

TURKISH CONTRACTORS IN THE PROJECT FINANCE OF POWER PROJECTS
IN SUB-SAHARAN AFRICA (SSA)

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ABSTRACT

TURKISH CONTRACTORS IN THE PROJECT FINANCE OF POWER PROJECTS IN SUB-SAHARAN AFRICA (SSA)

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The development of the power sector is essential for the development of Sub-Sahara African countries. The Sub-Sahara African region which comprises 48 countries¹ has one of the lowest generation capacity in the world. As the region is one of the poorest in the world and governments lack the financial means to fund power projects, these ones have been financed through project finance. The trend is toward a bigger participation of the private sector and less of government financing. Therefore project finance is becoming the standard for power projects. More opportunities are flowing in the power sector in the region and it is important that Turkish contractors are not left out of the competition. This thesis starts by familiarizing the reader with the world of project finance and then provides a clear picture of the situation of Turkish contractors in a region which is yet to see their

¹ Even though the definition of "Sub-Saharan Africa" used by UN institutions includes Sudan, the United Nations itself classified it as a North African country. In this work, we will consider Sudan as part of the Sub-Sahara African Region.

participation in the power sector. By assessing the difficulties they face in the region, this thesis intends to determine their strengths and weaknesses after establishing characteristics of the power sector in general and the region in particular. This work provides realistic and effective solutions in order to take the competitiveness of Turkish contractors to a higher level.

Keywords: Project finance, Sub-Saharan Africa, Power sector, Strengths and Weaknesses of Turkish Contractors

ÖZ

SAHRA ALTI AFRIKA'DAKİ (SSA) ENERJİ PROJELERİNİN FİNANSMANLARINDA TÜRK MÜTEAHHİTLERİN DURUMU

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Enerji sektörü, Sahra Altı Afrika ülkelerinin kalkınması için büyük bir önem taşımaktadır. 48 ülkeden² oluşan Sahra Altı Afrika bölgesi, dünyanın en düşük üretim kapasitesine sahip olanlardan bir tanesidir. Bölgenin dünyanın en fakirlerden bir tanesi olduğu için ve hükümetler enerji projelerini finanse edebilmek için yeterince finansal kaynaklara sahip olmadığı için bu projelerin çoğu proje finansmanı aracılığıyla finanse edilmiştir. Özel sektörün daha büyük bir katkısı ve daha az hükümet finansmanlarına yönelik bir eğilim vardır. Bu nedenle proje finansmanı enerji projeler için bir standart haline gelmiştir. Bölgedeki enerji sektöründe fırsatlar mevcut olup, bu kapsamda Türk müteahhitlerin rekabetin dışında kalmaması gerekmektedir. Bu çalışmada enerji sektörünün genel ve bölgeye ait olan özellikleri ortaya konulduktan sonra müteahhitlerin bölgede karşılaştıkları zorluklar değerlendirilerek kuvvetli ve zayıf yönleri belirlenmiştir. Sonuç

² BM kurumları tarafından kullanılan "Sahra Altı Afrika" tanımı Sudan'ı bu tanımın içine dahil etse de Birleşmiş Milletler Sudan'ı Kuzey Afrika ülkesi olarak sınıflandırmaktadır. Bu çalışmada, Sudan Sahra Altı Afrika ülkesi olarak kabul edilmiştir.

olarak bu çalışma, Türk müteahhitlerin rekabet gücünü daha üst bir seviyeye çıkarmak amacıyla gerçekçi ve efektif çözümler sunulmuştur.

Anahtar Kelimeler: Proje Finansmanı, Sahra Altı Afrika, Enerji Sektörü, Türk Müteahhitlerin Kuvvetli ve Zayıf Yönleri

To my beloved family...

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LIST OF ABBREVIATIONS

SSA	Sub-Saharan Africa
UN	United Nations
GDP	Gross Domestic Product
GW	Gigawatt
ENR	Engineering News Record
EPC	Engineering Procurement Construction
IPP	Independent Power Provider
MW	Megawatt
PPA	Power Purchase Agreement
BOT	Build Operate Transfer
BOOT	Build Own Operate Transfer
BOO	Build Own Operate
COD	Commercial Operation Date
NUG	Non-Utility Generator
PURPA	Public Utility Regulatory Act
SPV	Special Purpose Vehicle
kWh	Kilowatt hour
USD	Dollar
TUSKON	Turkish Confederation of Businessmen and Industrialists
IHH	Humanitarian Relief Foundation
DEIK	Turkish Foreign Economic Relations Board
US	American
O&M	Operation and Maintenance
PC	Pulverized Coal
CCS	Carbon Capture and S
IGCC	Integrated Gasification Combined Cycle

CT	Combustion Turbine
CC	Combined Cycle
BFB	Bubbling Fluidized Bed
CIS	Commonwealth of Independent States
TÇMB	Turkish Cement Manufacturers' Association
FEED	Front End Engineering Design
TE	Turk Eximbank
ECA	Export Credit Agency
OECD	Organization for Economic Cooperation and Development
CAD	China Africa Development Fund
EURIBOR	Euro Interbank Offered Rate

CHAPTER 1

INTRODUCTION

The importance of the power sector can be summarized in these words from Ban Ki-Moon, General Secretary of the UN, taken from his speech made at the Clean Energy Ministerial Meeting in Seoul, South Korea:

“Energy is the golden thread that connects economic growth, increased social equity, and an environment that allows the world to thrive. Access to energy is a necessary precondition to achieving many development goals that extend far beyond the energy sector – eradicating poverty, increasing food production, providing clean water, improving public health, enhancing education, creating economic opportunity, and empowering women” (United Nations, 2014) .

In SSA, where 70% of people do not have access to electricity, developing electricity infrastructure is definitely a priority for governments. It is also a priority for the UN and the EU through the “sustainable energy for All” program that aims to increase access to energy, increase the proportion of renewable energy and improve energy efficiency (IEA & UNDP & UNID, 2010). Heysh and Charafi (2013) states that there is probably no element as critical to economic progress and development as access to electricity.

The lack of access to efficient and sustainable modern energy services is an obstacle to economic growth and poverty reduction (Ouedraogo, 2012). Power and infrastructure are the cornerstones of a sustainable development. When we talk power we do not only see the electricity for households. Power is the driving force of businesses, no matter how small they may be, and of the industry. Hospitals, schools, universities and government offices cannot function without electricity. The economies of many African countries are negatively affected by the quality and quantity of electricity at their disposal. Economies

of Tanzania and Uganda lose 4% to 6% of GDP every year because of power cuts (Periou, 2013).

According to Tas Anvaripour, Business Development Director and Team Leader for the Africa 50 Initiative of the African Development Bank, the reason why the power sector is underdeveloped in Africa is because it requires skilled professionals and because the social impact and resettlement costs involved are high. Another reason is the difficulty in finding the balance between the advantages of governments and the benefits of the private sector. Power projects are also perceived by potential investors to be highly risky (Anvaripour, 2014). Despite that, the region sees the installation of about 1 to 2 GW new capacity each year (Saghir, 2014). Therefore it is an opportunity that Turkish companies should not miss.

Turkish companies are well known for their experience and capabilities in building and in infrastructure projects. Not many Turkish companies which operate in the power sector on the national level have been able to internationalize. For example while 42 Turkish contractors were listed on the 2013 ENR list of international contractors, only 6 of these companies had operations in the power sector (ENR, 2013).

Besides the fact that it is composed of 48 countries (Figure 1), as SSA holds many of the fastest growing economies in the world (The Economist, 2011), the power sector is becoming more and more demanding and it is expected that there will be more opportunities in the coming years in the power sector for contractors and it is important that Turkish Contractors become an active player and participate in that pool of opportunities.

This thesis has for aim to determine the causes of the absence of Turkish contractors in the power sector in SSA by evaluating their strengths and weaknesses and suggest effective measures in order to strengthen their presence in the region.



Figure 1: Map of Sub-Saharan Africa (Capacity4dev)

CHAPTER 2

PROJECT FINANCE

2.1. History of project finance

The concept of Project finance as we know today was developed in the United States almost 40 years ago as there was a need for financing oil projects and the only security that could be provided by the borrowers was oil reserves. The idea behind the concept was that all the parties involved share part of the risks of the Project (IFC, 1999).

In the 1970s, the finance for large-scale projects often came from official sources (host countries, international development agencies...). As the availability of the funds coming from the public sectors were reduced, and public expenditures experienced constraint, the need for private sector financing has increased. Developing countries also needed new financing techniques that could help them gathering the private funds necessary to finance their large scale infrastructure projects (Hoffman, 2001). In the United States, there was a boom in the construction of new power plants through project finance (IPP) as there was a need for new generating capacity after a decade of virtually no new construction and as utilities were required to divest large amounts of generating assets (Periou, 2013).

Project financing around the world peaked around 2000 with the Asian financial crisis and the downturn in industrialized countries. As the crises created stresses and strains for many projects, serious concerns were raised about how viable some projects could really be. The importance of thorough finance structuring and risk mitigation was highlighted (IFC, 1999).

The power sector has always been the most important client for project finance as illustrated in the figure below (Figure 2).

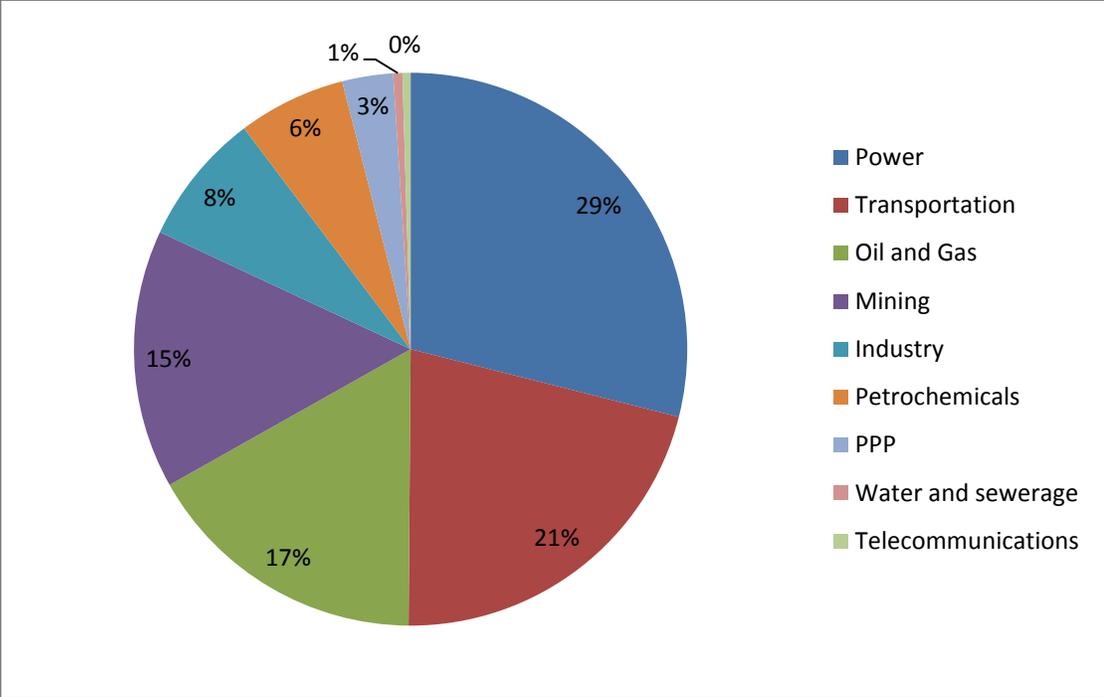


Figure 2: Project Finance Transactions by sector (First Semester of 2014) (Thomson Reuters Project Finance International)

In the early 1990s, multilateral and bilateral development institutions urged number of African countries to adopt plans to unbundle their power systems and introduce private participation and competition. That's then that project finance made its way to the power sector in Sub-Saharan Africa in the form of Independent Power Providers (IPP) with the 210 MW capacity CIPREL Natural Gas Power Plant in Ivory Coast which was executed as a BOOT (Build Operate Own Transfer) type of contract (Davis, 2003). The IPPs were supported by non-recourse or limited recourse loans and had long-term power purchase agreements (PPAs) with an offtaker which was usually a state utility. Since the 1990s around 30 medium-to-large scale projects (capacity above 40 MW) haven taken root across 11 countries in Sub-Saharan Africa and 30 small IPPs (capacity below 40 MW) totaling approximately 4.7 GW of energy capacity (Eberhard & Gratwick, 2013).

Table 1: Sub-Saharan Africa IPPs above 40 MW as of the second quarter of 2013
(Eberhard & Gratwick, 2011)

Project	Country	Size MW	Fuel/cycle	Contract type	Contract (yrs)	COD
Dibamba	Cameroon	88	HFO/peaking plant	BOT	20	2009
Kribi	Cameroon	216	Natgas/open cycle	BOT	20	2012
CIPREL	Côte d'Ivoire	210+111	Natgas/open cycle	BOOT	19	1995/2009
Azito	Côte d'Ivoire	281+139	Natgas/open cycle	BOOT	24/20	2000/2015
Takoradi II	Ghana	220	Light crude/single cycle	BOOT	25	2000
Sunon Asogli	Ghana	200	Combustion engine	BOO	20	2010
CENIT Energy Ltd*	Ghana	126	Trifuel/open cycle	-	-	2012
Westmont	Kenya	46	Kerosene/gas	BOO	7	1997
Iberafrica	Kenya	44+12+52	HFO/diesel engine	BOO	7/15/25	1997/2000/2009
OrPower4	Kenya	48+36	Geothermal	BOO	20	2000/2009
Tsavo	Kenya	74	HFO/diesel engine	BOO	20	2001
Rabai	Kenya	90	HFO	BOOT	20	2009
Thika Thermal Power	Kenya	87	HFO/diesel engine	BOO	20	under constr.
Triumph (Athi River)	Kenya	81	HFO/diesel engine	BOO	20	under constr.
AES Barge	Nigeria	270	Natgas/open cycle	BOO	13	2001
Okpai	Nigeria	450	Natgas/combined cycle	BOO	20	2005
Afam VI	Nigeria	630	Natgas/combined cycle	BOO	20	2008
Aba Integrated	Nigeria	141	Natgas	-	-	2013
Kivuwatt	Rwanda	100	Methane/gensets	BOO	25	tbd
GTi Dakar	Senegal	52	Diesel/nafta	BOOT	15	1999
Kounoune I	Senegal	68	HFO	BOO	15	2008
IPTL	Tanzania	100	HFO/diesel engine	BOO	20	1998
Songas	Tanzania	189	Natgas/open cycle	BOO	20	2004
Centrale Thermique de Lomé	Togo	100	Trifuel (thermal)	BOOT	25	2010
Namanve	Uganda	20+30	HFO	BOOT	6	2009/2012
Bujagali	Uganda	250	Hydro	BOT	30	2011
Tororo**	Uganda	50	Diesel	BOO	-	2012
Itezhi Tezhi	Zambia	120	Hydro	BOOT	25	expd. 2014

BOT: Build-operate-transfer / BOOT: Build-own-operate-transfer / BOO: Build-own-operate / HFO: Heavy Fuel Oil

* Mauritius, Cap Verde and South Africa are excluded from the samples

2.2. Definition of project finance

Project finance is the raising of funds on a limited-recourse or nonrecourse basis in order to finance infrastructure or industrial projects that have been proved to be economically separable and in which the providers of the funds look primarily to the cash flow from the project in order to service their loans and provide the return on their equity invested. In the power sector, projects developed by project finance are often called Independent Power Producer (IPP) or Non-Utility Generator (NUG). They are defined as non-public entities which own facilities to generate electricity for sale to utilities and end users (Energy vortex, 2014). The concept of IPP as we know it today was born in the United States in 1978 when the Public Utility Regulatory Act (PURPA) was passed. PURPA in its section 210 established a new class of IPP that were permitted to produce power for resale and required utilities to purchase energy produced by these IPPs at the utilities avoided cost. By doing so PURPA also insured that the energy generated by small producers were not wasted (MISO Energy, 2012).

The parties involved in the project finance structure are the equity investors, called “sponsors” and the lending institutions that provide the loans. Under project finance, sponsors raise debt financing for their project on the basis of the project’s own revenues and not on the sponsor’s assets.

