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Institutional determinants of successful public–private partnerships in electricity generation: Evidence from Tanzania

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Abstract. Public – Private Partnerships (PPPs) have become a popular global strategy for addressing energy infrastructure challenges. However, the question on which PPPs model works best for a particular project in the range of more than a dozen different models, remains unsettled by different governments of the world. This study examined the necessary conditions for enhancing Public- Private Partnership (PPPs) models for improving electricity generation in Tanzania. Overall, the study findings revealed that, performance of PPPs in electricity generation projects was being hindered by elements such as unpredictable payments guarantee, skewed contracts for PPAs, lack of transparency and fair competition and high costs of electricity. Findings suggests that, the quality of political, economic and social institutions, both formal and informal are important for influencing the functioning of PPPs projects and its economic outcomes. Also, robust and inclusive institutions, the quality of governance structures, laws, rules, regulations, and policies as well as the accepted norms and customs, predict the best outcomes. The reverse is equally true. In addition, rent seeking activities decrease appreciably as institutional competence improves accordingly as well as the capacity of the state to regulate activities of private investors.

Keywords. Public – Private –Partnerships, Independent Power Producers, Electricity generation projects, Tanzania.
JEL. L32, Q48, O43.
SDG. SDG7, SDG16.

1. Introduction

Electricity services are crucial for economic and social development. Yet, over 1.2 billion people still lack access to electricity worldwide. Half of those without electricity are in Sub – Saharan Africa (European Investment Bank, 2015). Electricity generation in Africa, for example, has been a challenge to most countries. As a result of insufficient public funds for new power generation and decades of poor performance by state utilities, most Sub-Saharan African (SSA) governments began to adopt a new model for their power systems, influenced by pioneering reformers such as Chile, Norway, Brazil, the United Kingdom (UK) and the United States of America (USA). The reforms were pushed on by World Bank (WB) which was

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withdrawing funding from state owned projects thus, a number of countries adopted plans to unbundle their power systems and introduce private participation and competition. Independent Power Producers (IPPs) with long term Power Purchase Agreements (PPAs) with the state utility became a priority in overall power sector reforms (World Bank, 1993; Eberhard & Gratwick, 2006).

Although IPPs were considered part of larger power sector reform programs in Sub Saharan Africa, the reforms were not far reaching. Eberhard & Gratwick (2011) had a view that IPPs for Sub Saharan Africa have failed to play a larger and more beneficial role in improving electricity generation and the governments and citizens have not benefited in terms of affordable and reliable power.

In Tanzania, to promote private investors participation in electricity sub sector a number of legal and policy instruments such as National Energy Policy 1992, 2003, 2015 and Electricity Act of 2008; PPPs policy 2009) backed by PPPs Act, 2010 as amended in 2018 were put in place. Despite the Policy and legal setting that meant to facilitate private sector participation in the Power sector, challenges have remained. For example, the legal, regulatory and institutional frameworks are not clear and robust to enable investors accept risks over the longer term with some certainty of the framework within which these risks are being taken. Institutionally, private investors look for certainty of regulation whether it is tax policy, electricity regulation for predictable fiscal and monetary policies for a market in which contracts are fair and are respected. Dione (2018), argue that clear rules of engagement, transparency in bidding and procurement and appropriate risk-sharing arrangements between the public and private sectors are pre requisite for effective PPPs functioning.

Experience of public private partnership models applied in Tanzania for electricity sub-sector namely management contract and Build Own Operate revealed success and failure outcomes. Under management contracts experience from TANESCO and NET Group solutions in 2002 to 2006 Ghanadan & Eberhard, (2007) expressed that; the model was successful management and planning in electricity service delivery. He challenged the model that, management contract may improve conditions for investment but they do not on their own resolve the question where finance for new investment will come from and who is responsible. In that way may increase revenue and operations but do not guarantee investment outcomes in practice, investment risks and most operational risks remain with the public sector.

The Build Own Operate model as applied in electricity generation projects the government granted to independent Power producers the right to finance, design, build, operate and maintain electricity generation projects. The potential benefit of the model is that there is an element of quickly competition of project, investors guarantee a majority portion of the capital investment and properly maintain the plants. Peng, *et. al.*, (2016) argued that IPPs with high commercial content were messed up by certain elements of

corruption, lack of capacity, overestimated capacity charges, high project costs estimates and poor planning. In this vein, this study analyzed the quality of power purchase agreement contracts entered between the institutions of the state and private sector institutions; their respective institutional capacities to monitor and enforce the implementation of the signed contracts; quality of incentives offered by the state to private sector actors to transfer technology, managerial skills, financing and innovations as well as the modalities of sharing agreed mutual costs and benefits during the entire period of the contract.

2. Literature review

2.1. Structures of public – private partnerships models

Public – private partnerships differ in terms of the models and structures being applied from country to country or between projects. Their context, purpose and perspective may as well differ depending on the arrangement between parties involved and the pattern of implementation (Mouraviev & Kankadse, 2012; ONG, 2003). The terms of a PPP are typically set out in a contract or agreement to outline the responsibilities of each party. PPP models have been also analyzed from different perspectives depending on the arrangement as seen from different scholars and sources such as UNESCAP (2008); Jeffares, *et al.* (2009); Kwak, *et al.* (2009); Tanzania PPP policy (2009); United Nations (2011); UNDP (2015). The most common models in utilities are discussed.

Management Contracts: They are normally of short duration ranging from 3-5 years of operations arrangement with a limited transfer of responsibilities and risks to the private operator (Fall *et al.*, 2009). Both the private sector risk and financial and commercial risks remain relatively low and ownership remains with the public sector. Although the ultimate obligation for service provision remains in the public sector, daily management control and authority is assigned to the private partner or contractor. The main advantages of management contract are in form of operational gains that result from the private sector management without actually transferring assets to the private sector. In terms of weaknesses, the split between the obligation of services and management on one hand, and the financing of expansion planning could inhibit the private sector from enjoying the autonomy or the authority thus not able to make meaningful change. Similarly, being paid a portion of profits may encourage the private sector to inflate the reported achievement or deficit maintenance of the system to increase profits (ADB, 2008). Ghanadan & Eberhard, (2007) expressed that; management contract is successful if there is effective policy, management and planning in the sector as a whole.

Build-Own-Operate (BOO): Under BOO model, the government grants the right to finance, design, build, operate and maintain a project to a private entity, which retains ownership of the project. The private entity is not required to transfer the facility back to the government. BOO guarantee a majority portion of the capital investment required. Gratwic *et. al.* (2005)

addressed that, BOO mitigated project risk, by ensuring that developers would properly maintain their plants. The model is disadvantageous as ownership of strategic assets such as nuclear power plant is likely to fall under private and foreign firms.

Build Own Operate Transfer (BOOT): Under this model a private entity receives a concession from the private or public sector to finance, design, construct, own, and operate a facility stated in the concession contract. Legally own and operate such infrastructure assets for a defined period and then transfer the assets to the government after a defined period of time. BOOT model minimizes the public cost for infrastructure development and reduces public debt. Yumurtaci *et. al.,* (2006) pointed out that BOOT facilitates great incomes than investment and operation cost to the developer and shift of capital abroad.

