



**Public Private Partnership in Bangladesh:
A Case Study Of Two Power Sector Projects**

By

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MPPG 6th Batch**

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**Public Policy & Governance Program
North South University**



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**Public Policy & Governance Program
North South University**

Dedicated to

My Parents

Declaration

I declare that the dissertation entitled “Public Private Partnership in Bangladesh: A Case Study Of Two Power Sector Projects” submitted to the PPG Program of North South University, Bangladesh for the Degree of Master in Public Policy and Governance (MPPG) is an original work of mine. No part of it, in any form, has been copied from other sources without acknowledgement or submitted to any other university or institute for any degree or diploma. Views and expressions of the thesis bear the responsibility of mine with the exclusion of PPG for any errors and omissions to it.

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Abstract

Public Private Partnership (PPP) has emerged as a concept, a governance idea related to New Public Management (NPM) and also a tool for development. It started in developed countries, later policy transfer occurred to developing countries. In Bangladesh the concept was introduced in October 1996 in Power Sector, in the form of Private Sector Power Generation Policy. Since then it has been an evolution process for PPP in Bangladesh in terms of policy making, government institution formation and incorporating different sectors. The study involves theoretical concepts for PPP in general but focuses on power sector and the state of PPP in the power sector of Bangladesh. This study involves two Build-Own-Operate (BOO) projects of the Power Sector as comparative case study. Between the two projects one is financially successful (BEDL) and the other one is a failure (QPCL). The main objective of the study is to find out the effectiveness of those two projects according to 'PPP Criteria'. The study of 'PPP Criteria' in these projects is a new one. 'Effectiveness of the Project As PPP' is the dependent variable. 'PPP Criteria' comes from the definition and core features of PPP which is defined by four criteria that are the four indicators of the dependent variable – level of sharing, role of the government, fulfillment of contract conditions and level of satisfaction of Public and Private from the partnership. Three independent variables – incentives, agency cost and goal conflict - come from 'Principal Agent Theory'. One case matches partially with fulfilling two criteria out of the four and other does not fulfill any criterion. From the study it is found that both the projects, irrespective of being a financial success or not, do not qualify according to the PPP criteria. The project which is a financial success and considered as a successful power project only conforms to 50% of the criteria from 'PPP Perspective'. Success as a power project is not the same as- PPP Effectiveness; still there is some dependence. Some factors for not being 'Effective' are common for the two projects. Those factors are -sharing of risk, finance or other resources are not taking place and the government is mainly being a regulatory authority after launching the project. There are some additional factors for not being effective found only in the case of QPCL. Those factors are - not

being able to utilize the advantage of free land, lack of sound planning, not being cost effective, two way asymmetry of information including lack of experience and absence of good financial management. One major assumption of the Principal Agent Theory is that government may make mistake prior to contracting which is called 'adverse selection of private partner'. It was found true in the project of QPCL. Findings from case study can be generalized. The findings imply that, all power sector Build-Own-Operate projects being implemented in Bangladesh, have limitations as 'PPP project'; but mostly factors for lack of effectiveness are due to specific project. Key findings include that the government's role is more of a regulator than being an equal partner; the professionals from both public and private have lack of academic perspective about PPP. PPP framework consisting of institutional, legal and policy components were reviewed and found it was not adequate earlier but the gap is abridged by the PPP Act 2015 followed by some guidelines. A recent World Bank report suggests that Bangladesh is currently among the countries that have relatively sound 'PPP Framework' but still has scope for improvement. But in case of monitoring power sector projects, an 'institutional framework conflict' is also found in the study. Recent projects are monitored by PPP Authority and earlier projects specially power sector projects are monitored by other agencies like the Powercell under the Power Ministry. In the Power System Master Plan 2016 government plans for enhancement of PPP projects for medium and long term but does not specify a 'PPP Power Project'. The findings of this study imply that an effective PPP project in the Power Sector should adopt the criteria of PPP and separate guideline is needed for the power sector PPP Projects based on the PPP Act 2015 including financial participation, risk allocation and flexibility in the contract to achieve synergy in partnership

Keywords: PPP, BOO, PPP perspective, effectiveness, institutional framework, adverse selection, PPP framework.

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List of abbreviation

ADB- Asian Development Bank
ADP – Annual Development Program
ASEAN – Association of Southeast Asian Nations
ATC - Available Transfer Capability
BAPEX – Bangladesh Petroleum Exploration and Production Company Limited
Bbl – Barrel
BBS – Bangladesh Bureau of Statistics
BERC – Bangladesh Energy Regulatory Commission
BPC – Bangladesh Petroleum Corporation
BPDB – Bangladesh Power Development Board
BREB – Bangladesh Rural Electrification Board
BOT - Build-Operate-Transfer
BOO - Build-Own-Operate
BOOT - Build-Own-Operate-Transfer
BPDB - Bangladesh Power Development Board
BEDL- Barakatullah Electro Dynamics Limited
CCPP – Combined Cycle Power Plant
CNG – Compressed Natural Gas
COD – Commercial Operations Date
CSF – Critical Success Factors
DBFO - Design-Build-Finance-Operate
DBO - Design-Build-Operate
DESCO – Dhaka Electricity Supply Company Limited
DPDC – Dhaka Power Distribution Company Limited
DSM – Demand Side Management
ECMP – Electricity Efficiency and Conservation Master Plan

EGCB – Electricity Generation Company of Bangladesh
EIA – Environment Impact Assessment
EMRD – Energy and Mineral Resources Division
ERD – Economic Relation Division
EST – Environmentally Sound Technology
EU – European Union
FD – Finance Division
FDI – Foreign Direct Investment
F/S – Feasibility Study
FY – Fiscal Year
GDP – Gross Domestic Product
GOB – Government of Bangladesh
GTCL – Gas Transmission Company Limited
HFO - Heavy Fuel Oil
ICT – Information and Communication Technology
IDCOL- Infrastructure Development Company Limited
IEA – International Energy Agency
JICA – Japan International Cooperation Agency
kWh – Kilowatt Hour
LNG – Liquefied Natural Gas
MoPEMR – Ministry of Power Energy and Mineral Resources
MWh – Megawatt Hour
NWPGL – North West Power Generation Company Limited
NPM - New Public Management
O & M – Operation and Maintenance
p.a – per annum
PBS – Palli Bidyut Samity
PC – Power Cell
PD – Power Division
PGCB – Power Grid Company of Bangladesh

P/P – Power Plant
PPA - Power Purchase Agreement
PSA – Power Sharing Agreement
PSC – Production Sharing Contract
PSMP – Power System Master Plan
PSPGP- Private Sector Power Generation Policy
PFI - Private Finance Initiative
QPSL - Quantum Power Systems Limited
REB – Rural Electrification Board
SD/VAT – Supplementary Duty / Value Added Tax
SDGs – Sustainable Development Goals
SHS – Solar Home System
SIPP – Small Independent Power Producers
SREDA – Sustainable and Renewable Energy Development Authority
TCF – Trillion Cubic Feet
TDS – Transmission and Distribution Sector
T/D – Transmission and Distribution
TOR – Terms of Reference
U/G – Under Ground
USD /\$ - United States Dollar
WB – World Bank
WZPDCL – West Zone Power Distribution Company Limited

Chapter 1

Introduction

1.1 Introduction

'Partnership' between government of Bangladesh and the private sector can be traced back to the mid 90s starting from the field of power generation. This study focuses on those projects, with two projects studied as cases. This is the introductory chapter. The Chapter specifies the research problem, briefly describes the objectives and methodology.

1.2 Background of the study

In Public Private Partnership (PPP), the Public partner is represented by the government; Private partner can be a company or large group having expertise in that field. (PPP) is a relatively new concept in South Asia comparing to Europe and USA . "PPPs have proved a popular choice with the public sector around the world because it can both reduce their financial burden and also bring in the private sector's technical know-how in designing and managing projects" (Savas,2000). PPP arrangements are useful for large projects that are economically and socially desirable and require huge fund. PPP so far has been adopted throughout the world in various fields including toll road, bridge, airport, healthcare, power plant and telecommunication system.

PPP is being emphasized in recent years in Bangladesh because government wants high growth rate to become a middle income country. High growth require huge investment which is being expected to come from the private sector. The FDI is not growing, so the government's option is PPP. Projects from different sectors are being pursued currently(list of the projects are mentioned in Chapter 3); but those are mostly not completed yet, rather in different stages of procurement because implementation of PPP is a long term matter. Some completed projects are found in the power sector. Projects taken in early phase were mostly in the power and energy sector. For this reason analysis of result, performance or outcome is possible for

those projects. This study focuses on these power sector projects which are in Build-Own-Operate method which is a form of PPP.

In Bangladesh, government tried other forms of amalgamation with private sector in post liberation period like nationalization, privatization and joint venture. Gradually some efforts were made for more cooperation with the private sector. With the formulation of private sector power generation policy in 1996 the efforts got momentum. At that period Bangladesh's power sector was experiencing a crisis. "A survey in 2003 found that 73 percent of firms viewed electric power as a major or severe constraint, a finding confirmed by a 2007 survey and two World Bank missions. It was found that the power shortage was costing two percent of GDP growth. The government agency for bulk power production -Bangladesh Power Development Board (BPDB) was financially insolvent" (Khan et al., 2012). In such a condition Independent Power Producers (IPPs) gave a short or medium term solution. In Independent Power Producers (IPPs) or rental power plants - government pays commercial price to purchase electricity from a private power plant over a long period to allow private investors to get back their investment with a return. The Power Policy was revised in 2004 . It contained details on the IPP issues , purchase of electricity from them, financing arrangements and mode of projects. By 2010, the private sector was generating 38 percent electricity (BPDB website). In 2010 Policy and Strategy for Public-Private Partnership (PPP) was enacted and three guidelines were made under this; and those are- Guidelines for Formulation, Appraisal and Approval of Large/Medium/Small Projects, 2010. Afterwards in 2015 PPP Act was made. Government through its national budget in 2009-10 introduced the concept of PPP budget(position paper by finance division,2009); but in initial years it remained largely unspent. The government has taken a two way strategy for PPP- one is to attract investment for projects, where building new infrastructure and expanding existing infrastructure is the major component; the second is to attract innovation and sustainability of public service delivery to the citizens (PPP policy,2010).

1.3 Statement of Problem

Though most of the completed early Public Private Partnership projects in Bangladesh are from power and energy sector, taking these projects in the power generation sector is a matter of debate for many reasons including the value for money. The focus of this paper is to shade light on some of those debatable issues and find out the extent to which these projects are being fruitful.

Electricity belongs to a group of public utilities (including water, natural gas and rail) referred to as Network Utilities that “require fixed network to deliver their services” (Newberry, 2002). Production and delivery of such utilities require setting up of extensive network infrastructure over the country . It is this feature of network utilities that makes them natural monopolies, where ideally a sole producer is economically viable (to avoid duplication of infrastructure) and politically significant (for public interest). Governments have therefore typically provided such services either through direct ownership or by regulation of privately owned utilities. Due to inefficiency and resource constraint of public agencies ,governments are gradually moving away from pure public ownership of such utilities by liberalizing the sectors for competition and private sector involvement (Issifu, 2015). Both developed countries (UK, Norway, Australia, USA and Germany) and developing countries (Chile, Ghana etc.) adopted this . “Full privatization of electricity sector is not possible because of the social and political factors; so PPP is the option” (Gassner, Popov, & Pushak, 2009). But the performance of PPP projects differs hugely from one project to another.