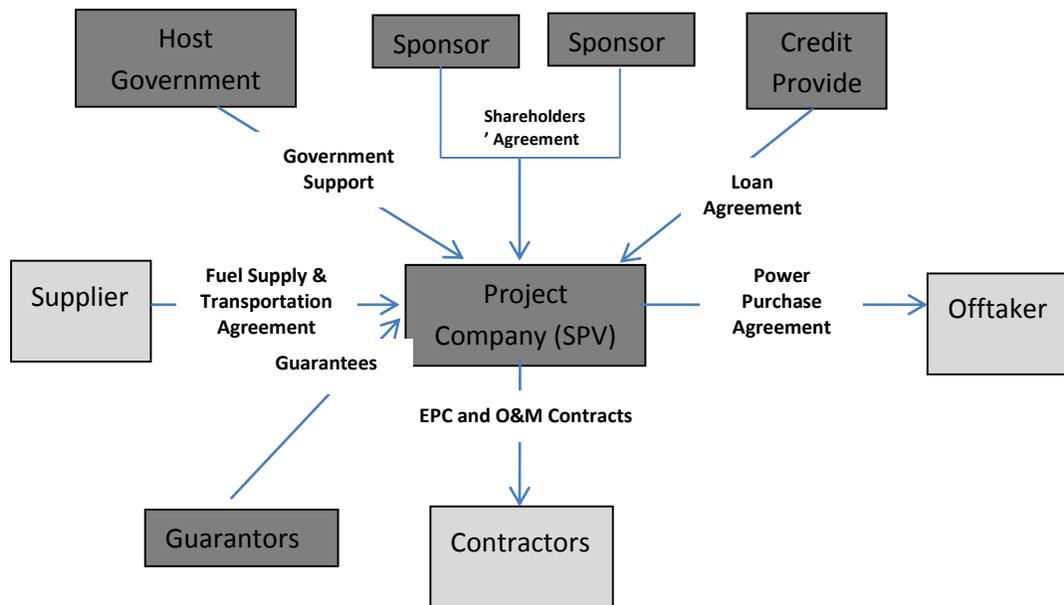


Figure 3: Typical structure of an Independent Power Provider in an Emerging Market

2.3. Stakeholders in project finance

A project stakeholder is an entity that has an interest or a gain upon a successful completion of a project and which can impact the project positively as well as negatively (Wikipedia 1). In project finance, the numbers and nature of stakeholders depend on the nature of the project, its complexity, its ownership structure, the host country, the risks involved... Project finance is underpinned by the allocation of risks among several stakeholders. Each stakeholder is allocated the risks that he is the more likely to manage (Gardner and Wright, 2013).

Those stakeholders are credit providers, sponsors, guarantors, buyers, suppliers, contractors.

2.3.1. Credit providers

In project finance, there are numerous financial institutions and development banks that provide credits. These financial institutions can be regional development banks (The

Islamic Development Bank, the African Development Bank, etc.), multilateral organizations (International Finance Corporation), bilateral organizations (Turk Exim Bank), and commercial banks. The forms of support they offer are varied: low interest-rate loans, no interest-rate loans, market interest-rate loans (Yescombe, 2002)

Credit providers are usually not willing to bear risks related to the operation of the Project and prefer to leave them to the sponsors. Sponsors are usually more likely to undertake the management of these risks given that they are usually the ones mastering the technological side of the Project. Lenders usually require that the sponsors or other creditworthy parties involved in the project provide a certain number of assurances, generally through contractual obligations: (Achonwa, 2008)

- That the Project will be completed even if the actual cost exceeds the planned cost
- That the debt will be repaid in full even if the Project is not completed
- That once completed, the Project will generate enough cash to meet the debt obligations
- If the Project experiences interruption, termination or suspension of its operations, the Project will continue to service its debt obligations

2.3.2. Sponsors & SPV

2.3.2.1. Sponsors

The sponsors are the equity investors and owners of the Project Company (SPV). They can be a single party, a joint venture or a consortium of companies. In case they are a group of companies, a shareholder agreement is established between them. That agreement codifies issues relating to the control, corporate governance, funding, ownership, share transfer and termination of the Project Company (Gardner and Wright, 2013).

They are the ones who initiate the Project. The role of the Project sponsor is limited but critical. He is the one which creates the Special Purpose Vehicle (SPV) or Project Company.

The Project sponsor receives the profits generated at the end of the project. He doesn't face the same risks that he would in traditional finance since, in project finance; the only guarantee of the project is its future revenues (Gatti, 2008). Therefore, the main equity owner of the project does not carry liability in case of default. Large infrastructure projects usually need the support of the government. In power projects, the host government is always a sponsor or a guarantor. No power project can be conceivable without the support and direct involvement of the government given their critical importance for the development of the country. The government can be the initiator of the project but can decide to contract construction companies as sponsors in order to mitigate construction risks and gather the necessary financing (Yescombe, 2002).

2.3.2.2. SPV

The SPV or Project Company is the company created by the sponsor for the sole purpose of achieving the goals of construction and operation of the project. The SPV is the entity legally authorized to contract with other parties throughout the project and the one to conduct all the business related to the Project on behalf of the sponsor. The shareholders are the owners of the SPV (Yescombe, 2002).

2.3.3. Guarantors

The host country when he is not a sponsor in the traditional form can provide risk mitigation in the form of sovereign guarantees (Fight, 2006). Those guarantees can include repayment of the debt in case of political unrest or default, or promises to establish suitable legal reforms, to set favorable tariffs. Some financial institutions such as the World Bank or the European Bank for Reconstruction and Development provide guarantees and political risk insurance, thereby providing assurance to investors; some commercial banks provide completion guarantees on behalf on the sponsor companies; some institutions provide guidance on the management of the project as well as technical and operational support (Hoffman, 2001).

2.3.4. Suppliers & Buyers & Contractors

2.3.4.1. Contractors

As the risk of completion is one of the more important risks in project finance, the sponsor if he is not a builder himself will transfer that risk to contractors (Gatti, 2008). The main contractors are the EPC contractors with whom a Turn-key contract is signed and the Operation & Maintenance Contractor (Yescombe, 2002). The EPC contractor is entitled to complete the construction on a specified timeline and in compliance with specific characteristics.

2.3.4.2. Suppliers

Both in the construction and in the operation phase, a scarcity of materials can jeopardize the project. In order to reduce if not totally remove the risk of supply, it is necessary that strong suppliers be involved in the project and that detailed and clear agreements been made between those suppliers and the SPV. The most important supply contract in an IPP is definitely the Fuel Supply and Transportation Agreement (FSTA). It is important that the natural gas and its pipelines, the coal and its train line are available and that the biomass deposit is accessible. In a lesser extent, the supply of materials that will be used in the construction phase like cement and steel and equipment like turbines and boilers should be secured as well.

2.3.4.3. Buyers (Offtakers)

In project finance a buyer is always required in order to mitigate commercial risks. The supplier agrees to purchase a quantity of electricity generated by the plant which is sufficient to generate enough revenues. In IPPs, the supplier is usually the public entity responsible for the distribution of electricity or one of its affiliates. Sometimes other buyers can come into the picture like mining companies or other governments. In the D.R. Congo's 4.800 MW Inga Project which is expected to start by October 2015, the buyers are South Africa (2.500 MW), the Katanga Region and the mining sector (1.300 MW) and other sectors (1.000 MW) (AEF 1). The contract between the Project Company and the buyer is called a Power Purchase Agreement (PPA). A PPA is, somehow, a

guarantee that once the construction is completed, the project will be able to generate enough revenues to sustain its debt. It defines all the commercial terms for the sale of electricity namely the beginning of commercial operation, the schedule for delivery of electricity, penalties in case of non-performance, payment terms and termination. (Wikipedia 2) The contractual terms of the PPA may last between 5 and 20 years (Babbar & Schuster, 1998). As the PPA is the main agreement which defines the revenue and credit quality of the IPP, it is considered as a key instrument in project finance.

2.4. Importance of project finance in the sub-Saharan power sector

Turning to IPPs gave Cote d'Ivoire access to the electricity it needed to meet its growing national demand and made the country an exporter of electricity to neighboring countries (Benin, Burkina Faso, Ghana, Mali & Togo) (David, 2003).

Raising Sub-Saharan Africa's electricity availability per person to the level of lower-middle income countries would potentially cost an unaffordable 400 billion USD. More than 69% of Sub-Saharan Africans, some 585 million people do not have access to electricity (T'Serclaes & Philibert 2010). Without South Africa, the region total installed generation capacity is 28 GW which is the same as Holland which has a population of only 17 million people (Eberhard et. al, 2008). With an annual electricity consumption per person of about 200 kWh, the region is one of the most deprived in power in the entire world. In order to raise it to 700 kWh, which is the level of lower middle income countries (India, Algeria, Colombia for example), 125 GW of additional generation capacity is required (Heysh & Charafi, 2013). With the building of associated transmission and distribution networks required the region needs 400 billion USD to achieve that capacity. In other words in order to reach that capacity in a decade 40 billion USD of investments would be required every year which is around 7.5 to 10% of the continent's GDP which is quite unlikely. Grants and development loans will not be enough either as the total Official Development Assistance for infrastructure in Africa is about 3.5 billion USD per year (Eberhard et. al, 2008). Can be added to that the 30 billion USD of loans provided annually by development banks and similar institutions. Therefore in the best case scenario, if a third of all these flows were allocated to the power sector, it would only

make between 10 and 15 billion USD so approximately the third of what is currently needed. The extra two third needed can only come from the private sector. This is a reality that actors in the power sector in SSA, Turkish contractors included, should be aware of: the governments of the region are poor and therefore only the actors who can bring the necessary financing will be able to succeed. Many projects could never come to life because the investors were reluctant to invest in the country and the government could never realize them using its own funds. It is the case of the Inga Dam III in the Democratic Republic of Congo which has been an idea for more than 2 decades and of which the construction would finally start by 2015 (AEF 1, 2014). Without enough funds to build its generation facilities, the SSA region (without South Africa) could only implement 10 private power projects in the last 3 years which is less than 1 IPP per country. Many countries have started to give more space to the private sector to build and even operate generation facilities. Given the strategic importance of the sector, many countries which were not comfortable with including private companies decided to let the private sector in but in order not to lose the grip entirely developed public private partnerships. The governments can sit in the board of directors of a project company even if they do not have a share of capital and therefore have a say in how things are run. Another advantage for governments is that when the finance is provided by other entities they can allocate the funds they would have allocated to energy to other sectors like education and health. It is a real relief for African governments which usually struggle with the poor budgets they have. Project finance is therefore the best and maybe the only alternative for the power sector in SSA.

CHAPTER 3

TURKISH CONTRACTORS' ACTIVITIES IN SUB-SAHARAN AFRICA

We cannot truly understand the place of Turkish Contractors in Sub-Sahara Africa without getting to the bottom of what made them decide to venture into that market they had not been very familiar with. It all starts with the accession to power of a new governing party in 2002 and its “Opening Up to Africa” Plan.

3.1. The opening up to Africa action plan

In 1997, during the conference of Luxembourg, Turkey who had been focusing his foreign policy especially on the Western world was given several unexpected conditions by the European Union in regards with his candidacy as member of the Union. That event was a big deception for the Turkish government and he decided not to focus only on Europe and to redefine its foreign policy (Boztaş, 2010). Turkey decided to expand and develop its political and economic relations to other regions of the world namely Africa, Latin America, Asia and Middle East. As a result, his interest toward Africa grew and its foreign policy toward Africa changed drastically. Until then Turkey had very strong relations with North Africa given the proximity of the region and the similarities of culture and religion. Turkish contractors were used to that region where they had undertaken several projects. But Sub-Sahara Africa was a mystery for Turkey. In 1998, the Ministry of Foreign Affairs decided to materialize that interest by developing a policy that they called “Opening Up to Africa”. They decided that the policy would be a vision on the long term instead of a simple set of moves toward Africa. The following points were agreed upon as part of the Plan of Expansion to Africa: (Hazar, 2012)

- Organizing meetings between high officials of Turkey and African countries
- Reinforcing the relations with African governments through international and regional organizations (African Union, Islamic Development Bank...)
- Organizing humanitarian aids when necessary

- Supporting the economic and technical programs of the UN
- Inviting ministers and experts in order to discuss technical issues
- Being contributor member of the African Development Bank
- Being Member of the African Export Import Bank (Afreximbank)
- Organizing visits and conferences where African and Turkish Business men can meet

With the arrival to power of a new governing party in 2002, the exchanges between Turkey and African governments increased. Africa was seen as an alternative market as the European market was experiencing an economic recession and as a fruitful environment for the expansion of the new bourgeoisie formed by small and medium sized enterprises that had ties with the governing party (Karagül & Arslan, 2013). Actions of organizations like TUSKON and IHH which share the ideology of the governing party helped strengthened the new strategy toward Africa.

The support by all African countries but two of the candidacy of Turkey as a non-permanent member of the United Nations Security Council in 2009-2010 was a strong sign of the effectiveness of Turkey's efforts in Africa (Pannetier, 2012). Other signs of the efforts were:

- In 2005, Turkey becomes an observer member of the African Union
- Organization of the International Turkey-Africa Congress
- Organization of the Turkey-African Cooperation Summit
- Opening of Turkish embassies in 15 countries of Sub-Sahara Africa since 2009
- Opening in Ankara of the 11 embassies of Sub-Saharan African countries
- Visit of the President Gül and the Prime Minister Erdoğan to Africa several times and visit of African Presidents to Turkey
- Accreditation of Turkey by regional African organizations (Economic Community of West African States, East African Community, Common Market for Eastern and Southern Africa)

In 2000, the trade volume between Sub-Sahara Africa and Turkey was 750 million USD. In 2011, that trade volume reached 7.5 billion USD.

Since 2008, more than 15 Turkish embassies opened in Africa (Tanzania, Ivory Coast, Cameroon, Ghana, Mali, Uganda, Angola, Madagascar, Zambia, Mozambique, Mauritania, Zimbabwe, Somali, Gambia, South Sudan, Niger, Namibia, Burkina Faso, Gabon) taking the number of Turkish embassies in Africa to 31 (Hazar, 2012). Reciprocally 21 Sub-Sahara African countries have their embassies in Ankara (Ethiopia, Gambia, South Africa, Mauritania, Nigeria, Senegal, Somali, Sudan, South Sudan, Ghana, Democratic Republic of Congo, Republic of Congo, Uganda, Angola, Guinea, Kenya, Ghana, Burkina Faso, Zambia, Benin, Djibouti).

It seems like Turkey has come a long way when it comes to its political relations with Africa. But are its economic relations strengthened too? is that enough?

3.2. Turkish contractors' activities in sub-Saharan Africa

In 2011, 40.10% of the total market share, the Chinese contractors were dominating the African market followed by the Europeans (34,60%) and the Americans (6,70%). It is interesting to note that in 2002 the Chinese contractors, with 9,90% market share, were far behind Europeans (44,30%) and Americans (24,10%) and that it took them merely 10 years to position themselves as the leaders in the sector in the region (Shenyang, 2012). Even though these figures are valid for the whole African continent we can assume that the Sub-Saharan Region sees the same fate. So where are the Turkish contractors?

The share of Turkey on the African market fell from 4,9% in 2009 to 3% in 2011 (Milliyet, 2012). It can easily be said that Turkey is a small player in the region. In 2010, Turkish Contractors had executed a total of 205 billion USD in 93 countries (Figure 4) and 19,5% of the volume of project executed were in Africa (EIC, 2013). In 2013, according to the Turkish Foreign Economic Relations Board (DEIK, 2013), Africa was the third destination for Turkish contractors after the Commonwealth of Independent States and the Middle East. They had undertaken projects in Africa for a total value of 46.4 billion USD (DEIK, 2013). Only 18% of this volume was generated from the Sub-Saharan Region which is equivalent to approximately 8.43 billion USD. Therefore as displayed in table 2, only 3% of the projects undertaken by Turkish contractors were executed in the SSA region.



Figure 4: Volume of Executed Projects per region (EIC, 2013)

Table 2: Projects executed by Turkish Contractors in the SSA region by the second semester of 2014 (TMB, 2014)

Countries	Number of Projects	Total Project Value (USD)	Share (%)
Ethiopia	14	2,436,282,136	0.86
Sudan	67	2,253,536,358	0.79
Nigeria	18	1,100,574,326	0.39
Angola	2	808,000,000	0.28
Equatorial Guinea	5	330,409,654	0.12
Cameroon	3	223,589,800	0.08
Kenya	9	221,829,666	0.08
Ghana	5	207,835,596	0.07
Djibouti	9	130,065,442	0.05
Gabon	4	124,594,889	0.04
Mauritania	2	108,653,018	0.04
Guinea	6	94,803,276	0.03
Senegal	1	78,703,433	0.03
Somali	3	65,440,000	0.02
Burundi	1	51,069,000	0.02
Mali	2	40,717,504	0.01
Mozambique	2	40,334,000	0.01
Congo	3	34,980,545	0.01
Sierra Leone	2	25,236,069	0.01
Republic of South Africa	3	18,975,871	0.01
South Sudan	2	11,405,896	0.01
Tanzania	1	10,354,947	0.01
Niger	2	6,381,789	0.00
Malawi	1	910,000	0.00
Gambia	1	739,535	0.00
Ivory Coast	1	663,419	0.00
Total	169	8,426,086,169	3

But as Wheeler states, Turkey even with a GDP increasing rapidly since 2000 is not in the league of India and China in terms of working force and area but has done a lot for a country of its caliber (WPR, 2011). But the most notorious players, the Chinese contractors are slowly losing their grip on the market and become obliged to share it with the other emerging countries, Turkey included, as these countries become more and more competitive (FT.COM, 2012).