Design-Build-Operate (DBO): Under this model, the government contracts with the private partner to design and build a facility in accordance with the requirements set by the government. After completing the facility, the ownership of the facility remains with the public sector while the private partner operates the facility according to public performance requirements. Salifu (2015) expressed that to ensure DBO achieved its desired objective there should be an improvement in the regulatory capacity and processes to make it more systematic and transparent.

PPPs models have been applied in different countries in various infrastructure projects and typically practiced as the optimal strategy in the electricity sector. It becomes imperative to describe how they are typically practiced in electricity sector and compare to other best experience from different governments.

Nandjee (2006) in the study of electricity generation in Cotdivour reported that due to delays the project took about 4 years to come into operations. The bidding and costs of the project was high than for traditional government procurement processes. An expensive tender and negotiation process, including higher contract transaction costs paid to legal and accounting firms, can neutralize any savings made in design and construction phases. The argument was close to Colverson & Perera, (2012) who express that, complicated and lengthy tender process of PPPs contract and negotiation periods are often more complex and protracted due to the nature of the multi party, financially intricate, and long agreement terms inherent in the relationship.

Nsasira, *et al.* (2013) focused on the use of Public Private Partnerships (PPPs) as a strategy to address deficiencies in the energy sector of Uganda in order to remedy the power generation shortage in the country. They presented two case experiences of PPP in the energy generation of Uganda and lessons learnt. A review of the two case studies suggests a number of learning points related to involvement of stakeholders, need for government monitoring of the Public Private Partnership contracts and fostering of a win-win outcome. The paper highlights that successful implementation of a PPP depends to a large extent, on the development of capacity, sound legal

procedures, agreements, and contracts that clearly define the relationship between government agencies and private firms.

Eberhard, *et. al.*, (2018) in a review of private investment in Tanzania's power generation sector addressed that poor contracts in Tanzania resulted into costly deals and disputed contacts with a large drains on time and resources. They acknowledged that IPTL contract was the most expensive. Comparing Songas Limited to IPTL contracts they concluded that IPTL power costs six times more than Songas' power. They further found that beyond technical considerations, it is apparent that such a large price difference between the two is primarily due to a lack of competition and the disputes that have affected IPTL procurement. Additionally, the study cited Symbion Tanzania as another powerful example of a deal initially contracted in a nontransparent manner, with costly and disruptive outcomes. The Energy and Water Utilities Regulatory Agency has been given the mandate to reject unsolicited proposals, like IPTL, that are not within the Power Sector Master Plan and are not financially viable. However, negotiated deals persist, and non-competitive procurement.

Eberhard *et.al.*, (2016) in the study of Independent Power Projects in Sub-Saharan Africa, lessons from Kenya, Nigeria, South Africa, Tanzania and Uganda revealed that; although the typical IPP structure is understood as a privately sponsored project with limited recourse project financing, some IPPs in Sub-Saharan Africa do not follow this exact model. Instead, the government may hold some portion of equity, bringing IPPs closer to a model of PPPs than that of traditionally conceived IPPs. The study findings specifically for Tanzania indicated that, what has prevented Tanzania from harnessing its domestic resources in an economically efficient way is the sector's structure and institutions characterized by poor organization and governance structures, vertically integrated state-owned utility and the prominence of nontransparent deals.

3. Conceptual framework

The conceptual framework of this study is primarily concerned with understanding of the possible conditions for enhancing public-private partnership models to be effective in improving electricity generation in Tanzania. The conceptual framework reflects possible variables which address and predict the result of the study in such a way that at the end of the process, they will be possible factors that influence performance of PPP models for improving electricity generation. Figure 1 gives details of a planned effective public – private partnership model in the electricity sector.

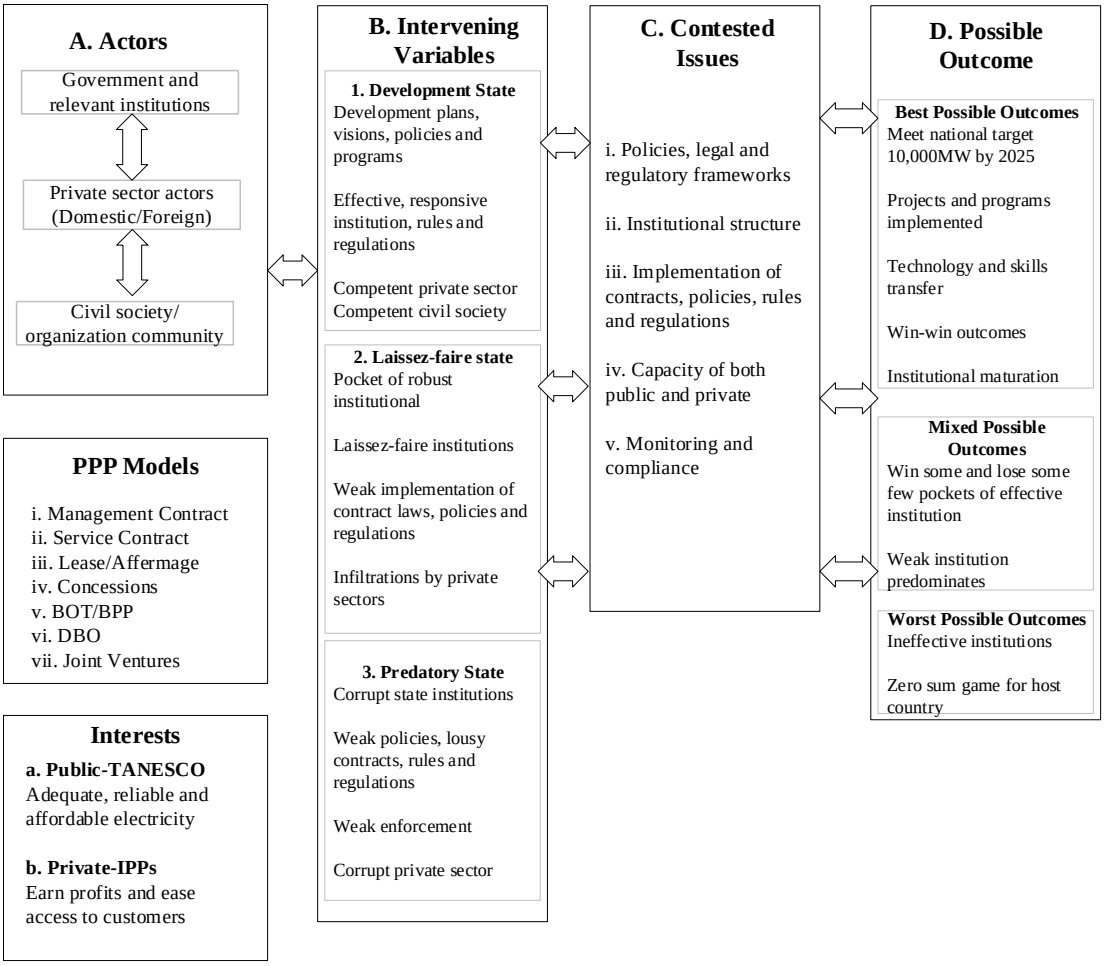

Figure 1. *Conceptual Framework Suggesting Effective Public Private Partnership for Improving Electricity Generation*
Source: Author's construct, 2018/2019

The conceptual framework of this study was guided by the argument that, the nature of the state, society and institutions influences the quality of the regulatory outcomes. Following Routley (2012) it is posited that, there three types of state: the developmental state; Laissez faire state and predatory state. The first state category has robust developmental visions, plans, and strategies. With a developmental ideology, it mobilizes the domestic and foreign firms to pursue its state objectives. It has the capacity to negotiate and implement win-win contracts with the private sector rewards the working class and provides social services to the public at reasonable prices. Ultimately, the development success enhances the political legitimacy. Similarly, the laissez faire state has pockets of robust institutions and pockets of lousy and ineffective institutions. It may negotiate robust contracts and agreements with the private sector and civil society but fail to implement them thus reflecting its inherent institutional weakness. The framework predicts suboptimal performance over a long haul.