The Power Plants constructed under PPP are contributing significantly to the national power grid. However, these projects are very costly and depend on the supply of gas or oil. From the government perspective success is determined by the service provided to citizens and from private partner’s perspective the main thing is the return on their investment with profit. There are debates among experts of this sector and people from the civil society whether the government should go for this sort of costly venture for producing electricity. *Khan, M. et al. (2012)* identifies “the problems and implementation barriers for these kind of projects as – High risk

premium (a form of compensation for the extra risk - Investopedia) small number of bidders, irregularities and rent capture (When a firm uses its resources to procure an unwarranted monetary gain from external elements without giving anything in return to the society by wealth creation- Economic Times, India), protracted (prolonged) decision making, and few IPP successes". We may notice that most of these corrupt practices are prior to selecting the project. But this study will evaluate the selected projects from PPP point of view be after completion (or near completion) of the project.

In Bangladesh while most IPP or Rental power projects have become successful, few couldn't. Again the compliance of those projects in light of the standard and core features of PPP under the institutional and legal framework of Bangladesh is yet to find. This paper makes an effort to do that. So the problem this paper is focusing on is – underlying mechanisms or reasons for a power project to become effective or not from Public Private Partnership Perspective. To understand how power sector PPPs can be successful in Bangladesh, the comparison of two projects can be useful.

1.4 Scope of the Study

The study involves theoretical concepts for PPP in general but focuses on power sector and the state of PPP in the power sector of Bangladesh. It starts with PPP concepts and then discusses the development of PPP in Bangladesh. The Projects taken for study were launched at the period when PPP started its journey in Bangladesh through the power sector. Government capability, framework for PPP etc were also at the beginning level; since then a lot of development has taken place some of which are discussed in chapter 3. In this study we will have a comparative look at the following projects-

- 1. 105 MW HFO (Heavy Fuel Oil) Fired Power Plant of Quantum Power Systems Limited (QPSL)**

2. 51 MW Gas Fired Rental Power Plant of Barakatullah Electro Dynamcs Limited (BEDL)

The first one is a failure as an IPP Power Project and the second one is a successful one. The case selection method is explained in the methodology. These projects represent the early PPP projects from power sector and can give a picture of the strength and weakness of those type of projects. The total projects taken under PPP in Bangladesh has a significant portion in the power and renewable energy sector. Case study method has the advantage of generalizing the findings for similar projects. The case study will be generalized for power sector projects. The study of 'PPP factors' in these projects has not been done yet. One reason for this can be the fact that – some projects in this sector is renewed and still not completed. So the evaluation of the project's outcome; the success factors and failure factors –these are yet to be studied mostly. In this study between the two cases – one is completed and another is at matured stage. This study clarifies the position of these projects in the field of PPP.

1.5 Objectives

The objective of this paper is to study Build-Own-Operate Projects from the power sector of Bangladesh. Two projects are taken as cases. BOO projects are considered one form of PPP worldwide where the government doesn't finance directly but provides tax incentives and the transfer of the public good doesn't happen. The implementation of this type of projects in context of Bangladesh follows some local policies and guidelines. The objectives include

1. To compare one financially successful IPP and one failure one;
2. To analyze the project attributes in compatibility with effective PPP criteria;
3. To find out the relevant factors that have impact on the project from PPP point of view.
4. To find out the inter-dependency of being successful PPP Project and successful IPP (Independent Power Producer) Project.

1.6 Research questions

Literatures usually find the challenges and way forward of PPP in Bangladesh. In this study the questions focus on the two cases from a single point of view which is defined as 'PPP Perspective' assuming that the findings will be generalized for all BOO power projects.

1. To what extent the project is an effective or an ineffective PPP ?
2. What are the factors responsible for being an effective or ineffective PPP?

1.7 Methodology

The primary research area that is Power Sector BOO projects in Bangladesh needs in-depth information which is possible in qualitative method. So, the research will be a qualitative one . In qualitative research, meanings cannot be separated from the context in which they originate and this is the major advantage of qualitative research approach (Velotti et al., 2012). Qualitative research can be carried out with five different methods -narrative research, grounded theory, phenomenology, ethnography, and case study (Creswell, 2007). As suggested by the title, it will be a comparative case study. "Case study is not a probability sampling but a purposeful sampling. Purposeful sampling is widely used in qualitative research for the identification and selection of information-rich cases. All sampling procedures, whether purposeful or probability, are designed to capture elements of both similarity and differences" (Palinkas et al.,2016) . "Comparative case studies cover two or more cases that share the same goal in a way that produces more generalizable knowledge about causal questions" (Goodrick, 2014).The cases are selected using extreme or deviant case sampling method. Extreme or deviant case sampling means selecting cases that are unusual or special in some way, such as outstanding successes or notable failures. In this study one completed and another running project are taken. Between the two cases one is financially successful and other one is failure. From the primary information received from Infrastructure Development Company Limited (IDCOL) which is a government agency that arranges and monitors finances for these projects, it was obvious that the completed project

has been a non-successful project financially because of the loan repayment failure; but the other case is a financial success history. Reason for taking one successful IPP and one failure one is that – it can give insight about the link between ‘success as IPP’ and ‘PPP Effectiveness’ - finding this being one of the objectives.

The respondents were selected purposefully. “Selection of respondents in qualitative research is purposeful; participants are selected who can best inform the research questions and enhance understanding of the phenomenon under study “ (Kuper et al., 2008). Respondents include Public Sector key officials, Private Sector Officials from the relevant projects, Key informant from the regulatory agencies like Public Private Partnership Authority, IDCOL, BPDB and experts. Semi-structured interviews were conducted with key respondents from the organizations involved in two PPP Projects and also with the key informant. However, in-depth interviews were conducted with other officials and experts. Semi structured interview covered the major information required and in-depth interviews covered among other things the indicators of the variables. Considering resource and time availability, altogether 14 (fourteen) interviews were conducted. As it is totally a qualitative study, no hypothesis will be tested . The study was conducted on the basis of primary as well as secondary data. Primary data was gathered through semi structured and in-depth interviews as mentioned earlier and secondary data was obtained from content analysis of relevant policy documents, literatures, copies of contracts , websites etc.

1.8 Rationale of the Study

Primarily this study relating to PPP and also power sector is a useful learning experience for me. The concept PPP is gaining momentum as a tool for implementing public projects. The topic of this study is taken because Government of Bangladesh is turning its focus to PPP for implementing large scale projects- infrastructure and power sector has been the priority sectors. So it is necessary to learn about that is widely used by our own government and other governments across the world. Studies should be conducted to provide important findings for decision making for the bureaucrats and politicians. PPP involves management,

finance and even politics. Politics is involved because decision making of a government often involves political agenda.

It is often seen that government officials have lack of academic knowledge on the area of their operation; because they enter government service as a generalist. Public Private Partnership and Power Sector both fall under the category where a lot of technical knowledge and skills are needed. In case of Power Division under the Ministry of Power, Energy and Mineral Resources and also the Public Private Partnership Authority officers are posted who are generalists. A combination of academic knowledge and technical expertise can enable the human resources to work efficiently in this field. This study may be useful to bridge the gap of understanding BOO power projects, the theoretical aspects of PPP and the framework for PPP in Bangladesh.

1.9 Significance of the study

The study will contribute to the literature of PPP and also power sector in context of Bangladesh. So far few studies have been made. Existing studies in the power sector are much more than that of PPP in Bangladesh context and PPP in Power sector is hard to find. It should give important insights for decision making for PPP in Bangladesh context. The study may give an understanding of underlying reasons, provide insights and help to develop ideas or hypotheses. As the study is qualitative it will find the underlying mechanisms working in implementing IPP projects. This paper should be significant for stakeholder's like- public sectors, private sectors, policy makers, analysts etc. for gathering knowledge regarding PPP in Bangladesh especially for the field of power and energy.

This paper will be very much relevant for not taking a generalized approach but a specific sectorial approach . Worldwide large projects are being implemented by PPP which are contributing to the development of the infrastructure and almost all other sectors. After the initial success of power sector projects, government of Bangladesh tried to convert the success to other sectors as well with Private Sector Infrastructure Guidelines 2004 but the transition could not get immediate success. Research is needed for specific sectors of PPP in Bangladesh; like health sector,

infrastructure sector, ICT sector, telecommunication sector etc. Each sector has exclusive dynamics and success factors; the country context also can determine the outcome. This study can be a beginning for that.

1.10 Limitations of the study

There are limitations in the scope of this study; because a lot of information in this area is confidential due to business secret and also non disclosure agreement to keep the confidentiality. Another issue is that interview with important officials are more of a formal discussion which is sometimes a barrier to reveal negative aspects. There is also difficulty in collecting data being an outsider in the field. Again, the study doesn't cover the problems prior to taking projects, it will only deal with data about agreement and implementation. Unlike many other studies, it does not cover the problems or prospects of PPP in general for Bangladesh, because for research purpose we should be more specific. The perspective used here is PPP perspective; but there are other perspectives also. For example, power crisis is another perspective from which the evaluation might be different.

1.11 Organization of Chapters

In this study the general outline of the chapters are as follows:

- Chapter 1 ----- Introduction
- Chapter 2 ----- Review of Literature & Analytical Framework
- Chapter 3----- Relevant Acts, Policies & Framework In Bangladesh
- Chapter 4----- Methodology, Data Presentation
- Chapter 5----- Findings, Policy Implications & Conclusion

Chapter one is the introductory chapter and presents an overview of the research problem and study objectives. It also describes the scope, importance and limitation of the study by identifying the outline. This chapter also mentions the stakeholders who are relevant to the research problem.

In Chapter two, there is description of technical terms as the thesis involves a technical field and also policy matters. The terms mainly describe the different forms

of working together of the Public and the Private sector. But the focus of the chapter is on relevant literatures. The review of literature includes briefly the history of PPP, the context of developed and developing countries, context of Bangladesh and relevant research in Bangladesh and also finds the gap in the literatures. It also formulates an analytical framework based on theory to analyze the data.

Chapter three contains mainly the framework of PPP in Bangladesh of which acts , policies and institutions are the components. The description is according to chronology which gives the picture of gradual development of PPP framework in Bangladesh. It is important to understand the current policy framework and earlier frameworks to have clear understanding of the policy implications of this study.

Chapter four initially describes the design and data collection methods then presents the data according to the indicators of dependent and independent variables which are collected from Primary and Secondary sources and gives a comparative picture of the two cases being studied.

Chapter five is the final chapter containing findings, analysis and the implications. Some findings may contribute to the current policy framework of PPP in Bangladesh and also to the power sector. Key findings and answer to the research questions are also described. This paper doesn't give any recommendation as it is not the purpose of research, but discusses the policy issues.

1.12 Conclusion

This first chapter includes the basic points and describes the structure . Some points pointed here will be discussed in more detail in later chapters. This study involves technical terms and concepts. Efforts are made to adhere to the policy and framework issues and the basics of PPP. This study certainly can contribute to the framework of PPP in Bangladesh.

Chapter 2

Review of Literature & Analytical Framework

2.1 Introduction

In this chapter relevant literatures and theories will be discussed. There are some relevant concepts that need to be defined for clarity. This study is related to technical aspects. So, technical terms also need to be mentioned. It is very important to clarify those concepts transparently with appropriate definition for the discussion of the results and findings. As an emerging global concept, studies are being done worldwide about PPP. Literatures are available in this field in the context of Bangladesh and other countries.

2.2 Definition of technical terms

A number of different contractual models of PPPs have been developed globally and are widely applied in projects. Each PPP model represents a different allocation of risk and responsibility between the public and private sector. (Your guide to PPP, Public Private Partnership Authority Bangladesh).

