PRE-ASSESSMENT REPORT OF THE MOZAMBIQUE ENERGY SECTOR UNDER THE PRINCIPLES OF THE INTERNATIONAL ENERGY CHARTER AND THE ENERGY CHARTER TREATY

THE REPUBLIC OF MOZAMBIQUE

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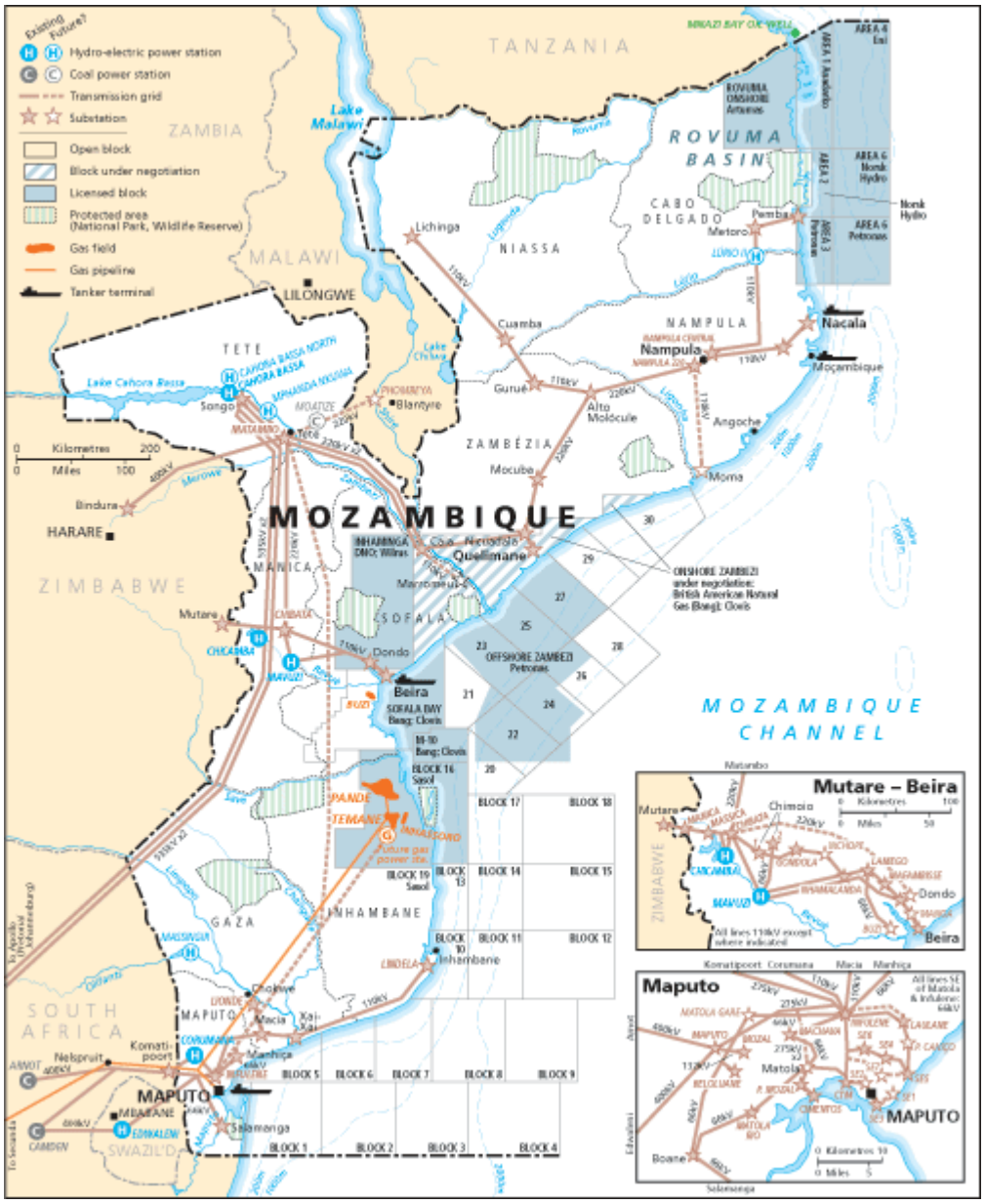
The International Energy Charter Secretariat, in collaboration with the **European Commission, DG Development and Cooperation**, has developed a capacity building programme with African countries to introduce them to the universal market-based principles enshrined in the Energy Charter Treaty, and to assess their energy sectors against these universal principles. The objective is to promote an investment friendly regulatory environment that is necessary to address the energy challenges facing the African continent.

This report for Mozambique has been funded under the EU Technical Assistance Facility for the Sustainable Energy for All Initiative – Western and Central Africa and is the result of the capacity building programme that for three months brings secondees from African governments to the Energy Charter Secretariat in Brussels. The secondment of a civil servant designated by the Ministry Energy of Mozambique and the elaboration of this report are part of a broader strategy aiming to engage the country in further energy policy reform in line with international standards.

The Energy Charter Treaty is a multilateral international treaty concluded in 1994 currently in force among 54 contracting parties from Europe, Central Asia, South Caucasus and East Asia. The Treaty offers a multilateral cooperation platform for the promotion and protection of energy investments. **The International Energy Charter Secretariat** offers its technical assistance to contracting parties and observer countries by means of energy investment country reports, policy recommendations, model agreements, regional cooperation, seminars and training programs, private sector dialogue.

This Report was drafted by **Mr Anucêncio Bouene** from the Ministry of Energy of Mozambique. The work was guided by **Mr Can Ogutcu** and **Dr Ernesto Bonafé** from the International Energy Charter Secretariat. Final edition was conducted by **Ms Crystal Svanikier**.

Map of Mozambique



Abbreviations

AfDB	-	African Development Bank
ANEA	-	Agencia Nacional de Energia Atomica
APE	-	Acordo de Parceria Economica
BIT	-	Bilateral Investment Treaty
CCGT	-	Combined Cycle Gas Turbine
CNELEC	-	Conselho Nacional de Eletricidade
CPLP	-	Comunidade de Paise de Lingua Oficial Portuguesa
CTRG	-	Central a Termica de Ressano Garcia
ECT	-	Energy Charter Treaty
EDM	-	Electricidade de Mocambique
EITI	-	Extractive Industries Transparency Initiative
ENH	-	Empresa Nacional de Hidrocarbonetos
FDI	-	Foreign Direct Investment
FUNAE	-	Fundo de Energia
Gj	-	Gigajoules
ICO	-	Islamic Cooperation Organization
IMF	-	International Monetary Fund
INE	-	Instituto Nacional de Estatistica
KTOE	-	Kiloton Oil Equivalent
LNG	-	Liquefied Natural Gas
ME	-	Ministry of Energy
MIT	-	Multilateral Investment Treaty
MONTRACO	-	Mozambique Transmission Company
MOPI	-	Intelectual Property International Organization
PETROMOC	-	Petroleos de Mocambique
PPP	-	Public-Private Partnership
SADC	-	Southern Africa Development Countries
WB	-	World Bank
WTO	-	World Trade Organization

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Executive Summary

This Report was drafted by Anucêncio Bouene from the Ministry of Energy of Mozambique. The research work was guided by Mr Can Ogutcu and Dr Ernesto Bonafé from the International Energy Charter Secretariat. Final edition was conducted by Ms Crystal Svanikier.

The Energy Charter is an international organization that promotes the rule of law and regulatory stability for investment, trade, transit and efficiency in the energy sector across the world. As part of the objective to expand its principles and rules beyond its traditional borders, the Energy Charter has updated the 1991 European Energy Charter into the 2015 International Energy Charter in order to reflect some of the most topical energy challenges of the 21st century, such as the growing weight of developing and emerging countries for global energy security, the "trilemma" between energy security, economic development and environmental protection, the need to promote access to modern energy services, diversification of energy sources and routes, and regional integration of energy markets.

The International Energy Charter is in line with the EU and international policy agenda as reflected in the UN Sustainable Energy for All (UNSE4All) initiative, which mandates a 3-goal target of ensuring universal access, doubling the share of renewable energy and doubling the rate of improvement in energy efficiency by 2024. The European Union has allocated more than EUR €3 billion over the next 7 years (2014-2020) to promote sustainable energy in Sub-Saharan Africa. The importance of these efforts has been reinforced by the 2014 G7 and G20 meetings in Brussels and Brisbane, respectively, which highlighted the need to provide strategic assistance for sustainable socio-economic growth and financial rebalancing in developing and emerging countries.

In this context, the Energy Charter Secretariat, in collaboration with the European Commission, has developed a capacity building programme with African countries to introduce them to the universal market-based principles enshrined in the International Energy Charter and the Energy Charter Treaty and to assess their energy sectors against these universal principles. The objective is to promote an investment friendly regulatory environment that is necessary to address the huge energy challenges facing the African continent. The current report is the result of that capacity building programme, which for three months brings to the Secretariat in Brussels secondees from African governments.

This report provides an overview of the Mozambican energy sector. The report presents national reforms against the core principles embodied in the International Energy Charter and the Energy Charter Treaty: Security of supply and universal energy access, open and sustainable markets, national sovereignty, regional market integration, regulatory stability and predictability, research and technology transfer, and international cooperation. Accession to the International Energy Charter and the Energy Charter Treaty contribute to

upgrade national energy policy and legal framework according to international standards, which improves trust and reliability in an increasingly global and interdependent energy sector. The more countries subscribe to those principles, the more they will effectively set the standard for international energy relations.

1. Introduction

The Energy Charter Treaty is an internationally legally binding text providing clear and predictable rules in the areas of investments, trade and transit and energy efficiency, it provides dispute resolution mechanisms, while explicitly recognising and protecting national sovereignty over natural resources. The Energy Charter Treaty creates an environment in which international energy markets can function effectively, and thereby helping to create an internationally level playing field and promoting the rule of law in the energy sector. The Energy Charter Treaty was signed in 1994 and entered into force in 1998. It currently has been signed by, or acceded to, by 54 countries, including the European Union.

The political foundation of the Energy Charter Treaty was the European Energy Charter of 1991, a political declaration expressing the commitment of a signatory country to move towards an upgraded international legal system. The European Energy Charter is a political commitment by its members to encourage energy cooperation with the following objectives and principles: development of open and efficient energy markets, creation of conditions to stimulate the flow of investment into the energy sector and encourage the participation of private enterprise, non-discrimination among participants, respect for state sovereignty over natural resources, and recognition of the importance of environmentally sound and energy efficient policies. Up to now the European Energy Charter has been signed by sixty-four European, Asian, Australasia, North American and African states, as well as the European Union.

The Astana Declaration of November 2014 highlights the strategic objectives of the Energy Charter to expand the principles of the Energy Charter Treaty beyond its traditional borders by maximising on the increasing interest of new countries in different regions around the world. The adoption of the International Energy Charter in 2015 reflects the implementation of this objective.

Having Mozambique sign the International Energy Charter, and later the Energy Charter Treaty, sends a political signal to the international community that it shares a number of international energy principles on trade, investment, transit and energy efficiency. It upgrades its national energy sector according to international principles, which would raise its profile and help to attract foreign investment. The objective of this report is to present the Mozambican energy sector against the universal principles enshrined in the International Energy Charter and the Energy Charter Treaty and it concludes that the Mozambican energy objectives and structural reform match the principles of the International Energy Charter and therefore, should embrace it, and after that, the Energy

Charter Treaty.

2. Country profile

2.1 Overview

According to 2007 estimates, Mozambique is a country with a population of around 25 million people[1] and has had an average economic growth of 7% for the last four years, well above the average economic growth for the Sub-Saharan African region of 5.5%. Since the devastating civil war which ended in 1992, the country has enjoyed a remarkable social and economic recovery and has managed to keep the average annual inflation rate below the double-digit range for the last ten years.

The 2014 Doing Business Report ranked Mozambique 139th out of 189 countries in the world, in 15th position out of the Sub-Saharan African countries surveyed, and 8th position in the investor protection ranking index. In the 2013 Index of Economic Freedom, Mozambique was placed 22 in the Sub-Saharan African region.