The third category of the state as posted by Routley (2012) is a predatory state. It reflects the greed of the ruling class and private sector. Its rules are

incapable of developing and nurturing strong institutions capable of transforming primitive economies, state and society. It is the extreme opposite of the developmental, accountable and responsible institutions of the first state category. It is non-developmental by all intents and purposes. It is corrupt, non-transparent and with exclusive institutions that preside over economic and political mismanagement. The financial system of this state predicts economic and social decay as well as political insecurity. PPPs models for electricity generation influenced by the public sector control the decisions making structures, the political and social goals while the private sector contributes to the process by its innovation capabilities, knowledge, technology, management, funds and networks. Stakeholders in the other side include civil society, financiers, faith based organizations and local community living along power plants. All of these have a significant contribution in enhancing effective PPPs models in the energy sector.

4. Methodology

The study was conducted in twelve (12) institutions that is four (4) Independent Power Producers (IPPs), eight (8) public and private institutions, and local community neighboring power generation projects in five regions of Tanzania mainland namely, Dar es Salaam, Iringa, Ruvuma, Kilimanjaro and Dodoma. The study used exploratory and analytical research designs to explore the variables and employed mixed approaches that consist of both qualitative and quantitative techniques for collecting and analyzing data.

The target population of this study based on the estimated number of officials with PPPs expertise and working on power sector in each of the companies, public and private institutions such that in every entity there are at least ten (10) officials making the total of 120 officials and the assumption that each power plants has at least twenty (20) people living along the power generation plants making a total of 80 people making estimated number of the targeted population was about 200 people for all of the categories. The study used the sample population instead of the whole population. Therefore, the selected sample of respondents was 66 as computed by using Yamane (1967) formula. Hampawaye, (2008) defines the sample as the representative of the target population which should be at least 10 percent of the target population. In this regard, the sample size for the study was obtained using the formula adopted from Yamane, (1967) which is delivered as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where

n = the sample size

N = the population size

e = 0.1 is sampling error expected to produce the desired level of precision.

There is confidence level of 99%
Therefore n= 200/ 1+200 $(0.1)^2$
n=66 respondents

The respondents were selected as follows. There were two (2) officials from Commercial and Compliance department of Songas Limited; Two (2) officials from the Office of Factory Executive Director of TPC Limited, Two (2) Senior Officials from Operations management of Mwenga Hydro Company Limited and four (4) from official from Operations and management at the main office of Tulila Hydroelectric Limited. Additionally, the sample was also drawn from public entities including four (4) officials from the section of Planning and research (1), generation (2) and Commercial services (1) representing TANESCO; also there were Two (2) officials from the Department of Electricity Generation and Markets of EWURA; Two (2) officials from the department of Policy and Planning (1) and department of Generation (1) of the Ministry of Energy. Furthermore, the sample was taken from four (4) officials from PPP Division of the Ministry of Finance and Planning,; Two (2) from Policy Department of the Tanzania Private Sector Foundation; Three (3) from the Department of research and Planning of the Tanzania Investment Centre; Six (6) from the Energy and mineral committee of the parliament of Tanzania; and One two (2) from the World Bank Group. Lastly, total of twenty-nine (29) community members living adjacent to the selected power plants were selected to participate in the study. Therefore, the selected sample of respondents was 66 but the actual sample used in the study was 48 equivalent to 72 percent of the selected sample, thus lead some gap between them. The reason behind was that some officials were in meeting out of their work station, others were busy with leadership issues and office works. Also, it was noticed that some officials had no time to while others were busy with parliamentary sessions leadership and some excused that are not conversant and responsible for PPPs issues. The study collected data through the administration of semi-structured questionnaires, interviews schedule, documentary search and observations.

5. Findings, analysis and discussion

5.1. Overview of the selected companies involved in electricity generation

Respondents were asked to indicate the profile of their respective companies using both close and open-ended questions. Also, documentary review aided to support the required information for analysis. Table 1 provides the summary of the private and public organizations involved in electricity generation.

Table 1. *Summary of Basic Information of Selected Companies Involved in Electricity Generation in Tanzania*

Company Description	SONGAS Limited	TPC Power Plant	Tulila Hydro Co.Ltd	Mwenga Hydro Co.Ltd	TANESCO
Year of establishment	2001	1930 registered in 1973	2010	2012	1931 registered in 2002
Location	Dar es Salaam	Kilimanjaro	Ruvuma	Iringa	Dar es Salaam
Registration status	Private	Private	Private	Private	Public
Installed capacity (MW)	180	17	5	4	1,382
Partnership model	BOO	BOO	BOO	BOO	BOO
Power purchase Agreement duration	15 years	20 years	15 years	20 years	Infinite (Single buyer and electricity distributor)
Work force size	151	3000	25	31	7000

Source: Field Survey, 2018/2019

As it is revealed in Table 1 the selected electricity generation companies are not homogeneous. They differ in terms of size, ownership and numbers of years engaged in power purchase agreements. The profile of each company shows that the companies are small size projects. This confirms what Sawe *et. al.* (2017) who argue that the institutional, policy and regulatory framework for the energy sector in Tanzania has been reformed with specific initiatives to encourage private participation in small power production and distribution. Overall, the study findings reveal two types of ownership of the private power projects, some are either owned fully by the private company, public or both private and public ownership shareholding. It was noted that all the power generating companies were working under Build Own Operate (BOO) model. This implies that Power Purchase Agreements set out obligations relating to the sale and purchase of the power generated, the required design and outputs and operation and maintenance specification for the power plant.

5.2. Motives and obligations behind the companies' engagement in electricity production

The major motive of all the electricity generating companies were established for commercial purposes with some electricity charges and therefore, in doing so, realize some profit. In their entirety, private power projects' main objective and motivation for electricity generation lie in commercial purposes. As argued by Gatwick *et. al.* (2006) conditions that have pressed for the use of Independent Power Producers include international donor priorities as the World Bank made electricity sector reforms a precondition for lending. Based on the findings of this study, it is evident that the main objectives of IPPs are to make profit. In this regard, Mishra (2018) remarked that, in generic terms, what one looks for in a partnership is a win-win situation. He insists that one must enter into a contract where both parties make money. This argument implies that

partnerships in power generation should be guided by win – win situation to all stakeholders.