CHAPTER 4

STRENGTHS AND WEAKNESSES OF INTERNATIONAL TURKISH CONTRACTORS

Porter (1990) believed that environmental factors played a key role in the success of international firms while Child (1972) and Witt and Meyer were convinced that strategies adopted by companies were the key factor for competitive positioning. The reality actually lies between the two theories: both environmental factors and the strategic choice perspectives of companies define a competitive advantage (Korkmaz and Messner, 2008). For that reason characteristics of the industry are necessary in order to assess the relative strengths and weaknesses of companies.

Porter developed the national diamond framework in order to explain why some nations are successful in some industries and some are not (Porter, 1990). That framework is supposed to analyze a company's ability to succeed in the national market and the ability of a national market to compete internationally. The diamond framework comprises the following components:

- Factor conditions
- Demand conditions
- Related and supporting industries
- Strategy, structure and rivalry
- Role of government
- Chance

While assessing strengths and weaknesses of international companies in a given industry, most scholars use the diamond framework of Porter as displayed in Figure 5.

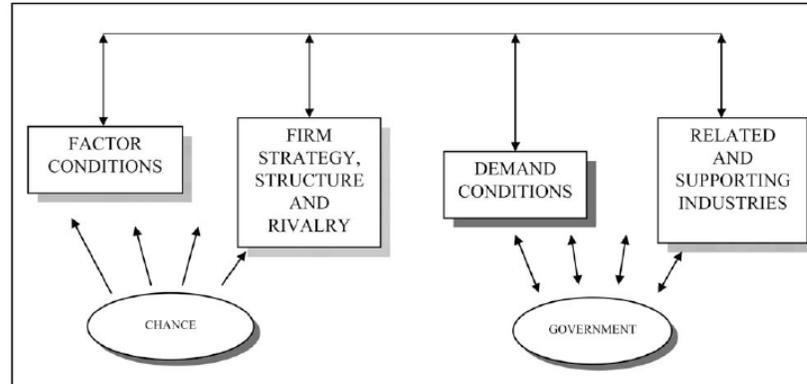


Figure 5: Porter's Framework (adapted from Porter 1990, 1998) (Korkmaz and Messner, 2008)

Lu et al. believe that many factors determine the competitiveness of contractors but that it is very important that the most important factors be identified (Lu et al., 2008).

In 2004 Korkmaz and Sinem investigated 16 top Turkish construction firms selected according to their organizational size, experience and reputation, 11 of them which were listed on the 2005 ENR's "Top 225 International Contractors" list. The aim of the study was to compare the strategic choice perspectives of these companies and the environmental factors affecting them with the ones of the top 10 US international construction firms. Their study pointed out the following factors as competitive advantages of Turkish contractors in the international market: (Korkmaz & Messner, 2008)

- Risk taking nature of the firms
- Management abilities of the directors
- Timely completion of project, references of firms
- Geographical proximity to the potential markets
- Low cost labor force

The study revealed that cost was the mode of competition adopted by Turkish constructions firms. The reason for that choice was the significant competition at the bidding level and the high percentage of lump sum projects in focus markets like the energy sector. The financing was considered to be one of the biggest difficulties

experienced by Turkish contractors. The competitive advantages of US companies were concluded as being the following: Leadership in high technology, good financing availabilities, competitive relating and supporting industries as well as a supporting government were considered to be the competitive advantage factors of the US companies. Even if not pointed out explicitly, the strengths of US companies could be taken as weaknesses of Turkish contractors.

The study came out with very significant differences in terms of the in-house services performed by the contractors. In international markets, Turkish construction firms were performing the following in-house services: engineering, construction, design and logistics management while US contractors were performing more state of the art services such as conceptual design and project management, project development, financing, feasibility studies, consulting.

The book of Porter “The competitive advantage of nations” defined three strategies that companies can follow in order to gain advantage: cost leadership, differentiation and focus (Porter, 1990).

In the study of Korkmaz and Siner, it was concluded that most of the cost leadership was adopted by most of the Turkish construction firms operating internationally. The cost advantage was considered to be a competitive advantage but that condition being threatened by the arrival of Chinese, Indian and Pakistani workers.

That is why, according to Birgönül and Dikmen, many Turkish companies started to adjust to a more technological level (2008).

In a report published in 2013, The Federation of European International Contractors identified the following factors as strengths for Turkish contractors in international markets: location, cost effective service at international standard, high client satisfaction, credibility in partnerships, extensive knowledge, vast experience in a wide variety of projects, familiarity with the business environments in the nearby region, qualified manpower, calculated risk approach to business (EIC, 2013). It was concluded that the competitive advantage of Turkish contractors in their activities of predilection stemmed from their cultural and lingual similarities. According to Dikmen and Birgönül (2008) it

is the reason why Turkish contractors' activities are concentrated in areas where they can use their national comparative advantage and their low cost advantage.

CHAPTER 5

LITERATURE REVIEW ON CHARACTERISTICS OF POWER PROJECTS

The following can be taken as characteristics of power projects:

- Need for important capital and lack of government funding
- Long term investment
- Offtaker risk due to electricity tariff
- Government involvement
- Technological complexity

The risk due to electricity tariff and the lack of government funding are peculiar to the SSA region.

5.1. Need for important capital and lack of government funding

Power projects usually require very important capital. By taking into consideration the rates of labor and materials of 2012, the actual and planned costs of plants as well as the possible contractual relationships between owner and contractor, the U.S. Energy Information Administration developed the table below (table 3) which displays the average cost of plants (development, engineering and construction) according to their type. It should be said the capital costs below are overnight costs meaning that it is supposed that no interest during construction is incurred which is usually not the case in project finance. Even though these data are taken from a western developed country, they give us an idea on the amount of funds which are necessary to provide a power project and help us understand why developing countries may face difficulties to finance them with their own resources. For several reasons such as transportation of equipment and material and expatriate personnel, the costs below can be higher in the SSA region.

Table 3: Updated estimates of power plant capital and operating costs (U.S. Energy Information Administration, 2013)

Plant Characteristics		Plant Costs (2012\$)				
		Nominal Capacity (MW)	Overnight Capital Cost (\$/kW)	Fixed	Variable	Construction Cost
O&M Cost (\$/kW-yr)	O&M Cost (\$/MWh)					
Single Unit						
Advanced PC	650	\$3,246	\$37.80	\$4.47	\$2,109,900,000	
Dual Unit						
Advanced PC	1,300	\$2,934	\$31.18	\$4.47	\$3,814,200,000	
Single Unit						
Advanced PC with CCS	650	\$5,227	\$80.53	\$9.51	\$3,397,550,000	
Dual Unit						
Advanced PC with CCS	1,300	\$4,724	\$66.43	\$9.51	\$6,141,200,000	
Single Unit						
IGCC	600	\$4,400	\$62.25	\$7.22	\$2,640,000,000	
Dual Unit						
IGCC	1,200	\$3,784	\$51.39	\$7.22	\$4,540,800,000	
Single Unit						
IGCC with CCS	520	\$6,599	\$72.83	\$8.45	\$3,431,480,000	
Conventional CC	620	\$917	\$13.17	\$3.60	\$568,540,000	

Table 3: (continued)

			Fixed		
	Nominal	Overnight	O&M	Variable	
	Capacity	Capital	Cost	O&M	Construction
	(MW)	Cost	(\$/kW-	Cost	Cost
		(\$/kW)	yr)	(\$/MWh)	
Advanced CC	400	\$1,023	\$15.37	\$3.27	\$409,200,000
Advanced CC with CCS	340	\$2,095	\$31.79	\$6.78	\$712,300,000
Conventional CT	85	\$973	\$7.34	\$15.45	\$82,705,000
Advanced CT	210	\$676	\$7.04	\$10.37	\$141,960,000
Fuel Cells	10	\$7,108	\$0.00	\$43.00	\$71,080,000
Dual Unit Nuclear	2,234	\$5,530	\$93.28	\$2.14	\$12,354,020,000
Biomass CC	20	\$8,180	\$356.07	\$17.49	\$163,600,000
Biomass BFB	50	\$4,114	\$105.63	\$5.26	\$205,700,000
Onshore Wind	100	\$2,213	\$39.55	\$0.00	\$221,300,000
Offshore Wind	400	\$6,230	\$74.00	\$0.00	\$2,492,000,000
Solar Thermal	100	\$5,067	\$67.26	\$0.00	\$506,700,000
Photovoltaic	20	\$4,183	\$27.75	\$0.00	\$83,660,000
Photovoltaic	150	\$3,873	\$24.69	\$0.00	\$580,950,000
Geothermal – Dual Flash	50	\$6,243	\$132.00	\$0.00	\$312,150,000

Table 3: (continued)

	Nominal Capacity (MW)	Overnight Capital Cost (\$/kW)	Fixed O&M Cost (\$/kW- yr)	Variable O&M Cost (\$/MWh)	Construction Cost
Geothermal –					
Binary	50	\$4,362	\$100.00	\$0.00	\$218,100,000
Municipal Solid Waste	50	\$8,312	\$392.82	\$8.75	\$415,600,000
Conventional Hydroelectric	500	\$2,936	\$14.13	\$0.00	\$1,468,000,000
Pumped Storage	250	\$5,288	\$18.00	\$0.00	\$1,322,000,000

Almost 20% of the generation capacity of the SSA region was developed through Project finance. It is quite impressive when you know that the first power plant developed on project finance in the region was the CIPREL power plant in Ivory coast which was commissioned in 1995. We can easily assert that most of the power plants built in the last 20 years were the products of project finance. The reason for that is very simple: African countries do not have the financial means to develop these projects and international finance institutions are reluctant to lend money directly to African governments for projects other than health and education. Therefore Turkish contractors should not expect projects with ready financing. Projects in the region are basically of 2 types:

-The ones of the project developers. These developers which bring the financing of which part is equity and the biggest part is loans are usually EPC contractors themselves or

corporate with contracting branches. In that case there is only room for other contractors willing to do subcontracting.

- The ones of which the tenders are launched by the government. In that case, there is a high probability, as the method is becoming very common, that a financing package be requested from the EPC contractors.

Therefore given these 3 types, two alternatives are provided to Turkish contractors:

- Become subcontractors of project developing companies
- Bid for tenders launched by the government and provide financing package as EPC contractors.
- Develop projects themselves and as in the second alternative, provide a financing package.

5.2. Long term investment

The construction of a green field power plant can take between 2 and 5 years depending on its type and capacity. For example a simple cycle natural gas power plant is built from 18 to 30 months, a combined cycle natural gas power plant in 36 months and the construction of a coal plant can take up to 72 months (AEP, 2014). Its development phase may take even longer than its construction. According to Babbar and Schuster, the average lead time (development time) for a project finance deal is 2.5 years. Fossil fuel projects reach closure in about 2.4 years while hydropower projects, given the complexities of surveying physical conditions at the plant site and resettlement issues and water rights (Babbar & Schuster, 1999). It has been proven that the biggest factor influencing the development time of a project is the experience of the host country. Table 4 gives the key factors that can impact the financial closure.

Table 4: Factors that affect financial closure (Hagler Baily IPP Knowledge Base)

Factor	Lead time (years)
Average time	2.5
Size	
Large (>600 MW)	2.7
Small (<150 MW)	2.0
Country Experience	
First time	3.6
Second deals	1.9
Type	
Fossil fuel	2.4
Hydropower	3.7

Since most of the SSA countries have not seen power projects developed through project finance, we cannot expect that development time to decrease any time soon. The investor usually gets a return after years of operation. For this reason companies may be obliged to focus and be committed on a single project for years. That degree of commitment usually requires a good financial strength and strong experience.

5.3. Offtaker Risk due to electricity tariff

Electricity tariff is an issue that discourages potential investors (Heysch & Charafi, 2013). It is one of the most important risks that they face in project finance of power projects in SSA. The average price of power in the SSA is high by international standards. That price rose from USD 0.07 per kWh in 2001 to USD 0.13 in 2005. That price is almost the twice of the price of power in other parts of the developing world. Countries reliant on power generation systems that use diesel have seen an even larger increase with prices rising from USD 0.08 to USD 0.17 per kWh given the increase of oil prices. But that price is still below the average operating cost of USD 0.27 per kWh (figure 6).

The reasons why electricity in SSA is so expensive are as follows:

- Countries with power systems less than 200 MW installed capacity face an operating cost penalty of approximately USD 0.15 per kWh compared with countries enjoying large national power systems (above 500 MW installed capacity). In 2008, 33 out of the SSA countries had power systems below 500 MW and 11 countries had power systems below 100 MW. Landlocked countries experience higher costs due to the transportation of fossil fuels (Eberhard et al., 2008).
- Inefficient power utilities increase the price of power (Figure 6 – (c)). They generate substantial hidden costs for the economy which amounts on average to 1.8 percent of the GDP in the region and 4 percent of the GDP in some countries. The sources of that inefficiency are underpricing, distribution losses and collection losses as illustrated in Figure 7. Many countries which lack developed infrastructure are forced to use technically inefficient forms of generation which use very expensive fuels in order to supply small domestic markets. In Eastern and Western Africa this kind of generation systems make up for third of the installed capacity. As illustrated in figure 8, these backup power systems which can be installed in a few weeks' time and provide an immediate solution to shortages supply power at an expensive average cost of USD 0.20-0.30 per kWh. They make up half of the total installed capacity in Democratic Republic of Congo, Equatorial Guinea and Mauritania. It is estimated that at least 750 MW of backup power is currently operating in the region (Eberhard et al., 2008).

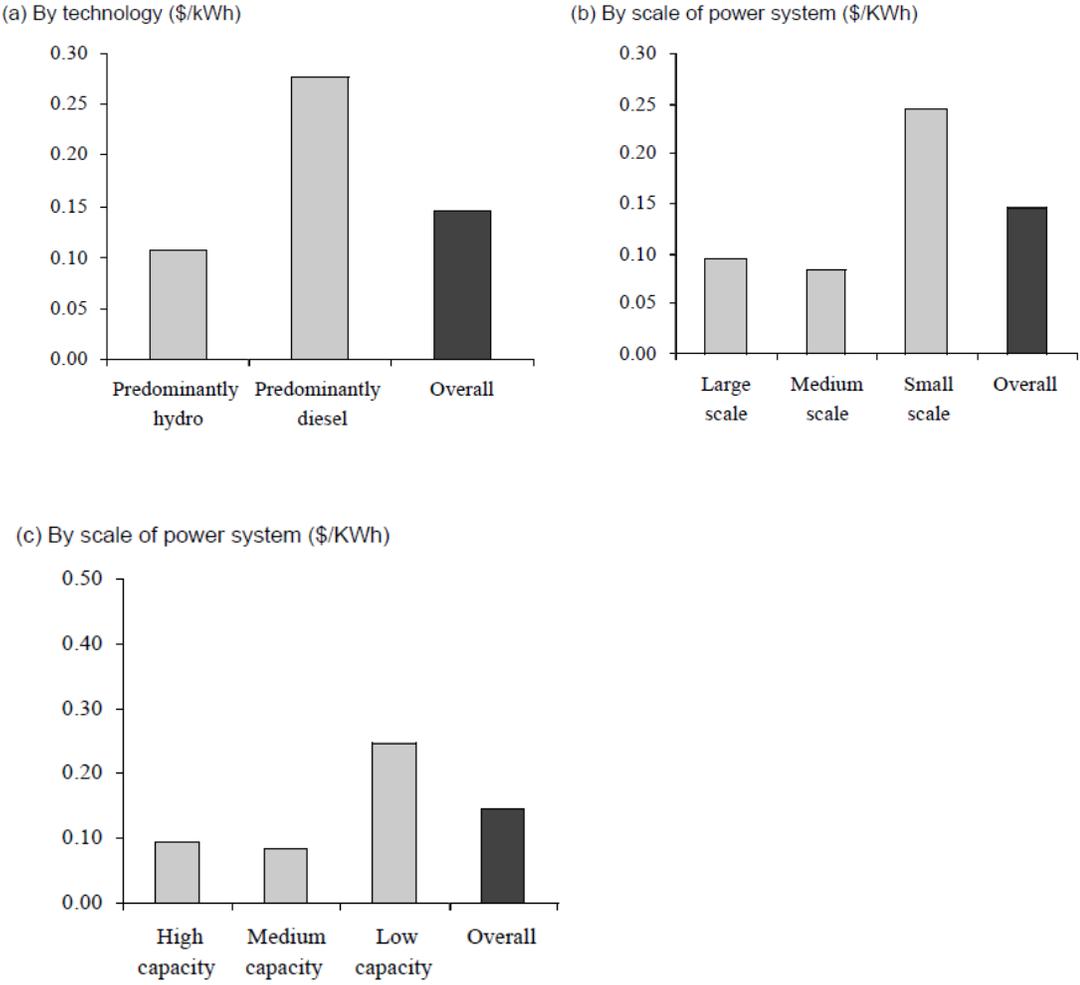


Figure 6: Operating Cost for power systems in SSA, 2005
 (Africa Infrastructure Country Diagnostic (AICD Power Sector Database), 2008)