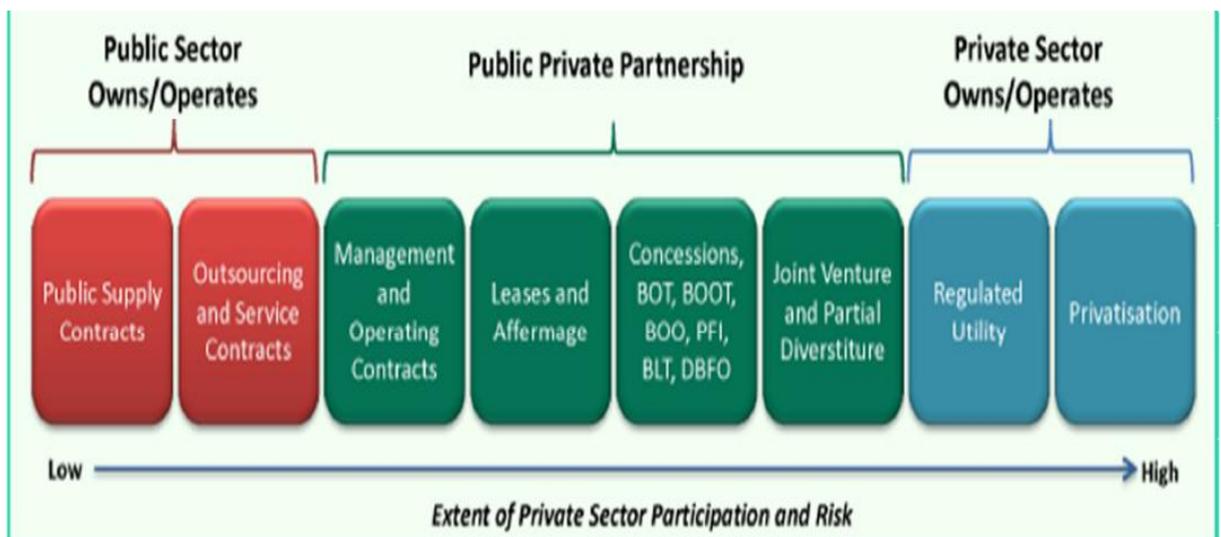


Figure2.1: Models of PPP Contracts

Source: Website of Public Private Partnership Authority Bangladesh

The above image shows that on the left side there is full public and on the right side full privatization. Between the two forms, outsourcing and service contracts in government organizations is not considered partnership and regulated utility services by private companies also not considered as partnership; these two forms are respectively within the boundaries of public sector and private sector. The picture shows that the forms of concession agreement, Build-Own-Operate (BOO), Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), Design Build Finance & Operate (DBFO) are considered the forms of Partnership between Public and Private.

Supply and Service Contracts

It is an agreement between the government and a private entity in which the private party is given the responsibility of supplying goods and services on behalf of government, where services provided is either paid by the government or by individual consumers (user charges). In most cases of contracting out, while ownership of the facility still remains public, the function of management or operation or both is contracted to a private entity.

Privatization

It is “a transfer of ownership and control from the public to the private sector, with particular reference to asset sales” (Walle,1989). In cases of privatization, the private entity assumes ownership of the organization and responsibility for the provision of services as operating in the market. Regulatory agencies are however often set up to regulate the operations of private entities delivery such services because of their perceived social and economic importance.

PPP

“It is an agreement between a private entity - whether for profit or not - and a public sector to jointly produce public goods and services in which accrued benefits and costs are shared according to consented agreements. In PPPs, while government retains responsibility and accountability for providing services, financing of projects mostly remains with the private party and in some cases shared between both parties” (Grimsey & Lewis, 2005).

PPP's difference with Traditional Public Procurement

According to the PPP Authority, Bangladesh the differences are – “in traditional public procurement the focus is on the delivery of an asset, PPPs focus on the delivery of service outputs which require the construction, operation and on-going maintenance of assets. This conceptual difference means that the roles and responsibilities carried out by the public and private sector in traditional procurement and PPPs differ depending upon the specific contractual model that is being applied to the PPP. For example, in a Build Operate and Transfer Project public sector retains responsibility for specifying the project scope, service requirements and standards. Public sector takes responsibility for providing land that is free from encumbrances and carrying out any linked projects (for e.g. relocation of utilities). Private sector takes responsibility for detailed design construction, financing, operation and maintenance of the asset. The revenue payment risk can be taken by the private sector, by the public sector or be shared between the parties.”

Mode	Traditional Public Procurement	Public Private Partnership
Delivery Role		
Land Acquisition	Public	Public
Linked Projects	Public	Public
Service Scope and Quality Standards	Public	Public
Detailed Design	Public	Private
Construction	Private	Private
Financing	Public	Private
Operation and Maintenance	Public	Private
Project Management	Public	Private
Revenue Payments	Public	Public/Private/Shared

Figure 2.2: Difference between PPP and traditional procurement.

Source: Website of Public Private Partnership Authority Bangladesh

Joint Venture

It is “a newly established company owned by both the public authority and private company” (Jeffares et al., 2009). In Bangladesh it means power plants developed under Policy guideline for Enhancement of Private Participation In The Power Sector,2008.

Private Finance Initiative (PFI)

It is “a form of capital outsourcing but with partnering contract. Public authority procures investment and services in relation to an asset with a design, build, finance and operate contract with a private provider”. (Jeffares et al., 2009)

Build-Own-Operate (BOO)

All the projects of rental power plant , IPPs and other power projects involving private sector are in the form of BOO as mentioned in the Power Policy 2004. Usually in these projects government do not finances but gives tax incentives. According to Policy guideline for Enhancement of Private Participation In The Power Sector,2008- It means “a contract whereby an investor undertakes to design, finance, build, operate and maintain a project and such project is to vest in the investor for specified period(s). “

“With Build-Own-Operate method , one private actor is approved or granted the right to design, finance, build, operate and maintain a project and even allowed to own the project. During this process, this private actor assumes the risks and all surplus revenues on its own. And it may use separate sub-contractors to conduct the design phase, construction and operation phases. the full project needs to be approved by relevant public authorities who must ensure the project being consistent with the overall public policies. Under the BOO model, all project responsibilities are assumed by the private actor, except that only in the initial conception stage, the government will participate probably in order to put forward the ideas of the project.”(Rui,2008).

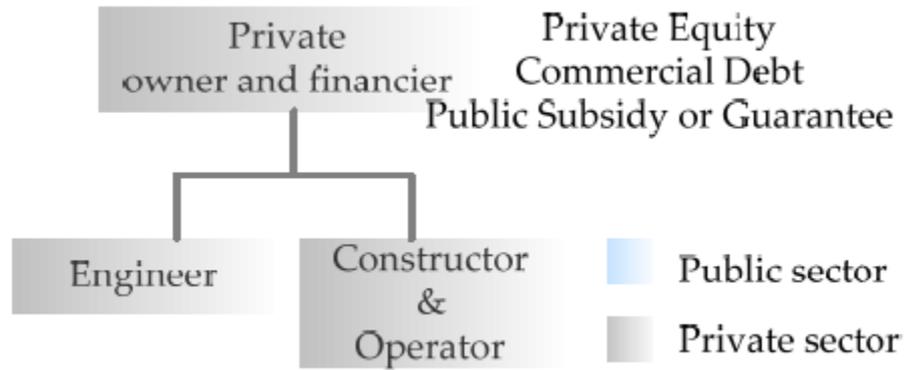


Figure2.3: BOO Model (Source: IMF working paper,2009)

Build-Operate-Transfer (BOT)

The project is built and operated by the private partner and by some consented agreement, the asset is reverted to the state at a specified period. (Kwak et al. , 2009)

Design-Build-Finance-Operate (DBFO)

The private partner designs, builds, finances and operates the project but with government maintaining full ownership. (Kwak et al. , 2009)

IPP

In Bangladesh it is defined as - Independent Power Producers under Private Sector Power Generation Policy of Bangladesh, October 1996. IPPs are private entities that own and operate electricity generation facilities and sell end products to end users, mostly governments and large industrial consumers. In most cases government pays commercial price to purchase electricity from that private power plant over a long period to allow private investors to get back their investment with a return.

PPA

“Power Purchase Agreement” refers to an agreement executed between Public Sector Power Utilities and power plants established under these Guidelines. (Policy guideline for Enhancement of Private Participation In The Power Sector,2008)

Private Partner

According to the Procurement Guidelines For PPP Projects 2016 – it means “the Preferred Bidder who has entered into the PPP Contract with the Contracting Authority and who has formed or will form the Project Company for implementation of the PPP Project.”

BERC

It means “Bangladesh Energy Regulatory Commission established under the Bangladesh Energy Regulatory Commission Act, 2003”. (Policy guideline for Enhancement of Private Participation In The Power Sector,2008)

BPDB

It means Bangladesh Power Development Board established under Bangladesh Water and Power Development Boards Order, 1972 (P.O. No. 59 of 1972). (Policy guideline for Enhancement of Private Participation In The Power Sector,2008)

Bangladeshi Private Investors

It means Bangladeshi entrepreneurs including Non-resident Bangladeshis (as defined by the Board of Investment or Bangladesh Bank from time to time) and Public Sector Power Utilities listed in the Stock Exchanges of Bangladesh. Such investors may enter into joint venture agreement with foreign companies. (Policy guideline for Enhancement of Private Participation In The Power Sector,2008)

Project

According to the Procurement Guidelines For PPP Projects 2016 – it means “any such actions or program or a combination of both by means of which the following plan or work is taken up for implementation:

- a) construction and/or operation of any new infrastructure or a plan to construct and/or operate any new infrastructure;
- b) plan to reconstruct¹ any existing infrastructure;
- c) plan to carry out the work specified in (a) and (b) both; or
- d) deliver any such goods or services which are not related to any infrastructure facility.”

Contracting Authority

According to the Procurement Guidelines For PPP Projects 2016 – It means “a line ministry or division; or any office or directorate or corporation or statutory organization or local government or any similar organization under the line ministry or its division; or the PPP Authority, in the event that the PPP Authority is given the duty to carry out the functions from the time of taking up/initiating a PPP Project up until the execution of the PPP Contract and which proposes to enter into a PPP Contract or other contractual agreement with the Preferred Bidder and/or the Project Company.”

Regulatory framework

A framework encompassing all laws, regulations, policies, binding guidelines or instructions, other legal texts of general application, judicial decisions, and administrative rulings governing or setting precedent in connection with PPPs. In this context, the term policies refers to other government-issued documents that are binding on all stakeholders, that are enforced in a manner similar to laws and regulations, and that provide detailed instructions for the implementation of PPPs. It should not be confused with policy in the sense of a government’s statement of intent to use PPPs as a course of action to deliver public services. The regulatory framework includes but is not limited to those laws, regulations, policies, and other government actions specifically dealing with PPPs.

Corrupt practice

According to the Procurement Guidelines For PPP Projects 2016 – It means “offering, giving or promising to give, receiving, or soliciting, either directly or indirectly, to any officer or employee of a Contracting Authority or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by a Contracting Authority in connection with any procurement process”.

Unsolicited Proposal

According to the *Guidelines For Unsolicited Proposals, 2016* it means “a written proposal for the implementation of a PPP Project submitted unilaterally by an

Original Proponent on its own initiative and not in response to any Formal Government Request.