5.3. Procurement modality of selected IPPs

This study noted that, for Tulila Hydroelectric Limited, Mwenga Hydro Limited, and TPC Limited the procedure for these independent energy generators were procured using direct negotiations under Small Power Projects (SPP) framework passed by the government in 2004. Under this framework, private producers submit their proposals under open and transparent way where then contracts are signed. For Songas Limited, the contract was signed under direct negotiations with the government to generate and sell electricity to TANESCO on sale of capacity and energy bases. During the interview session, one of the respondents commented on the model of procurement that it was not effective as it lacked competition. He noted:

> "The challenge is lack of competition in getting potential partners because private power generators were secured through agreements and signing memorandum of understanding which was not transparent and witnessed," he said. The issue of capacity charge is not put clear for many stakeholders from public sector and is benefiting the private producers. Also the high electricity cost sold to TANESCO from IPPs is the challenge and causes the government to subsidize TANESCO in order to sell electricity to customers at low price. The solution lies in adhering to the laws he mentioned PPP Act, Electricity Act 2008, Procurement Act and other available sectored policies and laws. The concept of capacity charges in electricity generation projects should be sensitized to law makers and decision makes from public side." (Interview Session Number 4 conducted on 27/11/2018 in Dodoma).

This concern implies that the basic condition should be enhancement of competition system in procuring potential investors, fair and transparent bidding process. Therefore, the regulator should issue indicative prices that will attract electricity generation and which are beneficial to both parties. Lack of competition in procuring IPPs projects has been pointed out as a challenge to successful PPPs as argued Chowdhury & Charoengam (2008) who found that a competitive bidding framework is necessary to give credibility to IPPs and that government should provide payment guarantees to stand behind the state utilities' obligations.

5.4. Electricity market structures

In Tanzania, TANESCO is the main buyer (off taker) of the generated electricity from Independent Power Producers. This national utility buys and sells electricity to customers and collects bills for repayment to the IPPs. The purchasing agency transmits to distribution companies which have a monopoly relationship with the final consumer (URT, 2014). Details of the ESI Reform Strategy and the Roadmap 2014 -2025 addressed different models in electricity sub-sector markets. They include single buyer as

opposed to wholesale competition and retail competition. This study found that among the four selected IPPs projects, only Songas Ltd and Tulila were selling electricity generated to TANESCO as the only buyer (off taker). For TPC limited electricity generated was primarily used to the sugar factory that is for internal consumption at 80 percent and only 20percent excess is sold to TANESCO. Mwenga Hydro Ltd had the license to sell electricity to TANESCO and community/villages surrounding the electricity plant. Lovei, (2000) argue that the single buyer model preserves a key role for the sector Ministry in decisions on investments in generation capacity and for the state owned electric company in the sector's financial affairs and thus tends to be favored by these influential players. However, among the disadvantages mentioned is that the single buyer model hampers the development of cross border electricity trade by leaving it to the single buyer, a state-owned company without a strong profit motive.

5.5. Risks involved in power production

The study observed that each organization in the partnership was facing its risks with some having common risks depending on the technology used in electricity generation. The common risk that was identified came out from the power plants visited (TPC Limited, Mwenga Hydro Limited, Tulila Hydroelectric Limited, Songas Limited and TANESCO which was the issue of lack of guarantee on timely payment and ageing transmission infrastructures that were disconnected from the grid for maintenance and repair hence plants could not produce electricity. The following quote from one of the respondents illustrates this situation:

> In my opinion, the basic risk is made of those issues that may cause the specific projects not to generate electricity and connect to the national grid. For example, delay in timely servicing and maintenance of generation machines and infrastructure of the power plants. Also, TANESCO has been delaying in paying electricity bills billed to it by power producers. This may make private producers fail to run the plants and even fail to timely service the machines. (Interview Session Number 1 conducted on 21/11/2018 in Ruvuma).

Another risk identified from IPPs using hydroelectric technology was the environment issue such that drought during summer seasons was the challenge. The following statement illustrates this argument:

> *We have the risk when it comes to river environment and the slowdown of the volume of water in the river. However, we are able to bear the risk and we have a joint committee with government formed to mitigate the risk and sensitize stakeholders on environment protection.* (Interview Session Number 2 conducted on 26/11/2018 in Iringa).

Based on the study findings, risks like drought seemed to be difficult to bear like low water levels in the river during summer seasons hence affecting the generation of power activities. Again, the market risk was associated with the risks of investment arising from a mismatch between power generated and actual market demand that had been undersupply. As commercial entities, non-payment for services rendered would have a

negative consequence on operational capacities of IPPs as they need money to meet staff settlements, to service their loans and overall to meet shareholders expectations. These findings are consistent with Kabanda (2014) who identified risks such as hydrology risk, market, political, and natural forces. Also, Zunguze (2016) identified risks involved in power production including; climate, repayment risk, lack of technical and financial capacity, change of political and economic environment and market demand risks among others.

5.6. Regulatory and institutional framework for electricity generation projects

According to Mwenechanya, (2013), and the GoT instrument of 2016; the electricity sub-sector is handled by the government under for key institutions namely the Ministry of Energy (ME), TANESCO, Rural Energy Agency (REA) and Energy and Water Utility Regulatory Authority (EWURA) with their respective Boards of Directors. Ministry of Energy, oversees the power and gas sectors in Tanzania. It is mandated with developing energy resources and has the power to develop and review government policies in the energy sector. At the industry level, TANESCO and private power producers are responsible for electricity generation though TANESCO dominates the sector. The structure and oversight of electricity sector in Tanzania is presented in Figure 2.

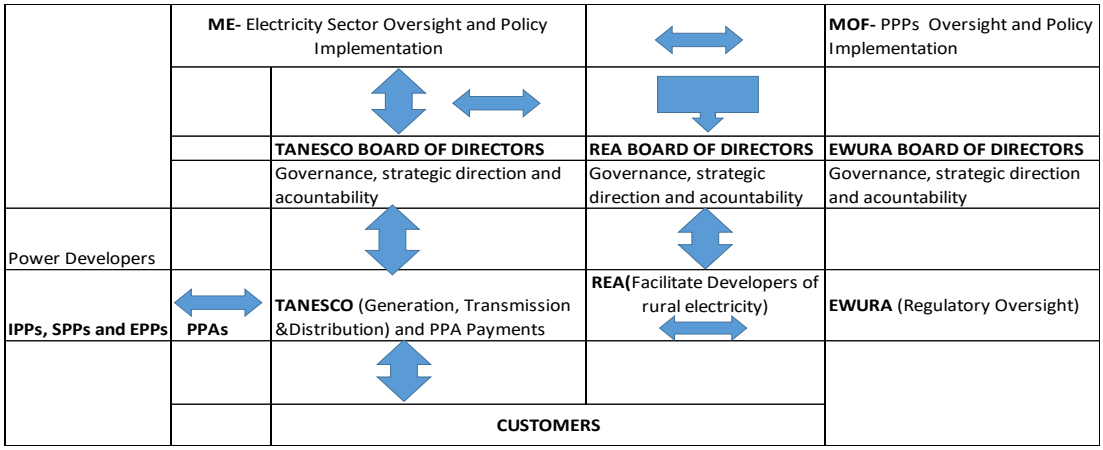

Figure 2. *Summary of the Structure and Oversight of Electricity Sector.*
Source: Field Survey, (2018/2019)