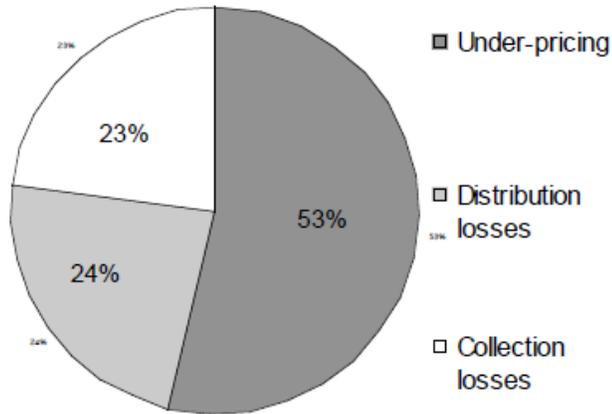


Figure 7: Source of hidden costs of Power sector inefficiency in SSA (AICD Power Sector Database, 2008)

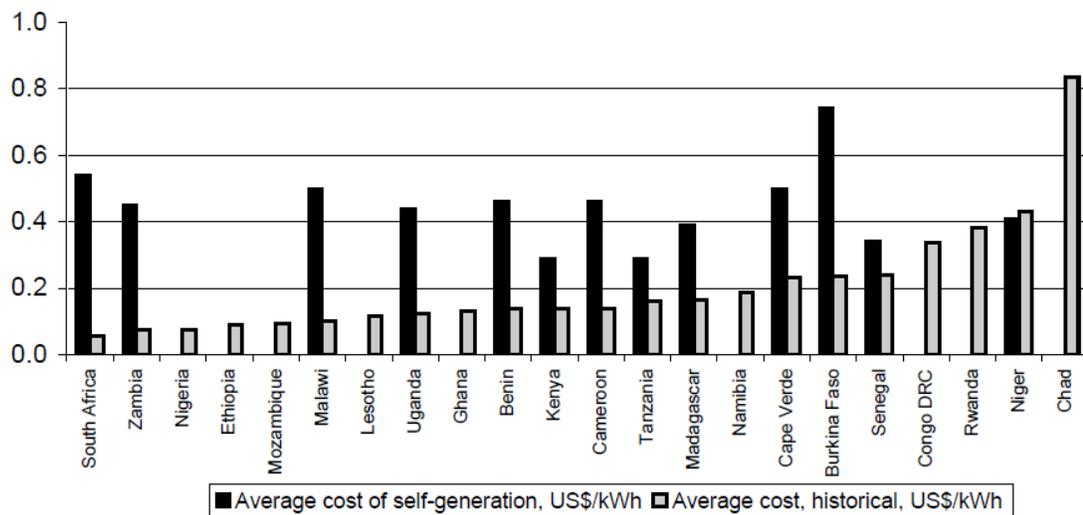


Figure 8: Average cost of grid and backup power in Sub-Saharan Africa (Eberhard et al., 2008)

Nowhere in the region is the full operating cost recovered by end users. Tariff settings are very politicized as governments are not willing to increase the power cost and upset the populations who vote for them or industries which have an important influence in the countries. Some countries historically supply power to important industrial and mining companies at highly discounted rates of only a few cents per kWh. Zambia Power Utility supplies electricity to mining companies at USD 0.02 cents per kWh. Its average power

tariff is USD 0.03 per kWh, one of the lowest in Africa (Briceño and Shkaratan, 2011). In countries where the price of power amounts 0.25 kWh, if the electricity was tariffed at the recovery cost price, power would absorb around 5% of the household budgets and therefore create economic and social problems. Countries which use hydropower and coal-based generation systems with average cost of USD 0.12 are closer to cost recovery than the ones which rely on diesel.

Unfortunately when subsidies are part of the investment equation of the project, investors are usually reluctant in financing fearing that the government may not always be able to provide the necessary extra money on time. In the case of a power project even if the offtaker who is usually the intermediary between the project company and the end users actually pays the real price of electricity to the Project Company, since the offtaker owes its survival to the government subsidies and not its own operation revenues, that offtaker is not seen as a reliable institution.

5.4. Government involvement

Whether the plant is financed through public funds or private funds, the criticality of the project makes it always a government's issue. The support of the government is usually necessary in order to mitigate political risks but the project always need the approval of the government just in order to survive as an idea. A power plant project is most of the time a matter of public importance and bears a strategic importance for the governments in place. The Azito Power Plant is a thermal power plant that was built in 1999 and 2000 in Ivory Coast. That project solved an important electricity shortage issue. Before 1999, Ivory Coast was a net importer of electricity from Ghana. With that project, the country was able to remedy its problem of shortage and to export power to neighboring countries such as Ghana, Togo, Benin and Burkina Faso. With the Azito power plant, the reliance of the country on hydroelectric power in the event of a drought was reduced drastically (Davis, 2003). The project can be for governments a political strategic move or a political trophy once completed. In many countries, for clear reasons the electricity sector is in the hand of public entities which provides it or regulate its price. In some countries, governments use a lot of scrutiny to deliver licenses to contractors willing to operate in

the energy sector as well as to companies eager to operate a power plant. Government decisions can influence positively or negatively the development, construction and even the operation of a project. In literature the impact of the host political jurisdiction on the development or construction and/or economic viability of a project is called political risk (Finnerty, 2007). Governments usually impact in the project by implementing regulations, either project specific or general. Some of the actions and regulations which can either facilitate or complicate the activities of the investor are as follows: (Yescombe, 2002)

- Tax exoneration for equipment and materials to be imported
- Restriction or permission for the investor to transfer the profit generated by the project to its home country
- Introduction of new competitors who can deregulate the market
- Environmental, safety, health employment requirements
- Tax and tariffs' increases or decreases
- Procedure of obtaining permits and licenses
- Legal procedures in case of conflicts
- Heaviness of the bureaucracy
- Expropriation

Apart from the central government, state governments or region administrations may also, independently from the general spirit of the former, render operations very difficult for the investor / contractor as they may not always be in line with the decisions taken by the central government or not share the same concern of credit-worthiness of the country attractiveness to foreign investors (sub-sovereign risk) (Yescombe, 2002).

Another reason why power projects are under the umbrella of governments is their particular impact to the environment. It is of public knowledge that almost all power plants, from coal fired to natural gas or geothermal power plants can release toxic gases to the atmosphere while some can even release radioactive materials. Sources like coal or geothermal are finite even though they are large. Power plants have significant impacts on water and habitat and species (Wikipedia 3). It is the reason why investors usually

have to go through a long process of securing environmental permits which will basically comprise the following steps: (Cichanowicz, 2008)

- Selection of the site
- Development of conceptual plant and environmental control system design
- Filing of permits
- Legal actions by interveners of petitioners to oppose the issued permits

5.5. Technological complexity

Power projects are complex projects which require a know-how that may take years to acquire. With the significant amount of money required from contractors and the long process to obtain permits and licenses, the technological side of the power sector makes it difficult for companies to enter that market and makes the competition in that market slightly lower than in the other sectors of the construction industry. It is also one of the reasons why it is rare to ever find contractors operating in that sector in developing countries and the reason why Turkish contractors are still not able to deliver power projects with equipment completely manufactured in Turkey. As an example, turbines and boilers are the core equipment in natural gas power plants. While many natural gas power plants have been built by Turkish companies in Turkey as well as abroad most of the turbines and boilers used in these power plants are of European, American or Chinese origin for some of them. No Turkish steam boiler is up to the international standards and no Turkish company manufactures turbines. When we know that the price of the turbine alone can amount for 50% of the total cost of a natural gas power plant project, we can understand that it is the core of the project. The technological side of these projects make the development of local companies in developing countries able to undertake this kind of projects very difficult and creates a dependence of the Turkish contractors toward the foreign manufacturers which is a significant handicap. Since the manufacturing of these equipment can be considered a factor of competitiveness in the energy sector, it is hard for Turkish contractors to beat companies from Europe, India or China in the sector.

CHAPTER 6

RESEARCH METHODOLOGY

The aim of this chapter is to explain the methods used for data collection and research process in order to reach the results obtained in the scope of the subject work.

While going through the literature on the subject project it was obvious that even though many books and articles that deal with project finance in general are available, finding literature that treats the subject of project finance in power project in SSA and involving Turkish contractors especially would almost be a dead end. That scarcity of available source materials may arise from the fact that project finance, an old discipline, peaked only around the early 2000 when the necessity was raised for viable stand-alone projects and the need for governments especially in developing countries to let in the private sector increased (IFC, 1999). It should be said that except countries like South Africa and Kenya or Ivory Coast, many countries in SSA are still behind in terms of private participation in the power sector and we are still to see real reforms made in that direction. These countries usually suffer the biggest power scarcity in the region. For obvious reasons of lack of activity and the fact that they are relatively new in the region, not many sources could be found on the subject of Turkish contractors activities in SSA. Therefore it was necessary to collect data for each of the key topics of this thesis namely: project finance, power sector, Turkish contractors and Sub-Saharan Africa and make a synthesis of all these data and make them fit into our specific topic. That task happened to be very challenging.

6.1. Data Collection

A literature review was conducted in order to spot the key weaknesses that could explain the poor activities of the Turkish Contractors in the Power Sector of the SSA region. Many different sources as provided in the previous chapter were used in order to define these key weaknesses. At the end of the literature review the following factors were defined as weaknesses:

- Lack of Turkish manufacturing industry for boilers and turbines
- Poor role of the Turkish government
- Absence of Turkish Consulting and Engineering Firms in SSA
- Ineffectiveness of Turkish Eximbank in the power sector in SSA
- Absence of Turkish Commercial Banks in SSA

In order to get the feedback from professionals of the industry on these factors, it was decided that a survey would be prepared. The survey would aim at classifying the weaknesses according to their degree of importance and to validate them.

6.2. Development of the Questionnaire

A questionnaire was designed in order to measure the validity of the weaknesses proposed. The questionnaire consisted in two sections

- First Section: General information about the respondents
- Second Section: Rating the findings of the author according to their criticality.

After presenting the main idea behind the research and explaining its contents, the respondents were asked to give general information about themselves and their company, their overall experience as well as their experience in the SSA. This part was for the evaluation of the respondents in respect of their business development experience and the experience in Sub-Saharan Africa. Later a list of weaknesses of Turkish contractors in the SSA region in the power sector found by the author (Table 5) was presented to the respondents. Even though all the weaknesses identified can explain the poor competitiveness of Turkish contractors, there is definitely a difference in terms of importance among the individual factors. The aim of the survey was exactly to establish the degree of importance of each factor in the eyes of experts of the industry

The respondents were asked to rate the weaknesses according to their level of importance (criticality) based on their own experience and their knowledge of the sector. The table was inspired from Kulatunga et al. (2009) where the Likert scale was used to determine the critical success factors of construction research and development (Table 6). In this questionnaire it was decided that 3 would be the threshold as for factors to be taken into consideration.

Table 5: Weaknesses of Turkish Contractors in the power sector in SSA

Rank	Weaknesses	Scale
1	Absence of Turkish Commercial Banks in SSA	
2	Ineffectiveness of Turkish Eximbank in the power sector in SSA	
3	Lack of Turkish manufacturing industry for boilers and turbines	
4	Poor role of the Turkish government	
5	Absence of Turkish Consulting and Engineering Firms in SSA	

Table 6: Values assigned for the Likert Scale

Value	1	2	3	4	5
Scale	Unimportant	Of little importance	Moderately important	Important	Very Important

The survey was sent to professionals of the Business Development of the Power Sector which had activities in the Sub-Sahara African Region. A total of 13 Professionals were selected and the surveys were sent to them. 10 of them kindly accepted to participate in the study (Table 7). 7 of the participants work for medium and large size International contractors (one of them not being Turkish but a Spanish international contractor with partnership history with Turkish contractors) very active in the global markets with operations in Middle East, CIS, Europe, and Africa with an average of 36 years of operation in the power sector. One of the professional works for a Turkish international supplier of electrical equipment for power plants and two of the professionals who participated to the survey work for African ministries of energy. The professional experience of the selected experts is in average 19 years and their experience in Africa is around 14 years. The surveys were sent through e-mail. 7 of the respondents are business development managers, 1 is a bidding manager and 2 are executives in contract and bidding departments of African ministries of energy. Of the 6 international contractors

which participated in the study, 3 are listed in the 2013 ENR list of International Contractors. All of the Turkish contractors are members of the Turkish Contractors Association (TCA) and all of them have turnover exceeding 100 million USD for the year 2013.

Table 7: Response Rate for the Questionnaire Survey

Number of Questionnaires Sent	Number of Responses Received	Response Rate (%)
13	10	76,9

Tables 8 and 9 below show some information about the companies and respondents information to give a general idea about their profile. For confidential reasons, names of companies and experts are withheld. It should be pointed out that it was really difficult to reach people in the market and to ask them to dedicate their time for this research.

Table 8: Companies Information

Company	Age	Type	2013 Turnover	Number of Employees
1	33	Contracting Company	663,5	>500
2	11	Contracting Company	120	100-150
3	73	Contracting Company	5506,3	>500
4	27	Electric Equipment Manufacturer	200	100-150
5	29	Contracting Company	110	>500
6	74	Contracting Company	617,6	>500
7	28	Contracting Company	100	>500
8	55	Ministry of Energy	-	>500
9	50	Ministry of Energy	-	>500

Table 9: Respondents' Information

Company	Years of Experience	Experience in SSA	Department
1	12	5	Bidding
2	18	10	Business Development
3	9	5	Business Development
4	8	8	Business Development
5	14	10	Business Development
6	32	27	Business Development
7	10	8	Business Development
8	45	30	Business Development
9	20	20	Bidding
10	15	15	Bidding

RESEARCH FINDINGS

7.1. Strengths and weaknesses of Turkish contractors

7.1.1. Strengths of Turkish contractors

The study conducted by Korkmaz and Messner (2004) pointed out the competitive advantages of Turkish contractors in the international market to be the following:

- Risk taking nature of the firms
- Management abilities of the directors
- Timely completion of project, references of firms
- Geographical proximity to the potential markets
- Low cost labor force

The European International Contractors in its report “Turkish Contracting in the International Market” (EIC, 2012) adds to the factors listed above high client satisfaction, credibility in partnerships, familiarity with the business environments in the nearby regions, qualified manpower.

- ❖ Geographical proximity to potential markets and familiarity with the business environments

At the time of the study, Turkish contractors were merely active in the Sub-Saharan African market and were concentrating their efforts on regions that had been their center of focus since the 1980s namely the Middle East and North Africa as well as the Commonwealth of Independent States (Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan and Uzbekistan). So while the geographical proximity applied to these latter they certainly do not apply to the Sub-Saharan African region as Turkey is not closer to Nigeria than England or India is. We can therefore directly discard it from the list of strengths that would apply to the region subject of this study. For similar

reasons the same is applicable to the “familiarity with the business environments in the nearby regions” factor.

❖ Low cost labor force

As to the labor low cost factor, it is of common knowledge that Turkish construction is lower than European and American construction even in Sub-Sahara Africa and in a way it assures Turkish contractors a serious advantage on their competitors. Even though Turkish contractors can hardly beat Chinese contractors in terms of cost, it is a serious advantage that plays in their favor.

❖ High client satisfaction, Time completion of projects & References and Credibility of Partnerships

Even though Turkish contractors are known to be hardworking and dedicated to their task it would not be wise to include client satisfaction as a strength since the adventure of Turkish Contractors in the region is slightly new. Besides few companies which are presently executing their second or third projects in Sub-Sahara African countries and besides Sudan which has seen more than 1 billion USD value of projects by Turkish contractors (TCA, 2009), most of the companies are only at their first projects and most of the countries are only started to be acquainted with Turkish contractors. So in order to assess the satisfaction of the clients we will probably have to wait for the second or even third wave of Turkish projects in the region. The same applies also for time completion of projects as most of the Turkish companies have executed projects in the Middle East, Turkey and in CIS countries it is probably difficult for African governments to be aware of the timely completion of the projects. Therefore even though it is not probable that a company will lie about its references all the details may not be given to the Client. So if the international references can be taken as a strength since they will be taken in consideration by the client, the satisfaction of the clients and timely completion may certainly not be. We would also discard the credibility in partnerships which will prove itself to be true or not over the years.

❖ Management abilities of the directors

This factor is definitely a strength to consider and which goes along with the several references of Turkish contractors.

The author would add another factor we should be taken in consideration given the fact that most of the energy projects have a strong procurement portion and that most of the countries in the SSA Region are not industrialized and therefore contractors may experience a scarcity of building materials and may have to import them from Turkey: the building materials industry. The most important materials in the construction of power plants are steel and cement.

❖ Steel Industry

Steel is the core of any industrial plant. The consumption of steel per capita has been used for years used as an indicator of the development of countries. In 2010, while the consumption of iron steel per capita was approximately 400 – 500 kg in developed countries, that consumption was 341 kg in Turkey. (TME) Turkey, with a crude steel production of 34.7 million metric tons in 2013 is the 8th biggest steel producer in the world (Wikipedia 4) and it holds the same rank in the list of top iron-steel exporters in the world with a total value of 17 billion USD of iron-steel exported in 2011. (TME, 2012) Therefore Turkey enjoys a relatively strong steel manufacturing sector.