2.3 Review of Literature

Relevant literatures are grouped into three categories in the literature map. The ‘literature gap’ is pointed out at the end of literature review. Group one contains some basics of PPP, like starting of the name ‘PPP’ , definition , example of ancient times PPP, history and development of the concept and the ‘transfer of this policy to developing countries’. Group one is divided into two types – one is definition and the other one is development of the concept of PPP over the years. The second group of literatures includes PPP in context of various countries other than Bangladesh which are named ‘literatures in world context’. The third group of literatures covers the context of Bangladesh which we call ‘literatures in Bangladesh’. In this context literatures are available that covers PPP in general, some literatures cover specific sectors and few cover the Power Sector. Representations from different sorts of literatures are taken. From the review, the gap in literature in Bangladesh is identified which is mentioned at the end of the review.

Here is the literature map:

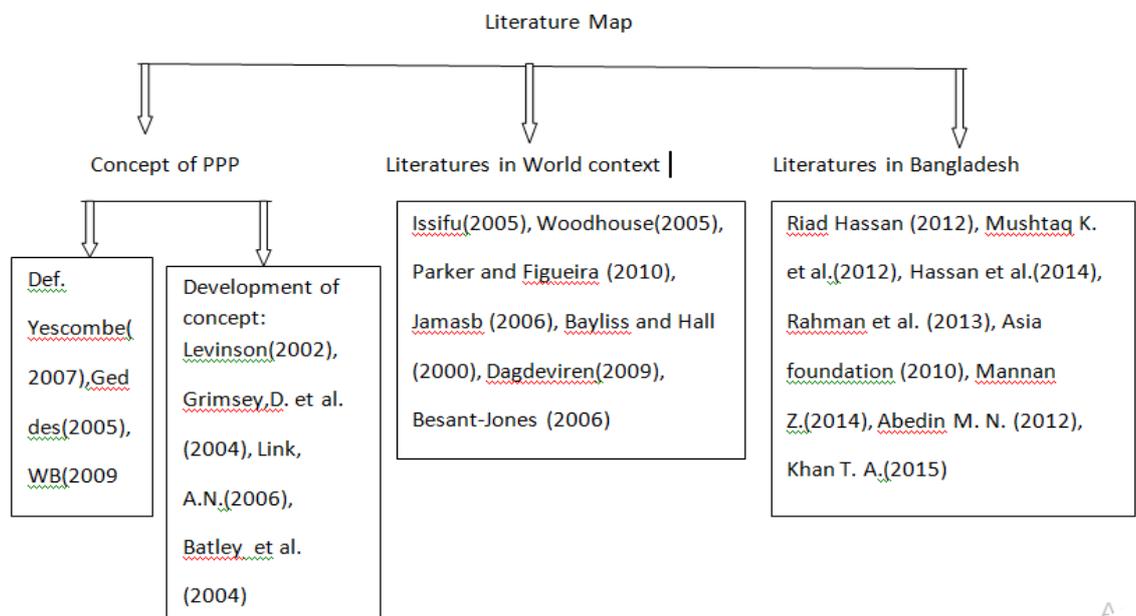


Figure 2.4: Literature Map

PPP has a long history worldwide. It has some ancient examples in Europe, but the term was introduced in USA. Yescombe (2007) states that –*“the term Public Private Partnership appears to have originated in the United States of America initially relating to joint public-private sector funding for education sector and then in the 1950s to refer to similar funding for utilities but came into wider use in the 1960s to refer to public-private joint ventures for urban renewal ”*

PPP has no fixed definition, so it is hard to define it. One definition is – *“a public private partnership is usually a medium to long-term relationship between the public and private sectors (including the voluntary and community sector), involving the sharing of risks and rewards and utilization of multi-sectoral skills and expertise and finance to deliver desired policy outcomes that are in the public interest”* Geddes (2005). In financing a mega project, the government has to provide huge capital even though the benefits derived from it may be delayed . This capital constraint is solved by the model of PPP by involving private sector. Government can also make use of private sector’s expertise in that field to provide citizens with better service. In the World Bank guide (2009) , it is said that *“one of the main obstacles to the effective delivery of PPP projects is having the right information on the right project for the right partners at the right time.”*

The history of this sort of initiative is from the ancient times. Trace of most ancient example found in the writings of Greek historian and philosopher Strabo (63BC–AD 21). He wrote in Geographia that *“at the time of Caesar Augustus mentioned about tolled road. The Salassi tribe was given a toll concession by the Roman Empire, for maintaining and providing guidance which is a form of PPP”*. After the ancient times this sort of initiative continued in the middle ages too. *“In the Middle Ages, tolls were used to support the cost of bridge construction, and in 1286 London Bridge had tolls. In 1364, Edward III of England legislated tolling rights on the Great Northern Road”* (Levinson,2002). Another example from the middle age was found in France. *“The history researchers show that as early as 1438, the French nobleman Luis de Bernam was granted a river concession to charge the fees for goods transported on the Rhine.*

These are the very early example for some form of PPP. During the colonial period , there were some efforts close to PPP” (Link,A.2006). In modern times specially in England one form of PPP was introduced which is called ‘ Private Finance Initiative (PFI) where private firms are contracted to complete and manage public projects. “All European countries have implemented PPP projects. In England, ‘Partnerships UK’ was established in 2000 to promote PPP/PFI concepts. The British government launched its PPP development policy in 1992 under the ‘Private Finance Initiative’. Since then, the technique has been applied systematically to all fields” (Grimsey,D. et al., 2004).

Darrin Grimsey et al. (2004) in ‘*Public Private Partnerships: The Worldwide Revolution In Infrastructure Provision and Project Finance*’ draws up ‘the development of PPP concept’ to three things-

1. *The changing market for public services.* The first influence is changing attitudes to the ways in which public services are produced and delivered to the public. A PPP is simply a method of procurement and as such its application is seen as an extension of a liberalization agenda that has become known as the ‘new public management’ or ‘marketization’ of the public sector (Broadbent and Laughlin, 2003).
2. *The private financing model.* It is the refinement of the private financing model and the development of project finance techniques to ‘engineer’ the finance to suit PPP structures.
3. *The concept of partnering.* PPPs have been shaped by concepts of ‘partnering’ developed in the engineering construction industry that lie on the border between engineering and management. The partnering concept has provided an intellectual backdrop and support to the organization of PPPs.

Issifu, Jamilatu of Ghana has done a research on PPP in Power Sector of Ghana titled ‘Public Private Partnership In The Power Sector Of Ghana: Has It Delivered As Expected?’ (2015)where she has discussed on the issue of increasing involvement of

independent power producers (IPP) in the developing countries. She described PPP as a part of New Public Management (NPM). *“NPM belongs to a cluster of Public Management Reforms that seek to modify the organization of public institutions and methods of public service delivery to be more responsive to the needs of citizens. A fundamental principle of NPM is to get government to run like a business entity with such elements of the private sector as efficiency, competition and profitability. The role of the state in providing public service in a manner which is impartial, open, and equal has therefore been replaced by market oriented principles”*(Issifu,2015).

PPP is considered as a policy transfer . Transferring of PPP concept from developed countries to developing countries is also difficult because of the contextual differences. Batley and Larvi (2004) point out some of these differences. *“The main reason is the pace and nature of reforms in developed countries are designed and carried out by their governments with the democratic support of voters. But reforms in developing countries are often designed by international agencies, and not fully understood or supported by citizens”*(Batley et al.,2004). Issifu, Jamilatu also mentioned PPP as a policy transfer - *“the situation between governments and IPPs therefore creates a PPP model of private sector participation in the developing countries’ context. To attract IPPs, governments in developing countries have followed the path of developed countries and have initiated power sector reforms and policies that focus on creating an enabling environment for potential investors”*(Issifu,2015). Parker and Figueira (2010) have also given importance on the environment - *“the existence of a solid regulatory environment is of vital importance for these projects to be carried out effectively”*. In Bangladesh for instance, several regulatory bodies were set up starting from Bangladesh Private Sector Infrastructure Guidelines 2004 upto PPP Act 2015. Their creation initiated the introduction of private sector participation.

Woodhouse (2005) has stated that *“an electricity sector without strong financial capacity is most often the catalyst that delivers other problems”*. Jamasb (2006) also has emphasized that, *“lack of access to and shortage of electricity supplies results in significant economic and social costs. The common challenges of developing countries are rapid population growth, hazardous economies,*

infrastructure and the lack of ability to mobilize sufficient investment to their electricity sector due to severe financial constraints". According to Jamasb (2006), there was private participation in the electricity sectors of over 75 developing countries between 1990 and 1999. Woodhouse (2005) has stressed that, *"indeed, demand for private investment in infrastructure, particularly electricity generation, remains strong, and with the passage of time activity is likely to grow"*. Governments of developing countries have therefore responded to this need by integrating IPPs in their electricity sectors. However, because of the economic uncertainties of developing countries, IPPs would usually require governments to act as guarantors for their loans or be the principal purchaser of electricity through the government's electricity utilities with the Power Purchase Agreement (Dagdeviren, 2009). Bayliss and Hall (2000) discuss that, the increase use of IPPs stems from the notion of being able to finance projects that is beyond the financial capability of state agencies. However, the benefits of private sector participation in the provision of electricity are not conclusive as experiences from different countries vary to a large extent (Besant-Jones, 2006). Nonetheless, stating some benefits of IPPs in developing countries, Besant-Jones (2006) has indicated that the introduction of IPPs helped countries such as Chile and Argentina to achieve better service quality for electricity consumers, such that, there was efficiency and wide coverage of services. Another benefit was that, private management of electricity provision reduces system losses such as payment delays, theft, and unpaid bills that public entities had difficulty in managing. This approach subsequently reduces the fiscal burden on government to cover such operational costs. Bayliss and Hall (2000) are however of the view that, such benefits of private sector participation in electricity delivery have been over exaggerated and misleading. They contend that, IPPs in reality are not an alternative source of funds for governments to finance their electricity sectors. Rather, IPPs are repaid by government for all services rendered, thus in practical terms, there is still fiscal burden on government. Bayliss and Hall (2000) have further argued that, the services provided by IPPs are rather expensive and that, prices of electricity services are mostly inflated. Since IPPs are private entities and have a motive for making profit, they pass all production costs onto the consumer which results in higher

tariffs. Consequently, private participation in electricity delivery could be rather an extravagant venture for developing countries that still need to invest in other sectors of the economy. They are therefore of the view that, governments should strengthen the capacity of state agencies instead of replacing them with private entities .

In implementing PPP projects the capability is not the same for every country. It depends on the institutional, legal and human resource capability of the country. In a very recent paper, World Bank took the initiative to assess government capability to prepare, procure and manage PPPs of 82 countries (including Bangladesh) in different regions in the paper – ‘Benchmarking Public Private Partnerships Procurement (2017)’. The paper analyzes PPP project cycle by dividing it into four – preparation, procurement, contract management and management of unsolicited proposals. The findings include that – the average performance in each area varies according to regions and income level of that region, most countries fall short of good practices specially in project preparation and contract management, few countries do not have separate PPP law and they work under general procurement procedures. The fiscal sustainability and being consistent with national investment program is found in only a fraction of the total countries. The study reveal that approximately two-third of the countries socioeconomic impact, affordability, risk identification, bankability and a comparative assessment with the traditional procurement for a potential PPP project.