From the figures 2, and the literature reviewed, EWURA is responsible for the technical and economic regulations of electricity. TANESCO is the single vertically integrated national utility that is responsible for generation and fully owns transmission and distribution systems including the National grid. TANESCO also purchases electricity generated by a number of Independent Power Producers (IPPs). The Rural Energy Agency (REA) as another autonomous body under the ME is responsible for the support and facilitation of improved access to modern energy in rural areas through running training programmes, financing rural grid expansion, and partially

financing rural energy projects. The National Energy Policy (NEP), (2015) acknowledges the challenge toward implementing regulatory issues hence the need to review legislations and overlapping roles and functions of institutions. This is consistent to the argument by Eberhard, *et. al.*, (2016) that the state utility TANESCO takes part in sector planning while simultaneously retaining an interest in building its own new power stations and also dealing with Private power producers.

6. Power generation performance: Overview

The performance of the power generation provides the evaluation of both private and public sector generation capacity to meet the government goal of 10,000MW by 2025. As of 2019, Tanzania's total installed generation capacity was 1,600MW where as a total of 20 electricity generation projects under Independent Power Producers (IPPs) were being operated with a total capacity of 408 MW (EWURA, 2019). The electricity policy of the year 1992 and 2003 lifted TANESCO's monopoly in power generation with the intention of attracting private sector investment to complement the TANESCO-owned generation capacity but private power generation capacity have remained meagre compared to the state utility performance.

Table 2 shows the trend of Independent power producers and TANESCO for the period 2010-2018.

Table 2. *Electricity generation by IPPs Vs TANESCO 2010-2018*

	Units Generated - MWh								
Category	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
IPPs	1,533,495.5	1,582,620.9	1,837,516.7	2,567,155.8	2,150,255.0	2,643,726.9	2,563,253.5	2,106,480.7	1,569,401.5
Public	5,723,331.6	5,425,156.0	5,153,007.8	3,830,931.6	4,071,351.6	3,267,615.6	3,123,649.7	3,034,721.2	3,700,149.6
Total	7,256,827.1	7,007,777.0	6,990,524.5	6,398,087.4	6,221,606.6	5,911,342.5	5,686,903.3	5,141,201.8	5,269,551.1
% of IPPs to total generation	21.1	22.6	26.3	40.1	34.6	44.7	45.1	41.0	29.8

Source: TANESCO, 2019

The trend of power generation shows that the contribution of the IPPs in electricity generation has slowed down from 29.8 percent in the year 2010 to 21.1 percent in 2018. The Electricity Act (2008), which is the principal law, entails far-reaching reforms, including the unbundling of the utility, TANESCO, into separate, autonomous units for generation, transmission and distribution, and the establishment of a system operator to administer a grid code. The law opened the generation and distribution segments to industry players though TANESCO has remained vertically integrated.

6.1. Electricity generation performance of the selected power projects

The analysis focusing on the four selected generation companies under this study (Songas Limited, TPC Limited, Tulila Hydro Electricity Limited and Mwenga Hydro Limited and TANESCO shows that, there has been a significant contribution of electricity generated by IPPs to the national grid since 2010 to 2018. Table 3 Shows individual capacity of power generated by each of the selected IPPs and TANESCO from 2010 to 2018.

Table 3. *Individual Capacity of Power Generated by Each of the Selected IPPs and TANESCO from 2010 to 2018*

Name of the Plant	Annual Units Generated - MWh								
	2018	2017	2016	2015	2014	2013	2012	2011	2010
Mwenga Min Hydro	16,830	16,337	19,269	16,654	22,900	2,595	-	-	-
Tulila	3,806	18,384	15,039	1,536	-	-	-	-	-
Songas	1,468,201	1,465,012	1,349,428	1,384,367	1,383,813	1,313,925	1,465,060	1,312,020	1,442,203
TPC	14,594	20,725	20,250	12,757	5,483	5,225	14,163	13,141	6,148
Total IPPs Generated MW/h	**1,503,431**	**1,520,458**	**1,403,986**	**1,415,315**	**1,412,196**	**1,321,745**	**1,479,223**	**1,325,161**	**1,448,350**
TANESCO	5,723,332	5,425,156	5,153,008	3,830,932	4,071,352	3,267,616	3,123,650	3,034,721	3,700,150
Total IPPs and TANESCO Generated MW/h	**7,226,763**	**6,945,614**	**6,556,993**	**5,246,246**	**5,483,548**	**4,589,360**	**4,602,873**	**4,359,882**	**5,148,500**

Source: Field Survey, (2018/2019)

The analysis basing on Table 5.5 above shows TANESCO's monopoly in power generation with meagre contribution from IPPs. The Electricity Act (2008), opened the generation and distribution segments to industry players though TANESCO has remained vertically integrated.

6.2. Capital investment in power generation

The selected IPPs demonstrates that as of the year 2018 the total capital investment was about US$ 352 million equivalents to Tanzania shilling 901.9 billion (ERT. 1 US$= Tsh 2,300). In the distribution Songas Limited investments was UD$ 321, TPC Ltd invested US$ 15 million, Mwenga Ltd invested US$ 11 million and Tulila US$ 6 million. The investment of US$ 352 million equivalents to Tanzania shilling 901.9 billion for four IPPs under study are relatively minimal and far from the required investment as the Ministry of Energy (ME) forecasts per capita electricity consumption increase of over 500 percent between 2010 and 2035 whereas meeting this demand will require investment of over US$40bn in power generation. The state utility had invested about 797.4 US$ million in the year 2018 which confirms that the government has been the primary financiers of electricity generation projects. The government has shown commendable initiatives in its thrust to invest in new massive electricity generation project of about

2,115 MW at Mwalimu Nyerere Hydroelectricity in Rufiji which up to its completion in 2022 will cost about 6.2 trillion shillings. To this end if further partnership will engage the likelihood to meet the national target of 10,000 MW will be achieved.

The minimal financing from private investors has been confirmed in the details of regulatory performance report on electricity sub sector for the year ended 30th June, 2017 issued by EWURA stating that even though the authority has developed regulatory tools to attract private investment in the electricity sub- sector, the pace of investment is not sufficient to meet the rapid growing demand. The Authority, in collaboration with the Government and other stakeholders is working on strategies to increase electrification including seeking guidance from MOE on implementation of the competitive bidding framework. The study findings further show that, PPP project funding has been limited by the infancy of the local financial sector. This finding is also addressed in Suman, (2016) for the case of Bangladesh. In the context of this study, during the interview, it came out that the infancy of the local financial sector to execute project finance are the challenge. It is a fact that energy infrastructure projects require huge capital for investment that most local commercial banks are currently unable to give. Banks and institutional investors such as pension funds are limited with regard to the amount of financing they can avail for energy projects.