❖ Cement Industry

In 2013, Turkey was the world's sixth biggest cement producer with a production of 70 million tons behind China (2,3 billion), India (280 million), the United States (77,8 million), Iran (75 million) and Brazil (70 million). From 2005 to 2013, Turkey moved from the 10th to the 6th rank (place) and was the only top European Country to progress in terms of ranking (U.S. Geological Survey, 2014).

In 2012, Turkey had a total of 48 integrated cement plants and 20 additional cement grinding facilities according to the Turkish Cement Manufacturers' Association (TÇMB) (Beçan, 2012). These plants are illustrated in Figure 9.



Figure 9: Map of Cement Plants in Turkey
(Turkish Cement Manufacturers' Association)

As the government, in order to keep competition high in the industry, doesn't allow any company to have more than 25% share of the market the country has around 30 producers. 75% of the industry is Turkish owned and 25% is owned by foreign companies (Votarantim, Cementir, Heidelberg Cement...). The government restriction on the national market share obliges Turkish cement producers to expand internationally. Turkish cement plants, given their high-quality natural resources and modern plant technology, which reduces production and cost and therefore prices, are expected to deliver European quality cement. In 2011, Turkey exported cement and clinker worth an estimated 900 million USD with 12 million tons of cement and 2,4 million tons of clinker (Beçan, 2012). Turkish manufacturers export in various regions of the world as shown in Figure 10.

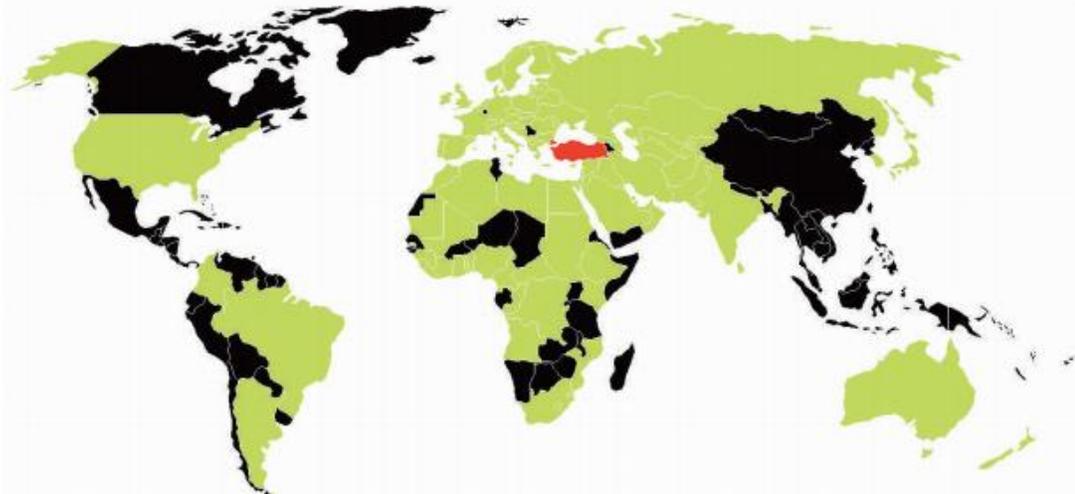


Figure 10: Turkey's export markets
(Kolancı, 2013)

To summarize, the following can be considered as strengths of Turkish contractors can be considered to be:

- Risk taking nature of the firms
- Management abilities of the directors
- References of firms
- Low cost labor force
- Steel Manufacturing Industry
- Cement Industry

7.1.2. Weaknesses of Turkish contractors

7.1.2.1. Equipment manufacturing

If there is one sector where Turkish contractors cannot compete in the energy sector, it is the equipment manufacturing sector. In their comparison study of Turkish and US construction companies, Korkmaz and Messner pointed out the fact that the US had a tremendous advantage over its competitors, Turkey included, in international markets given its leadership in high-technology (2004). As a developed country, it has a strong industry which can produce any high-tech equipment that would be required in any

industrial plant. In 2011, it was estimated that 100% of the equipment used in natural gas plant installed in Turkey was imported and that every year Turkey imported 2.7 billion USD of equipment for the energy sector and that for each plant installed an expense of 1 million USD of imported maintenance service was recorded. In 2011, the CEO of the Turkish ERA Group announced the launching of the first Turkish gas turbine manufacturer (EE, 2011). It is the only case to date and a tiny drop in the ocean. The same applies also to steam boilers which, with turbines, constitute the core equipment of power plants. They could amount for up to 70% of the project's total contract price.

Lacking an industry of equipment manufacturing, Turkish contractors are not able to provide 100% made power plants and are obliged to partner up with manufacturers from Europe, America or even China and India. That partnership can take the form of a Joint Venture, Consortium, Subcontracting or Supply structure. It should also be noted that as Turk Eximbank has for principle to only finance products of Turkish origin, contractors may secure the financing for basic material like steel or concrete but may miss the opportunity to take a bigger share of the pie. That issue will be developed further.

7.1.2.2. Role of the government

In the study conducted by Birgönül & Dikmen, Turkish contractors defined relations between Turkey and foreign governments as the least important strength for Turkish contractors in global markets after financial resources (2008).

The Turkish government has been organizing business trips to SSA for years and has intensified them with the launching of its “Opening Up to Africa” strategy. These trips which gather dozens of businessmen under the auspices of the related Ministries as a way for Turkey to display its business force. But these trips are more informative than really effective. There is no real follow-up on the achievements or non-achievements made after the trips.

Turkish embassies and consulates play an important role in the access of the information for contractors through its business attaches. The Turkish Contractors Association has also been playing, through regular e-mails and meetings, an important role in providing

contractors with accurate information on time through regular e-mails and meetings. The association acts like a giant Business Development agency in a sense that it keeps its members updated on tenders launched and possible strategy partnerships too. It is also important to note that the Association has been working closely with Turk Eximbank on how to serve best the interests of Turkish contractors through workshops and seminars.

But the Turkish government's actions in SSA are not very practical. It encourages the contractors to operate in SSA but it does not provide, for several reasons, the incentives necessary to actually allow these contractors to obtain contracts and perform them. On that matter, the Chinese government's actions in the region can definitely be taken as an example.

In 2010, 50 Chinese international contractors made it into the 2010 edition of Engineering News Record's "Top 225 International Contractors" (ENR, 2010). The role of the Chinese government in its overall foreign policy and economic strategy is an undeniable reason for the resounding success of the Chinese contractors (Sun, 2014). The "Go Global" policy was announced in 1999. Since then the role of the Chinese government has evolved from facilitation services such as risk assessment and insurance, bolstered by high-level political trade delegation participation to a more driving role which has seen a dramatic increase in state funding through low-cost export credit facilities to many friendly governments for the development of their countries' infrastructure.

7.1.2.3. Turkish Consulting and Engineering Firms

42 Turkish contractors are in the 2013 ENR list of international Contractors. Among them six have operations in the power sector. These are: Enka, Tekfen, Çalık Enerji, Gama, Metag İnşaat and Taca Construction. Six of them have a total value of international projects amounting more than 100 million dollar: Çalık: 663.5 million USD, Enka: 211.92 million USD, Gama: 191.406 million USD (ENR, 2013).

Even though the power sector in SSA has not seen many Turkish Contractors, notable Turkish firms are operating in the region in other sectors (ENKA, ESER, SUMMA and many others). Turkish Contracting is slowly becoming a brand in the region like Chinese

or Koreans. But Turkish consulting and engineering firms are nowhere to be found which is a serious handicap for Turkish construction. There is no doubt that it would be easier for Turkish Contractors to spot the right projects and be involved quickly and efficiently if the Turkish Consultants were more active in the region. Unfortunately the fate of Turkish consulting and engineering firms is not different in Sub-Saharan Africa than it is in the other parts of the world. In the ENR list of the 20 biggest Project Management Companies, there is not a single Turkish company. The list is based on the agency commission and project management fees received for their services in 2013. Related to our topic that is a serious drawback given the fact that many Project Management firms nowadays have very powerful project finance engineering departments. Along American firms, Australian, Canadian, Egyptian and even Jordanian firms are in the list but not a single Turkish. When it comes to Turkish design firms, even though they are present in the international market, their performance is not as impressive as the one of their counterparts from the contracting sector. While in 2012 Turkey had the highest number of firms after China in the ENR list of Top International Design Firms (38), their overall international revenue of 16.8 billion USD was far lower than the one of the 4 French firms (43.2 billion USD) of the list or of the 12 Spanish firms (72.9 billion USD). (ENR, 2013) Their performance does not match the one of the contractors. This is an important inconvenient for the contracting sector as consulting and engineering firms are the ones to prepare the foundation on which the contractors will perform. Their involvement in a country or in a project is an effective form of Business Development that should not be neglected. Who better than a consulting firm who is involved in many projects would know about the most feasible ones? As these firms are absent in the international market, there is no way for Turkish goods and services standards to take place in the specifications of projects for which international tenders will be launched (Güneş et al., 2004). Therefore the competitiveness of Turkish contractors is reduced. Turkish consultants should make their brand known in the region and compete with the other nations. The activities of consultants can work in favor or in disfavor of a nation. When the Volta River decides to build a 186 MW Combined Cycle Power Plant in the southern coastal city of Takoradi it hires the services of the American AECOM, giant worldwide management service provider. At the end of the FEED phase when the tender is launched in June 2014,

interested bidders could have been surprised to find out that the contracting authority, namely the Volta River Authority, had specified the brand (General Electric) and type of turbines (9E Gas Turbine) required for the project (Takoradi, 2014). The financing not being from the American government or any of its agency, we can see the hand of the consulting firm favoring a turbine manufacturer from its own country and therefore taking out of the picture the other possible manufacturers (Doosan, Alstom for example). We can assume that a Turkish consultant would have acted differently in the matter and create an environment more favorable for its Turkish counterparts.

7.1.2.4. Financing capabilities

International Turkish Contractors face many issues related to credit financing. With the needs peculiar to the construction sector in one hand and the ones of the international market on the other hand, projects may require important and various types of credits. Contracting companies need credits for the following reasons: (Ekincek, 2006)

- In order to execute projects which exceed their own capacity
- To face times of delays
- Time difference between revenues and expenses
- Delays of interim payments
- Insufficiency of advance payment or lack of advance payment
- Insufficient machinery park for the project to be executed
- Payment of current debts
- Excessive profit distribution
- Financing of fixed asset investments

One of the reasons which makes it difficult for Turkish companies to open up to new markets or to increase their share in the market where they are operating is the lack of financing coming from Turkey. Turk Eximbank is the only Turkish bank that provides credit or guarantees for Turkish contractors in the international market.

7.1.2.4.1. Turk Eximbank

7.1.2.4.1.1. General

Turk Eximbank is an Export Credit Agency founded in 1987 by the Turkish Government with the objectives to increase competition and assurance in the international markets for Turkish contracting companies operating abroad (Eximbank, 2013). Yescombe defines Export Credit Agencies or ECA as public-sector institutions or private-sector companies of a country which provide support for the exports of that country or a channel for government support for exports from the country (Yescombe, 2002). Turk Eximbank like all the major ECAs are members of the Berne Union or International Union of Credit and Investment Insurers as shown in the table below. The members of the Berne Union, all being listed in table 10, accept a series of principles intended to facilitate trade between countries and use the Union as a professional platform to exchange with each other. In 2012, the volume of export and foreign direct investment insured by members of the Berne Union amounted to USD 1.8 trillion approximately 10 percent of the international trade. (Berne Union, 2014)

Table 10: List of Berne Union Members (Berne Union Year Book, 2013)

1	AIG United States of America American International Group, Inc.
2	ASEI Indonesia PT Asuransi Ekspor Indonesia (Persero)
3	ASHRA Israel Israel Export Insurance Corp Ltd
4	ATI Multilateral African Trade Insurance Agency
5	ATRADIUS The Netherlands Atradius NV
6	CESCE Spain Compania Espanola de Seguros de Credito a la Exportacion
7	COFACE France Compagnie Française d'Assurance pour le Commerce
8	COSEC Portugal Companhia de Seguro de Créditos, S.A.

Table 10: (continued)

9	CREDENDO GROUP Belgium
10	ECGC India Export Credit Guarantee Corporation of India Ltd
11	ECIC SA South Africa Export Credit Insurance Corporation of South Africa Ltd
12	ECICS Singapore ECICS Limited
13	EDC Canada Export Development Canada
14	EFIC Australia The Export Finance and Insurance Corporation
15	EGAP Czech Republic Export Guarantee & Insurance Corporation
16	EH GERMANY Germany Euler Hermes Deutschland AG
17	EKF Denmark Eksport Kredit Fonde
18	EKN Sweden Exportkreditnämnden
19	EXIM HUNGARY Hungary Hungarian Export-Import Bank Plc. Hungarian Export Credit Insurance Plc.
20	EXIM J Jamaica National Export-Import Bank of Jamaica Limited
21	EXIMBANKA SR Slovak Republic Export-Import Bank of the Slovak Republic
22	FCIA United States of America FCIA Management Company, Inc
23	FINNVERA Finland Finnvera Plc
24	GIEK Norway Garanti-Instituttet for Eksportkreditt
25	HISCOX Bermuda Hiscox Political Risk
26	HKEC Hong Kong Hong Kong Export Credit Insurance Corporation
27	ICIEC Multilateral Islamic Corp for the Insurance of Investment & Export Credit
28	Export Credit Insurance Corporation Joint Stock Korea Trade Insurance Corporation

Table 10: (continued)

29	KSURE Korea KUBE Poland
30	MEXIM Malaysia Export-Import Bank of Malaysia Berhad
31	MIGA Multilateral Multilateral Investment Guarantee Agency
32	NEXI Japan Nippon Export and Investment Insurance
33	ODL Luxembourg Luxembourg Export Credit Agency
34	OeKB Austria Oesterreichische Kontrollbank Aktiengesellschaft
35	OPIC United States of America Overseas Private Investment Corporation
36	PwC Germany PricewaterhouseCoopers AG
37	SACE Italy Istituto per i Servizi Assicurativi del Credito all'Esportazione
38	SBCE Brazil Seguradora Brasileira de Crédito à Exportação SA
39	SERV Switzerland Swiss Export Risk Insurance
40	SID Slovenia SID Inc, Ljubljana
41	SINOSURE China China Export & Credit Insurance Corporation
42	SLECIC Sri Lanka Sri Lanka Export Credit Insurance Corporation
43	SOVEREIGN Bermuda Sovereign Risk Insurance Ltd
44	TEBC Chinese Taipei Taipei Export-Import Bank of China
45	THAI EXIMBANK Thailand Export-Import Bank of Thailand
46	TURK EXIMBANK Turkey Export Credit Bank of Turkey
47	UK EXPORT FINANCE United Kingdom Export Credits Gurantee Department
48	US EXIMBANK United States of America Export-Import Bank of the United States
49	ZURICH United States of America Zurich Surety, Credit & Political Risk

Most of the credits provided by Export Credit Agencies like Turk Eximbank are buyer credits rather than supplier credits. Buyer credits are direct credits provided to the importer by the exporter's bank or the ECA itself while supplier credits are loans provided by the exporter to the importer, with finance from the exporter's bank or ECA (Yescombe, 2002). Therefore the ECA will deal with the exporter or its bank and not with the Project Company.

Export Credit Agencies basically provide two types of supports for exports:

- Financial Support:

As financial support, ECAs can either provide direct loans directly to the project company at low fixed interest rates or rely on commercial banks to fund export credits and themselves provide only interest rate subsidies.

- Credit Support

ECAs can provide a direct loan by taking the whole credit risk of the project to its own books or insure or guarantee loans made by the private-sector banks.

Turk Eximbank provides theoretically both of the supports but in practice usually takes the credit risk of the project to its own books. An international agreement under the aegis of the Organization for Economic Cooperation and Development (OECD) governs the terms on which ECAs provide support for export credits. The OECD consensus "ensures the operation of an orderly export credit market and seeks to prevent countries from competing to offer the most favorable financing terms for exports". With that consensus, the competition between ECAs is only limited to the amount of credit available while the credit terms remain the same. The main provisions of the OECD consensus are: (OECD, 2014)

- Only 85% of the export contract value can be financed by the ECA
- The maximum repayment terms are 5 years for high income countries (Category I) and 10 years for other countries
- The maximum repayment period is 12 years for non-nuclear power plants

- Repayments should be made in equal principal installments at least semi-annually, beginning no later than 6 months from completion of performance tests under the EPC contract
- The minimum premium rates (MPR) for credit risk for each country are calculated using a formula commonly agreed by the members in 1999.

Some emerging countries like China and India have institutions that do not adhere to the OECD consensus.

As an ECA Turk Eximbank doesn't provide finance to projects. Turk Eximbank provides export credits for goods and equipment manufactured in Turkey only. Therefore a whole project cannot be financed through Turk Eximbank only the equipment and materials that will be used in the project may be financed through it in the condition that these equipment and materials are of Turkish origin. Secondly, as member of the OECD, Turk Eximbank cannot finance the total value of the exported goods of a project but only up to 85% of the total value. The 15% is usually required from the party to whom the credit will be allowed as a down payment before any credit is issued. Depending on the nature of the project, between 50% to 70% of the contract value may consist of equipment and goods to be imported.