Mozambique's macroeconomic performance over the last fifteen years has been the result of the country's political stability and its adaptation of liberal market policies that have increased foreign direct investment within its economy. The need to further enhance economic growth relies heavily on the country's ability to develop its energy sector in a way that allows for further interaction with regional and global markets, utilizing all of Mozambique's diverse natural resources. This report reviews the important tools required for Mozambique to achieve these goals.

The Poverty Headcount Index fell by 15 percentage points between 1997 and 2008 (out of a total population of 25 million)[2]. Inequality remained relatively low by regional standards and progress has been made toward achieving the key Millennium Development Goals of reducing infant mortality and primary enrolment. Nevertheless, with an annual per capita income of US $647[3] in 2014, 53.25% of the population still live below the poverty line.[4] Mozambique remains a poor country with considerable social and economic challenges; infrastructure deficits and services (energy, transport, water and sanitation, and the telecommunication industry) are still inadequate. In addition to this, there are serious unmet education and health needs.

[1] INE 2014
[2] INE 2014 The Mozambique population is 25 041 922 of people. www.ine.gov.mz/
[3] INE 2014 (National Bureau Statistics).
[4] In Mozambique the poverty line in is 18,4 Metical, or around 60 US cents.

Located strategically in southern Africa, Mozambique is member of several international organizations, such as the Southern African Development Community (SADC)[5], the *Comunidade de Paise de Lingua Oficial Portuguesa* (CPLP)[6], and the Commonwealth of Nations. Mozambique has a strategic relationship with European Union (EU), as the EU is the country's second most important economic partner, under the *Acordo de Parceria Economica* (APE), which also includes Botsawana, Lesoto, Namibia and Swaziland. This agreement provides for duty-free and quota-free access to the EU market. Mozambique also benefits under the African Growth and Opportunity Act (AGOA) program, under which the American government allows African goods duty-free access to US markets. Mozambique has also adhered to the Extractive Industries Transparency Initiative (EITI) principles since 2012.

The urban and peri-urban areas are expected to grow at 4% annually. However, only around 40% of households have access to electricity, with over half of them located in Maputo and its surrounding areas. A large portion of the remainder is located in the provincial and municipal capitals. Most of these urban and peri-urban centres are connected to the main national electricity grid, which is owned and operated by the Mozambican power utility, *Electricidade de Moçambique* (EdM). Access to grid-based electrification in the rural areas is extremely low and due to low population densities and geographically dispersed loads, will continue to remain very low for the foreseeable future. Off-grid electrification schemes have – and continue to have – increased access to modern energy services. Looking forward, substantial and sustained investment is required to systematically increase access to electricity nationally. Such a national electricity access scale-up program needs to be anchored by a long-term national electrification strategy, as well as a medium-term cost rollout and investment program for both grid-based and off-grid projects.

2.2 National constitution

The Mozambican national constitution[7] establishes the basic principles of the Republic of Mozambique. It sets out the country's fundamental objectives, which include the defense of independence and sovereignty, consolidation of national unity, the promotion of balanced economic, social and regional development, the defense and promotion of human rights and the equality of citizens before the law. It also highlights the importance of the development of the economy and scientific and technological progress, and the establishment, and development, of relations of friendship and cooperation with other peoples and states.[8]

[5] The Southern African Development Community (SADC) comprises of more than 250 million people, and Mozambique is considered the gateway to the region.
[6] Includes all countries with Portuguese as its official language, including Equatorial Guinea.
[7] The first Mozambique National Constitution was adopted in 1975.
[8] Article 11, National Constitution of Mozambique (1990).

Under the national constitution, Mozambique has acceded to and observes the United Nation Organizations Charter and African Union Charter principles. All international treaties and protocols ratified by the country remain in force under Mozambican legal framework. In terms of international solidarity, Mozambique actively participates in the international area to restore a fairer and more equitable economic both domestically and regionally.

In terms of economic rights, the Mozambican constitution recognizes and guarantees private property rights. Expropriation is only carried out in rare cases of necessity, particularly in utility and public interest under the national laws, and will be carried out with right to fair compensation

In terms of labour rights, the national constitution establishes the right of freedom association and labour union under the organization and democratic managements principles. The national constitution also emphasizes that natural resources within Mozambican territory (i.e. under ground, in the inter water, in the sea and in the economic free zone) are state property. The state makes inventories and values the natural resources before setting the terms and conditions for its use and establishes the framework under which benefits accrue to the state.

Under the national constitution, the state also mandates that foreign investors operate within the national economic policy framework, which allows foreign enterprises to participate in all national territory and economic sectors, except for sectors where it is reserved for state operation. The constitution establishes that land is the property of the state and therefore it cannot be sold, transferred or mortgaged. The state also seeks to protect the national ecological balance through environmental conservation in order to enhance development and improve living conditions.

3. Energy sector profile

3.1 Institutional system and stakeholders

a) The Ministry of Energy

The Ministry of Energy is responsible for national energy strategic planning and policy formulation, as well as overseeing the operation and development of the energy sector. Its main mission is to ensure the implementation of the rural electrification program, ensure increased access to modern energy sources, ensure the reliable and quality supply of energy, and to promote diversification of the energy matrix through the use of new technologies and renewable energy.

The Ministry of Energy handles three thematic areas, i.e. the power sector, renewables and liquid fuels, and is responsible for a central services management group. The Ministry of Energy is represented in the provinces by Provincial Directorates of Mineral Resources and Energy. While the Ministry of Energy has experienced remarkable development in the last 10 years, it remains seriously understaffed with respect to its level of responsibilities and volume of work, and requires significant institutional strengthening and capacity development.

b) Electricidade de Moçambique

*Electricidade de Moçambique (*EdM*)* is a vertically-integrated government-owned power company with an installed capacity of 140MW in hydropower generation (86 MW operational) and an installed capacity of 109 MW (82 MW operational) in thermal power stations. EdM buys most of its power supply (400 MW) from *Hidroelectrica de Cahora Bassa* (HCB)[9], which owns and operates the *Cahora Bassa* plant on the Zambezi (2,075 MW). The Government of Mozambique owns 92.5% percent of HCB, which operates as an Independent Power Producer (IPP). The bulk of the electricity generated at HCB is exported to South Africa, with a small amount sent to Zimbabwe. EdM sells any excess electricity on the Southern Africa short-term energy market. The national transmission grid is currently interconnected with South Africa, Zimbabwe and Swaziland.

c) The "Fundo Nacional de Energia"

The *Fundo Nacional de Energia (*FUNAE*)* is an energy fund created by the Decree 24/97 with a mission to promote more energy access in a sustainable and rational manner. It aims to finance and provide financial guarantees for energy projects that contribute to the development, production and productive use of alternative energy sources in rural areas. Since its establishment, FUNAE has been able to implement numerous successful projects using solar, wind and biomass energy resources and technologies. It has also been successful in bringing modern energy services (e.g. water pumping, crop grinding, communications, etc.) to schools, clinics and communities. FUNAE has four offices in Sofala, Zambezia, Tete and Nampula.

d) The "Conselho Nacional de Electricidade"

The National Electricity Council, *Conselho Nacional de Electricidade (*CNELEC*),* was established as an independent advisory regulatory body for the power sector in 2008. In early 2009, the Government of Mozambique approved the allocation of 2.5% of concession

[9] In November 2012, the Government of Mozambique completed the historic buy-back of the Cahora Bassa Hydroelectric Power Generation Facility, acquiring an additional 7.5% stake.

fees from *Hidroelectrica de Cahora-Bassa* to the advisory body, in addition to a 25% share of any other electricity sector concession fees to fund CNELEC's operating budget.

CNELEC was established under the Electricity Law and it functions as a legal entity with both administrative and financial autonomy. Its aim is to serve as a consultative body as well as a conciliation, mediation and arbitration authority for disputes between different concessionaires, as well as between concessionaires and consumers.

Currently, there is no independent regulator for the energy sector in Mozambique. The regulation and the supervision of the electricity sector is assigned to the Ministry of Energy through the Electrical Energy National Directorate. The CNELEC is under reform to become a regulatory authority, not only to the electricity sector, but to the entire energy sector (including the fuel and natural gas).

Similarly, the renewable energy sector is also dependent on the Ministry of Energy through the Renewable Energy National Directorate (*Direcção Nacional de Energias Renováveis* - "DNER"). The government is now in the process of endorsing CNELEC as the national regulatory authority. However, the relevant authority and responsibilities of the regulator have not yet been defined. Project documents are currently entered into between the concessionaire and the relevant authority (ME, Council of Ministers and Provincial Governors).

There is also the National Agency for Atomic Energy (ANEA), a public law entity that is responsible for managing protection against radioactive hazards and ensuring the environmental safety and protection against ionizing exposition and radiation.[10]

3.2 National energy mix

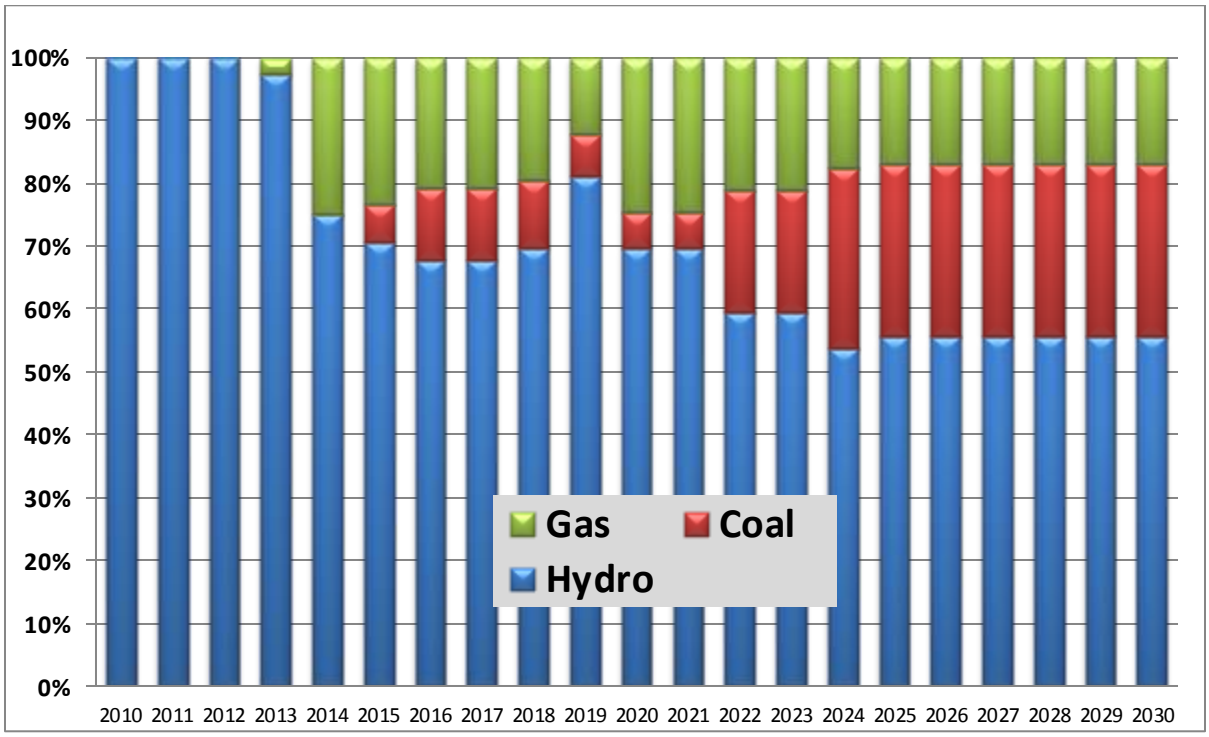
Mozambique has a considerable amount of energy resource potential. The development of the country's hydro, natural gas, coal, biomass and renewable resources can put the country in a favourable position to respond, not only to internal demand, but also regional and international demand as well. The energy mix in Mozambique is dominated by hydropower, and it has long been an important part of the Mozambique power system because of the large-scale of potential development and its low average cost of electricity generated, lower than any other technology, renewable or otherwise.

a) Hydropower

[10] In 2006, Mozambique adhered to the International Atomic Energy as result of the recognition of the importance of the nuclear energy application in the economic and social impact area, namely healthy, mining, environmental, agricultural and animal production.

