration, while promoting the contributions of the private sector and civil society. The EU and Africa despite facing global challenges, they work closely and commit to an effective multilateral system that forms multilateral agendas.

2.1. Implementation of the JAES

During the 5th AU-EU Summit (5th AU-EU Summit, n.d.) EU and African leaders issued joint statement (African Union-European Union Summit, 2017) in Abidjan, Côte d'Ivoire in

November 2017 on *"Investing in Youth for Rapid Integration of Growth and Sustainable Development"*, evaluating the new common priorities for the Africa-EU Partnership in four strategic areas from 2018 ahead. As we can see from Table 1, there are many strategic areas of the JAES implementation.

Previously, at the 4th EU-Africa Summit in Brussels (Africa summit, 2014), the Heads of State and Government of Africa and European Union adopted the Roadmap 2014-2017 (Brussels Roadmap, 2014), which focuses on the implementation of the common strategy in five priority areas.

It was also decided to increase synergies between political cooperation and dialogue, in the same way to promote civil society contributions and private sector. For instance, the first action plan for 2008-2010 (First Action Plan, 2007) the Second Action Plan for 2011-2013 (Joint Africa EU Strategy Action Plan, 2010) and the third Africa-EU Summit for 2011-2013 (3rd Africa-EU Summit, 2011) of the Africa-EU Joint Strategy focused on eight priority cooperation areas.

Table 1: The strategic areas of the JAES implementation

Implementation of the JAES		
Strategic areas		
1st, 2nd, 3rd AU-EU Summit	4th AU-EU Summit	5th AU-EU Summit
Peace and security	Peace and security	Investing in people - education, science, technology and skills development
Democratic governance and human rights	Democracy, good governance and human rights	Strengthening resilience, peace, security and governance
Regional economic integration, trade and infrastructure	Human development	Migration and mobility
Millennium Development Goals	Sustainable and inclusive growth and development and	Mobilizing investment for sustainable reform in Africa

	continental integration	
Climate change	Global and emerging issues	
Energy		
Migration, mobility and employment		
Science, information society and space		

Sources: 5th AU-EU Summit, 2017; Africa summit, Brussels, 2014; Fourth EU-Africa Summit Brussels Roadmap 2014-2017, 2014; First Action Plan 2008-2010, 2007; Joint Africa EU Strategy Action Plan 2011-2013, n.d.; 3rd Africa-EU Summit, 2010.

2.2. Complementarity with other frameworks of cooperation

The partnership of Africa-EU focuses first and foremost on cooperation on a continental level and in particular on the relationship of trade unions between European Union and Africa. It therefore complements existing EU cooperation frameworks with EU Neighbourhood and with sub-Saharan Africa at bilateral and at regional level.

Other in effect frameworks transcend the African continent, for instance the ACP-EU Partnership Agreement - also known as the Cotonou Agreement, which includes African countries, as well as Caribbean and Pacific countries (ACP). The Cotonou Agreement was established in 2000 and forms the legal basis of the European Development Fund (EDF).

In this respect, the Partnership of Africa and the EU with its continental approach, is a mechanism of political dialogue and cooperation, covering and complementing the existing framework of developing relations between African countries and the EU (The Partnership and Joint Africa-EU Strategy, n.d.).

2.3. The main stakeholders of Africa-EU Partnership

African and European stakeholders guide the partnership through official dialogue at various levels. It is a partnership with many partners, led by AU and EU Member States together with various non-state actors, such as civil society organizations, youth organizations, economic and social actors and the private sector (Table 2).

Table 2: The main stakeholders of the partnership

The main stakeholders of Africa-EU Partnership		
European Union's participants	**Africa Union's participants**	**Non-state actors**
Heads of State and Government of the EU Member States at the European Council	The Assembly, consisting of Heads of State and Government, sets the AU's main political agenda	Civil society organizations
EU Member State Ministers at the EU Foreign Affairs Council	The Executive Council, which consists of the Foreign Ministers	Private and business sector
Specialized working groups, e.g. the Africa Working Group (COAFR), through the Permanent Representatives Committee	The Peace and Security Council	Youth organizations
The European External Action Service (EEAS) in co-operation with the European Commission, coordinated by the Directorate-General for International Cooperation and Development (DG DEVCO), provides overall political	The Permanent Representatives Committee and its specialized technical committees	Economic and social factors

coordination and strategic direction for Africa-EU relations		
The European Parliament supports monitoring how cooperation is implemented through dedicated committees	The committee	Academic institutions
	The Pan-African Parliament	
	The Economic, Social and Cultural Council (ECOSOCC), which represents civil society	
	The African Union Commission is the main implementing arm of the Africa-EU Partnership, under the political guidance of the AU Member States	
	Institutions of the African Union, such as NEPAD, and regional economic communities in Africa play a prominent role	

Source: How it works - Africa-EU partnership, n.d.

2.4. Dialogue and institutional architecture of the Africa-EU partnership

As we can see in Table 3, African and European counterparts in AU-EU summits guide the partnership through formal dialogue and meetings, at various levels. The Heads of State and Government of Africa and the EU have traditionally met every three years, at summits alternating between Africa and Europe, to provide political guidance for collaboration. Ad-hoc

meetings at ministerial, parliamentary or committee level, annual meetings between African Union and European Union committees are contained within common mechanisms and structures underlining progress made between summits. Furthermore, in order to attract the views and recommendations of key African and European stakeholders in various areas of partnership, stakeholder dialogue actions are held on an ad hoc or regular basis between each AU-EU Summit.

Table 3: The Dialogue and institutional architecture of the Africa-EU partnership

Dialogue & Institutional architecture of the Africa-EU partnership	
Institutional meetings	**Dialogue with stakeholders**
The AU-EU Summit	The African-EU civil society forums
The African Union Peace and Security Council (AU PSC) - the EU Joint Political and Security Committee (PSC) annual joint consultative meetings	The Africa-Europe Youth Summit
The AU-EU committee meetings	The meetings of African-EU economic and social stakeholders
The AU-EU ministerial meetings	The EU-Africa Business Forums
The European Parliament - Pan African Parliament Summit	The Africa-Europe Local and Regional Forums

Source: How it works - Africa-EU partnership, n.d.

A significant contribution to the partnership is made by the Specific thematic dialogues or expert meetings which include the AU-EU human rights dialogue, the high-level policy dialogue on science, technology and innovation, the African EU Energy partnership, (AEEP) and Africa-EU Infrastructure Reference Group (How it works - Africa-EU partnership, n.d.).

2.5. European Union's overall support for Africa

The largest donor to the African continent is the EU, as we can observe in Table 4. Development aid directed to Africa count approximately € 20 billion a year through programs implemented at the continental, regional and national level. European Commission manages about 20% of this amount. The Official Development Assistance (ODA) to Africa by the EU Development Assistance Committee donors is actually an important percentage (Table 5), but the percentage of total bilateral commitments for the energy sector is very low (Table 6).

Table 4: Top 10 bilateral donors by share of aid to Africa

		2015	2016	2017	3 year average	Africa as % of each donor's aid
						2015-2017
1	Ireland	277	251	261	**263**	75%
2	Portugal	105	72	61	**80**	70%
3	Netherlands	635	663	716	**671**	70%
4	Belgium	421	471	460	**451**	67%
5	Denmark	418	455	425	**433**	58%
6	Sweden	873	842	1 033	**916**	57%
7	Luxembourg	128	123	130	**127**	55%
8	Iceland	13	15	15	**14**	52%
9	United Kingdom	4 203	3 857	3 858	**3 973**	52%
10	United States	9 320	9 840	11 190	**10 117**	51%
	Other DAC countries	10 483	10 625	11 626	**10 911**	30%
	Total DAC countries	**26 877**	**27 213**	**29 776**	**27 956**	**42%**

Source: OECD, 2019

Table 5: ODA to Africa by EU DAC donors

Countries	2000-09[1]	2010-17	2010-17 Africa as % of each donor's aid
Austria	238	105	30%
Belgium	650	600	77%
Czech Republic	5	7	15%
Denmark	696	588	59%
Finland	178	265	54%
France	3 583	2 850	57%
Germany	2 044	2 678	34%
Greece	17	7	17%
Hungary	3	2	10%
Ireland	303	305	81%
Italy	623	306	54%
Luxemburg	104	114	55%
Netherlands	1 250	754	64%
Poland	13	28	27%
Portugal	224	192	84%
Slovak Republic	9	2	24%
Spain	516	321	33%
Sweden	769	938	55%
EU Institutions	3 825	5 613	42%

Source: OECD, 2019

Table 6: ODA to Africa by EU donors for the Energy sector as a percentage of total bilateral commitments in 2017

Countries	Energy sector (%)
Austria	2.3

[1] USD million, 2016 prices and exchange rates, average annual net bilateral disbursements

Belgium	8.4
Czech Republic	0.1
Denmark	2.5
Finland	9.7
France	14.5
Germany	9.5
Ireland	0.1
Italy	2.3
Luxembourg	0.4
France	14.5
Poland	0.6
Portugal	0.6
Spain	0.2
Sweden	4.7
EU institutions	9.6

Source: OECD, 2019

2.6. Specific support for the implementation of the Africa-EU Partnership

Besides the precise projects funded by the EU Member States and the African Union and their development institutions, the EU provides specific support for the implementation of the partnership through two main channels. The first is the Pan-African Program which provided € 845 million for the period 2014-2020. It supports projects with interregional, continental or global benefit and it is the first EU program to cover the whole Africa region. The second is the African Peace Facility, which provided over € 2.7 billion since 2004. It is the EU's main mechanism to support peace operations of African leadership, launch of African Peace and Security Architecture (APSA) and initiatives at the framework of Early Response Mechanism (Financing the Partnership n.d.).