As of 2013, Turk Eximbank had provided 192 billion USD Turkish export support which can be divided as 106 billion USD for loans and 86 billion USD for insurance. It had also disbursed 2.3 billion USD in 23 countries all over the world and 321 million USD in 5 African countries (AEF 2, 2014). Table 11 gives summarizes the activities of Türk Eximbank for the last 3 years.

Table 11: Turk Eximbank Export Support (AEF 2, 2014)

Year	Loans (Billion USD)	Insurance / Guarantee (Billion USD)	Total Support (Billion USD)	Share in Turkish Exports (%)
2012	15,13	6,92	22,05	14,5
2013	19,70	8,00	27,70	18
2014 (forecast)	22,34	11,80	33,84	20,3

As shown in the figure 11 the energy sector constitutes most of the activities of Turk Eximbank.

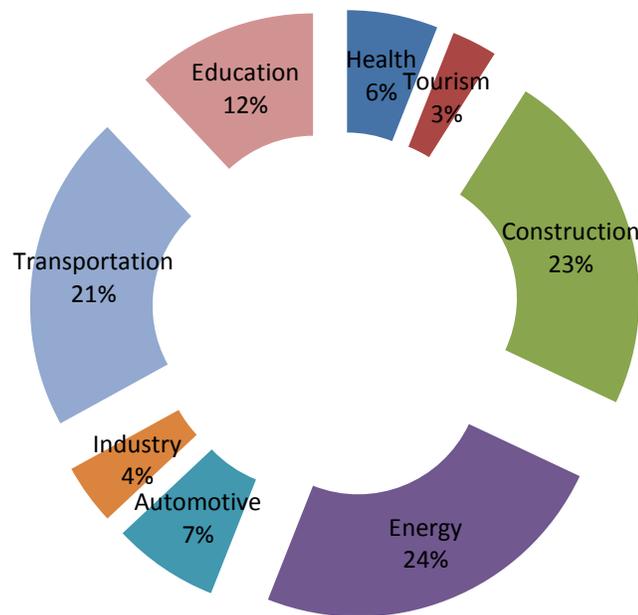


Figure 11: Letters of Intent submitted to Turk Eximbank in 2013 (AEF 2, 2014)

The total value of the projects concerned is 11.5 billion USD for a Turk Eximbank content of 7,4 billion USD. The experiences of Turk Eximbank in the SSA region is as displayed in table 12.

Table 12: Turk Eximbank’s experiences in Sub-Sahara Africa (AEF 2, 2014)

COMPLETED PROJECTS			
PROJECT	BORROWER	LOAN AMOUNT	CONTRACTOR
North Khartoum Sewage Project – Sudan	Sudan Ministry of Finance	21 million EURO	Faber İnşaat
Al-Halfara Bridge Project – Sudan	Sudan Ministry of Finance	15 million EURO	Yapı Merkezi
North Khartoum Urgent Water Supply Project – Sudan	Sudan Ministry of Finance	9 million EURO	Piomak A.Ş.
El-Mek Nimir Bridge Project – Sudan	Sudan Ministry of Finance	15 million USD	Yapı Merkezi
ONGOING PROJECTS			
PROJECT	BORROWER	LOAN AMOUNT	CONTRACTOR
Dakar International Conference Center Project – Senegal	Senegal Ministry of Finance & Economy	38 million EURO	Summa İnşaat
Akim Oda, Akwatia & Winneba Water Projects – Ghana	Ghana Ministry of Finance	136 million USD	Arda Grup

The experiences of Turk Eximbank in Sub-Sahara Africa represent only 14% of all the disbursements provided by the Bank since its creation and the amount of approximately 300 million USD provided is a drop in the sea while we consider loans provided by other export agencies. It is quite representative of not the lack of interest but the risk adverse approach toward the Sub-Sahara Africa region taken for years by Turkish contractors and

which has only started to change recently and the difficulties faced by Türk Eximbank in the financing of projects in the region.

Understanding the Chinese financial institutions and the way they operate will surely help us understand why Turk Eximbank is having difficulties in the Power Sector in SSA.

7.1.2.4.1.2. Chinese project finance instruments

While most of the ECAs adhere to the OECD consensus, their fiercer competitors of the Turkish in Africa, the Chinese credit export agencies, do not.

Chinese export financing infrastructure consists of 3 main institutions: Sinosure, The China Development Bank and the Chinese Export Import Bank.

Of the three, Sinosure is the only one which is a member of the OECD. It provides export credit and foreign investment insurance. It also offers direct loans of credit and comprehensive support to companies operating in strategic industries such as telecommunications. No OECD member provides this particular type of service.

The China Development Bank, established in 1994, also provides direct loans to strategic industries (Wikipedia 5).

China Exim Bank, also created in 1994, has already become the world's largest ECA (International Rivers). (International Rivers, 2014) Since China Exim Bank is not a member of the OECD, it has the possibility to offer longer repayment terms and lower interest rates. It can definitely be more flexible than the other ECAs. And in spite of the efforts of the European Union especially to call the Chinese ECAs to commit to working on the development of international guidelines in regards with export financing, they are still working under their own regulations (College of Europe, 2011). As Ex-Im Bank Chairman Fred Hochberg said at an interview to the Wall Street Journal in 2011, "They're winning deals in part because they're not playing by the rules," (WSJ, 2011). A notorious example of the difficulties the other ECAs experience while faced with Chinese competition is the Pakistan example.

In 2011, a Chinese exporter offered a very low price for the supply of diesel electric locomotives to Pakistan. That bid was backed up by a deal of the Chinese Eximbank that was far below market rates and which therefore constituted a breach of international standards. That deal offered a tremendous advantage to the Chinese exporter. The contract was eventually awarded to the American General Electric for the quality of its merchandise but the threat of the Chinese bank was obvious (Cotter, 2012). It is very difficult to beat Chinese exporters on major international contracts as the Chinese government offers trade packages which allow Chinese exporters to sell their products with very low interest rates (as low as 1 or 2%) and very long repayment schedule (between 20 to 30 years). below capital market rates. This is rendered possible by the extensive resources of the Chinese government and its lack of transparency.

In aggregate, the Chinese export credit programs are estimated to total over \$100 billion a year (Cotter, 2012).

❖ **The China-Africa Development Fund (CAD Fund)**

The new born in the family of Chinese project finance providers, the CAD Fund is an institution that focuses entirely on Africa. The creation of the CAD Fund was announced as one of the eight measures for China-Africa cooperation during the Beijing Summit on China-Africa Cooperation (FOCAC). With a capital expected to grow to 5 billion USD, the aim of the CAD Fund is to encourage and support Chinese companies to invest in Africa (CADF, 2014).

Inaugurated in 2007, its initial phase funding is of 3 billion USD by the Chinese Development Bank, the only shareholder of the fund. The particularity of this fund is that it provides loans but also and most importantly equity, it does not allocate the projects by countries and it operates independently through market-based mechanisms and bears risks on its own just like a normal corporate as summarized in figure 12.

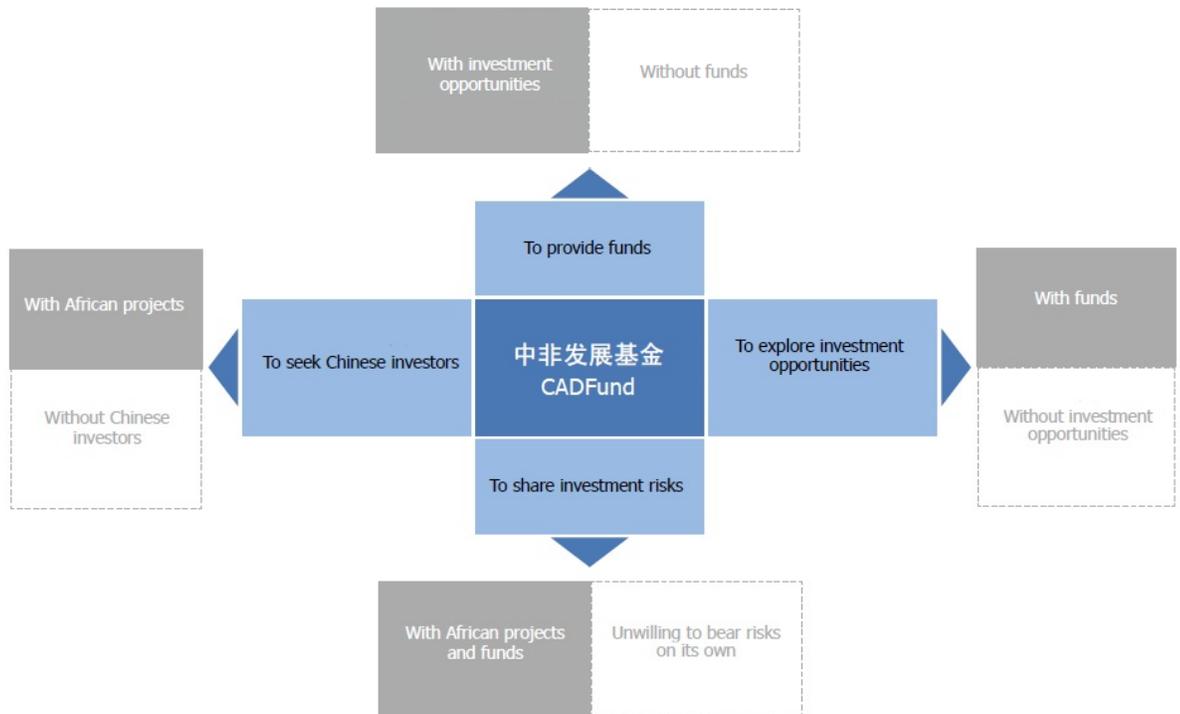


Figure 12: Investment Models of China-Africa Development Fund (CADF, 2014)

As illustrated in the figure above, the CAD Fund explores funding for enterprises which have investment opportunities and provide investment opportunities to enterprises which have the financial means but lack opportunities and shares risks with companies which have both projects and funds but do not want to bear all the risks alone.

This unique fund with its important capital and its unique services makes the Chinese competition in Africa almost impossible to match.

Besides its headquarters in Beijing, the fund has 4 offices in Africa: in Johannesburg (South Africa), in Addis Abeba (Ethiopia), in Lusaka (Zambia) and in Accra (Ghana). In 2013, besides the projects it had already achieved, the fund had committed to 9 projects for a value of 1.6 billion USD and had projects in its pipeline for a value of 50 billion USD (CADF, 2014).

As we can see, Chinese contractors have an undeniable advantage over their competitors and consequently they are able to establish their supremacy. Many African countries are particularly fond of Chinese credits for the following reasons:

- The financial resources of China are immense. There is basically no way a Chinese company can have difficulties mobilizing funds for a project.
- Chinese credit providing institutions do not require the political, environmental or human rights conditions that western institutions demand. Countries like Zimbabwe or China which have been banned by many western credit programs can still recourse to Chinese credits.
- Some countries such as Ghana or Mozambique are heavily dependent to foreign aid and may not be able to borrow any money as long as they do not repay what they already owe.
- Western institutions usually concentrate their efforts on education and health projects while other sectors like infrastructure are left without serious financing. They also stay away from private sectors considered risky or where corruption is known to strike. China Eximbank targets those sectors where western loans are scarce.

7.1.2.4.1.3. Difficulties of Turk Eximbank

1. Turk Eximbank is the only Turkish bank that provides credits to exporters or contractors operating abroad. While countries like China, France or the United States have many of such institutions it is not the case in Turkey. In the United States, OPIC is the most active agency in SSA after US Eximbank. OPIC (Overseas Private Investment Corporation), a profit-making US government agency that was established in 1971, has for goal to encourage long-term American private investment in emerging markets and developing nations. The loans it provides are typically between 100.000 USD and 250 million USD per project. OPIC is active in more than 150 countries (Yescombe, 2002).

2. The reason for this quite poor activity from Turk Eximbank in the region can also be explained by the fact that as Turk Eximbank follows the OECD consensus guidelines it also takes the OECD country risk classification as its base while allocating credit limits. As illustrated in table 13 and figure 13 below most of the African Countries fall into group V, VI and VII and are consequently considered to be risky. Being an ECA with quite

limited funds, countries which are considered the most risky will therefore be allocated small credit limits.

Table 13: African Countries Credit Limits Allocated By Turk Eximbank (AEF 2, 2014)

	YEAR	GROUP 0 – I	GROUP II	GROUP III	GROUP IV	GROUP V	GROUP VI	GROUP VII
Country Limits (USD; million)	2013	750	750	600	450	400	350	300

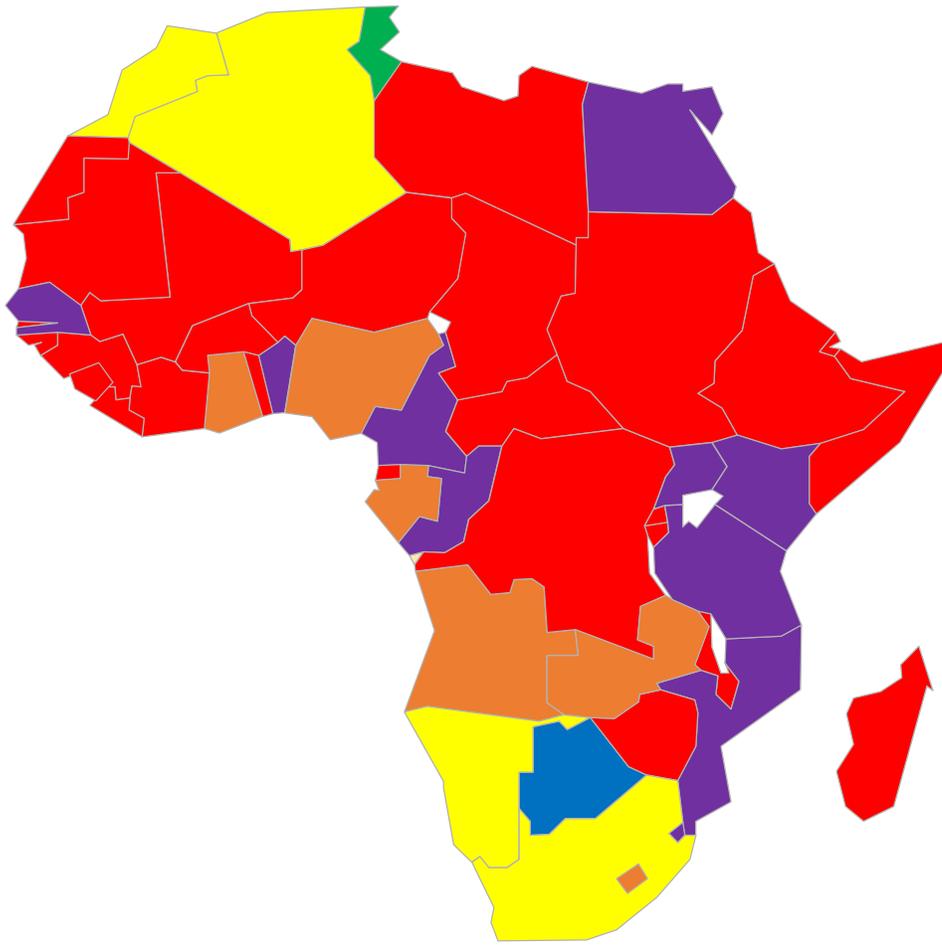


Figure 13: African countries per OECD Country Risk Class

Turk Eximbank has limited funds for each country and these funds are very small. 41 out of 54 African countries have a risk rate lower than 6 according to the OECD risk classification. As shown in table 3, rates of 6 and 7 imply respective maximum credit amounts of 350 and 300 million dollar. While we consider that projects in the energy sector are usually of quite important amount, we can conclude that the credits provided by Turk Eximbank are not sufficient especially if more than one project application has been made for the same country.

3. As stated earlier since the principles of Turk Eximbank are driven by the regulations of the OECD and since the OECD itself is guided by the rules of the IMF, Turk Eximbank is unable to provide credits to many SSA countries given the restriction on concessional term loans. Therefore even though a project may be very feasible and bankable, Turk Eximbank may not be able to provide any loan given the restrictions. It is true that the IMF can make exceptions for projects or sectors of critical importance to the countries but it is not always the case.

4. Turk Eximbank collects risk premium from projects to which they allow credits. It is actually the only remuneration that the institution gets from its services. This risk premium is collected from the Turkish contractors and not from the Exporter (Client) who is the Borrower. Therefore the contractors have to include that premium in their own contract price. Contractors can estimate the risk premium of the project they are applying for by entering information related to the project on the Turk Eximbank website. That premium is calculated based on a formula provided by the OECD and which takes in consideration the following factors:

- Country Risk Category
- Buyer Risk Category
- Credit Use Period
- Repayment Period
- Type of Financial Support

The example below would give us an idea of how expensive the Eximbank credit can be.