Mozambique is one of the largest producers of hydropower in Africa, and most of its production comes from one important hydro plant Cahora Bassa (run by HCB) that has an installed capacity of 2075 MW. There are other, smaller hydro plants, with combined total installed capacity of 225 MW. These include Mavuzi (50 MW), Chicamba (40MW), Coruma (16.6 MW) and Massingir (28 MW). Mozambique's total installed hydro capacity is around 2300 MW, and the country relies on it for a significant share of the total power generated – around 99% (Refer to Table 1). This excludes new upcoming large power projects.

Table 1: Mozambican energy mix (Forecast)



Source: Ministry of Energy 2013

b) Natural gas

Mozambique will become Africa's second largest natural gas exporter, after Nigeria, when natural gas production is set to increase to 230 billion cubic metres in 2040. In addition to this, Mozambique will contribute 26% of the gas supplies to the region by 2040[11] when Pande and Temane (3,59 TCF) and Bacia do Rovuma (191 TCF) both come on stream. There is 800 km of gas pipeline infrastructure from Temane to South Africa (Secunda), and there is also an internal gas distribution network for domestic and industrial use that has an annual capacity of 3 million of Gj. However, there are gas-to-power central stations, such as Temane (80Mw) located in the North of Mozambique (Inhambane province). Central

[11] International Energy Agency (2014) *Africa Energy Outlook: A focus on energy Prospects in Sub-Saharan Africa* (IEA Publications; France).

Termoeletrica de Ressano Garcia (CTRG) is located in Ressano Garcia, south of Mozambique and next to the South Africa border. CTRG is a gas fired power plant with an installed capacity of 175 MW and operates on natural gas from Temane gas field. This plant exports peak-electricity to South Africa. These new important plants are changing the energy mix in Mozambique and increasing the amount of gas being used to develop the domestic and region power sector.

c) Mineral coal

Mozambique is envisaged as a country with great potential in the production and export of coal, with potential reserves of more than 25 billion tons of mineral coal, including coque coal and termic coal. Most of this is located in the Tete, Manica and Niassa provinces. Since 2011, international investors have planned to construct a coal-fired power plant, not only to provide electricity for its mining operations, but also to reinforce the energy supply sent to the national and regional grid. More coal-fired station projects are planned from 2015, which include Moatize (300 MW), Benga (300 MW), Nkondezi (650 MW) and Jindal-Nhantsanga (660 MW). In spite of all this, coal does not currently represent any share in the power generation in Mozambique.

d) Renewable energy

Mozambique has enormous potential in renewable energy, which include solar, wind, biomass and geothermic resources. This potential was confirmed by the Renewable Energy Atlas, which stated that Mozambique had a potential of 23,026 GW of energy. In addition to this, there are a number of on-going mini hydro and solar projects central to the plan of maximizing the benefits from the country's renewable resources.

e) Solar

Solar plays an important role in the energy mix in Mozambique. There is approximately 5 kWh/m2/day average solar radiation which contributes for use in different technologies like PV systems and thermic solar systems for water heating. There are some projects to increase electricity access in remote areas of all provinces by providing schools, clinics and households with PV systems.

There is also a solar station (*Central Fotovoltaico de Muembe*) in a remote area in North of Mozambique with an installed capacity of 400 kW and provides electricity to a small number (approximately 350) private and public institutions and homes.

f) Biomass

Mozambique has around 2 GW of biomass potential. There are around 17 million hectares of forest and most of this area is located in the Zambezi, Sofala and Niassa provinces. Biomass meets around 80% of the energy needs in Mozambique, and it includes resources from wood, bagaco from the sugar industry and industrial waste. However,

firewood is still the most used biomass resource for domestic needs in the rural and semi-urban areas.

g) Wind

There is 6 to 8 m/s wind potential, which can only produce electricity on a small to medium scale. The total potential is around 4.5 GW, with an immediate potential connection of around 230 MW. Gaza and Maputo are locations of the optimal wind resource, where average wind speeds are approximately 7m/s.

h) Geothermic and oceanic

Geothermic and oceanic energy are also part of the renewable energy mix, with a small available potential of 200 MW.

For easy reference, please refer to Table 2, which presents the change in Mozambique's energy production and exports by energy source between 2000 and 2011.

Table 2: Mozambique Energy Production and Exports (2000-2011)

KTOE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Production (Net)	**7253**	**7535**	**7740**	**7713**	**9161**	**10362**	**10937**	**11332**	**11781**	**11910**	**12440**	**12786**
Biomass	6418	6512	6645	6772	6907	7045	7186	7398	7631	7816	8005	8199
Electricity	834	1022	1093	938	1007	1142	1265	1381	1300	1497	1432	1417
Natural Gas	1	1	2	3	1214	2116	2414	2476	2772	2551	2967	3126
Oil	0	0	0	0	33	59	72	77	78	46	36	44
Import	**658**	**921**	**798**	**1167**	**1307**	**1207**	**1295**	**1352**	**1307**	**1350**	**1489**	**1684**
Electricity	112	335	335	523	680	694	728	737	706	717	734	737
Oil	546	586	463	644	627	513	567	615	601	633	755	947
Export	**670**	**814**	**870**	**698**	**1965**	**2954**	**3320**	**3462**	**3724**	**3529**	**3876**	**4009**
Electricity	670	814	870	698	778	899	980	1062	964	1092	1038	1028
Natural Gas	0	0	0	0	1187	2055	2340	2400	2760	2437	2838	2981
Oil	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Energy Statistics 2012, Ministry of Energy

Under Mozambique's current energy strategy, access to, and the development of, a diversified range of energy sources is seen as critical to the sustainable use of those resources in terms of energy security, environmental protection and market efficiency.

In terms of fuel products, Mozambique does not yet produce oil or fuel products, except for condensates from natural gas. As a result, all other fuel products have to be imported. In 2011, Mozambique imported about 920,000 tons[12] of petroleum products (see the Table 3) against 535,000 tons in 2000, representing an increase of 73% and an average increase of 6% per year. Fuel price subsides have stimulated domestic fuel consumption and its increase during this period. The transport sector is also responsible for the vast majority of fuel consumption, followed closely by industrial activities.

Table 3: Mozambique Energy Access Rate (2005-2014)

Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Energy Access Rate (%)	7								39	40
Consumer of NEG (Million)	1,5	1,7	1,8	2,1	2,9	3,5	4	5,7	6,3	6,5
Isolated System (Million)	0,1	0,3	0,4	2,4	2,7	2,8	2,9	2,9	3,5	3,7
Total (Million)	1,6	2	2,2	4,5	5,6	6,3	6,9	8,6	9,8	10,2

Source: Ministry of Energy, 2014

In terms of natural gas, the SASOL/ ENH consortium have been producing condensates from gas extracted from the Pande/ Temane field since 2004 and all condensed production is exported.

In terms of LNG, Mozambique imports it from South Africa, having imported 15,000 tons of LNG in 2011, against 7,700 tons in 2000. This represents an increase of almost 94%. The limited capacity for storage has contributed to stagnation in the markets over the last seven years.

[12] Conversion factor, including 0s ktoe

4. National energy strategy

*The **2015 International Energy Charter** explicitly recognises the sovereignty of each state over its energy resources and its right to regulate energy transmission and transportation within its own territory, respecting all relevant international obligations. In the spirit of political and economic cooperation, signatories agree to promote the development of efficient, stable and transparent energy markets at regional and global levels, taking into account environmental concerns and the role of energy in each country's national development. To this end, signatories agree to take coordinated action to achieve greater coherence of energy policies, which should be based on the principle of non-discrimination and on market-oriented price formation.*

4.1 The 2014-2023 National Energy Strategy

Mozambique's Energy Strategy was designed for a ten-year period (2014-2023) and it provides a vision and path to respond to the challenges and opportunities in the power sector. The main goals are to reinforce Mozambique's position as an important regional energy producer, to support social development and poverty alleviation, and to promote general economic growth.

The mission under this strategy is to further diversify the mix of energy forms used, and contribute to industrial and socio-economic development. Hence, under the strategy, the Government of Mozambique will continue building institutional capacity in the sector to ensure the efficient promotion and regulation of the sector, which is needed to complete current infrastructural projects and enhance Mozambique's role within the SADC region.

In addition to this, the new energy strategy has taken the new natural resource discoveries – such as the natural gas at the Bacia do Rovuma (North of Mozambique) and the mineral coal of the Tete (Centre of Mozambique) into account, increasing Mozambique's energy sources used for power generation, and which will change the Mozambique energy matrix in the medium and long term.

This strategy is oriented along five important themes:

i) Production and transportation of electricity,
ii) Production and required infrastructure for fuel,
iii) Distribution and electricity access and fuel,
iv) Funding and pricing, and
v) Capacity building at the Ministry of Energy, which aims to increase the Ministry's

ability to respond to identified opportunities and challenges in the sector.

In terms of the challenge of universal access, the goal is to ensure universal access by using the country's diverse energy resources, i.e. hydro, fuel and natural gas.

Even though Mozambique has rapidly increased energy access over the past decade, only 40% of the population currently have access to modern forms of energy, which is divided into 26.4% connected to the national grid electrification and 14% in off grid (which include the PV systems in remote areas and gas-to-power). All district headquarters are fully electrified. Energy access rates have increased from 7% in 2005 to 14% in 2014. The average consumption in Mozambique was around 200 kWh per capita per year in 2013, being much lower when compared to neighbouring Zambia, Botswana and Zimbabwe (all above 500 kWh per capita per year).[13]

The use of solar energy as an option to deal with increasing energy demand in public services (e.g. schools, health centres, buildings, including the staff homes) is a viable option for increasing energy access in remote areas. It is estimated that around 4 million people have been given access to power via this option over the last ten years. In around 201 villages, more than 669 schools and 623 clinics, including 77 buildings were covered by the PV systems project in Mozambique.[14] Equally, more than 30,000 people in remote areas have benefited from 56 water pump systems, irrigation units and the domestic uses that come from the PV systems, resulting in improvements in living conditions.

The success of the project has made it economically feasible to produce solar panels in Mozambique, an important achievement that further reduces the cost of using solar energy and allows for its increased use in the country's energy mix.

Mozambique has ambitious and progressive expansion plans for its energy industry, particularly in the urban and peri-urban areas, in which the government has expressed its desire to increase energy access to 50% of the population by 2023. The Government of Mozambique also plans to launch a transmission and distribution grid rehabilitation program for the entire national territory to increase energy quality and efficiency in urban areas. There are also plans to further strengthen the institutional capacity of FUNAE to increase its role in the process of rural electrification.

In addition to this, Mozambique plans to ensure there is at least one petrol station in each of the 128 districts around the country and to promote the use of natural vehicular gas (NVG) for private and public transportation. To fulfil this goal, the government is taking action to create licensing legislation for NVG stations, as well as providing financial incentives to encourage vehicle conversion and hybrid vehicle purchase. This will reduce the country's dependence in oil imports, an important part of Mozambique's import cost.

[13] International Energy Agency (2014) *Africa Energy Outlook: A focus on energy Prospects in Sub-Saharan Africa* (IEA Publications; France).
[14] Ministry of Energy 2014.

The Government of Mozambique also plans to promote the installation of 400 MW of renewable energy systems, which will include 200 MW of mini and medium hydropower stations, 150 MW of wind energy, 50 MW of solar PV systems, and 50MW of biomass energy.

The Government of Mozambique also plans to do the following:

(i) *Regulation* – Establishment of an energy authority as the regulator for the entire energy sector, which will include liquid fuel, natural gas (downstream) and renewable energy.