2.7. Conclusions

The Africa-European Union energy partnership serves as a lighthouse for viewing the ongoing and ever-evolving political, economic and social relationship between the two nations.

Regarding the fact that political concern about continued dependence on carbon-based forms of energy for both static and transport is widespread globally (Ghoniem, 2011, pp.15–51) an energy partnership between two regions with historically opposite levels of economic efficiency and political integration, provides an opportunity to determine the depth of the overall relationship between these two regions and the political entities that represent them. Africa and the EU face significant and different challenges in terms of energy supply and security, and as a result, the energy partnership between the two regions, with their strengths and weaknesses, appears to be mutually beneficial if the historical circumstance in which these agreements take place could cause some critics to pause.

Events such as the Durban Climate Change Conference (2011) add even more value to the partnership. During tis conference, negotiators have agreed to work on a legally binding climate treaty, for both developed and developing countries, by 2020. However, it is noteworthy that Durban did not discuss how quickly countries would need to reduce gas of the greenhouse gas (GHG) and by what amounts. In this manner we verified neoliberals' assumption that states do not see each other as enemies more and more, but as partners needed to provide greater comfort and prosperity, by increasing the potential role of international institutions in political bargaining. (Grieco, 1988, pp. 489-490).

On the contrary, in terms of energy supply and access, both Africa and the EU have noticeably different fundamental issues. EU nations, despite having built up their wealth over the last two centuries largely on the exploitation of declining and increasingly costly carbon-based energy sources, are increasingly in need of carbon (Jones and Glachant, 2010, pp.15-25).

The EU's adoption of an Emissions Trading System (ETS) as a tool based on market promoting carbon reduction is a carbon-based form of energy that cost more over time (Hepburn, 2007, pp.375-393). Moreover many of the regions that provide various forms of energy to EU states are in dubious political stability and as a result the EU is also aiming to improve its energy security (F. Umbach, 2010, pp.1229–1240). The technological viability of the EU in the field of energy production and in particular alternative energy is difficult to dispute, but the cost of

producing conventional and alternative energy is constantly increasing, while ETS has not yet achieved its particularly striving goal of promoting it.

Europe derives economic and social benefits from harnessing carbon-based energy, which Africa, on the other hand, has not experienced yet, mostly due to the lack of technology and investment, which is a result of its underdeveloped consumer markets, as well as the lack of a real market to cover the underlying infrastructure investments needed to make those investments viable.

Concluding the description of the EU-Africa cooperation, we testified the core subject between neorealism and neoliberalism concerning institutions operation as dependent or independent variables from states national power, in an attempt to determine whether institutions influence the prospects for cooperation and to what extent. In particular, in the case under consideration, energy cooperation was strengthened and institutionalized through a series of international regimes established "to conclude some mutually beneficial agreements" between governments and transnational actors.

Chapter 3: Energy Resources and Capabilities

Regarding the fact of fundamental inconsistency between Africa and the EU in terms of energy supply and access, the purpose of this section is to provide an outline of recent and foreseeable energy issues within the two continents.

3.1. EU Energy: Issues and Problems

It is broadly known that the EU is particularly worried about its energy security. This is mainly due to the fact that EU member states depend on non-EU inputs for energy production both in terms of static electricity and in terms of liquid fuels needed for transportation. France is the main exception, whose nuclear power plants, which use fissile material from countries outside the EU, generates 75% of the nation's electricity and actually export electricity to neighboring countries, for instance Belgium and the Netherlands. In addition, electricity does not generate GHG at the source. Having said that, there is growing confrontation to Europe's growing nuclear

capacity, which is likely to become even more intense in light of the recent precipitations in Fukushima, Japan in 2011. Therefore, it is unlikely that there will be a European nuclear regeneration within the EU, in any case in the short term (Mangala, 2013).

As Mangala mentioned "*there are still sizeable indigenous coal sources within the EU, but these are becoming uneconomical to exploit, especially given that stationary energy producers generating base-load power from coal are subject to a steadily increasing carbon price. Wind power is increasingly being made use of, particularly in the United Kingdom, the Netherlands, and Denmark, but the percentage of electricity generated by such means is miniscule in the context of ever-increasing demands for electricity within the EU. Other renewables also have potential, but there is limited capacity for some forms of renewable energy generation, such as solar power, geothermal, and hydroelectric, mainly owing to geographic and climatic characteristics of the region. With respect to liquid fuels for transportation, the situation is more problematic. The oil reserves of EU nations are not extensive, with the United Kingdom and Norway (not even in the EU) being the nations with the greatest resources in this area. That said, petroleum products are manufactured throughout Europe. Liquid fuels from these local reserves are being increasingly supplemented by biofuels, such as bioethanol and biodiesel, produced within the EU"* (Mangala, 2013, p.173).

EU member states rely severely on external inputs, due to the lack of domestic energy potential. As for power generation and heating, gas comes from the former Soviet republics, and especially from Russia (Bilgin, 2009, pp.4482-4492). However, there is concern about the security of this supply, many concerned about the power that this dependency holds in the hands of non-Russians. In particular, those who are not considered politically stable. In the case of liquid fuels, the EU has to rely profoundly on oil from possibly incompatible with certain EU interests, such as Venezuela, or OPEC states, many of which are politically unstable, such as those in the Middle East.

EU's concern about mitigating anthropogenic climate change is intensifying all of these issues. The EU has accepted that combustion of fossil fuels has contributed to undesirable climate change and that these emissions should be drastically reduced to avoid the forecasts of the

International Commission on Climate Change (IPCC). This is particularly demonstrated by the implementation of the global ETS system. Under this regime, producers, including static energy producers, face a gradually rising carbon price of one ton of carbon dioxide (CO2) emissions.

Although this situation was intended to encourage transmitters to adopt cleaner energy technologies, a number of obstacles, including low carbon prices, and consequently insufficient investment in renewable energy, meant that the EU is still exposed to a price of carbon emissions with noticeable future economic consequences. The battle to reduce greenhouse gas emissions has also led to the development of a comprehensive policy aimed at removing EU's member states from petroleum-based fuels. Consequently, particular attention was paid to developing a sustainable market for biofuels. Despite these issues, the EU has developed state-of-the-art expertise in various aspects of energy production and has invested large sums of capital to develop its capacity for renewable energy. This ranges from simple research, development of renewable energy projects and installations to production and implementation (Pechak, Mavrotas and Diakoulaki, 2011, pp.3380–3387).

As a logical conclusion the subject of the cooperation is a win – win situation where European states, due to the lack of energy resources, increase their dependence on African states, thereby reducing Russia's security dilemma, as a sole energy exporter which poses a potential threat to the EU, USA and NATO in European continent. On the other hand, the African states as exporters of energy resources, mitigate uneven development with Western countries to the extent that they gain access to new technologies and correspondingly know-how for exploration and exploitation of their resources, increase their Gross Domestic Product (GDP) and their measure of interdependence from the latter.

3.2. Africa's Energy Potential

The majority of African people traditionally relies on biomass for energy and lives in rural and semi-rural areas. Biomass, such as firewood and charcoal, provides free or affordable energy to a continent with a growing population and low per capita income. Deforestation, desertification,

soil erosion and greater accumulation of atmospheric carbon dioxide is related to constant use of biomass, with consumption trends projected to increase by 2030.

All of these harmful effects can lead to local climate change and reduced yields as agriculture remains an important economic activity in Africa. The challenge is the diversification of energy sources that are both accessible and sustainable.

It is an accomplished fact that most African states, especially in the sub-Saharan region, are at relatively lower levels of economic and technological development than their counterparts in the EU. Unsuccessful political regimes are progressively being lost to realistic groups seeking an improved standard of living, while information technology and mainly the Internet, has exposed more Africans to external developments. However, Africa is primarily dependent on biomass for energy, and as a consequence the increased economic activity is likely to lead to greater demand for fossil fuel energy and, therefore, the risks associated with climate change. The IPCC considers Africa particularly vulnerable to the impacts of climate change due to its dependence on agriculture, potential water shortages and low adaptability. (Mangala, 2013).