6.3. Electricity prices

In the year 2018, the average cost per kilowatt-hour sold to TANESCO was TZS 191.0 (approximately US$0.08) while the cost sold to customers was TZS 270.0 (approximately US$ 0.12) based on average 2018 exchange rates. According to the report of TANESCO and details of PPAs, it is revealed that for Tulila,, Mwenga and TPC the price of buying electricity from December up to July of every year was between TZS 182.80 Kw/h. to TZS 185.9 Kw/h. and for the months from August up to November the price is Tsh243.73 kW/h . The price was set based on the size of these power plants and technology adopted in electricity generation. During the study, respondents were asked to comment on the current price of TZS 270.0 per kilowatt-hour using close ended questions with four options as summarized in Table 4. A total of 48 respondents including six (6) from Independent Power Producer and sixteen (16) from public and private institutions participated and 26 ordinary citizens.

Table 4. *Respondent's Responses on Electricity Prices as of 2019 n=48*

	IPPs		Public and Private Institutions		Citizens		Total	
	n (6)	%	n (16)	%	n (26)	%	n (48)	%
High	1	16.7	11	69	21	80.8	33	69
Medium	5	83.3	5	31	3	11.5	13	27
Low	0	0	0	0	2	7.7	2	4
Don't Know	0	0	0	0	0	0	0	0
Total	6	100.0	16	100.0	26	100.00	48	100.0

Source: Field Data, (2018/2019)

Analysis of the study findings on Table 4 indicate that 33(69%) of the respondents commented that electricity price is high. 13(27%) agree that electricity price is medium while 2 (9.1) had the observation that electricity price is low. In terms of categories of the respondents 5(83.3%) out of six respondents from IPPs said the price was medium and from the group of public and private institutions about 11(69) respondents had the opinion that electricity price was high while the group of citizens 21(80%) concluded that electricity price was high. The results implies that respondents had conflict of interest. Respondents from power users comment that the price are high while this observation was contrary to respondents from IPPs who argued that the price were medium. During a one to one interview session with one respondent neighboring Songas Limited it was revealed that one of the main challenges facing consumers was high electricity cost from producers. Quoting his own words he remarked that:

> "The cost of electricity is high compared to the uses of one unit. I suggest there should be more investors other than TANESCO to improve the situation. (Interview Session Number 10 on 16/11/2018 in DSM).

In supporting this another resident of Mbuyuni neighboring TPC Limited remarked that:

> "The electricity cost is high as I buy electricity from TANESCO. The amount of units received is small compared to the amount of money I pay and imagine the economic situation now days". I participate in planting trees and conserve water sources". (Interview Session Number 9 conducted on 6/3/2019 in Dar es Salaam).

For a country like Tanzania whose economic development is still low, its citizens have no capacity to buy electricity at such a high price. It is against this background that TANESCO and the government at large have always been in bargains with private power investors to ensure that electricity is available at a reasonable price to low customers.

6.4. Factors influencing performance of PPPs projects in power sector

Compliance and Commitment: Respondents showed that the rights and obligation of each participating partners in contractual arrangement was partially fulfilled. They mentioned that the government through TANESCO was responsible for buying and paying the generated and sold electricity and the private produce whose basic major obligation was to offer the generated electricity as needed. However, this study noted that the problem was on lack of timely payment of electricity bill as per PPPs.

The findings of this study indicated that TANESCO was selling electricity to customers and collecting bills for repayment to the IPPs. It was argued that the Single buyer model applied in selling the generated electricity was not sufficient as limited competition and it encouraged state monopolist tendencies in the sector. The research findings showed that payment among IPPs and TANESCO were problematic. Respondents revealed that TANESCO was failing to pay the bills timely hence suffocating the plants that were required to repay the loans from commercial banks and pay

salaries to the staff. To address this problem, it was suggested that compliance and commitment should be effectively regulated by the independent power regulator in the country that oversees the performance of the power plants and bill repayment status as per PPA. This finding is consistent with Farlam (2005) who conducted a study to assess Public-Private Partnerships in Gabon and who reported that defining investment obligations help to limit the investment risk of the private operator.

Quality and sufficiency of Contracts: Farlam (2005), Gratwick *et. al.*, (2007); Kabendera & Anderson (2014), criticized IPPs performance with the argument that, the contracts were skewed in favor of power producers at the expense of government and consumers. Weaknesses in due diligence during the procurement and negotiation of PPAs have led to long and controversial legal disputes that incurred significant indirect costs, as well as blemished from the public perception of private investment in electricity projects. During the interview, It was raised that challenge to effective performance of electricity generation investment is the unsatisfactory contracts entered between two parties particularly in the price of selling electricity. Regarding this scenario, one of the respondent's notes:

> "The results of poor performance has been caused by poor management System and contracts are not favorable to the government. (Interview Session Number 5 conducted on 19/11/2019 in Dodoma)

This is in line with the argument by Gratwick, Ghanandan & Eberhard, (2006) that PPP contracts being undertaken through concessional agreement for electricity generation projects did not produced the expected role of private sector in generating adequate, cost effective, reliable electricity.

Capacity charges: During the interview, It was raised that capacity charges has been the major issue in complicating performance of electricity generation deals. While public officials complained on capacity charges from Independent power producers, the officials from the Independent power producers had different views protecting their interest in favor of capacity charges. This argument implies that, IPPs major objectives is to make profit by making sure that its funds will be paid back over time plus a reasonable return on that investment. In Tanzania these charges are negotiated and agreed by TANESCO and also have to be approved by the Electricity and Water Regulating Authority. The findings are in line with Lovei, (2000) argument that, decisions about adding generation capacity are made by government officials who do not have to bear the financial consequences of their actions.

Hydrological Uncertainties: Environment issues pertaining to sharp decline in water levels during dry seasons was a big challenge to the performance of power producers who depended on hydroelectricity. It was noted that generation was high during wet and high rainfall season and it was low during dry seasons when the volume of water was low. The researcher found that there was no water gauge to project the water behaviour of the rivers used for electricity generation. Based on the findings, it is true that

electricity from hydro-power plants is limited by environment conditions such as droughts and human activities. The findings of this study are in line with Salifu (2015) who indicated, Hydrological uncertainties were challenges to partnerships in electricity generation in Ghana.

Robust and Inclusive Policies, Laws, Regulatory and Institutional Frameworks: The National Energy Policy (NEP), (2015) states the main issues pertaining to electricity generation is sufficient power for domestic market and participation in cross border trading. The policy statement shows that the government shall ensure that there is cost reflective tariff to attract private investments; ensure effective use of energy resources; facilitate cross border power trading and create enabling environment for nuclear electricity generation. However, the research findings from the selected private power producers showed that realities in functioning of PPPs in electricity generation did not match with the policy statements. It was noted that delays and self-interest among public officials was one of the causes of poor performance and application of PPP projects in energy generation. For instance, it was observed that the process of getting approval and licence to develop new investments was taking too long. It was revealed that respondents noted turnaround times in the licensing and generation tariff approval process in different government institutions. This finding is in line with Akampurira & Shakantu (2008) who noted critical challenges in the development of PPPs including lack of smooth approvals of different steps required to set up power generation plants in Uganda. This was exacerbated by weak and unresponsive bureaucratic nature of institutions thus causing delays, prompted by poor coordination among government departments. This observation is consistent with literature on the development of an IPP where legal and institutional support is critical. On this particular issue, Minizela (2016), argues that the licensing and permitting stage which is dictated by policy and the legal framework government support is of essence to the application of PPP projects.