So far studies in PPP is very few in Bangladesh. In most literatures in context of Bangladesh, basically prospects, and possible sectors are mentioned. In this category of literatures, in some cases , case studies are done also. Mushtaq Khan et al. in ‘*Public-Private Partnerships in Bangladesh's Power Sector: Risks and Opportunities*’ (2012) identified the reasons for taking these projects –“as in many other countries, Bangladesh has sought private sector support for power to obtain better value for money, on time delivery, performance assurance, and access to financing.” The paper also mentions how PPPs in power sector of Bangladesh connects to the New Public Management. “Power Sector PPPs mainly have three

aspects of NPM –fragmentation (separating power generation, transmission and distribution into separate business functions), competition (subject to government procurement rules), and incentivization (contracts written to focus private sector on the task to deliver the outcomes)”. The paper points out some risks for implementing PPP project like “corrupt practices of governance, weak procurement, moral hazard and asymmetric capacities.”(Khan,M. et al.,2012)

Riad Hassan (2012) in *‘PPP in Bangladesh: Reality and Prospect’* identifies the problems and prospects in general for Bangladesh. One of the key findings of this study is that, there is lack of institutional and legal framework for PPP in Bangladesh . In this paper , the different government agencies of Bangladesh are discussed who work regarding PPP; a list of projects mentioned; prospective sectors identified and some recommendations are there. The Asia Foundation (2010) in-*‘Promoting Public Private Partnership in Bangladesh, A brief Guide for Partners’*- provides a comprehensive outline for smooth and sustainable run of PPP projects. It starts with the basic concepts then discusses on development of PPP in Bangladesh, classification of projects, policy and strategy of the government, institutional framework, key to successful PPP project etc.

The study of Hassan, Mahmud, Rahman, Khan and Haque (2014) shows that the shortage of electricity has become a threat for the rural areas of Bangladesh. The study of Rahman, Saha, Khan, Habiba and Chowdhury (2013) explains that the progress of energy sector is very slow in Bangladesh and almost 70 percent of people having lack of access to energy use, and most of them live in rural areas. So, the importance of installing renewable energies is mostly emphasized in rural areas. The study of Hassan, Mahmud, Rahman, Khan and Haque (2014) shows that the shortage of electricity has become a threat for the rural areas of Bangladesh.

There are some specific field centric studies also. Zahed Mannan (2014) studied the education sector in – *‘Public Private Partnership in Higher Education in Bangladesh: A Study of Stakeholders Conceptualization and Critical Success Factors’*. This paper finds the success factors for education sector PPPs. The paper first presents a conceptual clarification of PPP and then argues that good governance,

commitment of the public and private sectors, favorable legal framework, sound economic policy and availability of finance market are the top five Critical Success Factors of PPP implementation in Bangladesh. Mohammad Nazmul Abedin (2012) focuses in –*Public Private Partnership in Service Delivery: An Evaluation Of National Sanitation Program Of Bangladesh*’ on the sanitation program. This study was undertaken in two upazilas to study the success of the sanitation program which involved private sector and find the issues that caused the success. A study was made under the MPPG thesis program of North South University. Towfique Ahmed Khan (2015) did thesis on *‘Managing Accountability in the Dhaka-Chittagong Expressway Development Project in Bangladesh’*. As this project is a PPP project, the study can be considered a PPP study in the infrastructure sector. The objective of the thesis was to identify – to what extent accountability management has been adopted in the mentioned project. The key findings of the study was that , the accountability mechanism of the project was not satisfactory . The hierarchical method was used for accountability which was not suitable in case of PPP.

2.4 Summary of literature review

PPP has no standard set definition and specific method, rather it has variation. Literatures throughout the world on PPP is diversified, mostly on specific country context. The literatures show how governments in Europe came into PPP. It is also found that the concept similar to PPP is ancient . The modern adoption of the concept has aspects of NPM and post NPM. In case of Bangladesh studies on power sector are many but study on ‘PPP in Power Sector’ is scarce. Most of the papers specially from Bangladesh don’t focus on any specific problem rather gives some overall idea about PPP in Bangladesh. Many fall short in research methodologies but in the end give some recommendations which a research paper should not give. Few papers did case studies on projects of separate fields, but not comparative study from the same field. By observing the completed PPP projects in Bangladesh it is obvious that 3 or 4 sectors (transportation, power, land port, telecom/ICT) were covered in the early phase; later efforts were made to incorporate other sectors. Among the completed or ongoing projects Power sector is dominant; but very few

studies on power sector PPPs. Power and other specific sectoral studies can be more useful because each sector has its own influencing factors and dynamics. Two papers are found most relevant-‘Public-Private Partnerships in Bangladesh's Power Sector: Risks and Opportunities’ by Mushtaq Khan et al.(2012). Though it doesn’t take case studies but focuses on the power sector PPPs mainly. In the second paper– Chowdhury, M.S.R. takes several case studies including two successful power sector projects in ‘Problem Analysis And Overcome Strategies Of Public Private Partnership In Bangladesh’(2016); but those do not reveal the factors for success or failure for a BOO project or a PPP project because case sampling is not done in that way.

2.5 Research gap

From the review we find that Bangladesh still has a long way to go in the study of Public Private Partnership. This type of study is more of an institutional responsibility of specialized government agency. From the review, gap in the research field for PPP in Bangladesh can be found on the power and energy sector. There remains a huge literature gap on how PPP is functioning in the Power Sector of Bangladesh. The study of ‘PPP factors’ in power generating BOO projects has not been done yet. This study, being a case study can be generalized to all BOO projects and clarifies the ‘PPP compatibility’ of those project. Research gap can be phrased as – ‘study of PPP projects in Power Sector from PPP point of view: Case Study , comparison and analysis’. This paper makes effort to bridge the gap to some extent. This paper focuses on a specific sector that is power sector PPPs. In this paper two power sector projects are taken; the evaluation and comparison can be done as both of them belong to the same category.

2.6 Discussion of Relevant Theories

Only few theories explain the mechanisms of PPP. Worldwide PPP study caters to limited theories. Among those theories critical success factors theory , game theory principal agent theory are mentionable. In this study Principal-agent theory is used.

2.6.1 Critical Success Factors

'Critical Success Factors' is a management term which means the factors which are necessary to achieve the goal of a company or an organization. Another way of defining it is "the few things that makes or breaks the project; that is without those factors the project cannot be successful"(Rockart, 1989). Alternative terms are key result area (KRA) and key success factor (KSF). Ronald Daniel of McKinsey & Company first developed the concept of 'Success Factors' in 1961. Later John F. Rockart (1989) developed the concept as 'Critical Success Factors' . This theory was initially used for other fields. Off late, it is being used for PPP sector. This is different from KPI or key performance indicators concept. To apply Critical Success Factors theory initially a list of factors are generated from the literature review then from the primary data they are sorted according to the order of criticality. In this paper we are examining the effectiveness as primary issue and then the factors; so this theory is not fully relevant to our study. Critical Success Factors theory deals with only the factors which is basically relevant to the second question of this study. But here our focus is on whether the project is successful or not which cannot be identified by Critical Success Factors. But again for the second question answer we have not used this theory because of the coherence of the analysis procedure.

2.6.2 Game Theory

Game theory is mostly used in the fields of Economics, Political science, biology etc. Game theory is the "study of human conflict and cooperation within a competitive situation. In other words, it is the optimal decision-making of independent and competing actors in a strategic setting" (Investopedia,2017). But it also has applicability in analyzing PPP. As PPP involves many actors and stakeholders, mutual cooperation and sharing is important issue here. This co-operation in some cases could be analyzed as a social game. "In PPP the cooperation, sharing of risk among the partner, allocation of responsibility –these issues can be determined according to the game theory"(Kennedy, G. M. ,2013).

Game theory follows more of mathematical models and equations. It can accommodate PPP as a game and show the aspects of cooperation and risk sharing

and their distribution among the partners. But PPP is not all about that. In our study there is mainly the government and a private company employed by the government to produce electricity. A number of entities are not involved here and we are not focusing on cooperation and risk factors rather we are focusing on the success of the project. But in this study those factors dealt by game theory like cooperation and risk sharing are also taken into consideration.

2.7 Principal-Agent theory And Key components

The analytical framework based on 'PPP criteria' is formed using the theory of principal-agent developed by Laffont and Tirole (1993). This theory describes "the behavior of a boss (the principal) who cannot accurately monitor the productivity of his or her employee (the agent). The principal can, however, introduce a set of incentives in order to increase the agent's efficiency. Such incentives are costly. Principal-agent theory has two basic assumptions –

1. *Information is asymmetric between the parties.* in general, the agent (the private sector operator) has more information about its own actions.
2. *The agent pursues its own interests,* that may run contrary to those of the principal" (IMF Working Paper, 2009)

This theory is primarily compatible to the structure of PPP where two parties that is the Public and the Private are involved and other conditions are present. Principal Agent theory has a different way of determining and defining the relations of public and private entities and the output of the project, so this theory is very much relevant to the structure of PPP.

Agency theory "*is a contract in which one or more persons (the principals) engage another person (the agent) to take actions on behalf of the principals that involve the delegation of some decision-making authority to the agent*"(Jensen ,2003). "The basic assumption for agency theory is the asymmetric information between the principal and the agent, which induces adverse selection prior to contracting and moral hazard problem after contracting or launching period. Adverse selection refers to the fact that the principal is unable to access relevant information of the agent before signing the contract. And moral hazard refers to the

fact that the efforts made by the agent dedicated to the task can not be freely observable by the principal and thus causes the monitoring problems. The information asymmetry is not necessarily a problem if the agent's interests were perfectly aligned with the principal's (Rui, 2008) However, Information Asymmetry affects the project outcome because another assumption, *goal conflict*, exists between the principal and the agent. So when the agent's behaviors are not controlled or restrained, the goals of the principal are unlikely to be attained (Caers et al, 2006).

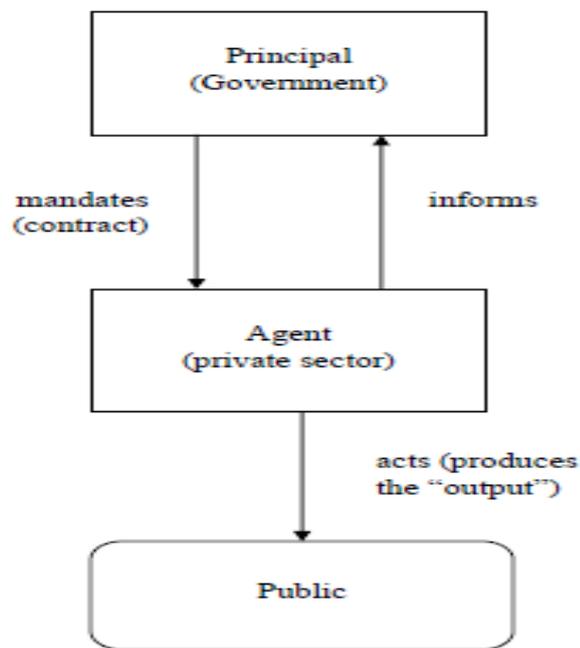


Figure 2.5: Principal Agent Framework (Source- IMF Working Paper, 2009)

2.7.1 Contract Mechanisms in Principal Agent Theory

In Principal Agent Problem there is conflict of interest which is similar to moral hazard problem. "The difficulty in achieving a contractual resolution in this problem arises because the Principal cannot directly observe the agent's actions and therefore cannot control that by incentive. Instead, the Principal must choose a contract from a set of contracts with incentives with a mutually observable state of nature so as to induce the agent to take an action that is in the best interest of the

Principal”(Page, 1990) In Bangladesh there is no set of contract but a format was made for BOO project contract; which is followed.