Biofuels appear as suitable supplements or substitutes to fossil fuels. Since the early 1980s, some biofuel projects have been undertaken in Africa, but the exploitation of this energy source is still immature. However, Africa has many fertile and underutilized areas along with a favorable climate for biofuel projects. There are approximately 100 such projects spread across more than 20 countries, such as Mali, Guinea, Senegal and Tanzania. In addition, the debate about the advantages and disadvantages of biofuels is still being discussed, as advocates point to job creation, rural development, low-cost fuels and environmental friendliness as positive features (Charles et al 2007, pp. 5737–5746, Charles et al 2009, pp. 5546–5556).

3.3. Africa's Energy Mix

The African continent is rich in hydrocarbons and some African states are among the largest exporters in the world. Compared to North Africa, as well as South Africa, where this funding translated into the creation of domestic markets, in the rest of sub-Saharan Africa, investments

were mainly focused on the export of the mining industry. Nevertheless, the hydrocarbon resources are distributed unevenly. Oil and gas reserves are exploited lower than the potential, with the exception of North African states, and investments have led to production for export over the development of domestic markets. In 2040 Africa accounts for almost a quarter of the world's population, but only 6% of energy demand. As we can comprehend from this, Africa's energy consumption remains small relative to its size.

Hydrocarbons play a major role in the energy mix of African states already. Indeed, among commercial energy sources, oil, gas and coal account for the largest share of Africa's primary energy consumption: oil accounts for 44%, followed by natural gas (27%), coal (21%) and nuclear energy (1%). Renewable sources, including hydrogen and biofuels, account for only 7% (BP Energy Outlook, 2019).

3.4. Uranium in Africa

Uranium resources in Africa cover around 19% of the world's uranium availability. In particular, it comes from Namibia (7%), Niger (5%), South Africa (5%), Botswana (1%) and Tanzania (1%) (World Nuclear Association, 2020). Uranium mining in Gabon has been halted because it is closely linked to Niger because of the role of the French Atomic Energy Commission and Orano. According to World Nuclear Association, African countries with a known potential of uranium are Algeria, the Central African Republic, the Democratic Republic of Congo, Equatorial Guinea, Malawi, Mali, Mauritania, Morocco, Nigeria, Zambia and Zimbabwe (World Nuclear Association-Uranium in Africa, 2020).

Despite the fact that a number of countries are considering starting nuclear power generation, recently the only active nuclear power plant in Africa ("Koeberg") is located in South Africa, where it accounts for around 5% of total energy demand. South Africa intends to reduce its dependence on coal, although current policies seem to favour small-scale decentralised production as opposed to large, capital-intensive projects, leading to a slowdown in nuclear projects.

As de Strasser, Tagliapetra and Hafner are underlying*: "nuclear energy is one of the most controversial sources of energy and usually divides public opinion. On the one hand, greenhouse gas emissions from nuclear power are in the range of solar and wind power and even look at the whole life cycle of a nuclear power plant, although there is considerable uncertainty about the disposal of radioactive waste, which has not yet been taken into account in the estimates. On the other hand, the environmental impact of the disposal of radioactive waste is one of the main concerns of those who oppose nuclear energy, together with concerns about the safety and risk of nuclear proliferation. In this respect it is worth noting that South Africa is the only country in the world that has voluntarily dismantled its nuclear weapons, becoming a champion of peaceful nuclear energy"*(de Strasser, Tagliapietra and Hafner, 2017, p.25).

3.5. Oil and Gas

The latest geological review estimates that it would be "technically and economically feasible" to produce approximately 381 billion barrels of oil and 73.8 tcm of gas as it sets Africa's upper limit of potential at 1,273 billion barrels of oil (including liquefied gas from gas production) and 82 tcm of natural gas (including oil production) (Modelevsky MS, Modelevsky MM, 2016, pp. 1342–1348). However, there is considerable uncertainty about hydrocarbon resources in Africa, and in particular in the SSA, where hydrocarbon basins have generally been less studied.

As it is described in the IEA Africa energy outlook, the following regions have major hydrocarbon basins at different exploration and exploitation levels:

*"**Niger Delta Basin** – A long-standing source of oil and gas production in Africa, the majority of the basin lies in Nigerian waters and produces high quality sweet crude from its hundreds of small deposits. The eastern edge of the Niger Delta extends into Cameroon and Equatorial Guinea (Rio Del Rey Basin) and accounts for most of their production. The US Geological Survey (USGS) ranks the Niger Delta as the 12th richest basin in undiscovered petroleum resources in the world, with over 30 billion barrels of undiscovered oil resources and 60 billion barrels of total remaining recoverable oil resources.*

***East African Rift** – The East African Rift Basin has recently brought the prospect of oil production to Uganda, Kenya and several of their neighbours (such as DR Congo, Rwanda,*

Burundi, Tanzania and Ethiopia). Recent drilling activity has been most intense in Uganda, with the Kingfisher discovery in 2007 and others in the vicinity amounting to 1.7 billion barrels of recoverable oil. Exploration in Kenya has so far discovered 600 million barrels of recoverable resources, principally in the Lokichar Basin. Ethiopia is thought to hold further promise in the Ogaden Basin.

East African Coastal *– Over 5 trillion cubic metres (tcm) of gas resources have been discovered in East African coastal waters off Mozambique and Tanzania in the last five years, predominantly in the Rovuma and Tanzanian coastal basins.*

USGS estimate that there are 41 billion barrels of oil and 13 tcm of gas to be found in the four geologic provinces off the east coast of Africa (including the Seychelles and Madagascar).

West African Transform Margin *– The discovery of the Jubilee field in Ghana in 2007 has fed expectations of more to come in this relatively under-explored basin stretching from Mauritania to the Niger Delta. The area under license has doubled in the last five years, with technical discoveries being made in Liberia, Sierra Leone and Côte d'Ivoire, but further appraisal is required to ascertain their commerciality.*

West Coast Pre-Salt *– Gabon (Diaman discovery), Congo (Marine XII block) and Angola (Lontra and Mavinga) have seen discoveries below salt layers, proving that such pre-salt systems exist in West Africa. Volumes discovered so far have been modest and mainly natural gas, but explorers hope that larger finds await and there is particular interest in Angola's Kwanza and Benguela basins. Pre-salt prospects are also being explored in Cameroon, Equatorial Guinea and Namibia"*. (IEA, 2014, p. 50)

Table 7: Oil reserves and production (2018)

Country	Proved oil reserves (Thousand million bbl.)	Reserves to production (R/P) ratio	Oil production (thousand bbl./day)
Algeria	12.2	22.1	1510
Angola	8.4	15.0	1534
Chad	1.5	40.9	101

Republic of Congo	1.6	13.2	333
Egypt	3.3	13.6	670
Equatorial Guinea	1.1	15.8	190
Gabon	2.0	28.2	194
Libya	48.4	131.3	1010
Nigeria	37.5	50.0	2051
South Sudan	3.5	73.4	131
Sudan	1.5	41.1	100
Tunisia	0.4	23.2	50
Other Africa	3.9	33.7	320
Total Africa	125.3	41.9	8193

Source BP, 2019

To the degree that natural gas is concerned, the situation is not much different due to the fact that around 90% of Africa's natural gas production comes from Algeria, Egypt, Libya and Nigeria (Table 8), which dominate SSA production. Once more, major new players have emerged, especially Mozambique and Tanzania, which are currently evaluating the existing options for the use of newly discovered resources. Other countries are also considering increasing gas production, for example Senegal (Reuters, 2017).

Table 8: Gas reserves and production (2018)

Country	Proved oil reserves (trillion cubic metres)	Reserves to production (R/P) ratio	Gas production (billion cubic metres)
Algeria	4.3	47.0	92.3
Egypt	2.1	36.5	58.6

Libya	1.4	145.9	9.8
Nigeria	5.3	108.6	49.2
Other Africa	1.2	44.3	26.7
Total Africa	14.4	61.0	236.6

Source BP, 2019

3.6. Coal

Proven coal reserves are much more geographically constrained in the southern part of Africa as we can observe in Table 9 compared to oil and natural gas. South Africa's coal industry is besides quite technologically advanced, and the country is a world leader in coal fluid technology.

In addition to South Africa, which is the leader in coal production in the region (95%), SSA coal reserves are largely undeveloped, and the main reason for this is potential mines and lack of infrastructure (railways and ports).

Table 9: Coal reserves and production in Africa (2018)

Country	Proved coal reserves (Million tonnes)	Reserves-to-production (R/P)	Coal production (Million tonnes oil equivalent)
South Africa	9893	39	143.2
Zimbabwe	502	165	2.0
Other Africa	2822	164	10.6
Total Africa	13217	53	155.8

Source: BP, 2019

South Africa accounts for 70% of all coal found in Africa, and the production of electricity from coal accounts for about 80% of its electrification. South Africa has a well-developed infrastructure, unlike states such as Botswana and Mozambique, which have no developed infrastructure but rich coal reserves.