Fair Competition and Transparency: The PPP Act (2014) provides for competition for both solicited and unsolicited proposals although it provides some rooms for some projects for the national interests when things like security are a big concern. It was found that regulation of IPPs transactions is made by the Underlying Power Purchase Agreement (PPA). This models has been challenge in Colverson and Perera, (2012) that project transparency is weakened under the PPP model because of the difficultly in accessing private sector information. It this view it requires contracting authorities to implement the principles of fairness, equitability, transparency, competitiveness, cost effectiveness, atmost duedelligence in procuring power generation companies.

6.5. Strategies for improving power sector performance

Respondents were asked to suggest strategies for improving performance of the existing models used for electricity generation for improving power

sector performance in an open-ended question. Table 5 presents respondents the responses on proposed strategies.

Table 5. *Strategies for Improving Power Sector Performance n =22*

	IPPs		Public and Private Institutions		Total	
	n (6)	%	n (16)	%	n (22)	%
Political will	0	0	2	12.5	2	9
Timely payment of electricity bill from offtaker	3	50	0	0	3	14
Appropriate risk allocation and management	0	0	1	6.3	1	5
Commitment to contracts	2	33.3	3	18.8	5	23
Adequate financial and managerial capacity	0	0	1	6.3	1	5
Development and use of Local content	0	0	1	6.3	1	5
Policy, legal, and institution support	0	0	2	12.5	2	9
Fair and transparent bidding process	0	0	2	12.5	2	9
Increase goverment spending in electrcity	0	0	2	12.5	2	9
Debundling of the sector	1	16.7	2	12.5	3	14
Total	6	100.0	16	100.0	22	100.0

Source: Field Data, (2018/2019)

The analysis of the data generated from questionnaires administered to 22 respondents revealed that 5 (23%) of them explained that there should be commitment to contracts, 3 (14%) of the respondents thought that there should be timely payment of electricity bills from off taker and again 3(14) respondents observed that there is a need to unbundling the sector. Furthermore, 2(9%) was scored by each point namely political will, policy, legal, and institution support, fair and transparent bidding process, increase government spending in electricity generation. Other points that emerged and scored 1(5%) each were appropriate risk allocation and management, adequate financial and managerial capacity, development and use of local content.

Regarding this, Benges *et. al.* (2016) argue that, it is worth noting that the existence and arrangement of PPP institutional and regulatory frameworks are adequate to create an enabling environment to support and attract private sector participation in the PPP projects. This finding agrees with OECD, (2012) which indicates that at all stages of the PPP process, there must be strong institutions characterised by a clear legal framework that both public and private parties trust. Clarity in the regulatory framework will also help minimize the risk of corruption and prevent unethical behaviour. Nijkamp *et. al.*, (2002) argued that in the model of public private partnership, each partnership contributes to the partnership. Therefore PPP is built on "the expertise of each partner that best meets clearly the defined public needs through the most appropriate allocation of resources, risks responsibilities and rewards. Here the public sector maintains an oversight and quality assessment roles while the private is more closely involved in actually

delivered (financing), operating, maintaining, etc) the public good or services (World Bank, 2000).

7. New proposed PPPs model for improving electricity generation

In line with theoretical framework (institutional theory and theory of collaborative advantage), the proposed model specification is in tandem with the themes as emerged from the respondent's questionnaires, interviews, field observations and documentary analysis which allows for the identification of the determinants of effective public-private partnership model between independent power producers and TANESCO. The model aims to meet the overall objective of the study which was to examine the necessary and sufficient conditions for enhancing Public–Private Partnership models between Independent Power Producers and TANESCO for improving electricity generation in Tanzania. The model specification thus borrows from Jamilatu (2015), and Ubi *et. al.,* (2012) as follows:

The proposed model begins with the model specification

$$Y = f(X) \quad (1)$$

Y = Effectiveness of partnerships

X = Determinants of partnerships functioning.

Effectiveness of partnerships as an independent variable is measured by national goal of expanding electricity generation to 10,000 by 2025. Thus, to achieve this goal comes the determinants partnership functioning as the explanatory variables.

Thus, the model specification is developed as follows:

$$EG_t = F(GPS_t, TECH_t, CONT_t, FIN_t, EP_t, INS_t, GOV_t, QPPs_t, RAM_t) \quad (2)$$

In stochastic form, the above model can be expressed as:

$$EG_t = \beta_0 + \beta_{1GPSt} + \beta_{2TECHt} + \beta_{3CONTt} + \beta_{4FINt} + \beta_5 EP_t + \beta_{6INSt} + \beta_{7GOVt} + \beta_{8QPPt} + \beta_{9RAMt} + \varepsilon t \quad (3)$$

Where:

GPS - Government and private spending on electricity

TECH - Technology

CONT - Quality and sufficient contracts and its enforcement

FIN - Financial support and management capability

EP - Electricity price per megawatt hours

INS - Robust and inclusive political, economic & social institutions

GOV - Quality of governance structures, laws, regulations & policies

QPP- Quality of Independent Power Producers

RAM - Risk allocation and management

GPS; TECH; CONT; FIN; EP; INS; GOV; QPP; RAM; are explanatory variables, while ε_t is the stochastic disturbance term at time t.

The argument here is that PPPs models for electricity generation are influenced by the public sector that controls the decision-making structures, the political and social goals while the private sector contributes to the process by its innovation capabilities, knowledge, technology, management, funds and networks. Stakeholders in the other side include civil society, financiers, faith-based organizations and local communities living along power plants. These have a significant contribution for enhancing effective PPPs models in the energy sector.

The national energy policy addresses the government's increasing involvement in developing electricity sector including cost effective, adequate and reliable electricity for the national development. Private interests are mainly for profit earning than being society oriented. Therefore, to create a meaningful PPP model, the Public and private sectors should align their interest for effective functioning of PPPs models. It is said that *"You always get what you negotiate and not what you deserve."* Therefore, balancing these two conflicting interests requires a comprehensive policy, legal regulatory and institutional frameworks to negotiate win-win outcome. Given this context then, the government must ensure that the system is properly regulated. In operationalizing the proposed models, it is the author observation that private, public and other stakeholders have significant contribution in achieving the common motive of improved electricity generation. However, the PPPs model's functions are negotiated depending on status of the state if it is developmental state, laissez-faire or predatory state (Evans, 1989).