❖ Turk Eximbank credit for a Combined Cycle Power Plant in SSA

Turkish Contractor X is preparing an EPC offer to submit to the National Electricity Company of the country Y in SSA. X considers seeking financing of Turk Eximbank as only bidders able to provide an attractive financing package would be qualified. X established its contract price without financing as 100,000,000 USD. It is assumed that all the equipment will be of Turkish origin, which, as explained earlier, is not the case in real life. In order to estimate how much its offer would be if Turk Eximbank provides the financing, the Business Development Team of X goes to the website of Turk Eximbank and enters the required information details.

- Country Risk Premium

- Country risk

Y is an average SSA country. Its risk rate of 6 is higher than many other countries in the region.



Ülke Risk Kategorisi :	6
Alıcı Risk Kategorisi :	Seçiniz...
Kullandırım Dönemi (Ay) :	2
Geri Ödeme Dönemi (Ay) :	4
Finansal Destek Tipi :	6

- Buyer Risk

Ülke Risk Kategorisi : 6
 Alıcı Risk Kategorisi : SOV/CC0
 Kullanım Dönemi (Ay) : BTS
 Geri Ödeme Dönemi (Ay) : SOV/CC0
 Finansal Destek Tipi : CC1
 CC2
 CC3

The different buyer risk categories are given in table 14.

Table 14: Buyer Risk Categories (OECD, 2014)

Risk Category	Description
BTS	Better than Sovereign Exceptional classification for a buyer with exceptionally strong credit which is expected to fulfill its payment obligations through a period of sovereign debt distress or even default
SOV	Sovereign Entities which are legally mandated to enter into a debt payment obligation on behalf of the State, typically Ministry of Finance or Central Bank
CCO	Equivalent to the Sovereign: Exceptionally Good Credit Quality -Public entities which have the implicit full faith and credit/support of the sovereign - Corporate entities with exceptionally strong credit profile
CC1	Very Good Credit Quality The buyer has very strong capacity for repayment which is not likely to be affected by foreseeable events
CC2	Good to Moderately Good Credit Quality, Above Average The buyer has a moderately good capacity for repayment which is not likely to be affected by foreseeable events

Table 14: (continued)

Risk Category	Description
CC3	Moderate Credit Quality, Average The buyer has a moderate or moderately good capacity for repayment
CC4	Moderately Weak Credit Quality, Below Average There is a possibility that adverse conditions (business, financial or economic) could lead to an incapacity of the buyer to meet its payment commitments on time
CC5	Weak Credit Quality The risk of payment interruption is expected to be high or very high

The risk category that applies to buyers/clients in the power sector in SSA is usually the SOV/CO category as the institutions the credits are allowed to are usually public entities supported by the government and which can provide sovereign guarantee. The National Electricity Company is given that same category.

- Credit Use Period

The period during when the credit is used is usually the construction phase. The construction phase of the Combined Cycle Power Plant is taken as 3 years, which would be the average for this kind of project in that region.

- Repayment Period

The repayment period usually starts 6 months after the end of the construction phase and can go up to 10 years. X knows that Y would be comfortable with the longer repayment period possible. Therefore 10 years is chosen.

- Type of Financial Support

There are basically two types of financial supports: Country credit and medium term insurance. The one that applies to this particular case is country credit.

Ülke Risk Kategorisi : 6 ▼
Alıcı Risk Kategorisi : SOV/CC0 ▼
Kullandırım Dönemi (Ay) : 36
Geri Ödeme Dönemi (Ay) : 120
Finansal Destek Tipi : Ülke Kredisi ▼
Seçiniz...
He Ülke Kredisi
Orta Vadeli Sigorta

To sum up the following information have been entered into the Turk Eximbank website:

Ülke Risk Kategorisi : 6 ▼
Alıcı Risk Kategorisi : SOV/CC0 ▼
Kullandırım Dönemi (Ay) : 36
Geri Ödeme Dönemi (Ay) : 120
Finansal Destek Tipi : Ülke Kredisi ▼
Hesapla

The program of the website will give us the following output:

Ülke Risk Kategorisi : 6 ▼
Alıcı Risk Kategorisi : SOV/CC0 ▼
Kullandırım Dönemi (Ay) : 36
Geri Ödeme Dönemi (Ay) : 120
Finansal Destek Tipi : Ülke Kredisi ▼
Hesapla
Ülke Risk Primi (%): **12,8**

The risk premium has been established as 12.8%. The amount of the risk premium is as follows:

EPC Contract Price	100,000,000	USD
Risk Premium (%)	12.8	%
Risk Premium Amount	12,800,000	USD

- Interest Rates

The interest rates given by Turk Eximbank for the project is six monthly EURIBOR + 3.75%

The Business Development Team of X considers the 6 monthly EURIBOR rate dated 19th August 2014 which is 0.292%. Therefore we obtain the following repayment schedule:

REPAYMENT SCHEDULE				
Period	Loan at the Beginning of the Period	Interest at End of the Period	Principal	Total Installment
1	112,800,000.00	2,279,688.00	4,632,777.87	6,912,465.87
2	108,167,222.13	2,186,059.56	4,726,406.31	6,912,465.87
3	103,440,815.82	2,090,538.89	4,821,926.98	6,912,465.87
4	98,618,888.83	1,993,087.74	4,919,378.13	6,912,465.87
5	93,699,510.70	1,893,667.11	5,018,798.76	6,912,465.87
6	88,680,711.94	1,792,237.19	5,120,228.68	6,912,465.87
7	83,560,483.26	1,688,757.37	5,223,708.51	6,912,465.87
8	78,336,774.75	1,583,186.22	5,329,279.65	6,912,465.87
9	73,007,495.10	1,475,481.48	5,436,984.40	6,912,465.87
10	67,570,510.70	1,365,600.02	5,546,865.85	6,912,465.87
11	62,023,644.85	1,253,497.86	5,658,968.01	6,912,465.87
12	56,364,676.84	1,139,130.12	5,773,335.75	6,912,465.87
13	50,591,341.09	1,022,451.00	5,890,014.87	6,912,465.87
14	44,701,326.22	903,413.80	6,009,052.07	6,912,465.87
15	38,692,274.15	781,970.86	6,130,495.01	6,912,465.87
16	32,561,779.14	658,073.56	6,254,392.32	6,912,465.87
17	26,307,386.83	531,672.29	6,380,793.58	6,912,465.87
18	19,926,593.24	402,716.45	6,509,749.42	6,912,465.87
19	13,416,843.82	271,154.41	6,641,311.46	6,912,465.87
20	6,775,532.36	136,933.51	6,775,532.36	6,912,465.87
TOTAL		25,449,317.44	112,800,000.00	138,249,317.44

The interest amount on the total amount of the EPC contract Price and the Risk Premium is:

EURIBOR	0.292	%
Extra interest	3.75	%
Total interest rate	4.042	%
Interest Amount	25,449,317.44	USD

To sum up, the different details of the financing package are as follows.

EPC Contract Price	100,000,000	USD
Risk Premium (%)	12.8	%
Risk Premium Amount	12,800,000	USD
EURIBOR	0.292	%
Extra interest	3.75	%
Total interest rate	4.042	%
Interest Amount	25,449,317.44	USD
Financing Package	138,249,317.44	USD

More than 38 million USD has gone to the financing of the project only, which is almost 40% of the initial contract price and which may not be a very competitive package.

Note: Some additional fees such as commitment fees, management fees and expenses have not been taken in consideration

5. Turk Eximbank finances only the goods imported from Turkey. In a power plant project, equipment constitute more than 50% of the contract price. As stated earlier, the most critical and therefore most expensive equipment cannot be manufactured in Turkey and therefore they have to be imported. Table 15 below illustrates the Bill of Quantities for a Biomass Power Plant Project to be executed in Togo by a Turkish contractor.

Table 15: Bill of Quantities for a Biomass Power Plant Project in Togo

ITEM	ORIGIN	PRICE (EURO)
DESIGN		
DESIGN	TURKEY	833,087
EQUIPMENT		
STEAM TURBINE GENERATOR SET	THIRD COUNTRY	3,162,891.74
STEAM GENERATOR AND AUXILIARIES	THIRD COUNTRY	9,169,545.12
FLUE GAS CLEANING SYSTEM	THIRD COUNTRY	3,518,006.83
FUEL HANDLING SYSTEM	TURKISH	1,503,254.26
POWER CYCLE PIPING	TURKISH	274,622.34
BOILER FEED PUMPS	THIRD COUNTRY	327,652.86
WATER TREATMENT PLANT	TURKISH	2,178,039.22
HVAC	TURKISH	972,541.86
FIRE FIGHTING	TURKISH	421,783.92
EOT CRANE	TURKISH	152,936.23
SPARES	TURKISH & THIRD COUNTRY	854,226.98
TOTAL		22,535,501
SUPERVISION & COMMISSIONING		
SUPERVISION & COMMISSIONING	TURKISH & THIRD COUNTRY	598,942
OTHER COSTS		
LABOR AND MATERIAL	TURKISH	8,307,308
INDIRECT COSTS	TURKISH	2,332,316
OVERHEAD COSTS	TURKISH	312,289
PROFIT %	TURKISH	3,147,987
CONTRACTUAL CHARGES	TURKISH	930,139
TOTAL		15,030,039
TOTAL CONTRACT PRICE		38,997,569

As you can see, the equipment alone amount for 58% of the project contract price. The equipment that cannot be manufactured in Turkey and therefore should be imported from a third country amount for around 44% of the project contract price. Turk Eximbank will

not be able to finance that portion of the project therefore the Turkish contractor will be obliged to look for other financing alternatives.

7.1.2.4.2. Commercial Banks

Commercial banks financed projects requiring long term maturities during 1980s and became the principal source of long-term debt for Project financing. Since the 1990s with infrastructure projects becoming a high priority all over the world, commercial banks have expanded their role in project financing to lender and advisor. (Finnerty, 2007)

Commercial banks have played an active role in project finance since the 1990s with the non-recourse loan provided by a Dallas bank for the development of oil and gas properties (Forrester et al., 1994).

The international banking market has developed into one of the most dynamic financial markets in the world. (Yescombe, 2002)

Large international western banks are likely candidates for providing funds to a major project as illustrated in table 16 below.

Table 16: Global Initial Mandated Lead Arrangers, first semester of 2014
(Project Finance International League Tables 2014 Mid-Year Review)

	Mandated arrangers	US\$(m)	%	No of deals
1	BNP Paribas	5,825.0	5.5	33
2	SMBC	5,515.1	5.2	46
3	Mitsubishi UFJ	4,947.7	4.7	58
4	Credit Agricole	3,746.4	3.5	40
5	Mizuho Financial	3,560.7	3.4	39
6	HSBC	3,498.7	3.3	19
7	ING	3,160.0	3.0	34
8	CBA	3,092.0	2.9	23
9	Societe Generale	2,710.7	2.6	29
10	RBC Capital Markets	2,399.1	2.3	16
11	ANZ	2,298.1	2.2	21
12	Santander	2,037.0	1.9	21
13	SBI Capital	1,992.3	1.9	12
14	Deutsche Bank	1,912.0	1.8	16
15	KfW IPEX-Bank	1,830.9	1.7	12
16	CIBC World Markets	1,759.8	1.7	7
17	Scotiabank	1,735.4	1.6	14
18	Natixis	1,660.0	1.6	19
19	JP Morgan	1,594.3	1.5	7
20	NAB	1,463.2	1.4	13

Most of the commercial banks in Turkey are able to finance projects in the national market but are reluctant to be involved in the financing of projects abroad and particularly in developing countries.

Turkey has several world class reputed banks and private investing companies. In its article dated May, 13th 2014, Hürriyet newspaper asserted that Turkish banks had financed between 90 and 95% of the “great” projects of Turkey of the last 10 years. These projects amounted approximately 67 billion USD. Turkish banks were therefore able to provide between 45 and 55 billion USD of loans to finance these project (3rd Istanbul Bridge, Izmir-Istanbul Highway, Avrasya Tunnel...). 28 billion USD were invested in power projects (Hürriyet, 2014). Turkish investors prefer Turkish banks to foreign banks

as the formers can provide important loans with long maturities (up to 14 years) and they are faster to get involved in projects. These are definitely advantages that could be useful in SSA. Unfortunately besides Bank Asya which is present in the SSA region through Tamweel Holding, no Turkish company has activities in the region. Tamweel Holding is a company which has for mission to “promote Islamic Finance in Sub Saharan Africa by building modern, dynamic and strong Shariaa compliant banks as a key contributor to socio-economic development in the countries in which it operates” (Tamweel Africa Holding website). Bank Asya has 40% share in the company which has shares in banks in Senegal, Mauritania, Niger, and Guinea as described in figure 17 below.

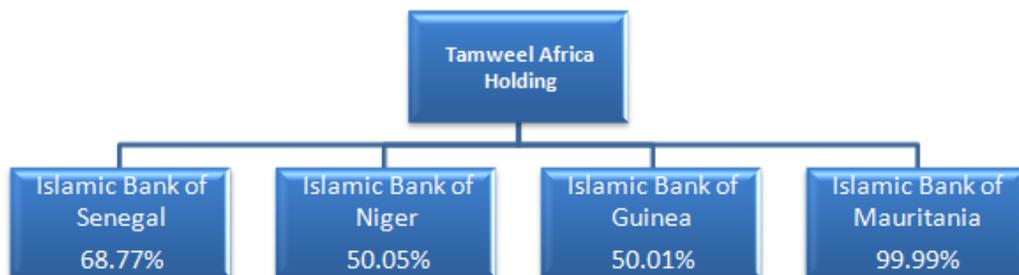


Figure 17: Group Structure of Tamweel Africa Holding (Tamweel Africa Holding website)

That lack of Turkish commercial banks is a serious handicap for Turkish contractors especially now that in project finance trend is away from the degree of subsidization that applied in the past (Yescombe, 2002).

7.2. Survey Results

Table 17 below presents the mean values of the ratings assigned by the industry experts. It is important to note that respondents considered the weaknesses found as important as all of them are above the threshold of 3 that we fixed earlier. Birgönül and Dikmen (2008) concluded that lack of finance and the poor role of the Turkish government were key weaknesses of Turkish contractors in the international market. In this particular sector

(power sector), the importance of the equipment manufacturing is revealed as respondents considered it the third key weakness and scaled it as “important”. Even though the first 2 key weaknesses are related to the finance capability of the contractors, respondents believe that the absence of Turkish commercial banks in SSA has more criticality than the ineffectiveness of Türk Eximbank. Therefore they believe that the private sector could be more useful than the government in terms of finance. It transpires that the role of the Turkish government and the absence of Turkish consulting and engineering firms are less important weaknesses but they are still considered as key weaknesses by the respondents.

Table 17: Responses of Industry Experts regarding the level of criticality of weaknesses of Turkish Contractors in the power sector in SSA

Rank	Weaknesses	Scale
1	Absence of Turkish Commercial Banks in SSA	4,2
2	Ineffectiveness of Turkish Eximbank in the power sector in SSA	4,1
3	Lack of Turkish manufacturing industry for boilers and turbines	4,0
4	Poor role of the Turkish government	3,1
5	Absence of Turkish Consulting and Engineering Firms in SSA	3,0

When asked to give other weaknesses that could explain why Turkish contractors struggle in being competitive in the power sector of the SSA region, the respondents listed the following weaknesses:

- Lack of strategic thinking and plans from Turkish contractors. One of the respondent asserted that the in general their target is a quick immediate profit.
- Lack of business development and researches. Most of the contractors do not make objective and thorough researches on the sector. They do not examine working and financing conditions, competitors, regulations of the countries and local conditions.
- Unprofessional commercial approaches of Turkish companies

Taking into consideration the weaknesses added by the respondents, it transpires that the way Turkish contractors operate is also a matter for concern especially their lack of strategic thinking and their seeking of quick profit.

CHAPTER 8

SUGGESTIONS TO BOOST THE COMPETITIVENESS OF TURKISH CONTRACTORS IN SUB-SAHARAN AFRICA

8.1. Internationalization of Turkish banks

As explained earlier, when it comes to the power sector and the SSA region, the sad truth is that Turk Eximbank is practically of no use for EPC contractors. The OECD regulations that it follows have the following disadvantages:

- Its credits are not enough for power projects especially if a single Turkish contractor is to undertake a project as an EPC contractor or if more than one application has to be made for the same country.
- It makes the loan too expensive for African governments who would not hesitate to resort to another more advantageous financing option.
- The OECD regulations prevent Turk Eximbank from providing loans to many SSA countries given the loan restrictions on concessional terms.
- Turk Eximbank can only finance equipment manufactured in Turkey. Since the key equipment are not Turkish made, only materials such as steel profiles and cement as well as engineering works can be financed. Therefore Turkish contractors are left with only a small portion of the contract price.

We do not really believe that improvements on Turk Eximbank may change the situation for the better for the following reasons:

- Turk Eximbank by definition is an Export Credit Agency, not a project finance provider. If in sectors where an important quantity of materials of Turkish origin (like building for example) Turk Eximbank can be useful, it cannot be the case in the power sector at least in the short and medium term.