Conclusions

Energy use and development in Africa differs extensively across Africa, with some African countries exporting energy to the international market, while others lack even basic infrastructures or schemes to obtain energy.

According to Reuters: *"Most oil producing countries, including Angola and Nigeria, export over 85% of their production to Europe, Asia and the USA. The same applies to gas from Nigeria, Equatorial Guinea and Mozambique, and the prospects for export are particularly promising, as thanks to Floating liquefied natural gas (FLNG) it is possible to enter global LNG markets without creating potentially dangerous onshore infrastructure"* (Reuters, 2017).

Interestingly, in the case of oil and gas products such as Liquefied Petroleum Gas (LPG), gasoline, diesel, the EU is also a key player in the oil and gas market. Fossil fuel exports (like other mining products) are the main source of income for African states, but governments are usually unable to reinvest tax profits in the development of internal energy markets.

Chapter 4: Development of the Energy Partnership

Before turning our attention to how AEEP operates, together with its governance measures, it is useful, for the continuation of the research, to look at the historical context of EU-Africa energy cooperation, so as to examine whether and to what extent it was the objective of mutual profits, which force European states to the development of collaborative institutions to meet their energy needs, and consequently affects relations between states and transforms national interests and attitudes.

4.1. AEEP Basic Rationale

An energy partnership between EU and Africa shows every sign of having the potential to bring noteworthy mutual benefits (Mangala, 2013). Apparently, the EU is particularly keen to improve its energy security, particularly in light of growing worries about the accessibility of conventional energy sources, especially in the case of the liquid fuels needed for transport.

On the contrary, despite the fact that Africa is rich in energy potential it cannot invest adequately on its own to exploit it, in particular because of its under-resourced banking and financial sector (Misser, 2007). Generally, the EU comes from a very high energy-efficient base business as well as infrastructure, whereas Africa represents the other way around. Africa needs to invest severely in critical infrastructure, in particular with regard to electricity supply, to enable a more equitable distribution of energy produced on the continent. At this moment in time, this is unfeasible, especially in the sub-Saharan region.

This is mainly due to the fact that the costs required to provide the infrastructure, which would have to be built from scratch in many cases, would be so high that, under normal market conditions, possible users of the new infrastructure could not afford the energy. In these circumstances, energy investments will not be considered attractive to international or even local investors, and African governments will not be able to make the required investments on their own. Therefore, some intervention is needed to make these activities more attractive to the market. As a result, the AEEP represents a vehicle through which these interventions can be achieved.

Along with the simplest benefits that an energy partnership could offer, there are also more strategic geopolitical concerns. A higher standard of living for citizens could be achieved through a fairer distribution of energy in Africa. These improvements, which would reduce the gap between individuals in the lower strata of society and the elite, many of whom do not have access to electricity and other technologies could lead to political reforms, ensuring greater general stability in the region and even better results for human rights, such as more representative democracies,

In addition to helping Africa, this would also benefit Europe, possibly at the expense of other forces seeking to gain augmented influence. Improving political stability will also have a significant impact on strong energy supply and will ensure the creation of an African energy market that is attractive to European business interests, with the benefits for African states in providing cost-effective infrastructure as a primary effort to improve energy supply across the continent (Limao and Venables, 2001, pp. 451–479).

An energy partnership can enable African states to jump to technologies that have enabled European states to achieve their present level of development and also will have less impact on the environment.

Since more efficient energy production processes, such as those based on renewable energy sources, are not currently cost-effective by more traditional processes and technologies, help is needed to ensure that African nations do not invest in low-cost technologies, which may not be feasible in the future, especially as non-renewable energy becomes uneconomical. It obviously benefits neither the EU nor Africa. This is undoubtedly worrying in terms of debt financing infrastructure, given the high level of national debt that African countries currently charge. The debt used to finance unnecessary infrastructure is obviously not in Africa's broader interest. With this frame of reference, both Africa and the EU have a common interest in moving the region through the era of carbon dependence to a cleaner energy model.

4.2. The Nature of the AEEP

The wider idea of energy security, which is seen as strongly by European governments, is behind the recent proliferation of partnerships, and agreements with various regions, such as Ukraine, Azerbaijan, Kazakhstan, various Balkan countries and Africa. The purpose of these partnerships, as explained by the Commission of the European Communities, is to link energy systems from different geographical areas by expanding technical expertise to partner countries (Tywuschik and Sheriff, 2009). The longstanding idea is to increase Europe's access to sustainable and affordable energy.

The Lisbon Summit, held in December 2007, put emphasis on access to sustainable, safe, affordable, reliable and climate-friendly energy sources for both continents, inter alia, cooperation. At the summit, the Africa-EU Energy Partnership (AEEP) was tasked with the mission of working towards achieving these goals. Hence it includes one of the eight strategic partnerships that form the Joint Africa-EU Strategy (JAES), with the priority accompanying action to *"intensify energy security cooperation and access to energy"*(AUC and EC 2007). Poverty is still a main burden in Africa. In 2002, the EU energy poverty eradication initiative was launched, with the aim of increasing access to energy as a poverty reduction plan (Bahgat, 2007, pp. 91–104). The Lisbon Summit's consideration for energy access was as a result a follow-up to this previous initiative.

Concerning the governance of the AEEP, the Lisbon Summit established a three-tier structure for managing the energy partnership. At the top is the AEEP Joint Expert Group (JEG), which includes European, African, and international representatives, as well as civil society organizations (CSOs). The original purpose was for this group to make new political decisions or initiatives, but its role, as clarified at the 11th EU-Africa Ministerial Troika in 2008 in Addis Ababa, is to provide an expert forum to discuss implementation and funding of AEEP priority areas.

In particular, this group coordinates the members, encourages discussion and regularly reports to other stakeholders, such as the various instruments aimed at increasing investment in the African energy sector and sets timetables and roadmaps for implementing priority conclusions. Some of them are the EU action, the EU-Africa Infrastructure Trust Fund and facilitating the Partnership Dialogue.

The second level of administration contains Implementation Teams, one from the EU side and the other from the African, both with two co-chairs. In addition to the European Commission (EC) and the African Union Commission (AUC) and information technologies include African and EU stakeholders, energy banks, regional economic communities from Africa and specialized agencies such as non-governmental sector organizations, as well as researchers.

The third administrative level is the EU Facility for Energy Initiative and Partnership Dialogue, which is responsible for preparing and documenting meetings of the first two levels, together with the AEEP high-level forums and the CSO partnership forums.

The Lisbon Summit has clarified the First Action Plan (2008-2010) to achieve the general objectives of the AEEP. An extensive outline of this First Energy Action Plan has emerged from various sources of documentation related to the early stages of gross national product (GNP), such as launching a cooperation and dialogue between the EU and Africa on the management of energy resources that support ecological development in Africa. It organized a sequence of meetings including Heads of State, Energy Ministers and Implementation Teams from the EU and Africa and facilitated the exchange of knowledge on energy resource management. It encouraged the export of African energy resources, investments in the African energy sector by African financial institutions, donors, investors and the joint contribution of the African and EU governments. Also, it promoted mutual understanding, environmentally friendly energy regimes and better management of energy resources. Furthermore, Africa's understanding of energy resource management from a longstanding perspective was boosted and promoted less deforestation, adverse effects on climate change and air pollution.

Thenceforth, at the first AEEP summit in Vienna in September 2010, there has been some minor change. Participants decided that specific initiatives would focus on five priority areas, such as access to energy, energy security, renewable energy and energy efficiency, institutional capacity building and increased investment (EUEI PDF, n.d.). These areas, which have been accompanied by a number of so-called political objectives to be achieved by 2020, do not differ significantly of the key areas of concern, but represent a progress of the AEEP, in particular in terms of strengthening institutional capacity. Some of the political goals are offering access to sustainable energy services to at least 100 million Africans and increasing electricity interconnections both within Africa and between EU and Africa, doubling the use of natural gas in Africa and exports to the EU, and last but not least, the creation of 10,000 MW of new hydropower plants, no less than 5,000 MW of wind power and 500 MW of all forms of solar energy, and triple the capacity of other renewable energy sources, improving energy efficiency in Africa in all sectors (EUEI PDF, n.d.).

4.3. Determining the success of the AEEP so far

At this point, it will be useful to look at some of the precise developments that have emerged because of the implementation of the AEEP, or even larger Africa-EU cooperation. The achievements of AEPP, which are rationally longstanding in nature, cannot be efficiently estimated in the short term. However, it is worth noting some remarkable results to date.

Firstly, regarding the regulation of energy markets, the EU supports many projects in North Africa, for instance MedRing which seeks to connect Mediterranean states, the Mediterranean Solar Plan and DESERTEC (Magoum, 2020). However, the project takes longer to document tangible results, partly because of the long-distance AC transmission losses that need to be overcome.