Supportive policies, laws, legal and regulatory framework are of essence in the application and implementation of PPP in energy projects. There are policies such as PPP policy 2010, Energy Policy 2015, and Investment Policy 1996 to mention but few. These policies are not specific for PPPs in electricity generation projects rather, they are general and have not been properly implemented even for the purposes which they were set for . For example, the Energy Policy 2015 as such has not been reviewed and updated to accommodate the changing macroeconomic contexts and other sector changes both national and global. Therefore, the policy should define long term vision and strategy and secure high level political support. The legal and regulatory environment should show clear legal basis, dispute resolution mechanism, procurement rules and fair transparent and competitive process.

Therefore, clear institutional frameworks should be in best operational capacity. This implies having clear allocation of responsibilities and autonomy of the existing institutional. The demarcation to who is approving what and who is in charge of promotion PPP projects, adhering to

regulations during implementation and where the expertise is located in the government are all what are needed. The investment and PPP issues are placed under different government departments that cause long investment process and bureaucracy. In the PPP arrangement for energy generation, each partner has one's own motive but in any case, effectiveness lies in win-win PPA/SPPAs contracts. To achieve such contracts, there should be adequate transparency in contract and procurement of PPPs and a comprehensive technical analysis of PPP as well as sufficient capacity of negotiation among partnering parties.

Monitoring and evaluation of electricity generation projects should be done time involving team work from both partnering parties with the aim of coming up with necessary review and flexibility in the implementation of the PPPs projects. If gaps are identified, there should be working towards harmonizing them as a way of improving o the existing PPP structures and creating an enabling environment. The PPPs and investment issues should be placed at one umbrella such as PPPs centre. It should be noted that energy infrastructure projects require huge capital for investment that most local commercial banks at present are unable to give. Therefore, to address these financial woes in the energy sector, electricity infrastructure development bank should be established since energy infrastructure projects have long life spans and require long term financial support which can only be secured sufficiently and reliably from strong and purposefully established bank.

Opening up competition and unbundling the sector is necessary for effective implementation and application of electricity generation projects. Regarding this, Oriakhi & Okoh (2007) noted that countries such as Argentina, Chile, Malaysia, Philippine, Hungary, Latria, Gabon, Cote d'ivoire etc. have introduced competitive and private participation in infrastructure development unlike in the past governments which were characterized by monopolistic national power utilities. With this new direction, the study noted that the results have been encouraging.

With this proposed PPP model, the services should be seen as a commodity and other utility and services providers should compete for services provision and therefore doing away with the monopoly of state sponsored energy utilities. This study notes that given that competition has been successful in the telecommunication sector, it is therefore optimistic that this would be the benchmark for unbundling the electricity sector. Therefore, stakeholders' involvement in PPPs projects should be enhanced to allow the public and experts to scrutiny the pros and cons of the ongoing projects. Likewise, the parliament as a powerful legislature organ will have the opportunity to debate the contracts signed. But this should be done transparently by involving all stakeholders with both direct and indirect interests such as donors and the communication sector in respective locations whose input is critical for the purpose of enlisting support and preparedness to change.

There should also be enhancing of strong internal arbitration institution instead of depending on external ICD. There should also be opting for

introduction arbitration subsidiary of the ICD in East Africa region for PPPs dispute settlement. Fair and transparent bidding process for PPAs should also form part of such body's functions as it should be noted, of the near past,, independent power producers were not obtained through transparent and competitive bidding. There should be competition system in getting potential investors and the government should issue indicative prices that will make electricity generation attractive or benefiting to both parties hence leading to fair and transparent bidding process. Another thing that the suggested model embraces is the importance of building capacity to local private investors. It was noted through the findings that local firms with a potential for producing electricity have not been engaged in the energy investment sector. Therefore, the model sees that there is a need for the government to enhance or build their low energy cost due to low investment costs that they will have uncured in the process of investing given the capacity building they might have received including the use of local content and personnel. Domestic capital is optionally cheaper and easier to secure than foreign capital and local investors have a better understanding of country risk and more avenues to navigate the potential setbacks. Thus the use of high quality foreign and domestic Independent Power Producers in financing electricity generation projects could lower the overall costs involved. To realize this, education about energy infrastructure and its potential should be given to investors and in the process, a financial package on projects exemptions be introduced.

There should also be building capacity on human, financial and technology dimensions for practitioners in terms of introducing sound management principles and sufficient capacity of negotiations and procurement of PPPs. For financial capacity building, the state utility should allow escrow arrangement, use of blended finance such as concessional, grant and government support. The technical technology development and skills levels will facilitate the initiation and hence guarantee effective implementation of PPP in the energy generation.

The government should ensure value for money for all PPP projects that is, making that these are guided by value for money and not for profit making alone. Also there should be promotion of the uptake of renewable energy projects in remote areas and considering of consumers' welfare. Again, the issues of fair allocation of risks and profits should be adhered to in the contractual agreement by making sure that each party is part of risks and profits. This should reflect also transparent and predictable contracts for partners and contract flexibility. With regard to political commitment on energy generation projects; the government should ensure there is political will and commitment and proper implementation of policies in order to allow the partnership operate in an environment that is acceptable by both partners in order to encourage private participation. It is envisaged by the proposed model that the government's preparedness in terms of political will and willingness to accommodate the private sector's participation in energy sector will promote further investment in new energy generation

projects. However, there is need for government to exercise sufficient political control in a bid to encourage private sector participation in the provision of public services and to ensure that the needed operational environment is put in place. Similarly, the government should be well prepared andle to handle the public perception and social and cultural issues that affect the manner in which a public private partnership is likely to be implemented.

Finally, according to the proposed model, there is a need to provide an environment that ensures sustainable recovery of project costs, affordable prices and tariff for investors that implement PPP pricing framework for suitable and sustainable pricing instruments. This will entail extending special incentives for attracting electricity developers willing to open new energy generation sites to geographical and economically disadvantage marginal areas. This would attract the private sector to invest in those areas which before had no electricity services therefore complementing the electricity supply by TANESCO.

8. Conclusion

The potential of private sector (innovation finance technology and managerial skills) and participation through PPPs in electricity sub sector have not been fully realized in Tanzania. Despite the fact that government policies, law regulations and institutions have been put in place for attracting private sector as a viable option for promoting efficient public services delivery in Tanzania's power sector, these efforts have not produced best outcomes. It has been further revealed that implementation of PPPs in energy generation projects has been hindered by key elements such as unpredictable payments guarantee, skewed contract for PPAs/SPPAs, lack of transparency and fair competition, high cost of electricity, unpredictable electricity demand and supply from the off taker, unpredictable electricity selling price, policy and managerial inconsistency, poor compliance and commitment contracts, corruption, policies, wind fall profits from power developers, lack of PPP skills to oversee PPP transaction, state utility monopoly, bureaucracy, weak institutional support and lack of sufficient resources dedicated to fostering PPP. However, this research argues that any model of PPPs engaging independent power projects can contribute to improving electricity services delivery and livelihood only if is competitively and transparently negotiations within effective planning and regulatory system. On the contrary, weak capacity of state institutions will result in blood sucking contracts that are lopsided, exploitative and unsustainable. Therefore, effective PPP models functioning under developmental state with boost policies, institutional rules and regulations and well-focused achievable development goals will reap benefits of innovation, technology, managerial skills and private financing.

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