(ii) *Energy efficiency* – To promote habits of reasonable and responsible consumption of energy and to create a legal framework that guarantees these behaviours both in the efficient production and consumption of energy.

(iii) *Feed-in Tariff* – To be approved by the government, the tariff for renewable energy is for projects in which the generation cost is equivalent to the contract cost of natural gas power stations, with an extra incentive on the biding process and an environmental tax. Special attention will be made so that there are no increases to the EDM operational and maintenance costs, which need to be retained.

(iv) *The new tariff methodology settlement* – Due to the large-scale energy projects in Mozambique, the investments made are significant. Therefore, tariff methodology settlement is an important tool used to help 'bail out' the investor in this sector, especially in operations on the local market. The new tariff needs to take the operation and maintenance cost into account.

(v) Rural and Peri-Urban Electrification – The main challenges are extending grid access, improving the quality of the energy, and improving the capacity of the administrative posts to promote the productive use of energy and to generate more income. The goal is to mobilize USD$ 200 million every year over the next seven years to expand and improve energy access in the rural and peri-urban areas, achieving 44% universal access by 2021.

The government is also looking to mobilize USD$ 350 million to improve the quality of energy in Maputo. Mozambique's capital has benefited from a new gas power plant (with a capacity of 175 MW), which has contributed to a large reduction in the energy supply shortfall and improvements in the quality of energy supplied. Maputo is registering an unprecedented increase in energy infrastructure to support its rising energy demand.

The increase in income levels of Mozambicans located mainly in the centre of the main cities of Maputo, Beira, and Nampula, is raising consumer demand with the use of new domestic equipment (such as laundry machines and air conditioners), which use a lot of energy. As a

result, the per capita energy consumption of Mozambique has increased significantly.

4.2 Ongoing projects

As a result of the new law governing public-private partnerships, large-scale ventures and business concessions, according to Law No 15/2011, Mozambique has significant energy investments in the generation and transmission areas of its power sector. These investments are all part of Mozambique's power sector development strategy and will bring new dynamics to the sector. It increases the ease of doing business in Mozambique and reduces the shortfall in the energy supply domestically and regionally. Based on the Energy Master Plan for Generation,[15] Mozambique has significant gas and coal resource potential, which will bring more competitiveness to the energy market.

a) Hydro power

- The Backbone Transmission Line (Tete region). The centre of hydropower generation in Mozambique is located in the Zambeze Valley, where a set of "mega-projects" are currently under development (i.e. Mphanda Nkuwa, Cahora Bassa North, Lurio, Moatize, Benga and Ressano Garcia). These "mega-projects", totaling more than USD $15 billion in mostly private investment, will provide the necessary power through this transmission project to the south of Mozambique, with the main load going to Maputo. This project will enable the development of hydropower and thermal generation projects in the Zambeze Valley and other upcoming projects, ensuring the transportation of power to the country's main consumer centres and creating business opportunities by providing reliable and affordable access to power.

- In terms of generation projects, the following are ongoing projects in the hydropower sector: Mavuzi, (60 MW), Mphanda Nkukwa (1500 MW), Cahora Bassa Norte (850 MW), Lupata (650 MW), and Boroma (160 MW). All these projects are located in the centre of Mozambique.

The combination of the different generation and transmission 'mega projects' under construction will ensure sustainable low-cost power generation in the country, encourage foreign direct investment in Mozambique, enhance regional integration through electricity trade, help finance the expansion of rural electrification and, *inter alia*, strengthen the country's balance of payments.

b) Thermal power projects

[15] Ministry of Energy, Generation Master Plan For the Mozambican Power Sector - Final Report- Volume I Main Report. July 2009

- Moamba Gas Plant. This power plant operates on gas from the Temane gas fields in the northern part of Inhambane province. The gas will be transported via an existing pipeline from Temane to Ressano Garcia. The location of the power plant requires the construction of a 50 km branch pipeline from Ressano Garcia to Moamba. The planned installed capacity is 500 MW but the initial installed capacity will be 140 MW.

- Kuvaninga Gas Plant. The planned location is in Chokwe (South of Mozambique) and will have an installed capacity of 55 MW. The plant has been presented as a base load plant and will be operation operating from 2015 onwards.

- Moatize Coal Plant. This coal-fired power plant is to be located on the north bank of the Zambezi, near Tete, in Northern Mozambique. It is a mine mouth power plant, based on the utilization of thermal coal, which is a by-product of mining and can be also exported as cooking coal. The project is planned to have an installed capacity of 2400 MW but will be commissioned with an initial capacity of 300 MW. The project will be completed in 2015. The plant is under the management of a Brazilian company, Vale Mozambique, which is currently implementing the first steps for the project.

- Thermal Electric Coal Station of Benga. It has an initial installed capacity of 500 MW but the total generation capacity will reach 2000 MW, which will be concluded from 2015 onwards. Benga will use lower quality coal since higher quality coking coal are reserved for export purposes.

c) Natural gas

Mozambique plans to make an investment decision on the construction of a multi-billion dollar gas liquefaction facility in northern Mozambique, which has already been concessioned to Anadarko, ENI and the state-owned company, *Empresa Nacional de Hidrocarbonetos* (ENH).[16] Operation is planned to commence in 2018. It will reduce the import of LNG in Mozambique and will maximize the benefit from the gas, not only through the revenue from sales (exports), but also as a factor for the industrial development of Mozambique.

In the next fifteen years, Mozambique and Tanzania will be among the main natural gas suppliers in Sub-Saharan Africa, sharing around 44% of the 170 thousand million cubic metric gas production in the region. [17]

[16] Anadarko and ENI are multinational corporations from the USA and Italy, respectively, which have invested more than USD$ 3billion in their oil and gas exploration project off the northern coast of Mozambique. The project began in 2006.

[17] International Energy Agency (2014) *Africa Energy Outlook: A focus on energy Prospects in Sub-Saharan Africa* (IEA Publications; France).

The revenues generated from those resources presents an opportunity for Mozambique to increase investment in energy generation, in the supply of clean water, and in other basic public issues like sanitation, transportation, education and public health. The project will also increase the LNG storage capacity from 1100 to 6000 TM for domestic uses.

Natural gas distribution in Maputo City and Marracuene (South of Maputo) is being expanded to create opportunities for the development of the gas market for industrial, transportation, trade and domestic uses. This project will also provide new employment opportunities, stimulate micro and small entrepreneurs and promote sustainable development. It is planed to operate from 2014 onwards.

d) Renewable energy

In 2009 the Government of Mozambique approved the Policy for the Development of New and Renewable Energies, establishing it as one of the strategic priorities for the evaluation of new and renewable energies. Within the scope of the assessment of resources, the Policy, and subsequent Strategy for the Development of New and Renewable Energies, was approved in 2011 and established specific measures to be developed in terms of mapping hydro, wind, solar, biomass, geothermal and wave potential, as well as the identification and mapping of potential sites for the exploitation of these resources.[18]

e) Solar

Construction of the PV station in Mavago, Mecula, Niassa and Cabo Delgado will benefit around 29,500 consumers through electrification of 2,401 houses and 10 primary schools.

f) Wind

The wind conditions in Mozambique are most favourable along the coastline in the southern part of Mozambique to the border with South Africa. Dedicated wind measurement equipment was installed at two selected locations – at Ponta d'Ouro and one east of Inhambane-Tofinho. The identified wind resources correspond to annual generation of 2-2.5 GWh per MW installed wind power capacity.

g) Biomass

For all this potential (hydro, coal, natural gas) in Mozambique, the country remains under great pressure over the large use of biomass resources. Most of the people in Mozambique depend on this resource for a number of reasons, which include among others cultural use, low income, and lack of conventional energy access reasons. However, several programs have been adopted aimed at encouraging the efficient use of this resource. These programs

[18] http://www.atlasrenovaveis.co.mz/en/conteudo/renewable-energy-atlas-mozambique. FUNAE 2011.

include the promotion of the enhanced production, technology and sustainable use of vegetal coal and firewood, thus reducing deforestation.

5. Energy legal framework

*The **2015 International Energy Charter** encourages its members to participate in joint efforts aimed at facilitating and promoting market-oriented reforms and the modernisation of energy sectors in each member country. The signatories recognise the importance of entrepreneurs working within a transparent and equitable legal framework through the harmonisation of rules, regulations and standards in the energy sector. Signatories further acknowledge that the formulation of stable and transparent legal frameworks is necessary to create the conditions required for the development of energy resources for sustainable development, and they recognise the need to formulate legislation wherever this has not yet been done.*

The discovery of Mozambique's substantial mineral resource potential places the country in the unique position for investment in the energy sector, which is necessary to support the country's economic growth, sustainable development and the improvement of living conditions for millions of Mozambicans. However, this favourable environment for investment creates new challenges for the country, especially with regards to how investments in the energy sector can be made in an economically, socially and environmentally sustainable way whilst bringing the most benefit to the country.

At present, the biggest challenge Mozambique has been dealing with is legislative reform, especially in respect to investment and the energy sector to ensure that the country receives the most benefit from the exploitation of its natural resources. It is very important to the Government of Mozambique that the exploration and exploitation of its natural resources be undertaken in compliance with its sustainable socio-economic and environmental development strategy.

The region is currently facing a severe energy shortfall. This is the result of the rapid increase of the region's energy demand from extensive new construction projects, new energy intensive industries (including the mining sector), and the increase of income per capita. In order to address this issue, it is crucial that the national legislation and policy be structured to facilitate the necessary investment to the sector.

Mozambique's main energy legislation is the **Electricity Law No 21/97** of October 1997. This is the basic regulatory instrument for the generation, transmission, distribution and sale of electrical energy in Mozambique. It also covers electricity import and export, as well as regulates the concession regime of such activities. Under this law, the state, its agencies and other public entities have a determinant role in promoting the development of

Mozambique's energy potential to increase access to the benefits of electricity, as well as to contribute to the economic and social development of the country.

The state guarantees the participation of the private sector in the public service of electricity supply through concessions that guarantee the right to use and benefit from energy resources, while protecting the public interest. As a general rule, the governmental authorities with powers to approve power projects vary according to the installed capacity of the facility, as follows:

Authority to Approve Power Project		Capacity Level of Project
Council of Ministers	=>	>100 MW
Ministry of Energy	=>	Between 1 MW and 100 MW
Provincial Governors	=>	<1 MW

The National Electricity Council (CNELEC) was also established under this law. CNELEC is administratively and financially autonomous and serves as a forum for consultation and as a safeguard for public interest. It also conducts public hearings on relevant matters, and mediates and arbitrates disputes in the sector between the concessionaires and the consumers.

Furthermore, the Electricity Law requires the national power transmission grid and the corresponding dispatch centre to be operated and managed by a public entity. Accordingly, by way of **Decree No 43/2005**, of 29 November 2005, state-owned *Electricidade de Moçambique* (EdM) was entrusted with the role of managing the national power transmission grid and the corresponding dispatch centre. Despite this, EdM has been required to adopt such an organizational structure as to separate the responsibilities of grid manager from its generation, transmission, distribution and trading activities, i.e. the first step towards unbundling.

Another energy legislation is the liquid fuel legislation **Decree No 63/2006** of December 2006, which regulates the import, export, transit, supply, storage, transport, distribution and sales activities of the fuel products, including the setting of tariffs. This law also accommodates the possibility of national biofuel production, as well as crude oil and condensed natural gas processing. This law aims to increase processing efficiency and to enhance the economic benefits in the import and distribution activities, making the fuel price more flexible and giving more incentives to participate in distribution systems in the country. Under this law, investors require a license for production, storage, loading terminals, oil pipelines, distribution and sales.