Secondly, the EU likewise finances the standardization of the East African Reconstruction Team. The completion of energy markets is constant through projects such as the Medgas pipeline, which is under construction and will be used to facilitate gas transport from North Africa to Europe. In addition, the Caprivi Link interconnection was able to link Zambia's and Namibia's electricity distribution networks (Karamichalis, 2019). In the same way, the Felou hydroelectric plant along the Senegal River in Mali is an initiative of the African Union and the EU to unite the supply of electricity throughout Mali, Mauritania and Senegal (these three countries were traditionally based on inadequate electricity produced by high carbon sources). This fully integrated electricity infrastructure is set to create a highway between Africa and Europe, allowing the peoples of both continents to benefit from the enormous energy resources available on the African continent. It will also stimulate economic growth and improve living standards while protecting the environment, given its renewable character. DESERTEC is also a longstanding, though highly aspiring project, the outcomes of which will be fully realized in the next 40 years, if the plan is restored. Although many obstacles have not been yet overcome, this project aims to cover 15% of European electricity needs from solar power plants located in North Africa (Lilliestam and Ellenbeck, 2011, pp. 3380–3391).

Thirdly, numerous public-private enterprises have been created to increase access to funds for energy investment. The African Development Infrastructure Fund (EAIF) is a prominent public-private partnership that affords capital for the building of energy infrastructure in 47 African countries. These public-private partnerships are planned to embolden healthy competition in the energy sector and have been implemented in states such as Egypt, South Africa and Algeria. The EU Partnership Dialogue Facility (PDF), the ACP-EU Energy Facility and the European Development Fund (EDF) are also working to improve investment in African energy markets. It is known that African people need to educate to help themselves in financing energy projects, which means that the development of a strong banking sector must keep pace with the development of huge infrastructure projects, as well as those related to energy.

Lastly, the AEEP aims to increase energy access to the population of the EU and Africa. For example, the governments of Germany and the Netherlands at a cost of 36 million euros fund the Energy Development Project (Endev) in Benin. These initiatives have so far benefited approximately 3 million African individuals. The AEEP also seeks to develop renewable energy sources for use within Africa itself. In this respect, the EU is financing many projects, such as the Gilgel Gibe II hydroelectric power plant in Ethiopia, where 50 million euros are spent on electricity generation and the integration of electricity networks in the region. Likewise, Kenya's Olkaria II geothermal power station is funded through AEEP and related delivery mechanisms at a cost of 32.5 million euros, in line with the objective of improving energy efficiency and contributing to sustainable development in Africa. Moreover, the Renewable Energy Center of ECOWAS use of renewable energy sources, while the International Renewable Energy Agency (IRENA) established in 2009, provides knowledge through its network of experts.

4.4. Evaluation on the AEEP

Regardless of some of the accomplishments and thrilling projects abovementioned, views on AEEP range from optimism to skepticism and complement to criticism.

First of all, the AEEP has not been sufficiently exposed to create ideal cognizance of its existence, aims and profits to both continents, accompanied by the investment opportunities that it avails. For example, whereas the AEEP is very energetic, its outcomes are rarely given the

publicity that they merit. Many Europeans are not aware of the investment opportunities that Africa presents because of poor publicity. The AEEP needs to attract more European investment. In part, insufficient publicity stems, from its debatably unclear administrative structure, which seems to lack a specialist arm designed to enhance public relations and communicate its benefits to stakeholders, mainly those outside Africa and those with capitals to invest.

AEEP must overcome obstacles to achieve implementation. Initially, it was difficult for the African side to cooperate, to a certain extent due to the African skepticism of European energy interests, and the African side is not quite clear on what to expect from the AEEP, as opposed to the European side. Recognizing the importance of good faith policy in determining the success of the AEEP, the fossil fuel wealth of the West African nations of Ghana and Nigeria is one of the main reasons for their reluctance to cooperate. Contrasting the EU, the African Union does not impact the policies of its Member States.

However, it must build an integrated energy infrastructure to take advantage of the continent's enormous energy resources and thus promote economic growth and improvement of Africa's standard of living. Furthermore, AEEP must translate into tangible benefits for both parties. The AEEP must ensure that renewables are available to African individuals at a lower cost than the cost of biogas.

The procedure of assimilating energy networks in different countries needs the augmentation of stakeholders, such as European and African CSOs and private investors. The significance of assimilating the exploitation and use of renewable energy sources, as well as the greater involvement of public and private partners.

As the AEEP focuses on the future, it is particularly important to consider its direction. Of course, we cannot foresee the future with great confidence, especially when it comes to complex geopolitical issues like if North African states join the EU, or the EU does not exist at all, at least in its present form (Lilliestam and Ellenbeck, 2011, pp. 3380–3391). Additionally, energy infrastructures are time-consuming to install, partly due to unforeseen consequences that may emerge, suggesting that the most significant benefits of GDP could last up to a decade or more.

4.5. Strengths and Weaknesses of the AEEP

Based on the previous discussion, it seems that GNP has many benefits for both Africa and the EU. First, it recognizes the strategic significance and interdependence of the two continents, at least in terms of energy resources. On the one hand, the African continent, hosts huge, unexplored or in part exploited energy resources, which both continents need. On the other hand, Europe has the technological know-how and financial assets that can be used to exploit these energy resources. This synergistic association is mutually favorable.

Second, the AEEP aims to provide energy access and security for Africa and the EU, facilitating many aspects of development. Europe seeks to ensure the stability of its future energy supply whereas Africa seeks to progress the standard of living of its citizens. The enormous energy resources available in Africa, if harnessed and their revenues used conscientiously can accelerate economic growth and improve the everyday life of millions of African individuals.

Third, the AEEP give emphasis to a participatory approach both to energy management and other issues such as improving administration and living standards. The fact that GNP treats Africa as a mostly welcome departure from earlier European practices that were incompatible fragmented and focused on specific regions or even nations of the African continent. However, it is possible to create an overly interconnected situation where Europe must rely on Africa for a significant portion of its energy needs, while Africa must rely on Europe for technology and financial resources. This subtle relationship is based on political and in fact economic stability on both continents. A change in political ideology on both sides, or across the different African Union or EU states, could affect GDP, with durable consequences for the peoples of both continents. Moreover, the continued existence of the EU as a single economic and political bloc is an important determinant of AEEP's success as the continuation of its existence is undoubtful. AEEP also seems to see Africa as a single economic and political bloc, but Africa hardly ever adopts a single stance on any issue, just as European Member States tend to diverge in their views.

Furthermore, the joint expert group (JEG) is somewhat limited in that it cannot make new policy conclusions or initiatives. This is the role of political interests, such as those represented in the high level meeting held in 2010. Basically, the JEG does not provide policy for the AEEP, even if the parties involved are undoubtedly capable of doing so or at least improving them because of their experience. Implementation of the AEEP agenda has also faced financial constraints, partly because of the financial disadvantages of the AU, which has insufficient human resources to oversee the work of the AEEP, as well as the lucrative private sector. At the same time, official capacity needs to strengthen the level of engagement of both the EU and the African Union, as the AEEP is not legally binding. Implementation of some of the commonly agreed objectives tends to be uneven across the different RECs (Mangala, 2013).

4.6. Conclusions: Improving the AEEP for the Future

It is challenging to assess to what extent AEEP is a factual on-going partner, as it exists for a moderately little period, and as its profits are expected to become considerably more obvious in the next decades.

In this manner the strategies that can be adopted to improve AEEP include the ability to document tangible benefits on both sides to the continued existence of the AEEP, especially when "easy wins" have the potential to boost the investment potential needed for more complex and large-scale projects, mainly concerning renewable energy sources. Deprived of European interests deriving significant returns from their investment, the AEEP becomes doubtful about its ability to make durable improvements (Charles et al, 2013).

Regardless of the 2020 targets, the far-reaching targets are truly longstanding in nature and require an enduring multilevel commitment to fully exploit the potential of the AEEP. This should be done on a periodic basis and should be based on recommendations from various sources, not just the AU or the EU bureaucracy and its agents or politicians with temporary interests. The target here is to rationalize efforts towards activities that have an easy understanding of mutual benefits. To achieve this, efforts are being made and consideration has been taken into account in the AEPP governance. However, there is a risk that there will be

insufficient consultation with stakeholders not directly linked to AEPP, such as those with funds for investment in energy projects. Moreover, the focus should be on projects that promote a future energy model and not those that look for the extension of the existing energy structures. Encouraging investment in unsustainable energy options is unlikely to be in the longstanding interests of the EU or African states, even if they improve pressures on energy supply in the short term. In this regard, AEEP should look beyond 2020 and envision the most appropriate longstanding energy landscape for both continents.

To sum up, increasing investment in the African energy sector has the potential to lead to energy production for domestic use and export, as well as to create more employment in Africa. This could be only possible if investment opportunities are effectively marketed, especially with the EU, and their desirability is indicated to potential investors. These improvements also depend on the rapid maturation of the African banking and financial sector and the involvement of the private sector under the auspices of suitable governance structures to safeguard public access to energy.