2.7.2 Risk Allocation in Principal Agent Theory

In the paper ‘Risk-Allocation: Theoretical and Empirical Evidences’ , published from University of Paris, in Principal Agent Theory the findings for risk allocation criteria was mentioned as – “Risk allocation criteria come from the incentive and participation constraints. Risk should be allocated to the partner best able to manage it. The risk should be allocated to the Agent to the extent he does manage the risk. Risk should be allocated to the least risk averse partner in order to minimize the overall risk-bearing cost .The Principal can support some risks in order to support the Agent’s development”(Oudot, 2005). From this perspective the principal should take some risks and allocation of risks should be done according to cost effectiveness between the partners. “For a risk to be insurable, it should respect the following conditions: risk should be assessable, this assessment should be observable by all partners, and risk should be independent of partners’ actions”(Moureaue et al.,2004). But in case of BOO projects risk is not allocated in this method in Bangladesh, rather risk allocation criteria is unknown and allocation of risk do not vary according to project details. In the framework we examine the risk sharing in the ‘level of sharing’ –one indicator of the dependent variable.

TIME	PUBLIC SECTOR	PRIVATE SECTOR (PPP OPERATOR OR OUTSIDE INSURANCE)
	Project specifications	
		Concept, construction
		Operation, maintenance
	“Act of nature” non-insurable	“Act of nature” insurable
	Demand for minimum (social) output	
		Financing cost
	Residual risk	

Figure2.6: Matrix for risk sharing in PPP (Source- IMF Working Paper, 2009)

2.7.3 Incentives

Incentives are to motivate the agent to work for the Principal's goal and following the contract. There are two types of Incentives available - Fix-Price Incentive Contract and the Cost-Plus Incentive Contract. In fixed price method , the final contract price is the outcome of a formula consisting 3 components - target cost, the target fee and the share formula. There is high risk of profit margin for the agent if the target cost varies from the actual cost. The cost plus incentive is re-adjustable later.(Rui,2008)

2.7.4 Monitoring

It is assumed in Principal Agent Theory that the Principal do not have sufficient time or capacity to monitor the agent's activities. Moreover, there are other challenges of monitoring; like- monitoring is difficult before the actual output, due to technical aspects and for confidentiality of the project issues.

2.8 Developing Analytical Framework using Principal Agent Theory

In analytical framework the Independent Variables come from the single theory – Principal Agent Problem. The theory's main ingredients are reflected in the independent variables. According to the theory the principal and agent have difference in interest which leads to agency cost for the principal. So this things along with incentives can affect the project. Here the dependent variable is – 'Effectiveness of the project as PPP'. Several Independent variables can be identified through study of the theories and literatures; those are – Incentives, agency cost and conflict of interest. Operational definitions are given later.

It is mentioned earlier that Principal-Agent theory has been chosen for analysis of the projects. It fits to Power generating PPP projects in Bangladesh because the private partner here can be the agent hired by the government implementing agency (BPDB) which is the principal. The private partner always focuses on profit maximization and government interest is providing electricity according to the need. So the conflict of interest is there between the principal and the agent. Information asymmetry which means the uneven prior information between the two parties

about the product is not dominant here because both parties sign the agreement after gathering sufficient information. Still there could be some factors which one party knew previously as an added advantage. There is a popular example regarding this theory named the house owner and tenant problem. It describes that if the owner and the tenant both have the same information still the tenant will be reluctant to use cost effective electric equipment if the bill is paid by the house owner. We have included this issue also in the analytical process. Incentive is there for the private partner in terms of capacity payment by the government and mainly by the power purchase agreement.

Analytical Framework

Dependent Variable	Independent Variable	Indicators
Effectiveness of the Project as PPP 1. Levels of sharing of public & private 2. Role of Public 3. Fulfillment of agreement conditions (production, COD) 4. Levels of satisfaction of public & private	Incentives	Land , Financial incentives (Capacity & Energy Payments, Exemption of taxes, subsidized fuel)
	Goal conflict	Coordination, legal dispute
	Agency cost	Information asymmetry ,Cost effectiveness

Table2.1: Analytical framework

2.9 Operational Definitions

Dependent Variable – “Effectiveness of the project as PPP”

Effectiveness is used here to measure the extent to which the project outcome matches with the contract and efforts of the partners to achieve that goal. It has four indicators - Levels of mutual involvement of private & public ,Fulfillment of production output ,Maintaining timeframe and Financial Partnership & Return. As it is a qualitative analysis, no mathematical indicator is mentioned to measure the effectiveness. To what extent a project is effective that can be identified using the concession agreement. In this case it is the Power Purchase Agreement. Standards

set in the agreement will be the base for dependent variable. For determining the factors, we have to first identify to what extent the project is effective and interpret the independent variables and data collected. For example, the agency cost will show that there was not uniform information and the agent usually had more information and used it against the principal's interest. Failing the timeframe can create mistrust and also costly to the principal (government) which can be a reason for failing of the project. Data will also show if there is weakness in the Power purchase agreement or the Concession Agreement. Breach of trust or lack of coordination can also be the factor for failing depending the severity of those. Here cost effectiveness and legal or institutional barrier are also taken into consideration. Thus from analysis and interpretation using principal-agent theory, the factors responsible for success or failure will be identified.

Principal

Though here the government is the employer of the private company but we can specify the relevant agency of the government as the Principal -that is BPDB.

Agent

In this case two private power producers- Quantum Power Systems Limited and Barakatullah Electro Dynamics Limited.

Contract

It refers to the main document of agreement(Concession Agreement) between the government agency and private company. In case of these projects the main agreement is Power Purchase Agreement or PPA. Some other agreements like Implementation Agreement (IA), Land Lease Agreement (LLA) and Fuel Supply Agreement (FSA) are there but not all projects have all these agreements.

Levels of sharing of public & private

Sharing is the basic thing of partnership. Sharing means engaging own resources and also share the risk. Resources include financial resource, human resource etc.

Role of Public

This means the role of the government prior to launching the project and also after the commercial operation start. To what extent this is regulatory role or partnering role that is important.

Fulfillment of agreement conditions (production, COD)

This is mentioned in the bidding and also in the Power Purchase Agreement. The government will monitor and pay according to the daily production which is the amount being added by the plant to the national grid. And there is scope for the government to fine huge amount of money to the private company for any shortcoming in this. COD means the time mentioned for Commercial Operation Date (COD) that is launching of the project ; the period for which the plant may be shut down in a year and the tenure of the project etc. are also important factor.

Levels of satisfaction of public & private

Satisfaction on the part of private partner usually depend greatly on financial return. Financial participation is an important sector for PPP and return on investment is the most important factor for Private partner. On the other hand, government satisfaction depends on consistency of performance of the plant and quality maintenance.

Incentives

It refers to the financial and any other incentives given to the agent by government. One way of protecting the principal's interest is making prior contract specifying the incentives.

Agency cost

It is the cost that the principal has to pay due to the agent's working for own interest. In this case the government's extra expenditure due to private company's activities for own interest are assumed to be agency cost. Here we mention three indicators for it – information asymmetry, cost effectiveness and unscheduled or extra payment.

Goal Conflict

It is a basic presumption of the principal agent problem that the agent will have its own agenda which is supposed to conflict with the principal's purpose. In this study we will see if there is any proof of that.

Land

Here land means the place where the project is located, ownership of that property and cost. It also include whether the government gives the land to the private partner with or without rent because this things add to the cost of the project and affect the profitability.

Financial incentives

Incentive is a major thing used to motivate the agent to work according to the principal's way. Incentive may include things other than financial ones. Here it includes Capacity & Energy Payments and Exemption of taxes and subsidized fuel. These incentives are mentioned in the policy papers which will be given to the private partner or agent. It is usually defined in the Power Purchase Agreement. The equation of payment is like this –

Tariff Payment = Rental Payment + Energy Payment (/kWh/month)

Rental Payment = Reference Rental Payment * Dependable Capacity

Energy Payment = Variable Operation & Maintenance Price + Fuel Price

The Reference Rental Payment is defined in each contract.

Information asymmetry

It will mean that one party (usually seller) has more information; so he takes more price. We will find if there was any information gap from the contractual agreement.

Cost Effectiveness

It is also an assumption in the agency problem that the agent will not use cost effective methods and equipments if the price is paid by the principal. Here we look into the equipments like generators and fuel for cost effectiveness.

Coordination

It will refer to the mutual efforts between the principal and agent to cooperate and communicate with each other for the implementation of the project.

Legal dispute

It refers to the process of settlement of any dispute, like correspondence, amicable settlement and filing of court cases. These processes are clearly defined in the agreement.

2.10 Conclusion

In this chapter the focus was on analytical framework and some relevant literatures were reviewed. The analytical framework is for analyzing the data according to the questions. Specifying the indicators is important because it will frame the findings. In the framework, core points from the theory are adopted; issues relating to institutional and legal framework will be covered in the next chapter. If we can take note of the factors that cause an effective PPP project specially in the power sector, the future projects in power and energy sector have the chance to become more successful.

Chapter 3

Relevant Acts, Policies & Frameworks In Bangladesh

3.1 Introduction

In case of Bangladesh, it is rather a gradual development process for private and public sectors working together. PPP can be useful to cover the lag in infrastructure, power and other sectors which can boost growth if there is a right framework. Initial power projects were BOO format; later other formats were adopted.

3.2 Chronology of Policy Formation - PPP & Power Sector

After the liberation war up to the 90s, government of Bangladesh had tried some other forms of amalgamation with the private sector like nationalization and privatization. An initial policy framework for PPPs was introduced in Bangladesh during the mid 1990's with the Private Sector Power Generation Policy that was enacted in 1996. It was the starting of PPP in a structured format. This initiated two early success stories in the power sector, with the 450MW Meghnaghat and 360MW Haripur Power Projects. The policy for encouraging partnerships with the private sector continued throughout the 2000's with the introduction of PSIG 2004 (Private Sector Infrastructure Guidelines 2004). The Policy and Strategy for Public-Private Partnership (PPP), 2010 (PPP Policy 2010) was introduced (replacing the PSIG 2004) to update the policy framework and incorporate best international practice to further boost the use of the PPPs across multiple sectors and to provide a clear and transparent regulatory and procedural framework. The Policy and Strategy for Public Private Partnership (PPP) 2010 and the Guidelines for Formulation, Appraisal and Approval of Large Projects, Medium Projects and Small Projects, 2010; all gazetted on August 2010 established the PPP Policy Framework for Bangladesh. These documents are updated and supplemented by specific PPP guidelines providing further details (for e.g. the Guidelines for Viability Gap Financing 2012).

Chronology	Policy/Act/Guideline/Reform
1910	The Electricity Act
1994	Inter-ministerial Committee Report on Power Sector Reform
1996 updated in 2004	Private Sector Power Generation Policy
1998	Policy Guidelines for Small Power Plants (SPPs) with private sector participation
2000	Vision and Policy Statements on Power Sector Reforms
2003	Bangladesh Energy Regulatory Commission Act
2003	Three-Year Sector Reform Road Map and Interim Pricing Framework
2004	Private Sector Infrastructure Guidelines
2006	Public Procurement Act (PPA)
2007	Policy Guidelines For Power Purchase From Captive Power Plant
2008	Policy Guidelines For Enhancement Of Private Participation In The Power Sector
2010	Power System Master Plan
2010	The Policy and Strategy for Public-Private Partnership (PPP Policy)
2010	Guidelines for Formulation, Appraisal and Approval of Large Projects, Medium Projects and Small Projects
2012	Guidelines for Viability Gap Financing
2012	Guidelines & Scheme for PPP Technical Assistance Financing
2015	PPP Act
2016	Power System Master Plan (latest)
2016	Procurement Guideline for PPP Projects
2016	Guidelines for Unsolicited Proposals
2017	Policy for Implementing PPP Projects through Government to Government (G2G) Partnership
2017	Bangladesh Power Development Board Act (Proposed)
Table: 3.1 Chronology of Policies (Source: own collection)	

3.3 Components of a PPP Framework

According to international standards not only an act or a policy is sufficient to form a framework ; there are lot of other things also. According to the Paper- “Toolkit for Public - Private Partnerships in roads & Highways” published by *Public-Private Infrastructure Advisory Facility (PPIAF)* which is a multi-donor technical assistance facility and part of the World Bank, -“A specific PPP framework would include -

- ✚ The legal and regulatory framework
- ✚ Procurement guidelines,
- ✚ Model PPP contracts, and
- ✚ Risk Management Framework,
- ✚ Financial guidelines (Tariffs, payments and Government support),
- ✚ The Project Cycle and the role of Advisors,

- ✚ Technical design and service standards,
- ✚ Institutional and Approvals Framework (Including Dispute resolution mechanisms)” (PPIAF,2009)

In another paper named “Private Solutions For Infrastructure In Bangladesh” , PPIAF gave some recommendations specifically for the power sector of Bangladesh –

“(i) increasing efficiency in the sector and eliminating financial losses—by adjusting tariffs, improving collections and reducing supply costs;

(ii) expanding coverage to unserved areas; and

(iii) improving targeting of fiscal support, primarily to soften capital costs for expanding coverage.