The **Oil Law No 21/2014** is dated on August 2014 and adjusts the oil sector legal framework to the country's changing economic structure, where the Government of Mozambique is keen to promote new development in the oil sector and to ensure the sector's competiveness, transparency, as well as safeguard the public interest, as mandated under the national constitution. This law establishes the regime for granting rights for oil operation activities in Mozambique. The state is responsible for activities related to hydrocarbon exploration, research, production, transport, sales and processing, including the petrochemical activities and liquefied natural gas (LNG). The state mandates that part of the oil products produced are allocated to national development. The government also guarantees to financially support the public company ENH to invest in enhancing and protecting its share holdings in the various hydrocarbon licences.

In terms of renewable energy, there is currently no specific legal framework governing these activities. However, the government enacted **Resolution No 10/2009** on the Renewable Energy Policy and the **Resolution No 22/2009** on the Biofuels Policy and Strategy, and both policies stress the relevance of those industries as to (i) develop the country's technical skills and capacity, and (ii) increase the energy resources available according to sustainable standards. Based on the foregoing expressions of intent set out in the Policies, a comprehensive legal framework detailing the procedures and requirements applicable to renewable energy and biofuels projects is expected to be enacted in the near future.

6. Security of supply and universal access

*The **2015 International Energy Charter** recognises the importance of energy security, a concept that embraces the needs of energy producing, transit and consuming countries, as well as access to modern energy services that is based on environmentally sound, socially acceptable and economically viable policies. In order to achieve energy security, IEC signatories affirm the importance of freedom of movement of energy products and of developing an efficient international energy infrastructure in order to facilitate the development of stable and transparent trade in energy. In addition to this, signatories to the IEC highlight the importance of diverse energy sources and supply routes to enhance energy security.*

Energy security is defined by the International Energy Charter from the viewpoint of producing, transit and consuming countries and also, universal access to modern systems of energy. Depending on the status of the countries, energy security may imply several of those dimensions.

Taking into account the evolution of the structure of the energy matrix in Mozambique as well as the projects discussed in previous sections, the assessment on energy security in Mozambique under the definition of the International Energy Charter is promising. Mozambique is heading towards a direction in which, if all projects (5000 MW) in generation of current and power transmission are operating at maximum capacity, can be self sustainable to meet the growing demand not only domestically but also meet the regional demand as well.

The geographic location of the country places Mozambique in a strategic position for energy resource transit from abroad to the hinterland countries like Zimbabwe, Malawi, Botswana and Lesotho. Currently, there is an oil pipeline connecting the Beira Port to Zimbabwe, which extends approximately 400 Km. In addition to this, under the Energy Protocol of the Southern Africa Development Countries, Mozambique is part of a regional market for the sale of electricity, which puts the country subject to accommodate the transit of electricity between countries of the SADC region.

Energy security in Mozambique is also associated to policies of energy efficiency that Mozambique has put in place, including the creation of a coherent legal framework with the production and use of energy resources in a rational and responsible way.

The use of technology or modern energy systems has been implemented in the new and renewable energy program in Mozambique. Installing PV systems in schools, hospitals, public buildings in remote areas, and the use of sustainable biomass resources are the result of renewable energy programs in Mozambique.

Several programs have been adopted encouraging the efficient use of renewable energy sources. These programs include the promotion of the enhanced production, technology and sustainable use of vegetal coal and firewood, thus reducing deforestation.

In this context, Mozambique has been adopting measures of policies and strategic programs of production and the efficient use of electricity, creating conditions for national energy security as well as regional energy security, taking advantage of these trade gains.

In terms of the challenge of universal access, the goal is to ensure universal access by using the country's diverse energy resources (i.e. hydro, fuel and natural gas).

Even though Mozambique has rapidly increased energy access over the past decade, only 40% of the population currently have access to modern forms of energy, which is divided into 26.4 connected in national grid electrification and 14% in off grid (which include the PV Systems in remote areas and gas-to-power). The table 2 below illustrates how energy access rates increased from 7% in 2005 to 14% in 2014. The average consumption per capita in Mozambique was around 200 kWh per capita per year in 2013 being much lower when

compared to neighbouring Zambia, Botswana and Zimbabwe (all above 500kWh per capita per year).[19]

Table 4: Mozambique Energy Access Rate (2005-2014)

Indicador	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Energy Access Rate (%)	7								39	40
Consumer of NEG (Million)	1,5	1,7	1,8	2,1	2,9	3,5	4	5,7	6,3	6,5
Isolated System (Million)	0,1	0,3	0,4	2,4	2,7	2,8	2,9	2,9	3,5	3,7
Total (Million)	1,6	2	2,2	4,5	5,6	6,3	6,9	8,6	9,8	10,2

Source: Ministry of Energy, 2014

The use of solar energy as option to deal with increasing energy demand in the public services, i.e. schools, health centres, buildings and housing, is a viable option for increasing energy access in remote areas. It is estimated that around 4 million people have been given access to power via this option over the last ten years. Around 201 villages, more than 669 schools and 623 clinics, including 77 buildings were covered by the PV Systems project in Mozambique.[20] Equally, more than 30,000 people in remote areas have benefited from 56 water pump systems, irrigation units and the domestic uses from the PV systems, resulting in improvements in living conditions.

The success of the project has made it economically feasible to produce solar panels in Mozambique, an important achievement that further reduces the cost of using solar energy and allows for its increased use in the country's energy mix.

Mozambique has ambitious and progressive expansion plans for its energy industry, particularly in the urban and semi-urban areas, where the government has expressed its desire to achieve energy access to 50% of the population by 2023. The Government of Mozambique also plans to launch a transmission and distribution grid rehabilitation program for the entire national territory to increase energy quality and efficiency in the urban areas. There are also plans to further strengthen the institutional capacity of FUNAE[21] to increase its role in the process of rural electrification.

In addition to this, Mozambique plans to ensure at least one petrol station in each of the 128 districts around the country and to promote the use of natural vehicular gas (NVG) for

[19] Africa Energy Outlook Report 2014 - International Energy Agency
[20] Ministry of Energy 2014
[21] FUNAE is an energy fund created by the Decree 24/97, with the mission to promote energy access at sustainable, affordable and rational manner. It aims to finance and provide the financial guaranty for the energy projects which contribute to the development, production and productive use of alternative energy.

private and public transportation. To fulfil this goal, the government is taking actions to create licensing legislation for NVG stations, as well as providing financial incentives to encourage vehicle conversion and hybrid vehicle purchase. This will reduce the country dependence on oil imports, an important part of Mozambique's import cost.

Among the current projects there is the promotion of a installation of 400MW of renewable energy systems, which include 200 MW in mini and medium hydropower's, 150 MW in wind, 50 MW at solar PV systems and 50 MW in biomass.

7. Sustainable energy

*The **2015 International Energy Charter** recognises the importance of renewable energy sources and energy efficiency. Signatories to the IEC acknowledge the importance of efficient systems in the production, conversion, transport, distribution and use of energy for energy security, poverty alleviation, sustainable development and for the protection of the environment. They also agree to promote a more sustainable energy mix to minimise the negative environment consequences in a cost-effective manner by sharing best practices on clean energy development and investment.*

Mozambique has undertaken various programs and policies to promote energy efficiency in the country. The focus on natural gas and renewable energy are strong attempts at reducing greenhouse gases and protecting the environment. The new energy strategy also defines mechanisms to fund renewable energy, including carbon credits that constitute an additional source of revenue for development projects in this field. Some programs in this area support the effort undertaken in the energy sector in Mozambique, with particular emphasis on the development of the natural gas program, the introduction of energy-saving lamps program, and the solar thermal system program.

The establishment of a legal and regulatory framework that focuses on activities specific to energy efficiency – such as Ban Incandescent Lamps regulation and regulating of water heating systems – is necessary for the Government of Mozambique to begin to move towards a more sustainable energy market.

Besides that, EdM conducted a study that identified a number of priority programs of energy efficiency, which can contribute to creating a sustainable energy market. They include the promotion of energy-saving lamps (CFLs, LEDs, etc.) for domestic consumers, hourly pricing schemes, the management of large consumer demand, use of split meters and solar thermal systems, as well as power factor improvements, and dissemination and

awareness programs.

At the same time, there is a private initiative called Business Forum For the Environment (FEMA), where experiences are shared on energy efficiency measures in the context of resource efficiency and cleaner production. FEMA's mission is to promote dialogue between the government and the private sector, with the aim of jointly ensuring competitive industrial production based on the transfer and development of environmentally sound technologies.

Practices such as the deployment of solar heating systems to heat water, replacing conventional light bulbs with energy-saving lamps (UN 2050 initiative) and the implementation of light sensors are ongoing and are being adopted by several private companies in various sectors.

The adoption of feed-in-tariffs and other incentives is being considered by the Government of Mozambique to create a more sustainable energy market and to be able to attract more investors to the renewable energy production sector and change the energy mix in the country. The PV development in Mozambique is largely focused on off-grid applications given the low energy prices for on-grid customers, including a relatively stable supply service.[22]

With only about 26% of the population electrified on on-grid systems and in view of the large density of the country, the government is procuring a large portion of the imported PV equipment through its rural electrification agency (FUNAE) and from the PV module production line recently built. As a result, the country's experience with renewable energy besides hydro is still limited to pilot projects.

[22] PV Magazine (2013) Special Report Africa: Tanzania and Mozambique: www.pv-magazine.com/news/details/beitrag/special-report-africa--tanzania--mozambique_100013524/#ixzz3LaTyyFx7 (last visited Monday 26th January, 2015).

8. Open energy markets

*Under the **2015 International Energy Charter**, open markets refers to the liberalisation of the energy sector, and signatories agree to participate in joint efforts to facilitate and promote market-oriented reforms and modernisation of the energy sector. The signatories also agree to promote open and competitive markets for energy products, materials, equipment and services, as well as remove barriers to energy trade in a manner that is consistent with the provisions of the WTO Agreement and other international obligations. It is important to note that under the IEC, liberalisation is not an obligation, but a principle that countries are encouraged to develop according to their national sovereignty and national strategy.*

Within the context of the International Energy Charter, open markets imply having a competitive market for energy products, materials, equipment and services. It also includes the transparent access to energy resources, removal of barriers, promoting the development and interconnection of energy transport, promoting access to capital, and facilitating the transit of the energy.

Since 1990, the national constitution of Mozambique establishes a market economy and the principle that private initiatives should be promoted to the economic development of Mozambique. The economic and social reforms that have been implemented since 1987, after the accession of Mozambique to the Bretton Woods institutions, brought profound changes in the economic landscape of the country, with privatization programs and legal framework reform. The Investment Law[23] 3/1993 arose as a result of these changes.

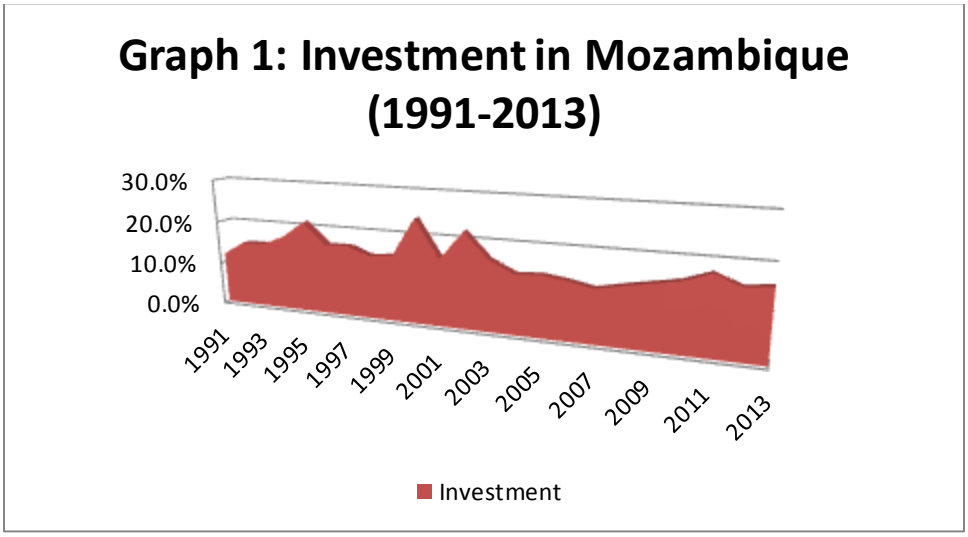
The investment law has come to embody the need of the country to attract more investment, to be open for private investors, and to set a basic and uniform legal framework for the process of conducting national and foreign investments. Under this law, foreign investors enjoy the same rights, duties and obligations as nationals. The guarantees and incentives are also part of the provision for investors, and establish the protection of property rights, the transfer of funds abroad (profits, royalties, amortization and other funds), as well as the possibility of mediation and conflict resolution among investors using international mediation or arbitration conventions.