Chapter 5: Other African Energy Institutions

In an effort to strengthen and expand EU-Africa energy cooperation, a set of norms, rules and procedures has been developed in order to *"facilitating the conclusion of specific agreements on key issues within the area covered by the regime".* These are a series of international institutions-international regimes which we will analyze immediately with a methodological aim to examine whether and to what extent *"can remedy the institutional defects of world politics in any of these three dimensions (liability, information, transaction costs), they can become effective devices for achieving state goals"* (Keohane, 1982, p. 338).

Consequently, it should be noted that the inclusion of international regimes–COMESA, EAPP, NELSAP and RAERESA- which established for enhancing energy cooperation, in the context of this study, is crucial, because on the one hand they are funded to a larger or less significant extent by the EU, and on the other hand, they reinforce the degree of interdependence of the African states with the European states, creating a mutually beneficial cooperative framework -

cheap energy resources for the European countries, know-how and economic development for the African states.

5.1. COMESA

The Common Market for East and South Africa (COMESA) was established in 1994, replacing the Preferred Trade Area (PTA) launched in 1981. The PTA aimed to promote "collective" self-confidence "of the newly independent states of South and East Africa through an integrated regional market, negotiated shortly after the collapse of the East African Community in 1977. COMESA was an important step towards creating an economic community. At the moment, COMESA consists of 19 Member States1 and is the second biggest of the eight Regional Economic Communities (RECs) formally recognized as building blocks for integration in Africa.

COMESA also plays a role in regional energy through EAPP (Eastern African Power Pool), despite its focus on trade, by reducing capital costs and improving the credibility of the power system and enhancing security of supply (AfDB, 2013). The EAPP was established in 2005 by seven East African countries and in 2006 it was approved as a specialized COMESA institution. However, the EAPP remains completely autonomous. Therefore, COMESA does not participate significantly in the implementation of the EAPP agenda. Instead, the main role of COMESA versus the EAPP is to provide a level of oversight and "policy coverage" and to provide the EAPP with greater political influence. Additionally with the disbursement of funding to the EAPP through the COMESA secretariat, COMESA also acted as a financial intermediary between donors and EAPP. EAPP devoted its resources mainly to preparing regulatory frameworks and building technical capacities for regional electricity trading.

5.2. The future of EAPP

The EAPP does not seem to be particularly interested in to take a leading role in regional energy cooperation in East Africa and has not pursued strategic approach cooperation with other regional entities dealing with energy. The result is that work related to regional electricity trade in East Africa is scattered across various organizations and initiatives, with inadequate coordination, creating a complicated environment to use the resources optimally.

As far as energy is concerned, it is unclear exactly how the commitment of the Governments of the region is in practice the closer integration of electricity and the pooling of power through the EAPP. Central to the position of Ethiopia is the dam of great Ethiopia that is under construction in the Blue Nile, which, as a result of the large volume of its tank, is bound to cause dramatic shifts in regional power relations (ECDPM, 2017). Therefore, Ethiopia seems determined to exercise control over the transmission and prices in East Africa. The perceived dominance of EAPP from Ethiopia has created tensions between Member States, leading to reduced confidence and mutual trust within the EAPP, two significant elements for the success of each regional power pool.

Other Member States with noteworthy strategic interests in the EAPP include Egypt and Kenya. Kenya has dramatically reduced its dependence on electricity imports through the recent development of its geothermal energy resources, regardless that has historically been based on these imports from Uganda (Otuki, 2015). Taking into account this development, Kenya considers the EAPP as an important mechanism to facilitate exports of future surplus electricity capacity and to exploit the economic opportunities associated with Transmission lines. Egypt, on the other hand, is considered by some to be a "blockade" of the EAPP agenda, and it has an interest in ensuring that the development of hydroelectric resources in the Nile Basin is limited. The recent diplomatic dispute involving Egypt and Ethiopia over the construction of the Grand Ethiopian Renaissance Dam (GERD) highlights Egyptian fears about the impact of increased hydroelectric energy growth in the Nile Basin for water safety and its political influence in the region (Nader, 2015).

5.3. The Nile Basin Initiative

Certain EAPP Member States are involved in regional energy cooperation through other regional organisations, such as the Nile Basin Initiative Action Plan. The Nile Basin Initiative (NBI) is a regional partnership to stimulate growth and address the critical challenges of the Nile Basin. The Nile states, namely Burundi, Ethiopia, Congo, Egypt, Tanzania, Eritrea, Kenya, Rwanda, South Sudan, Sudan and Uganda jointly founded the NBI in 1999 to exploit the NBI potential

benefits of cooperation and development of the Nile Basin. The partnership is still run by the Nile coastal states. It is based on the common belief that countries can achieve better results for all peoples in the basin through cooperation rather than competition. At the heart of this challenge is the urgent need to eradicate poverty. The partnership has been built around a common vision to improve the Nile Basin (NBI Secretariat, n.d).

The Nile Equatorial Lakes Subsidiary Action Program (NELSAP) is one of two investment projects under the NBI Basin Initiative (NBI). The other is the Eastern Nile Subsidiary Action Program (ENSAP). NELSAP promotes investments in energy development and trade, agricultural trade, productivity and fisheries and river basin management and development.

The Nile Basin Initiative/Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP), which approved and promoted the Interconnection of Electric Grids Project, received supplementary funding of USD 2.26 million from the African Development Bank (AfDB) mobilized by the European Union Africa Infrastructure Trust Fund (EU-AITF) to support Consultancy Services for two studies. The Power Network Analysis and the Regional Guidelines studies are vital for the physical and commercial operation of the NELSAP integrated grid system.

AfDB in cooperation with other development partners, including the European Union, the Japan International Cooperation Agency (JICA), the Government of the Netherlands and a leading German development bank, KfW Bankengruppe, has contributed to support the NELSAP project for the interconnection of electricity networks in 2015. The electricity interconnection project consists of six interconnections covering Burundi, Rwanda, Democratic Republic of Congo, Kenya and Uganda. Upon completion, the project will deliver 946 km of 220 and 400 kilovolt transmission lines and 17 associated substations in the five countries at a total cost of 415 million dollars: AfDB (USD 198M), JICA (USD 55M), Government of the Netherlands (USD 39.3M), Federal Republic of Germany (USD 92.5M) and EU (USD 29.72M).

Implementation of the NELSAP project for the interconnection of electricity networks will have a huge economic impact on the whole of East Africa. For the first time, countries will have the

opportunity to purchase low-cost surplus power from different borders and transfer them across many countries to their national customers. An integrated grid system will promote regional energy infrastructure planning of energy projects, which in turn will further reduce the overall cost of energy production in the region, enhance the efficiency of operation and management of utilities and encourage the development of enormous renewable energy resources that would not be economical if fully implemented to meet national demand.

The NBI/NELSAP with the support of Development Partners has played a key role in facilitating the preparation of cross-border regional projects, resource mobilization, and provides project implementation coordination and technical oversight on behalf of the member countries to contribute to the social economic development of the Nile Equatorial Lakes countries (NBI, 2015).

The African Development Bank announced in 2016 that it is assisting in the operation of studies funded by the EU-Africa Infrastructure Trust Fund (EU-AITF), which will provide professional advice on an electricity network connection plan in five countries of the Equatorial Lake of the Nile. AfDB is one of the partners involved in the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) project, which aims to build 927 kilometers of transmission lines and 17 connected substations in the Democratic Republic of the Congo, Burundi and Uganda to improve access to affordable electricity in the region (African Development Bank Group, 2019).

5.4. The Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA)

"The Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA) was established in 2009. The main objectives of RAERESA are capacity building and information exchange, facilitating energy supply policy, legislation and regulations, interregional cooperation and regional energy regulatory cooperation. During the last three years, RAERESA has been able to implement a number of activities included in its work program, such as organizing annual meetings, organizing a series of meetings of the portfolio

committees on electricity, oil and gas, renewable energy, energy, the environment, as well as energy efficiency and the implementation of a number of training laboratories.

On energy facility, a study was carried out by Egypt and approved by the 3rd RAERESA Annual General Meeting held in Lusaka in September 2012. The main objective of the report was to facilitate the development of recommendations on issues affecting the cost-effectiveness of energy interconnections and energy trade between members. The report could provide countries with the basic information needed to stimulate the electricity sector and facilitate investment in new technologies to increase overall electricity production.

The main findings of the study include that the average percentage of the population having access to electricity is 40.1%, based on data provided by only ten countries, while the high proportion of the population having access to electricity in a particular country does not mean the country is large. For example, the proportion of the population having access to electricity in Mauritius is 99%, despite its area being 1,865 km², while the rate in Congo is 9% and its area is 2,345,442. km2.

Most countries have designed electricity tariffs based on cross-subsidized social pricing and do not yet have subsidy removal plans, but are looking forward to owning their own electricity systems. There are some barriers that make it difficult for some countries to access electricity; barriers to access are mainly lack of supply, limited network availability, high contracting costs and high electricity costs. As for the issue of subsidies, most countries do not yet have it, but they are looking forward to owning their own electricity systems and also the tariff structure has no cross-subsidy data and also lifelong tax reduces consumer burden.