These recommendations recognize that achieving the government’s goals will require greater private-sector participation in the power sector within the context of an appropriate legal and regulatory framework.” (PPIAF,2003) Afterwards, efforts have been made by the government to improve the policy framework including institutional capacity which cover most of the recommendations mentioned above.

3.4 Development of Framework In Bangladesh

In this paper the development of PPP in Bangladesh are discussed by *four phases* of development which chronologically form *three frameworks for PPP*; this classification is done for the ease of description. The first phase was initiated in 1996 when a policy framework was introduced for Build-Own-Operate type power generating projects to enable the partnership in power sector. The second phase was started when government made effort to transfer the success of power sector to other sectors in 2004 by introducing Private Sector Infrastructure Guidelines to accommodate various other sectors like transport, health, telecommunication, renewable energy etc. These two phases were the part of the ‘Primary Framework for PPP’ in Bangladesh which is described as ‘framework 1’. At the third phase new Policy for PPP was introduced in 2010 reforming the earlier guideline which is the base for the framework 2 . In the fourth phase PPP Act was introduced in 2015 which formed the basis for current framework of PPP which we name framework 3. Following the act several guidelines are prepared.

3.5 PPP Framework 1 (1996-2009)

This initial framework was started in 1996 and lasted till 2009 prior to the enactment of PPP Policy in 2010. According to the position paper 2009 of the finance division -In 1997, under administrative control of the Economic Relation Division, Infrastructure Development Company Ltd (IDCOL) was established in order to promote private sector investment in infrastructure development. Infrastructure Investment Facilitation Center (IIFC) was established by the government to assist relevant ministries, divisions or agencies with formulation of project proposal and screening as well as to provide technical assistance. Bangladesh Energy Regulatory Commission (BERC) was established on March 13, 2003 . Later in 2004, Private Sector Infrastructure Guidelines (PSIG) was enacted which was the main structure of the framework. Private Infrastructure Committee (PICOM) was established under PSIG 2004. PICOM was responsible for project processing, expediting, monitoring, supervision and expansion activities. In 2007, a 5 year term Investment Promotion and Financing Facility (IPFF) of USD 60 million was set up in Bangladesh Bank to finance approved PPP projects. Later in 2008, policy to promote private sector participation in power sector was formulated. At this level the success was only limited to some small scale PPP projects. So, later reforms took place.

3.5.1 List of projects implemented under framework 1

Here is a list of PPP projects in Bangladesh based on the initial framework. Power being the dominant one along with few other sectors like- transportation, power, land port, telecom/ICT.

SL	Sector	Project Name
1	Power	Meghnaghat 450 MW Power Plant
2		Haripur 360 MW Power Plant
3		Summit Uttaranchal Power Company 44 MW Power Plant
4		Summit Purbanchal Power Company 66 MW Power Plant
5		VERL 34 MW Power Plant at Bhola
6		BEDL 51 MW Power Plant at Sylhet
7		34 MW Malancha Holdings Power Plant at Dhaka EPZ
8		Shah Cement 11.6 MW Power Plants
9		Thermax Trade Limited CNG Refueling Station
10		Three 22 MW Doreen Power Generations Ltd (2 in Tangail and 1 in Feni)

11		11 MW Doreen Power House & Technologies Limited at Mahipal, Feni
12		22 MW Regent Power Limited
13		Malancha Holdings Ltd.(44 MW Captive Power Plant at CEPZ)
14		Malancha Holdings Ltd.(35 MW Captive Power Plant at CEPZ)
15		Khulna 110 MW Power Plant
16		Summit Power 33 MW Power Plant
17		Haripur 115 MW Barge Mounted Power Plant
18		Westmont Baghabari Barge Mounted Power Plant
19	Renewable	IDCOL Solar Energy Program
20		National Domestic Biogas and Manure Program
21	Energy	250 KW Bimas Gasification Based Power Plant
22		50 KW Biogas Based Power Plant
23	Land Port	Hilli Land Port
24		Sonamasjid Land Port
25	Telecom.	Grameen Phone Network Expansion Project
26		Pacific Telecom Network Expansion Project
27		Ranks Tel PSTN Project
28		DNS Satcomm Satellite Earth Station Project
29		BanglaTrac International Communication Gateway Project
30		M & H Telecom Interconnection Exchange Project
31	ICT	Shoanchalok ICT Program
32	Health	Hemodialysis Centre at Chittagong Medical College Hospital.
33		Hemodialysis Centre at National Institute of Kidney Diseases and Urology (NIKDU).

Table 3.2: PPP Projects under initial framework.

Source: website of Finance Division, GoB

Institutional framework in PPP framework 1

Institute	Responsibility
Private Infrastructure Committee (PICOM) of 11 members	coordination, communication and encouragement for PPP related activities and placement of proposal to the cabinet
Board of Investment (BOI)	To provide secretarial services to PICOM
Cabinet Committee on Economic Affairs (CCEA)	Identification or approval of project which cost more than USD 5 million.
Line ministry	Identification or approval of project that cost below USD 5 million.

Table 3.3: Institutional framework under initial PPP framework

Source: website of Finance Division, GoB

Policy Documents

For framework 1, major policy documents were-

- i) Private Sector Power Generation Policy 2004
- ii) Private Sector Infrastructure Guidelines 2004
- iii) Policy Guidelines For Enhancement Of Private Participation In The Power Sector 2008

3.5.2 Private Sector Power Generation Policy 2004 (initially in 1996)

In the *Power Policy which was made in October 1996 and revised in November 2004*, government policy and modality of IPP projects was described along with financial incentives. In this policy it was mentioned that government need investment from the private sector to produce power and the industrial policy was amended to meet the need.

Objectives

1. Electrification expansion
2. Rapid implementation of Power Plants to cover the shortage
3. Supply electricity to pursue economic growth.

Background

At that time, three state-owned agencies under the Ministry of Energy and Mineral Resources were responsible for electricity development –

- i) Bangladesh Power Development Board (BPDB), responsible for generation and transmission of power in the country and distribution in urban areas except the area under Greater Dhaka;
- ii) Dhaka Electric Supply Authority (DESA), responsible for distribution of electricity in the greater Dhaka area including the metropolitan city of Dhaka; and
- iii) Rural Electrification Board (REB), responsible for distribution of electricity in rural areas.

At that point the Power System Master Plan projected 16500 GWh in 2000 and 24160 GWh in 2005. The required investment was taka 176 billion equivalent to \$ 4.4 billion; adding the amount for transmission and distribution the total was \$ 6.6

billion The government alone neither could produce the amount of electricity nor could afford to invest that money. The donor agencies were reducing the money; another factor was the recommendation of the paper on Power Sector Reforms by high level inter-ministerial group. All these factors pursued to open the window of private sector investments in this field.

Description

It is a rather short paper containing eight pages. The whole content is discussed under 8 headings; those are – introduction, GOB policy and the power cell, modality for implementation of independent power projects, tariff for bulk purchase of power, fiscal incentives, other facilities and incentives for foreign investors, issue of separate statutory regulatory order (SRO) and right of interpretation. In the starting , the importance of accelerating electricity generation to cope with expected economic growth was discussed and the then institutional framework was described. It specified that Independent Power Producers (IPP) projects will be implemented on Build-own-operate (BOO) basis. Minimum requirement for equity investment will be 20 percent. It also mentioned that The Government of Bangladesh may establish a Private Sector Infrastructure Development Fund (PSIDF), with the assistance of the World Bank or other aid agencies, which may provide part of the capital cost of the project. It mentioned two type of payments for the purchase of electricity produced by private sector- *Capacity payment* which is basically the fixed cost for establishment and *Energy Payment* which will cover the variable costs of operation and maintenance.

Key policy points

1. The projects were mentioned to be in BOO (Build-Own-Operate) mode.
2. The government created a power cell under the Ministry of Energy & Mineral Resources in 1995 to implement this policy. The main tasks of this cell is to facilitate power development by private sector, conduct reform, review tariff and formulate regulatory framework .

3. The IPP project evaluation , negotiation and awarding is done from this single cell.
4. In this power policy the financial arrangements were also defined which include establishing a fund for this by the government, raising capital through corporate bonds by the companies, issuing shares and tax facilities.
5. The structure of Implementation Agreement (IA), Power Purchase Agreement(PPA) and Fuel Supply Agreement(FSA) was also mentioned in the policy.
6. The tariff for power purchase was described also.
7. Major financial incentives included tax exemption for 15 years and exemption of import duties for equipment and parts upto 10% of original value for 12 years.

3.5.3 Private Sector Infrastructure Guidelines 2004

The *Bangladesh Private Sector Infrastructure Guideline 2004* was the base for framework 1.

Key features

1. It was mentioned that the government has adopted a policy of promoting the development of Infrastructure projects through private sector in fields like- telecom, power, port development, highway and expressway, tourism, airport, waste management etc.
2. It was mentioned that all projects will be classified into two categories- large and small infrastructure project.
3. The modes or forms of private sector participation and project selection was defined.
4. A national private infrastructure committee was outlined to coordinate, monitor and utilize the resources headed by Principal Secretary to the PM .
5. It was mentioned that private sector may submit proposal of projects through line ministry, Board of Investment or to this committee directly.
6. Other standards of feasibility study, risk allocation and contract document was also specified.

3.6 PPP Framework 2 (2010-2015)

Though the Bangladesh Private Sector Infrastructure Guidelines (PSIG) issued by the Cabinet Division in 2004 was the base guideline of framework 1 for implementation of projects under the PPP but that was no law passed by the national parliament. As a result, there were doubts and lack of clarity regarding the consistency between Public Procurement Regulation (PPR)-2003 and the private sector project development, approval and financing. Later the Public Procurement Act (PPA) 2006 was enacted by the national parliament. Public Procurement Act 2006 through section 66, which incorporated concessions agreement related provision, extended the government's legal jurisdiction to formulate independent PPP guidelines. After formulation of PPP Policy in August 2010, under this policy, the PPP Authority was established as a separate, autonomous office under the Prime Minister's Office to support line ministries to facilitate identification, development and tendering of PPP projects. A PPP Unit under the Ministry of Finance was also established.

Institutional Framework

Institution	Role
PPP Advisory Council (PPPAC)	Provide Guidance
Cabinet Committee on Economic Affairs (CCEA)	Approval of regulatory instruments. Approval for Large/Medium project. Approval of Viability Gap Fund received project, approval of incentives, Termination of concession contract.
PPP Office	Facilitating and promoting PPP
Line Ministry	Identification, Formulation, Appraisal, Procurement, Monitoring
PPP Unit, Finance Division	Financing Viability Gap Fund, Technical Assistance & Debt/equity
Planning Commission	Link components funding.