The Investment Promotion Centre (CPI) [24] was established in 1993 to promote investment for the country by attracting and retaining substantial direct domestic and foreign

[23] The first investment law in Mozambique was approved in 1984, Law 8/84.
[24] Centro de Promoção de Investimentos: www.cpi.co.mz/index.php/PT/about-us/vision-and-mission (last visited Monday, 26th January, 2015).

investment to boost economic growth and wealth creation, including the promotion of public-private partnerships for economic and infrastructure development.

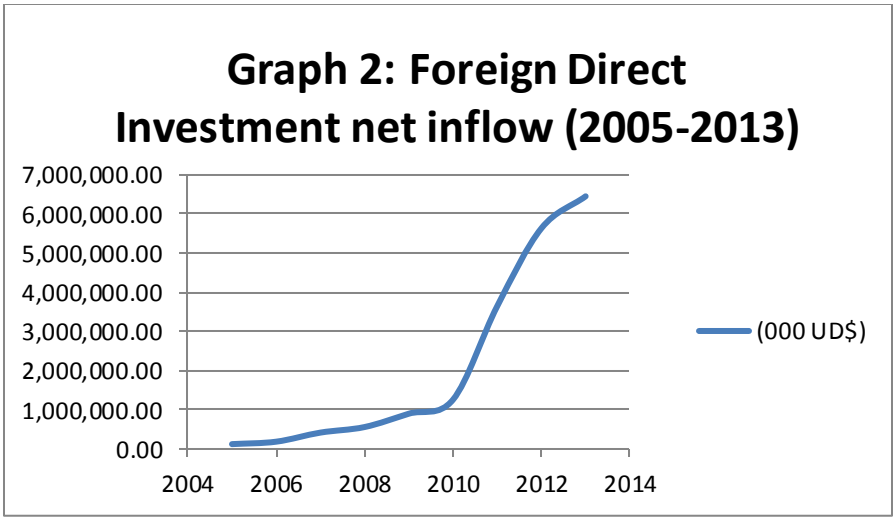
For the past nine years, investment in Mozambique has grown annually on average by 12% points (Graph 1). Investment in Mozambique grows more than the GDP rate in Mozambique (7.5%), meaning that investment in Mozambique has the highest weight on economic growth than any other variable that make up the GDP.



Source: INE (2014)

Mozambique has also been the final destination of a large volume of foreign capital, with greater focus on the energy and mining sectors. The volume of FDI has evolved considerably over the past nine years (Graph 2) as a result of this market opening.

Graph 2 shows how the FDI level has evolved in the last 10 years, from just over USD$ 122 million in 2004 to about USD$ 7 billion in 2013. Most of this investment goes to the extractive industry sector and is linked to coal in the coal basin in Tete and the exploration of natural gas and oil in the Rovuma basin.



Source: World Bank, 2014.[25]

Besides this, Mozambique has been taking steps to reduce barriers to investment and improve the business environment in the country, which has resulted in encouraging progress. An important improvement in the last two years is the country's position in the environment index, which is currently placed 139 out of 189 countries in the world. Recent reforms have occurred in the energy sector and cross-border trade respectively, namely providing the single window system that links all relevant governments agencies making it easy to trade across borders and reducing the financial burden of security deposits for new electricity connections.

As an Extractive Industry Transparency Initiative (EITI) member, Mozambique has complied with the principles and provisions of the initiative in terms of transparent access to mineral resources. By way of example, the new oil law provides that the state shall evaluate the existing mineral potential and promote access to oil resources through public tenders for granting the research, production and oil and gas exploration to allow access to the benefits of production and contribute to the economic development of the country.

Although the energy sector is fully liberalised, there are only a few number of private companies operating in the generation power sector. The main companies are Central Termica de Ressano Garcia (CTGR)[26] with 175 MW and the Scottish company, Aggreko, which has an installed capacity of 100 MW. They are responsible for 10% of the energy production, most of this is exported to South Africa. There is a public-private partnership ownership in the transmission line as well. MOTRACO is responsible for a dedicated line connecting South Africa to the aluminium smelter in the south of Mozambique, which is responsible for more than 60% of energy consumption in Mozambique.

[25] World Bank data: http://search.worldbank.org/data?qterm=fdi+mozambique&language=&format= (last visited Monday, 26th January, 2015).

[26] CTGR a joint venture between EDM and a South Africa private company Sasol Energy Group.

At the distribution level, the license to a private company to manage an off-grid system in northern Inhambane was withdrawn since the company failed to fulfil its commitments related to the expansion plan and new connections. The administration of the national electrical transmission grid is carried out by a public law entity that ensures its operation and the reliable and efficient expansion of electrical energy supply. Investors are called to participate in the development of the transmission grid.[27]

In the hydrocarbon sector, there are a number of multinational corporations engaged in the importation and distribution of oil and LGP, including BP, Total, GALP and SASO, and the public company PETROMOC. Two more multinational energy corporations are involved in the research, exploration and processing of oil and natural gas in the Rovuma Basin on the northern cost of Mozambique, the American company Anadarko Petroleum and the Italian ENI, in collaboration with the public company, ENH. There is a plan to construct a liquefied natural gas plant.

9. Regional integration

*The **2015 International Energy Charter** firmly supports its signatories enhancing regional cooperation in order to meet common energy challenges, acknowledging that enhanced energy trade is a powerful catalyst for strengthening regional cooperation for energy security. Members of the IEC agree to develop cooperation with regional organisations for sharing experience and specific examples from national practice in the area of sustainable development, access to modern energy services, energy poverty reduction, clean energy, energy efficiency, as well as the development and broader use of new clean technologies. Under the IEC, the freedom of movement of energy products, and the development of an efficient regional energy infrastructure, is essential to facilitate the development of stable and transparent trade in energy.*

The combination of the wide availability of energy resources of the country (gas, hydro, renewables, and coal) and the size of the regional market provides opportunities for greater attractiveness for projects and revenue generation, while improving the balance of payments.

The most important regional energy integration policy document is the SADC protocols on trade and on energy. The SADC Energy Protocol[28] establishes, as a general principle, the use

[27] Electricity Law 21/97, Article 14, numbers 1 and 3.
[28] Resolution 52/1998 ratifies the cooperation agreement in the field of community energy for the Southern African Development Community (SADC), signed on August 24, 1996 in Lesotho.

of energy to support development and economic growth, alleviate poverty and to improve the level and quality of life throughout the SADC region. It also provides the use of energy to promote collective self-reliance and creating an atmosphere that provides for the private sector to participate fully in the development of energy in the region.

10. National investment law

*In recognising the importance of energy security for energy producing, transit and consuming countries (regardless of their state of development), the **2015 International Energy Charter** encourages cooperation to promote closer and mutually beneficial commercial relations and investments in the energy sector. Signatories agree to create a climate favourable to the operation of enterprises and to the flow of investments and technologies. In order to promote the flow of investment, signatories agree to make every effort to remove all barriers to investment in the energy sector and provide, at national level, for a stable and transparent legal framework for foreign investment in accordance with relevant international laws and rules on investment and trade.*

The basic Investment law was approved in 1993[29] and its complementary legislation and amendments followed after that. The main investment laws are the following:

- The Investment Law No 3/93
- The Regulation of the Investment Law under the Decree Law No 43/2009
- The Fiscal Benefit Code under Law n° 4/2009
- The Public and Private Partnership Law No 15/2011

The main Investment Law No 3/93 is argued to be one of the most far-reaching legislations of its type, as a result of the old Economic Rehabilitation Program under the IFM and World Bank Agreement with Mozambique. Together with the new national constitution in Mozambique, the legislation offers a more open and objective economic policy with the aim of encouraging more participation through investment and providing equity in the way which national and international investments are handled.

The Investment Law also enshrines a set of benefits and incentives aimed at promoting the investment in Mozambique, which can be divided in three main categories:

- *Protection of Property Rights* – The protection and security of investor's assets and rights are protected through the judiciary, and includes industrial property rights[30] under the

[29] Law n° 3/93, dated June 24, 1993.
[30] Mozambique Industrial Property Code (IPI).

approved and released investment with compliance to the investment law and its regulations.

- *Capital Mobility* – Under the investment law, investors are allowed, under certain requirements, to transfer their funds (in particular, funds only related to their operations in Mozambique) overseas. This includes profits under the eligible investment, royalties and other incomes related to technology transfer, debt amortizations and interest incurred on the international market.

- *Duty and Fiscal Incentives* – A set of benefits has been enshrined to Foreign Direct Investment in Mozambique. It includes general benefits, namely tax exemptions (duty and VAT free) during the first five years from project commencement and other deductions in business operations. There are other very specific benefits which depends of the location of the investment, the sector in which the investment in made and the amount of investment being made in the project.

In addition to this, this law provides for environmental protection concerns. Under this law the investor at the conception, implementation and exploration phases must provide an environmental impact assessment and identify all current and potential pollution and sanity problems that may be caused by their operations.

In terms of dispute settlement, under this law all disputes involving an investor and the state, which cannot be settled by amicable or judicial means, can be arbitrated under the Washington Convention of March 15, 1965 and under International Trade Clearing.

The Public-Private Partnership Law No 15/2011 established the orientation rules in the hiring, implementation and monitoring process of public-private partnerships of large-scale projects[31] and entrepreneurial concessions. Under this law, the financial benefit for the country is ensured by the allocation of a share hold (capital stock) quota no less than 5% and no more than 20% to Mozambican singular or collective entities and the state or public company.

There also a Decree No 62/99 for an Industrial Free Zone (IFZ), which is applicable for all singular, collective, public or private enterprises, dedicated on conception, development and administration of the IFZ and its eligible activities under this regime.

[31] Under this law, large-scale project means a project which authorized investment above MZN 12 500 000 000.00, equivalent to USD$ 403 million.

11. Research and transfer of technology

*Signatories to the **2015 International Energy Charter** recognise the need to promote research and technological cooperation amongst members. To this end, they agree to cooperate to enhance capacity building among signatories and mutual access to technical and economic data (as consistent with proprietary rights), to facilitate the exchange of technological information and know-how in the energy and environmental sectors. They also agree to promote cooperation to further research and development activities, encourage pilot and demonstration projects, as well as encourage the application of technological innovations. In addition to this, signatories recognise the industry's role in promoting vocational education and training in the energy sector and agree to cooperate in such activities, including: professional education, occupational training, and the dissemination of public information on energy efficiency and on renewable energy.*

The discovery of Mozambique's various renewable energy potential, as well as its mineral resource potential, brings the challenge of extracting the most benefit from these resources for sustainable development.

Mozambique currently has a research centre dedicated to technology for the energy sector. Technology transfer in the energy sector has been made via the foreign direct investment route, particularly through the production of electricity from natural gas and projects for the generation of new and renewable energy undertaken by FUNAE.

The manufacture of solar panels in Mozambique is an important technology transfer demonstration project that contributes to the reduction of import costs related to the importation of renewable energy generation equipment and additionally creates better conditions for energy security for the country.

The SADC Protocol on Energy establishes regional cooperation objectives in the fields of research, development, and the dissemination and transfer of low-cost energy technology and know-how between countries in the region.

In addition to this, Mozambique has hosted a number of summits and workshops related to the importance of enhancing research and technology transfer in the energy sector. An example of this the Bioenergy Week II, an event that sought to submit proposals that will help in the dissemination of knowledge on renewable energy in Africa within the context presented by the United Nations (UN) during Rio + 20 under the Kyoto Protocol on climate

change.