There are also many power interconnection projects that are quickly implemented by COMESA and Trilateral. These include: Zambia / Tanzania / Kenya (ZTK) Power Transmission Plan, Ethiopia / Kenya Power Interconnection Plan and Zimbabwe-Zambia-Botswana-Namibia (ZIZABONA) Interconnection Transmission Plan." (COMESA, n.d.).

5.4.1. Zambia / Tanzania / Kenya (ZTK) Power Transmission Plan

The Common Market for Eastern and Southern Africa, East African Community and Southern African Development Community (COMESA-EAC-SADC) Trilateral Committee, which is rapidly implementing the Zambia / Tanzania / Kenya Power Interconnection Plan, has secured Programme Management Unit (PMU) funding under the 10th European Development Fund, a program for three years, funded by the European Union. In this context, the Implementation Agreement was signed between the Common Market for East and South Africa (COMESA) and the Ministry of Mines, Energy and Water Development of the Republic of Zambia on the implementation of the Zambia-Tanzania-Kenya (ZTK) Interconnection Plan, under the 10th European Development Fund, funded by the European Union. The funds under the agreement signed between COMESA and the Ministry of Mines, Energy and Water of the Republic of Zambia for the implementation of the Zambia-Tanzania-Kenya Interconnection Line (ZTK) are intended to finance the activities of the unit Implementation Project (PI). The total funding under this agreement is approximately USD 4.9 million (COMESA, n.d.).

5.4.2. The Ethiopia / Kenya Power Interconnection Plan

Boosting intra-COMESA trade through small and medium-sized enterprises the World Bank had already approved $684 million for the Ethiopia / Kenya Power Interconnection project ($243 million for Ethiopia and $441 million for Ethiopia). The African Development Bank (AfDB) had approved US $348 million for Ethiopia and US $116 million for Kenya). Nevertheless, it should be noted that securing such a significant amount of funds would bring enormous progress towards the physical construction of the project (COMESA, n.d.).

5.4.3. Zimbabwe / Zambia / Botswana / Namibia (ZIZABONA) Interconnection Transmission Plan

The Zimbabwe-Zambia-Botswana-Namibia (ZIZABONA) link scheme connecting the Zimbabwe, Zambia, Botswana and Namibia power grids has been included in the North-South Corridor (NSC).

So far, three countries, namely Namibia, Zambia and Zimbabwe, have signed the ZIZABONA Inter-Government Memorandum of Understanding (IGMOU). Botswana also confirmed its support for the project and would sign the IGMOU, as there is no objection from the cabinet.

It is noteworthy that investors were interested in the Development Bank of Southern Africa (DBSA), which provided a preliminary indication of approximately USD 50 million. The African Development Bank has expressed the possibility of financing 40% of the debt requirement, with the remaining parties exploring with African financing partners. French Development Agency (AFD) (France) has expressed potential interest of USD 30-50 million. The European Investment Bank (EIB) considered ZIZABONA as a high priority project that the EIB would like to be involved in, including due diligence. The EIB will look at the size of funding comparable to other European agencies. Stanbic Bank (South Africa) also expressed strong support for the ZIZABONA project.

Along with the funding interest, sponsors will continue to work with other potential funders to reach the best possible financing option for the project to meet the funding requirement, estimated at 223 million dollars (COMESA, n.d.).

The most recent years have observed a reinvigoration of efforts to integrate power systems via power pools within the respective regional economic communities (RECs) in Africa as a means of addressing the continent's power challenges. African governments are increasingly interested in new regional, multilateral or bilateral approaches that underline improved coordination and 'pooling' of their efforts to construct more robust regional power grids with the potential of lowering capital investment requirements across the region and reducing system functioning costs (Armar, 2009, p. 2).

5.5. COMESA in African and global contexts

So how does the performance of COMESA's integration with other regional economic communities compare across the continent? This is not an easy evaluation, as other HRs have different issues to deal with, contain smaller groups of members, and be at different completion

points. Several countries are making progress, such as the East African Community (EAC) and the South African Development Community (SADC), while others are moving less slowly, such as the Economic Community of Central African States. While COMESA has made some moves to implement its customs union, it also violates the EAC's performance in this respect as well. The EAC successfully adopted and implemented its customs union in 2005 and has been able to implement more advanced intra-regional trade liberalization arrangements (Marinov, 2016, pp. 81–104). Even though economic theory often smiles at such agents of change, COMESA benefits politically from the absence of such regional hegemony and the associated tensions.

It is worth noting that the COMESA region, through the formation of East and South Africa (ESA) comprising 11 countries (COMESA members), has agreed to negotiate an economic partnership agreement (EPA) with the EU, with the expectation that the EPA will partially support economic performance and competitiveness of the region, as well as progress towards economic transformation and effective integration. Therefore, the main objective of the negotiations was to use the ESA-EU-EPA as a means of sustainable economic development in the region, while supporting the integration of the ESA states in a manner compatible with World Trade Organization (WTO) multilateral trade rules and building on Cotonou.

Partly in response to such conflict and in response to China's growing influence in Africa, the EU gave incentive to a joint Africa-EU strategy at the Lisbon Summit in 2007. The Africa-EU Joint Strategy contained two action plans (2008-2010 and 2011-2013) to provide targeted assistance to African states, including promoting regional integration. However, European aid to the continent has not been promised. In 2015, the EU adopted the Eleventh European Development Fund for Sub-Saharan Africa (as well as for the Caribbean and the Pacific) for the period 2014-2020. It is too early to see how effective these devices are, but they are being implemented at a time of worrying relations between the EU and African countries in the light of the EPA (Mangala, 2013).

5.6. Conclusions

In this manner, the Africa-EU Partnership is the official political channel through which the European Union (EU) and the African continent cooperate, participate in political dialogue and define their cooperation relations. By developing international regimes, such as COMESA, EAPP, NELSAP, The Nile Basin Initiative and RAERESA, *"improving the quantity and quality of information available to operators or reduce other transaction costs, such as the cost of organizing or making secondary payments"* (Keohane, 1982, p. 338), and concluding beneficial arrangements between European –African states. Consequently, although not fully checked, the neorealist inquiry, focusing mainly on defence-security issues, considering the limited role of international institutions in developing, enhancing and sustaining transnational cooperation (Waltz, 1979, pp. 115-116).

Chapter 6: Concluding Remarks

This dissertation examined the historical evolution of the Africa-EU Energy Partnership and its present role in facilitating cooperation between Africa and the EU. Both regions integrates mutually beneficial objectives from the AEEP, but still faces some significant challenges, especially in interpreting short-term fervor into longstanding outcomes. Certainly, the AEEP can be seen as a dynamic vehicle for mutual support and long-term improvements to the energy sector of both Africa and the EU. Both continents clearly have a necessity to cheap and renewable resources. This should be a durable motivation for all aspects of development, including improving living standards in both areas, and especially in Africa.

Overall, an energy partnership between Africa and the EU is built on traditional kinships between the two regions. From the geographical point of view, the EU views Africa as an energy partner due to its geographical proximity to Europe. Historically, the peoples of the two continents have been, for better and worse, interrelated over the centuries. A shared determination to change to a relationship based on mutual interest rather than worse exploitation or at best, as has historically been mainly the case, offers the required means of addressing these imbalances. Given the continuing importance of energy worries in both regions, a official energy

partnership, as represented by the AEEP, can serve as a actual and effective mean of realizing these broader goals, but only if there is a real long-term prospect for all.

The objectives of the African-EU Energy Partnership are the assurance of the development of energy resources and energy security, the enhancement of investments in energy infrastructures. Moreover, it aims for a greater share of income from oil and gas for development activities, the absorption of climate change into development cooperation, the enforcement of the energy partnership in order to enhance cooperation on energy security and access to energy and the promotion of civil nuclear power.

The partnership will have to be built on existing instruments of the general scheme of the Africa-EU Infrastructure Partnership and its Trust Fund, the EU Energy Initiative (EUEI) and its ACP Energy Facility. In addition, the National and Regional Indicative Programs under the 10th European Development Fund (EDF), the thematic program on Environment and Sustainable Management of Natural Resources including Energy (Africa-EU joint strategy 2008).

Concluding the description of the EU-Africa cooperation, we testified the basic problematique between neorealism and neoliberalism concerning institutions operation as dependent or independent variables from states national power. Thus, we checked the function of international institutions within the institutionalized Africa-EU regional Energy Cooperation in an attempt to determine whether institutions influence the prospects for cooperation and to what extent. Our case study shows that all the institutions set up for the development and operation of the AEEP enhanced cooperation between the states involved and between the latter and international regimes created by verifying the neoliberal working assumption that institutions are strengthening regional cooperation due to reduce the cost of verification, create repeatability and ease the punishment of cheaters.