- Turk Eximbank is an agency ruled by the regulations of the OECD. As a government institution, trying to circumvent the rules of the OECD in terms of interest rates or concessional terms restrictions would do more harm than good.

That is why emphasis should be put on the private Turkish financing sector.

The government should provide incentives in order for Turkish banks to venture internationally. They should be able to establish branches or, as Bank Asya is currently doing, participate as shareholder of local African banks. The success of Turkish contractors should be followed by the one of Turkish finance providers.

The internationalization of Turkish banks will surely boost the activities of Turkish contractors to a higher dimension. As Davis states institutions with broad geographical scope and with both commercial and investment banking capabilities have a competitive edge in today's market. (Davis, 2003) It should not be forgotten that if Turkish contractors have been operating in regions where money is available for projects, it is not the case with SSA. As long as Turkish contractors do not develop their financing capabilities, they will stay behind.

8.2. Establishment of a Project Finance Development Agency

The government should involve itself more in making sure that the difficulties the contractors face are solved. And these difficulties are many. The role of the Turkish government should be more active. The story of the Chinese government is one that could be followed. Contracts will not be signed and projects will not be completed only through a hand shake between top officials who do not necessarily know the realities on the field. **The business mind should replace the political mind.** The role of the government should be, as the example of China Africa Development Fund, more less a political one and more a technical one.

The role of the government should be one of catalyst. It should implement an agency that should involve Turk Eximbank, commercial banks and private funds as well as the Turkish Contractors Association. The aim of that agency will be to get Turkish contractors and finance providers better acquainted to potential markets and to assist them in business development, in the search of viable projects, in their feasibility and preparation in order

to make them bankable and in seeking necessary funding first from Turkish finance providers such as Eximbank or commercial banks and then from international institutions. That governmental agency shall offer different financing opportunities to contractors and assist them up to the financial closure. The agency should be able to meet the needs of the international contractors with the expectations of banks and investors. It should not be forgotten that Turkish Eximbank can, in principle, provide guarantees for loans provided by Turkish commercial banks for projects abroad and probably the activities of the TE will move toward that direction once commercial banks become more active.

It is necessary that Turkish contractors do not abandon a project in SSA for the sole reason that there is no financing available. The finance should not be an obstacle for qualified Turkish contractors ready to venture into a region which is as unfamiliar to them as SSA and should not prevent them from holding high the Turkish flag. A construction project already holds many difficulties and is affected by so many parameters and the finance should not be the goal to achieve and therefore distract contractors from the ultimate real aim which is the successful completion of the project. Therefore it is not acceptable that financing be a problem.

8.3. Equipment Manufacturing

It is necessary that the Turkish governments puts more effort on Research and Development in power technology. This is the only way the country will actually be able to compete in the power sector and enter the family of technologically advanced countries like Japan, United States, South Korea, India or China. It is not enough that Turkey is a very industrialized country if it doesn't advance toward research and development in technology. We can note that the fiercer competitors of Turkey in SSA are also very technologically advanced countries. As stated earlier, the core of power plant is basically its very technological equipment namely boilers and turbines. The equipment manufacturing part is also one issue Turkish contractors stumble upon when seeking finance from Turk Eximbank. These equipment being from a non-Turkish origin, Turk Eximbank cannot, as a matter of principle, finance them even though they can account for up to 70% of the project contract price. That could change the day Turkish

manufacturers would be able to produce sound and reliable equipment. It is the duty of the government to work in that direction.

8.4. Turkish Consulting and Engineering Firms

As previously stated, without the presence of consulting and engineering firms, Turkish contractors are deprived of a strong foundation. Consulting and engineering firms should play a more active role in the region. The opportunities for these firms are immense as for 10 projects that are executed, 30 others pass in the hands of consulting and engineering firms without ever being realized. There is therefore a fertile ground for consulting and engineering firms. It is necessary that measures be taken so that consulting and engineering firms internationalize their activities and strengthen their presence in SSA. Incentives should be put in place by the government in that direction. Their presence will definitely strengthen the presence of the contractors. As stated earlier, these firms will be able to create a favorable environment for contractors and promote Turkish products and regulations. They will be at the inception of projects and by interacting with local authorities will be a good source of information for contractors and lay the foundation for their activities.

8.5. Turkish Contractors

Turkish contractors should invest more in project financial engineering as suggested by Birgönül and Dikmen.(2008) They should slowly move from standard contracting to areas that shall bring a more serious competitive advantage such as project management, project development, consulting, feasibility studies, financial engineering, Business Development. Turkish companies should improve their Business Development capabilities. They should be able to differentiate the different countries of Africa and see the continent as a whole where the advantages and disadvantages are the same at each corner. Being able to spot the right projects implies the thorough knowledge of the environment targeted. They should also focus into the long term by operating strategically and professionally instead of seeking quick profit.

CHAPTER 9

CONCLUSION

9.1. Summary of the Findings

After having analyzed the history of Turkish contractors in the SSA region and reached the conclusion that their presence is not as strong as it could be, this thesis provides the characteristics that would be useful to understand the power sector in general and the particularities of the sector in the SSA region. The characteristics of the power sector are as follows:

- Need for important capital and lack of government funding
- Long term investment
- Offtaker risk due to electricity tariff
- Government involvement
- Technical complexity

These characteristics lay the foundation for the determination of strengths and weaknesses of the contractors. As Porter said, competitiveness is a matter of both the environment and the capabilities of the companies (1990). In this case, the electricity tariff issue requires that contractors be well equipped in financial engineering in order to reach, in the project, the level which would be profitable for them and for the populations the government is supposed to represent. The need for important capital and the lack of government funding available implies that it is necessary for EPC contractors to add the financing dimension to their activities. The long development time requires that contractors be strong enough both financially and capability wise. With the host government involvement, it is clear that the Turkish government will have to provide a special support to its contractors in order to expedite activities and formalities. The technological complexity is with the financing, one of the biggest problems Turkish contractors which seek financing to undertake a project on an EPC basis face. It has been

explained that as local governments lack the necessary funding and given the focus of international financing institutions on education and health, the trend in the region is toward project development and bidding that involves financing package. Turkish contractors should learn from their difficulties and add to the strengths determined in this paper namely their risk taking nature, the management abilities of the directors, their references, their low cost labor force, the Turkish steel Manufacturing and the cement industry. Notwithstanding these strengths, their weaknesses of which the most important stem from the limitations of Eximbank and the absence of Commercial banks as well the lack of an equipment manufacturing industry make them very uncompetitive in the power sector in SSA. It was explained that when many countries have several international project finance providers, Turkey actually doesn't have any as Turk Eximbank works on the basis of exports and is not able to finance a whole project. As more than 50% of the power project amounts are mad of equipment that are not manufactured in Turkey, Eximbank appears to be more or less "useless" for that sector. Its membership to the OECD limits it even more and render its credit very expensive and uncompetitive when compared with Chinese credits for example. Even though credit can be secured the limitations on concessional loans applied on many countries in SSA prevents the agency to provide any credit and the contractors to undertake projects. Turkish commercial banks are inexistent in the region which reflects the general feeling among private finance providers that the region is too risky which is in contrast with the risk taking nature of Turkish contractors. Without a strong equipment manufacturing sector, Turkish contractors are dependent to foreign companies which is a serious handicap and capital flight that could be invested in Turkey. The Turkish government involvement is very political and not enough technical. Crowded business trips are not always very effective.

Since restructuring Turk Eximbank will be a very complicated and maybe suicidal task, there is a need for more participation from the private financing sector. The Turkish government should work in canalizing the capabilities of the Turkish private financing sector so that they can profit the contractors. In this paper it was suggested that an agency be established for that particular matter. That agency will work both as a huge Business Development Agency and as a support to contractors of finance providers interested in the SSA region. The agency will make sure that the financial needs of international

contractors are met. It should not be forgotten that the project finance sector will require both a strong financing sector and companies specialized in financial engineering and in project development. We cannot expect from Turkey the financing capacities that its competitors like the Chinese have but with the help of private banks which have shown their capabilities locally to finance huge projects Turkish contractors will be able to provide more and more quality projects. Turkish engineering and consulting firms are absent internationally and especially in SSA. Their involvement is necessary in order to promote Turkish regulations and products and in order to be the eyes and advocates of Turkish contractors to the local governments and help them in the Business Development in the region. These firms are the most likely by delivering feasibility studies and embracing financing engineering to perform project development activities. Turkey will need to invest more into research and enter in the short list of technological countries just like their competitors. Turkish contractors should aim toward more specialized activities such as financial engineering. If necessary measures are not taken in the sense of the suggestions provided, the Sub-Sahara African region will not be able to profit from the expertise of Turkish contractors and these latter will not be in the position to undertake projects as EPC contractors but will be condemned into a status of subcontractor or at best JV or consortium member. The next step of this thesis will surely be the classification of strengths and weaknesses of Turkish contractors in the SSA region according to their importance by assigning them weight after having discussed with different power companies interested in the region. It is also necessary to evaluate the losses incurred by Turkish contractors given the different difficulties to face.

9.2. Limitations of the Research

As almost every research has some shortcomings, this research has also some few drawbacks. First of all the even though the rate of participation was quite high, it would have been preferable to target a higher number of respondents. It was asked in the questionnaire to the respondents to add weaknesses they believed worth to be taken into consideration. Some respondents may not have been willing to concentrate and look for other weaknesses than the ones already provided to them. It is true that the opposite is also possible, that the respondents may have actually agreed that all the weaknesses

provided were the key ones. Even though one of the aims of the study was to actually determine the key weaknesses of Turkish contractors, a thorough investigation preferably through brainstorming could have provided other weaknesses that could have been rated too. It could have also been interesting to get the feedback of other respondents on the weaknesses provided by some of the respondents. Another drawback of that study which stems principally from the fact that EPC Turkish contractors have not yet penetrated the energy sector of SSA is that the researches concentrate on the difficulties contractors experience while seeking projects up to the contract award which is actually the business development phase of the project rather than the execution phase. Therefore the weaknesses that may stem from the execution phase are not taken into consideration.

9.3. Recommendations for Future Researches

This study can be a good reference for those who are willing to conduct a comprehensive research about the weaknesses of contractors active in the power sector. As this study actually determines the key weaknesses and evaluate their criticality. Further researches may include a more detailed questionnaire to be sent to a higher number of respondents. In addition brainstorming session and group interviews may be conducted in order to spot more weaknesses. In a couple of years when Turkish EPC contractors will have settled in the SSA region, it would be useful to include professionals from the execution phase of the projects in order to have a broader picture of the problematic.

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APPENDIX A

SAMPLE QUESTIONNAIRE

1. Scope of the survey

This survey has been developed for a master's thesis "Turkish Contractors in the Power Sector in Sub Saharan Africa" which is under preparation in the Construction Management division of Middle East Technical University.

The development of the power sector is essential for the development of Sub-Sahara African countries. The Sub-Sahara African region which comprises 48 countries has one of the lowest generation capacity in the world. As the region is one of the poorest in the world and governments lack the financial means to fund power projects, these ones have been financed through project finance. More opportunities are flowing in the power sector in the region and it is important that Turkish contractors are not left out of the competition. The main purpose of this research is to identify the weaknesses of Turkish Contractors with regards to the power sector in Sub-Saharan Africa by assessing the difficulties they face in the region and after establishing characteristics of the power sector in general and the region in particular. The research also intends to provide realistic and effective solutions in order to take the competitiveness of Turkish contractors to a higher level.

In order to get the feedback from professional in the industry and the findings, a survey has been developed to be submitted to experienced people in the energy sector in the Sub-Saharan Africa region.

To make sure that the participants clearly understand the findings of the thesis, a short summary of the findings is attached to the survey.

All of the information provided by the participants of this survey will stay confidential, company name will be withheld and data will only be used for academic purposes.

We would like to thank for your time and contribution in our study.

M'bi Mabilia Ovic, MSc candidate

Thesis supervisors: Prof. Dr. İrem Dikmen Toker & Prof. Dr. M. Talat Birgönül

2. Summary of the Findings

Weaknesses of Turkish contractors in the Power Sector in Sub Saharan Africa (SSA)

- **Equipment manufacturing**

In a power plant project, the equipment part can account for up to 70% of the project contract. Turkey lacks an industry of equipment manufacturing especially for boilers and turbines. Therefore being unable to provide 100% Turkish made power plants, Turkish contractors have difficulties competing in the energy sector and are obliged to partner up with manufacturers from Europe, America or even China and India. That partnership can take the form of a Joint Venture, Consortium, Subcontracting or Supply structure.

- **Role of the government**

Turkish government's actions in Sub Saharan Africa (SSA) are not very practical. The government encourages the contractors to operate in SSA by organizing business trips that include business men willing to venture into the SSA market and by organizing or sponsoring fairs and conferences that gather African business men and decision makers and Turkish business men. But it does not provide enough and very effective financial incentives to allow Turkish contractors to obtain contracts and perform them.

- **Turkish Consulting and Engineering Firms**

Turkish consulting and engineering firms do not match the success of the Turkish contractors.

In the 2013 ENR list of the 20 biggest Project Management Companies (based on their agency commission and project management fees), there is not a single Turkish company. Regarding the activities of Turkish design firms, while in 2012 Turkey had the highest number of firms after China in the ENR list of Top International Design Firms (38), their overall international revenue of 16.8 billion USD was far lower than the one of the 4 French firms (43.2 billion USD) or of the list or of the 12 Spanish firms (72.9 billion USD).

Having active consulting and engineering firms would help bring a serious advantage to Turkish Contractors as:

- The involvement of these firms would be a form of Business Development. There is always more opportunities for consulting and engineering firms than for contracting firms and the former would be able to spot the project that may come to life. These firms will also have an earlier access to the clients
- By being involved in the early stage of a project, Turkish consulting and engineering firms will be able to promote Turkish products and standards.

- **Financing capabilities**

- **Turkish Eximbank**

- Turkish Eximbank is the only Turkish bank that provides credits to exporters or contractors operating abroad
- Turkish Eximbank is not a Project Finance Agency but an Export Credit Agency. Therefore it cannot provide credit for the whole project but only for materials and equipment manufactured in Turkey and services of Turkish origin. When we know that more than 50% of the contract price may consist of equipment that cannot be manufactured in Turkey, the Eximbank credit may happen to be quite ineffective.
- Turk Eximbank follows the OECD consensus guidelines and takes the OECD country risk classification as its base while allocating credit limits. 41 out of 54 African countries have a risk rate lower than 6 according to the OECD risk classification. This implies that Turkish Eximbank can only allocate a maximum of 350 million dollar to most of the SSA countries which may not be enough for a power project.
- As stated earlier since the principles of Turk Eximbank are driven by the regulations of the OECD which are themselves guided by the rules of the IMF. Therefore Turk Eximbank is unable to provide credits to many SSA countries given the IMF restriction on concessional term loans. This means that even though a project may be very feasible and bankable, Turk Eximbank may not be authorized to provide any loan to a specific country.
- Turk Eximbank collects risk premium from projects to which they allow credits. This risk premium is collected from the Turkish contractors and not from the Exporter

(Client) who is the Borrower. The calculation of that risk premium takes into consideration the country risk category, the buyer risk category, the credit use period, repayment Period and the type of financial support. Given the fact that the risks associated with SSA countries are usually high and that the client will seek long periods for credit use and repayment, the risk premium in these countries is usually high. The interest rates of Turk Eximbank are established by the OECD regulations too. With these interest rates and the country risk premium, a typical project in SSA would increase of 30 to 40% of its original EPC contract price.

➤ **Commercial Banks**

Most of the commercial banks in Turkey are able to finance projects in the national market.

Turkey has several world class reputed banks and private investing companies. Turkish banks were therefore able to provide between 45 and 55 billion USD of loans to finance between 90 and 95% of the “great” projects of Turkey of the last 10 years (3rd Istanbul Bridge, Izmir-Istanbul Highway, Avrasya Tunnel...). 28 billion USD were invested in power projects. But Turkish banks are reluctant to be involved in the financing of projects abroad and particularly in developing countries.

Bank Asya, through Tamweel Holding in collaboration with the Islamic Development Bank, is the only Turkish bank with activities in the SSA region.

3. Survey

Name of the respondent:

Company of the respondent:

Total years of experience in the power sector:

Total years of experience in SSA:

Please rate the following weaknesses determined by the author on a Likert scale from 1 to 5 (5 being a very strong weakness and 1 being a very weak weakness). (Do not classify the items, 2 items can have the same score).

Likert Scale

Value	1	2	3	4	5
Scale	Unimportant	Of little importance	Moderately important	Important	Very Important

Table of Weaknesses

Weaknesses	Rating	Remarks
Lack of Turkish manufacturing industry for boilers and turbines		
Poor role of the Turkish government		
Absence of Turkish Consulting and Engineering Firms in SSA		
Ineffectiveness of Turkish Eximbank in the power sector in SSA		
Absence of Turkish Commercial Banks in SSA		

Any other weakness that you believe is worth being considered?