Nuclear technology is an alternative that is being considered in the region, with focus on the export potential of electricity from Mozambique. The activity of prospecting in Mozambique may result in uranium discovery. For these reasons, it is important to understand this technology and this research is done through the National Atomic Energy Agency, which represents the country in international organizations.

Under the code of the tax benefits, investments in the areas of scientific research, the development of information and communication technologies, and research and development made during the development of a project are exempt from customs duties and VAT for the importation of equipment required for those activities.

12. International cooperation

*Having regard to the principles of the UN Charter and to the outcome documents of various energy-related regional and international conferences, the **2015 International Energy Charter** signatories are aware of the obligations under major relevant multilateral agreements, of the wide range of international energy cooperation and of the extensive activities by existing international organisations in the energy field. Its signatories agree to enhance development of trade in energy consistent with major relevant multilateral agreements, such as the WTO Agreement and its related instruments, and to also ensure that the international rules on the promotion and protection of industrial, commercial and intellectual property rights are assigned. The IEC also affirms the importance of full access to adequate dispute settlement mechanisms, including national mechanisms and international arbitration in accordance with national laws and regulations and all relevant bilateral and multilateral treaties and international agreements.*

Mozambique has many bilateral international treaties (BITs) and multilateral international treaties (MITs) signed to facilitate cross-border trade, investment promotion and investment protection.

Mozambique has more than 25 BITs (refer to Annex) agreements on trade and investment with several different countries, including countries of the European Union. Most BITs contains no specific provision on energy but they do cover general provisions on trade and investment.

Just recently Brazil and Mozambique signed a Cooperation and Facilitation Investment Agreement (CFIA) in Maputo, Mozambique. The CFIA establishes an institutional

framework and ensures investment cooperation, risk mitigation and dispute prevention. The Agreement further aims to leverage the internalization of Brazilian companies and to provide greater security for the investor in the signatory countries. Among the elements of the agreement is the nomination of an ombudsman by each contracting party and the establishment of a joint committee composed of government representatives from both countries [32]

Mozambique is also a member of the World Trade Organization (WTO) and ratified all principles and rules under this organization. Since the general principles that guide the IEC are based on the rules of WTO, this aspect becomes important to put the country in a good position to join the IEC.

Mozambique also joined the Africa Clean Energy Corridor (ACEC) Initiative[33], which aims to transform the current energy mix by promoting clean, indigenous, cost-effective renewable power to support Africa's economic growth. This initiative includes the mobilization of cost-effective renewable power options and the development of an enabling framework to attract investment for interaction of a higher share of renewables into the transmission network.

13. Added value of acceding to the IEC and ETC

1. At political level

1.1 Political signal of the country to international community

By signing the International Energy Charter, a country sends a political signal to the international community that it shares a number of international energy principles on trade, investment, transit and energy efficiency in such important sector as the energy sector. Since investment protection is the cornerstone of the Energy Charter, it would be a good chance for governments to send a message to the investor community of their endorsement of transparency and good governance. This would most of all benefit countries in unstable political situations and the ones, which seek to enhance their ties with some key countries from the Energy Charter constituency.

[32] The CFIA was signed on 30th March 2015 by the Minister of Development, Industry and Foreign Trade of Brazil, Armando Monteiro and the Minister of Foreign Affairs and Cooperation of Mozambique, Oldemiro Baloi. UNCTAD: Investment Policy hum: Brazil & Mozambique signed CFIA , Published on 01/April 2015, http://investmentpolicyhub.unctad.org/News/Hub/Home/287 last visited on 15/ April 2015.

[33] The ACEC initiative was endorsed by Ministers from countries of the Eastern and Southern Africa Power Pools at the fourth IRENA Assembly in January 2014 in Abu Dhabi.

1.2 Effects of modernization of the Energy Charter Process

The world's energy interdependence has dramatically intensified over the last decade. Improved energy security with multiple economic, technological and environmental benefits could be derived from international cooperation in the energy sector. At the same time potential interruptions to the global energy supplies due to conflicts, volatile energy prices, lack of investments and other challenges have resulted in a more fragile global energy architecture. Such challenges require both national and international responses. Where the problems cannot be adequately addressed by a country acting alone, acting cooperatively at the international level becomes essential for a country to protect its own interests.

The International Energy Charter is going to play a major role in establishing common principles to promote long-term cooperation in the energy sector based on mutual benefits. The institutional benefits of signing the IEC include, but not limited to, the following:

- The IEC is going to be an historic document that may be signed by more than 100 countries worldwide.
- The IEC provides inspiration and motivation to pursue energy security for all including producers, transit and consumer countries, as well as universal energy access.
- Signing the IEC means to join an established international framework of long-term cooperation in the energy sector.
- The IEC is a policy but not a legally binding framework that allows a country to strengthen energy security, promote access to energy resources and new markets, facilitate access to finance, benefit from experience exchange and multilateral cooperation on sustainable development of the energy sector.

2. At strategic level

2.1 Promotion of energy investments and trade

A country, by signalling its willingness to engage seriously in a dynamic political process resulting of the International Energy Charter as well as its ability to agree on a strategic, forward-looking document, demonstrates that it considers the Energy Charter Process and its tools as instruments of its choice. Thus, signature of the International Energy Charter would demonstrate to international investors that a country commits to the principles of secure investments. In this way, a country becomes a more attractive destination for international investments, while, at the same time, being able to use the International Energy Charter as a reference tool for own energy investment and trade initiatives.

2.2 Engagement in multilateral cooperation and good governance

It is difficult for countries to find isolated solutions to the complex and interlinked energy challenges, which know no borders. International cooperation is imperative to find effective, lasting and mutually beneficial solutions. The Energy Charter has a broad

membership, involving developed and developing, energy exporting, importing and transiting countries. Signing the International Energy Charter will allow the signatory's representatives to assemble under the Energy Charter Ministerial Conference and Working Groups, which could serve as a platform for building relationships, and sharing of information related to the challenges faced in the energy sector. The challenges concerning security of supply, competitiveness and climate action should be solved through a common approach, to which the International Energy Charter will play an important role. Signatories to the International Energy Charter will acknowledge this common approach publicly, without any legal commitments.

2.3 Influential and confident position within the Energy Charter Process

Engagement to the International Energy Charter is an open and inclusive process. More than 80 countries from all over the world agreed the text of the International Energy Charter. The text reflects today's global energy challenges and international policy objectives. The openness of the International Energy Charter to new countries enhances the confidence and ownership of those countries in the Energy Charter process.

3. At practical level

3.1 Observer status with the Energy Charter Conference

Signing the International Energy Charter automatically grants an observer status, which will make it possible for new countries to attend the meetings of the Energy Charter Conference, without a right to vote.[34] Furthermore, observer countries will have the possibility to attend official meetings of subsidiary bodies on political and expert level in the capacity of observers with a right to speak.

If the necessary funding is provided, observers may benefit from activities of the Energy Charter Secretariat like forums, executive training programmes, energy efficiency reviews or reports on investment climate and market structure. Observers may be invited to send seconded experts and trainees to the Secretariat in Brussels in view of deepening their engagement in the process of applying the principles of the International Energy Charter and consider the adoption of the Energy Charter Treaty.

3.2 Getting familiar with the Energy Charter Treaty

The Energy Charter Treaty is unique in so far as it provides a legally binding framework for energy cooperation for a large and diverse membership.[35] However, it is apparent that

[34] Observer status is not defined in the Energy Charter Treaty. For this purpose, a Working Group on Procedural Issues was established at the 24th Meeting of the Energy Charter Conference in Astana.

[35] The ECT was signed in December 1994 and entered into force in April 1998. To date the Treaty has been signed or acceded to by 54 contracting parties, including the European Union.

accession by new countries to the Treaty is not something that can be achieved over night. For new members sharing the principles of the International Energy Charter, it is imperative to thoroughly analyse the provisions of the Energy Charter Treaty before committing to further steps. Signing the International Energy Charter can only be a beginning that does not pre-empt in any way the decision of a state to accede to the Energy Charter Treaty. As observers to the Energy Charter Conference, non-members will however have the opportunity to learn more about the Treaty, its benefits and obligations, and will cooperate closely with the members to that end. This will enable them to make an informed decision about possible further steps.[36]

3.3 Possibility to initiate the Early Warning Mechanism

Countries signing the International Energy Charter are automatically granted a right to initiate the Early Warning Mechanism (EWM). Its aim is to provide a non-binding framework for preventing and overcoming emergency situations in the energy sector related to the transit and supply of electricity, natural gas, oil and oil products through cross-border grids and pipelines.[37] Parties can refer to it, voluntarily, on a case-by-case basis. It will be complementary to other mechanisms for early warning and dispute resolution agreed bilaterally between individual parties. The EWM would help to resolve energy conflicts and thereby enhancing the energy security for energy producing, consuming and transit countries.

14. Conclusions and recommendations

a) Challenges

The main challenges of the energy sector in Mozambique are:

i. Short-term response of the power supply needs to meet the demand linked to economic and social projects currently underway, with particular emphasis on the south and the special economic zone of Nacala in northern Mozambique.
ii. Mobilization of resources for the implementation of transmission line projects and power generation (approximately 5000 MW) and other energy infrastructure to improve quality and efficiency in energy supply.
iii. Increase access to diverse forms of energy in a sustainable manner, contributing to the well being of the population, industrialization and economic welfare.

[36] A state or regional Economic Integration Organisation that wishes to accede to the Energy Charter Treaty is required to be a signatory of the 1991 European Energy Charter, the original political declaration that is expected to be adopted together with the Energy Charter Treaty.

[37] Article 2.1 of the Model Energy Charter Early Warning Mechanism, CC 501, 5 November 2014.

iv. Combating and preventing loss of power resulting from dishonest attitudes such as vandalism, theft of materials and equipment from the national grid and theft of electricity through fraud and illegal connections.

b) Open issues

Many programs and actions are being considered by the Government of Mozambique in order to make the energy sector more attractive and dynamic for investment, thereby contributing to a more sustainable socio-economic growth for the country.

The renewable energy market in Mozambique is still underdeveloped. The government is considering the introduction of a feed-in-tariff system in order to encourage further investment. The government has already begun the analysis for a draft law for the introduction of a feed-in-tariff in Mozambique, which will be guaranteed by the public company EdM, the main electricity distributor in the country.

The government is also in the process of endorsing National Electricity Council (CNELEC) as the national regulator for the entire energy sector in Mozambique, with jurisdiction in all energy industry areas of activity. The exception would be nuclear energy because the nature of activity led to the creation of a specific National Agency of Atomic Energy (ANEA).

However, the relevant status, powers and responsibilities for the regulator have not yet been defined. Project contracts are currently entered into between the concessionaire and the relevant authority (Ministry of Energy, Council of Ministers and Provincial Governors). In the current environment, CNELEC is the mandated authority responsible for serving as a consultative body, as well as conciliation, mediation and arbitration authority with regards to disputes between different concessionaires and between concessionaires and consumers.

Also, the ongoing completion of the proposed Atomic Energy Act is critical to provide the necessary legal and regulatory framework necessary for the continuity of economic and social activities around nuclear science and technological development.

c) Recommendations

Mozambique's main policies and strategies for energy sector development are in line with the principles of International Energy Charter. Considering that Mozambique has a huge and diversified energy of untapped potential and that substantial FDI is required for its development, Mozambique is in a good position to begin the process of accession to the

International Energy Charter. Further support for this is based on Mozambique's continued work towards creating favourable conditions for liberalisation of the energy market, which provides a series of incentives for investors (including tax benefits and expatriation of profits, just to name a few).

The national constitution provides for non-discrimination and as a member of the WTO, Mozambique already follows the main principles of the International Energy Charter. As a result, Mozambique meets the basic conditions to adopt the International Energy Charter and become an observer of the Energy Charter.