In particular, in the case under consideration, energy cooperation was strengthened and institutionalized through a series of international regimes established *"to conclude some mutually beneficial agreements"* between governments and transnational actors.

To the extent that cooperation is confined between countries of different levels of development, between developed-developing countries, within the framework of international institutions and regimes, and because everyone benefits, to a greater or lesser extent, it is natural for cooperation to continue and expand. On the one hand, the least developed African states are finding markets for their energy resources while introducing expertise and foreign direct investment, which will contribute to their socio-economic and political-technological development. On the other hand, European states, by finding new energy markets at extremely competitive prices, are mitigating the measure of its energy dependence on Russia and generally acquiring the ability to formulate and implement an independent and unbundled energy security policy beyond the major East-West energy monopolies.

In this context, the role and importance of international regimes is demonstrated, *"to facilitate the conclusion of specific agreements on key issues within the area covered by the regime"* (Keohane, 1982, p. 338). More precisely, the Africa-EU partnership focuses primarily on cooperation on a continental level and in particular on the relationship between European and African trade unions. It therefore complements existing EU cooperation frameworks with sub-Saharan Africa and with EU Neighbourhood at bilateral and at regional level.

Confirming the neo-liberals' working assumption that *"international regimes help ensure that governments"* expectations are consistent. The regimes are partly developed because global policy actors believe that these arrangements will allow them to conclude mutually beneficial agreements that would otherwise be difficult or impossible to reach. In other words, regimes are valuable to governments where, in their absence, it would be impossible to conclude some mutually beneficial agreements. (Keohane, 1982, p. 338)

Thus, we can record the findings of our case study so as to clarify the utility of the two theoretical streams, neorealism-neoliberalism, of our methodological framework. For this reason, we will proceed to a thoroughly evaluation of the answers to the core questions of our study connecting with the theoretical framework.

a) Why Energy cooperation between Africa and EU is important?

The Africa-EU Partnership is important, regarding the fact that aims to bring Africa and Europe closer by enhancing economic cooperation and promoting sustainable development, while the two continents live side by side in peace, security, democracy, prosperity, solidarity and human dignity. In this context, both partners are determined to work together on a strategic and long-term basis to develop a common vision for EU-Africa relations in a globalized world. Their common interests include issues such as climate change, global security and the Sustainable Development Goals (SDGs). To the extent that such cooperation encompasses the field of energy security at regional and global level, it is worth asking the question of long-term research as to whether EU-Africa cooperation will continue or be limited in the light of the work of the European Union. In contrast with the neorealist assumption, on the interruption of transnational cooperation when it is expands on high policy issues. That is because like Keohane and Nye, described, “In a world of multiple issues imperfectly linked, in which coalitions are formed transnationally and transgovernmentally, the potential role of international institutions in political bargaining is greatly increased” (Keohane and Nye, 1977, p. 35; Grieco, 1988, p. 490).

b) What are the joint targets of the EU-Africa energy alliance?

In brief, EU-Africa energy cooperation's common goals are outlined in a series of conferences, ranging from the 4th EU-Africa Summit in Brussels in 2014 to the 5th AU-EU Summit in 2017. During the 5th AU-EU Summit EU and African leaders issued joint statement on 29-30 November 2017 in Abidjan, Côte d'Ivoire on "Investing in Youth for Rapid Integration of Growth and Sustainable Development", outlining the new common priorities for the Africa-EU Partnership in strategic areas from 2018 onwards, in particular investing in people - education, science, technology and skills development, peace, security and governance, migration and mobility and last but not least, mobilizing investment for sustainable reform in Africa.

Beforehand, at the 4th EU-Africa Summit in Brussels, the Heads of State and Government of Africa and Europe adopted the Roadmap 2014-2017. It focuses on the implementation of the common strategy in priorities such as peace and security, democracy, good governance and human rights, human development, sustainable and inclusive growth and development and continental integration and global and emerging issues.

From the preceding list of the common goals of the EU-Africa arrangement, we find that it is primarily an international regime, which fully validates Ruggie's definition of regimes as sets of *"mutual expectations, rules and regulations, plans, organizational energies and financial commitments, which have been accepted by a group of states"* (Katzenstein, Keohane and Krasner, 1998, p. 660). Consequently, reaffirms Arthur Stein assumptions that, *"just as societies create states to solve problems of collective action between individuals, other regimes are being created on the international stage to address the collective hypoxia that can result from individual behavior."* (Stein, 1983, p. 123). Also it seems to endorse the assumption of neoliberalism that institutions reduce the cost of verification, create repeatability and ease the punishment of fighters.

c) Is the initiative between Africa-EU in the energy sector aiding both parts?

On the above mentioned study it seems clear that the energy partnership between Africa and the EU has the potential to seen as a win-win situation, verified the neoliberals assumption that a cooperation among states in economic issues bring mutual benefits. The issue here is not how much does a state benefit from its partner, which the neo-realists focus on as an obstacle to transnational cooperation, but that they all have a profit. In particular, and in line with the neoliberal argument, the development of transnational co-operation to serve functional needs through international regimes, limited to economic-commercial sectors, may prove to be beneficial to all, in absolute terms. Most obviously, *"the EU is particularly keen to improve its energy security, especially in light of growing concerns about the availability of conventional energy sources, especially in the case of the liquid fuels needed for transport"* (Charles et al, 2011, p. 1147.

On the contrary, Africa is rich in energy potential, but it cannot invest sufficiently on its own to exploit it, in particular because of its under-resourced banking and financial sector (Misser, 2007). *"Africa needs to invest heavily in critical infrastructure, in particular with regard to electricity supply, to enable a more equitable distribution of energy produced on the continent.*

In addition to the simplest benefits that an energy partnership could offer, there are also more strategic geopolitical considerations. A fairer distribution of energy in Africa has the potential to

lead to a higher standard of living for citizens" (Njoh, 2000, pp. 286–296). These developments, which would lessen the breach between those in the lower strata of society and the elite, many of whom do not have access to electricity and the various technologies that depend on it, could lead to political reforms, such as more representative democracies, ensuring greater general stability in the region even better results for human rights (Saungweme, 2007). Improving political stability will also have a significant impact on strong energy supply and will ensure the creation of an African energy market that is attractive to European business interests - with the benefits for African states in providing cost-effective infrastructure as an initial effort to improve energy supply across the continent (Limão and A. J. Venables, 2001, p. 451)

d) How the Africa-EU Energy Partnership is developed?

Formal dialogue at various levels between Africans and European bonds guide the partnership. It is a partnership with many partners, led by EU and AU Member States together with various non-state actors, such as civil society organizations, youth organizations, economic and social actors and the private sector. It is developed in a set of rules and institutions affects relations between states, pushes the cooperation towards pluralism and diversity, guided through formal dialogue and meetings, at numerous levels, between African and European counterparts, and culminates in AU-EU summits. As a result, it is verified neoliberalism assumption that transnational contacts and coalitions have transformed national interests and attitudes (Tarzi, 2004, p. 115). Analytically we have a normative communication and cooperation (every three years summits) among the Heads of State and Government of Africa and the EU. In addition, we have stakeholder dialogue events, held on an ad hoc or regular basis between each AU-EU Summit and aim to attract the views and recommendations of key African and European stakeholders in various areas of partnership.

The EU provides specific support for the implementation of the partnership through two main channels. The first is the Pan-African Program, which provided € 845 million for the period 2014-2020. It supports projects with interregional, continental or global benefit. It is the first EU program to cover the whole Africa region. The second is the African Peace Facility, which provided over € 2.7 billion since 2004. It is the EU's main instrument to support peace operations

of African leadership, launch of African Peace and Security Architecture (APSA) and initiatives at the framework of Early Response Mechanism (Financing the Partnership, n.d.).

e) What is the role of African Energy Institutions and how do they support the EU-Africa Energy Partnership?

We have a set of African Energy Institutions, such as COMESA, EAPP, NELSAP, trying to manipulate the uneven development issue by improving the standards of living, using a set of programs and practices so at to reduce capital costs, enhance security of supply, improve credibility power system, promote economic growth. Regarding the fact of active interest of EU in Africa, starting from the EU-Africa strategy established in the the Lisbon Summit in 2007, with the two action plans (2008-2010 and 2011-2013) to provide targeted assistance to African states, including promoting regional integration, the African Union Commission is the main implementing arm of the Africa-EU Partnership, under the political guidance of the AU Member States. In addition, we have institutions of the African Union, such as New Partnership for Africa's Development (NEPAD), and regional economic communities in Africa play a prominent role in the EU-Africa Energy Partnership.

As a conclusion we can discern, that the multiple and complex institutional framework between EU-Africa in energy sector verified the notion of Arthur Stein about the regimes of common interest. Are peculiarities of the essential thematic areas in international relations characterized by a state of complex interdependence, when the actors agree to follow a collaboration strategy as the best optimal policy (Haas, 1982, p. 211)?

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