Observership is a "light" form of participation in the Energy Charter process.[38] It offers interested non-members the possibility to become more familiar with the Energy Charter Treaty to establish formal contacts with member countries and other observers and participate in the international forum for energy dialogue established by the Energy Charter. Observers do not have any legal obligations under the Energy Charter Treaty. In particular, they do not have to contribute to the budget of the Organization. Observership may be – although not necessarily – a transitional phase towards full membership.

As an observer member, Mozambique would be subject only to a political commitment, pledging to move in the same direction with the principles of International Energy Charter and all of its sector policies, including legal reform.

It is also recommended a number of actions to be taken before the accession of Mozambique to this initiative:

i. Conducting a workshop in Maputo by the Energy Charter Secretariat, involving all energy sector stakeholders in order to further develop the principles of the International Energy Charter. This workshop will allow other entities in the energy sector, to become more familiar with the International Energy Charter and the Energy Charter Treaty, and provide a platform where stakeholders will be able to share their ideas and experiences regarding the Energy Charter.

ii. Receiving the legal opinion from the legal department of the Ministry of Energy will be important in the process to signing the International Energy Charter. Although the International Energy Charter is just a political declaration without any legal or financial obligation, it is a necessary required for this type of membership.

iii. The first contact between Mozambique and the Energy Charter Secretariat was in July 2014, through the Mozambican Embassy, Permanent Mission to the Kingdom of

[38] The Energy Charter Treaty: A Reader's Guide (Energy Charter Secretariat; Brussels).

Belgium, The Netherlands, and the European Union. At this time, it was expressed the country's interest in knowing more about the Energy Charter Process.

It is also recommended that the Energy Charter Secretariat expands its initiative to more countries in the southern African region, given that there is a Protocol of Cooperation at the level of countries in Southern Africa (SADC) that include cooperation in the fields of trade and energy sector investment. There is a convergence of the main objectives and principles of SADC and the International Energy Charter.

As a signatory of the International Energy Charter, Mozambique will have the opportunity to extend their participation in the international platform for cooperation on energy and benefit from a wide range of opportunities, including:

i. Cooperation on technological development and innovation activities in the fields of production, conversion, transmission, distribution and the efficient and clean use of energy, taking into account their obligations and nuclear non-proliferation commitments.

ii. Programs and activities in the research domain and technological development; dissemination and exchange of relevant information and transfer of know-how on technologies, with particular emphasis on energy efficiency and renewable energy field, where its relevance to Mozambique has been higher in recent years due to the survey of the country's renewable energy potential and the importance it has on rural electrification in remote areas of the country.

iii. Institutional training programs for staff linked to the energy sector in the various policy areas, which may extend to academic institutions (that is, vocational, technical and/or higher education institutions) in Mozambique.

Besides that, the International Energy Charter respects the sovereignty of each state over its energy resources, as well as the right to regulate the transmission and the transport of energy in their territories, respecting all relevant international obligations. In the spirit of political and economic cooperation, the International Energy Charter promotes the development of efficient, stable and transparent energy markets, regional and global energy cooperation based on the principle of non-discrimination and commercial-based pricing, taking into account environmental concerns and the role of energy in national development of each country.

As a signatory of the International Energy Charter, Mozambique will be engaged in the implementation of the general principles of the International Energy Charter, which will

culminate in the development of two annual reports prepared by officials seconded to the Energy Charter Secretariat, sent by the Government of Mozambique, covering the following themes:

i. Market Structure and Investment Climate Report; and
ii. In-Depth Report on Energy Efficiency in Mozambique.

Expansion of the International Energy Charter to more countries in the region is an important step that needs to be implemented. Mozambique is already an integrated country within the SADC region and it would be advantageous that membership to the International Energy Charter include all the member countries in the SADC region. This would facilitate further convergence of the energy policies in the light of the basic principles of the International Energy Charter on an international level.

d) Procedure to adopt the International Energy Charter

The previous section pointed out the added value of signing the International Energy Charter. All that is required to adopt it as an international political declaration on energy cooperation is to formally express such desire to the Energy Charter Secretariat in writing, requesting an invitation to formal signing of the International Energy Charter in The Hague in May, 2015. The International Energy Charter can also be signed after that date, following the same procedure.

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- Resolution No 64/2009 of 2 November 2009 – Natural Gas Market Development Strategy.
- Decree No 67/2009 of 11 December 2009 – National Atomic Energy Agency.

(B) Power generation and supply

- Law No 21/97 of 1 October 1997 - Electricity Law.
- Decree No 8/2000 of 20 April 2000 - Regulations on the Powers and Procedures for the Award of Concessions, and the Import and Export of Energy.
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- Decree No 25/2000 of 3 October 2000 – Electricity National Council (CNELEC) Statutes.
- Decree No 46847 - Regulation of safety of high voltage power lines and distribution networks of low voltage power.
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(C) Corporate

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(D) Investment

- Law No 3/93 of 24 June 1993 - Investment Law.
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(E) Tax & Customs

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16. Annex A

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
MULTILATERAL INVESTMENT TREATIES						
EU-SADC Interim Agreement	EU (European Union); SADC (Southern African Development Community);	Signed	22/01/2009		Rules for cooperation in trade in goods, supply-side competitiveness, business enhancing infrastructure, trade in services, trade related issues, trade data, institutional capacity building, fiscal adjustments. Facilitation of transit movements is regulated in Article 40. Energy is not a priority sector according to its appendixes.	NA
SADC Investment Protocol	SADC (Southern African Development Community);	In force	18/08/2006	16/04/2010	NA	NA

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
Mozambique-US TIFA	Mozambique; United States of America;	In force	21/06/2005	21/06/2005	NA	NA
Cotonou Agreement	ACP (African, Caribbean and Pacific Group of States); EU (European Union);	In force	23/06/2000	01/04/2003	According to Article 23, cooperation will develop mining and energy sectors, encouraging private sector involvement and development. There are no rules regarding investment protection or promotion.	NA
SADC Treaty	SADC (Southern African Development Community);	In force	17/08/1992	30/09/1993	NA	NA
AU Treaty	AU (African Union);	In force	03/06/1991	12/05/1994	Chapter IX, regarding energy and natural resources promotion, according with the protocol on natural resources.	NA
OIC Investment	OIC (Organisation of the Islamic Conference);	In force	05/06/1981	23/09/1986	Article 3 indicates that "*parties shall endeavour to open up various fields*	Article 16 contains a fork on the road provision. Article 17 allows conciliation or

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
					and investment *opportunities to the capital on the widest possible scale.*"	arbitration.
BILATERAL INVESTMENT TREATIES						
Algeria - Mozambique BIT (1998)	Algeria; Mozambique;	In force	12/12/1998	25/07/2000		
BLEU (Belgium-Luxembourg Economic Union) - Mozambique BIT (2006)	BLEU (Belgium-Luxembourg Economic Union); Mozambique;	In force	18/07/2006	01/09/2009	Applicable to all investments, according to Article 12. Article 7 focused on environmental measures/rules Survival clause: 10 years	Article 10: • Cooling off period: 6 months. • ICSID and ICSID additional facility, ad hoc tribunals under UNCITRAL Rules. • Enforcement of awards under Washington and New York conventions.
China - Mozambique BIT (2001)	China; Mozambique;	In force	10/07/2001	26/02/2002		
Cuba - Mozambique BIT (2001)	Cuba; Mozambique;	In force	20/10/2001	26/02/2002		

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
Denmark - Mozambique BIT (2002)	Denmark; Mozambique;	In force	12/10/2002	30/12/2002		
Egypt - Mozambique BIT (1998)	Egypt; Mozambique;	Signed	08/12/1998			
Finland - Mozambique BIT (2004)	Finland; Mozambique;	In force	03/09/2004	21/09/2005	Applicable to all investments, according to Article 13. Survival clause: 10 years	Article 9: • Cooling of period: 3 months. • Fork in the road clause • ICSID, ICSID Additional Facility, ad hoc tribunals under UNCITRAL Rules. • Enforcement of awards under Washington and New York conventions.
France - Mozambique BIT (2002)	France; Mozambique;	In force	15/11/2002	06/07/2006		
Germany - Mozambique BIT (2002)	Germany; Mozambique;	In force	06/03/2002	15/09/2007	Survival clause: 15 years Applicable to all investments	Article 11: • Cooling of period: 6 months. • ICSID, ad hoc tribunals.

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
India - Mozambique BIT (2009)	India; Mozambique;	Signed	19/02/2009		Applicable to all investments, according to Article 12. Survival clause: 15 years	Article 9: • Cooling of period: 6 months. • Conciliation under UNCITRAL Rules • ICSID, ICSID Additional Facility, ad hoc tribunals under UNCITRAL Rules.
Indonesia - Mozambique BIT (1999)	Indonesia; Mozambique;	In force	26/03/1999	25/07/2000	Applicable to all investments, according to Article 11. Survival clause: 10 years	Article 7: • Cooling of period: 3 months. • Fork in the road clause • Arbitration or conciliation • ICSID, ICSID Additional Facility, ad hoc tribunals under UNCITRAL Rules.
Italy - Mozambique BIT (1998)	Italy; Mozambique;	In force	14/12/1998	17/11/2003		
Japan - Mozambique BIT (2013)	Japan; Mozambique;	Signed	02/06/2013		Applicable to all investments, according to Article 27.	Article 17: • Cooling of period: 3 months. • ICSID, ICSID Additional Facility, ad hoc tribunals

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
					Survival clause: 10 years	under UNCITRAL Rules, any arbitration in accordance with other arbitration rules. • Enforcement of awards under Washington and New York conventions.
Mauritius - Mozambique BIT (1997)	Mauritius; Mozambique;	In force	14/02/1997	26/05/2003	Applicable to all investments. Survival clause: 10 years	Article 8: • Cooling of period: 3 months. • Any arbitration institution or ad hoc arbitration in accordance with ICSID Rules.
Mozambique - Netherlands BIT (2001)	Mozambique; Netherlands;	In force	18/12/2001	01/09/2004	Applicable to all investments, according to Article 27. Survival clause: 15 years	Article 9: • Arbitration or conciliation under ICSID Covnention.
Mozambique - Portugal BIT (1996)	Mozambique; Portugal;	In force	28/05/1996	31/10/1998	Applicable to all investments, according to Article 1. Survival clause: 10 years	Article 9: • Cooling of period: 6 months. • Arbitration under ICSID Convention.

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
Mozambique - South Africa BIT (1997)	Mozambique; South Africa;	In force	06/05/1997	28/07/1998		
Mozambique - Spain BIT (2010)	Mozambique; Spain;	Signed	18/10/2010			
Mozambique - Sweden BIT (2001)	Mozambique; Sweden;	In force	23/10/2001	01/11/2007		
Mozambique - Switzerland BIT (2002)	Mozambique; Switzerland;	In force	29/11/2002	17/02/2004	Applicable to all investments, according to Article 1. Survival clause: 20 years	Article 9: • Cooling of period: 6 months. • Arbitration under ICSID Convention, or ad hoc arbitration under UNCITRAL Rules.
Mozambique - United Arab Emirates BIT (2003)	Mozambique; United Arab Emirates;	Signed	24/09/2003			
Mozambique - United Kingdom BIT (2004)	Mozambique; United Kingdom;	In force	18/03/2004	12/05/2004		
Mozambique - United States of America BIT (1998)	Mozambique; United States of America;	In force	01/12/1998	03/03/2005	Applicable to all investments, according to Article 1.	Article 9: • Fork in the road clause. • ICSID, ICSID Additional Facility, ad hoc tribunals

Short title	Parties	Status	Date of signature	Date of entry into force	Clauses related to energy	Investor – State Arbitration
					Survival clause: 10 years	under UNCITRAL Rules, any arbitration in accordance with other arbitration rules. • Enforcement of awards under Washington and New York conventions.
Mozambique - Viet Nam BIT (2007)	Mozambique; Viet Nam;	In force	16/01/2007	29/05/2007		
Mozambique - Zimbabwe BIT (1990)	Mozambique; Zimbabwe;	Signed	12/09/1990			