Table 3.4: Institutional framework under PPP framework 2

3.6.1 PPP Policy 2010

In 2010 government made the Policy and Strategy for PPP and also guideline for formulation, appraisal and approval of large, medium and small projects under this.

Objectives

1. To specify Project initiation and procurement process.
2. To identify, formulate, appraisal and approval procedure.
3. To define roles and principles of partnership
4. Define the institutional framework
5. Balancing risk and reward for public and private.

Key features

1. Among other basic things, three types of financial participation of government in PPP projects was classified as- Technical Assistance Financing, Viability Gap Financing and Infrastructure Financing.
2. Institutional framework for PPP was defined here including PPP Advisory Council, Cabinet Committee, Office for PPP, line Ministry, finance division and Planning Commission.
3. The PPP Advisory Council is headed by the Prime Minister and Ministers of relevant ministries are the members.

3.6.2 Guidelines For Projects, 2010

Basically 3 types of guidelines form this. Those are for large projects , for medium projects and for small projects.

Key features

1. The guidelines discusses about the procedures for identification, formulation , appraisal and approval of PPP projects in the major portion of it.
2. The guideline mentions each phase, the output documents or methods of each phase and also limits the phases to a certain time period. A summary of the steps with time specification (for large projects) are as follows –

Phase Indicative	Time Frame
Project identification	On-going
'In Principle' Approval by CCEA	2–4 weeks
Feasibility Study	8–20 weeks
Request for Qualification	4–8 weeks
Request for Proposals	8–12 weeks
Negotiation and Contract Award	4–8 weeks

Table 3.5: Timeframe for different phases of project implementaion

For medium and small projects, the steps are the same but time specification has small variations.

3. The output documents from each phase include (among others) list of projects qualified in that phase, Detailed feasibility study report, RFP report, Monitoring and evaluation report , periodic progress report.

3.7 Combined List of Projects Under Framework 2 and Framework 3

Projects under framework 2 and 3 are overlapping; some were initiated under framework 2 and continued in framework 3; others were initiated and continued both under framework 3. Listed below are those projects at different stages

SL	Project Name	Current Stage
1	Hi-tech Park at Kaliakoir.	Construction
2	Dhaka-Elevated Expressway.	Construction
3	Economic Zone 4: Mongla.	Contract to be Signed
4	2 Jetties at Mongla Port through PPP	Contract to be Signed
5	Economic Zone 2: Mirersharai	Contract to be Signed
6	Development of Integrated Tourism & Entertainment Village at Cox's Bazar.	Contract to be Signed
7	Oboshor: Senior Citizen Health Care and Hospitality Complex at Sreemangal, Sylhet Division.	Contract to be Signed
8	Construction of High-rise Residential Apartment Building for Low and Middle Income Group of People at Jhilmil Residential Project Dhaka.	Contract to be Signed
9	Construction of Satellite Township with Multi-storied Flat Building at Section 9, Mirpur, Dhaka.	Contract to be Signed
10	Development of Occupational Diseases Hospital, Labor Welfare Center and Commercial Complexes at Chasara, Narayanganj	Procurement
11	Development of Occupational Diseases Hospital, Labor Welfare Center and Commercial Complexes at Tongi, Gazipur	Procurement
12	Development of a Five Star Hotel in Chittagong.	Procurement
13	Establishment of Intl. Standard Tourism Complex at Existing Motel Upal Compound of BPC at Cox's Bazar	Procurement
14	Upgrading of Dhaka Bypass to 4 Lane (Madanpur-Debogam-Bhulta-Joydebpur).	Procurement
15	Naf Tourism Park (Jaliardwip).	Procurement
16	Hi-Tech Park in Sylhet.	Request For Quotation
17	Construction of Laldia Bulk Terminal.	Request For Quotation
18	Flyover from Santinagar to Mawa Road via 4th (New) Bridge over Buriganga River.	Request For Quotation
19	Establishment of 5 Star Hotel with other Facilities at Existing	Invitation For Bid

	Parjatan Motel Sylhet Compound of BPC Sylhet.	
20	Medical College and Modernization of Railway Hospital at CRB in Chittagong.	Invitation For Bid
21	Shopping Mall with Hotel-cum-Guest House on the unused land in Chittagong.	Invitation For Bid
22	Construction of multistoried Commercial cum Residential Apartment complex with modern amenities at Nasirabad, Chittagong	Invitation For Bid
23	Construction of a New Inland Container Depot (ICD) near Dhirasram Railway Station.	Project Development
24	Dhaka-Chittagong Access Controlled Highway.	Project Development
25	Shopping Mall with Hotel-cum-Guest House on the unused Railway land in Khulna.	Project Development
26	Improvement of Hatirjheel (Rampura Bridge)-Shekherjaiga-Amulia-Demra Road.	Project Development
27	Development of Economic Zone (EZ) at Jamalpur with Private Sector participation.	Project Development
28	Installation of Water Supply, Sewerage, Drainage System & Solid Waste Management System in Purbachal New Town.	Project Development
29	Establishment of Three Star Standard Hotel and other Facilities of Existing Hotel Pashur Compound of BPC at Mongla Bagerhat.	Project Development
30	Establishment of a Five Star Standard Hotel along with an Application Hotel and Training Centre on existing land of BPC at Muzgunni, Khulna.	Project Development
31	3rd Sea Port (Payra Port Coal Terminal)	Project Development
32	Development of Textile Mill at Demra, Dhaka.	Project Development
33	Development of Textile Mill at Tongi, Gazipur.	Project Development
34	Medical College & Nursing Institute and Modernization Railway Hospital of Kamlapur.	Project Development
35	Establishment of Sabrang Exclusive Tourism Zone.	Project Development
36	Medical College and Modernization of Railway Hospital at Saidpur in Nilphamary.	Project Development
37	Medical College and Modernization of Railway Hospital at Paksey in Pabna.	Project Development
38	New Modern Medical College & Hospital of 250 beds on the unused land in Khulna.	Project Development
39	Build and Construct Khulna Khan Jahan Ali airport and Special Tourism Zone (STZ) in Khulna	Project Development
40	The Innovation & Innovator Cell (IIC) development under Public Private Partnership.	Project Development
41	Construction of LPG Import, Storage and Bottling Plant at Kumira or any Suitable Place at Chittagong Including Import Facilities of LPG, Jetty, Pipeline and Storage Tanks	Approved
42	Construction & Operation of Inland Container Terminal (ICT) at Khanpur.	Approved
43	IT Village at Mohakhali.	Approved
44	Hemayetpur-Singair-Manikganj PPP Road.	Approved
45	2nd Padma Multipurpose Bridge at Paturia-Goalundo.	Approved

46	Water treatment plant in Khilkhet (Dhaka) under PPP	Planning
47	Expressway Aminbazar - Azimpur	Awarded
48	Supply, Installation and Commissioning of a Multi Mode Surveillance System at Hazrat Shahjalal International Airport, Dhaka	Tender
49	Kamalapur Railway Hospital	Planning
50	Sirajganj gas-fired power	Financial close

Table 3.5: List of PPP projects under framework 2 and 3

3.8 PPP Framework 3(2015-current)

This is the latest PPP framework in Bangladesh of which the base is PPP Act 2015. The act replaced the earlier guidelines. Several guidelines and policies followed the act. At this level the PPP Authority became the main institution to identify, develop, tender, facilitate finance, negotiate and monitor PPP projects.

3.8.1 PPP Act 2015

PPP Act 2015 replaces the earlier policies in this field. The formulation of PPP Act was started in late 2011 with the help of Asian Development Bank. PPP laws ,regulations and practicing in other countries were examined during the preparation of this law. Representatives from the public and private sector and multilateral partners were also involved. Stakeholder’s opinions were taken.

Objectives:

1. Facilitating the development of core sector public infrastructure and services vital for the people of Bangladesh.
2. The law prioritizes increased investment in infrastructure which is essential for sustainable economic growth.
3. It provides a legal framework to attract the interest of national and international private sector investors to join in partnership with the government in building and upgrading core infrastructure assets.
4. The goal of the Government is to ensure a more rapid, inclusive growth trajectory, and to better meet the need for enhanced, high quality public services in a fiscally sustainable manner.

Key Features

1. The PPP Act has been structured over 7 (seven) chapters.
2. The initial chapter is on preliminaries and definitions,
3. Chapter 2 describes the establishment of a Public Private Partnership Authority (“PPP Authority”).
4. The responsibility and authority of the PPP Authority is described in the act in details. It shall be neutral and independent in relation to all financial, administrative matters and in carrying out its functions. The activities of the PPP Authority will be overseen by a Board of Governors, which will be chaired by the Honourable Prime Minister. The Honourable Finance Minister will be the Vice Chairperson of the Board of Governors with the Principal Secretary to the Honourable Prime Minister acting as the Member Secretary.
5. Development of policy, regulations and guidelines, development of standard documentation, appointment of consultants and advisors, providing consents and opinions in relation to PPP projects, organizing seminars and training sessions etc will be conducted by PPP Authority.
6. Chapter 3 sets out the provisions for the identification and approval of PPP projects including national priority projects and incentives or financial participation of government is also mentioned. The Cabinet Committee on Economic Affairs (“CCEA”) is mandated to provide the in-principal and final approval for PPP projects.
7. Chapter 4 broadly covers the selection of a private partner to develop and execute PPP projects.
8. Chapter 5 of the PPP Act describes transparency issues by setting out provisions to deal with issues of corruption and conflict of interest.
9. Chapter 6 identifies some of the key issues that should be covered in a PPP contract. It also provides for land access rights and the right of the private partner to impose levy on users for accessing public services or purchasing public goods. Further, in order to enhance investor protection, it provides a clear dispute resolution process which includes amicable settlement, mediation and arbitration.

10. The final chapter sets out a number of miscellaneous measures covering issues such as grievance procedures, confidentiality, etc. The chapter also provides that the Policy and Strategy for Public-Private Partnership (PPP), 2010 (PPP Policy), is to be treated as repealed following the enactment of the PPP Act. However, it also provides exceptions in which cases the PPP Policy will continue to be applicable.

3.8.2 Procurement Guideline for PPP Projects

Guidelines are usually made following an Act. PPP Act 2015 replaces previous guidelines; so new guidelines were prepared to define process, timescales and institutional roles and responsibilities for the selection of a Private Partner in the phases of – identification, development, bidding, approval & award.

Objectives

1. To ensure that PPP Projects are thoroughly developed in order to maximize their potential for successful delivery and implementation;
2. To enable efficient processing of PPP Projects in order to minimize the time taken for development and delivery;
3. To establish a range of alternative Private Partner selection mechanisms that provide flexible options for the delivery of different types of PPP Projects;
4. To promote transparency & fairness maximizing the potential of selection.

3.9 Conflict in Institutional Framework for BOO Projects

Review of the PPP frameworks reveal that power sector BOO projects were mostly initiated during the first framework and some still continuing through renewal. The current framework does not abolish the institutions that were established during the initial framework; rather the BOO projects are monitored under by those institutions like IPP Cell in BPDB and IDCOL. But newly taken projects are monitored by PPP Authority and line ministry. So there exists an institutional framework conflict for PPP in Bangladesh as both system exists simultaneously. The initial framework was not based any law or even policy and later the activities were accommodated under public procurement; so the legal validity problem also was obscure for early projects.

3.10 Power System Master Plan 2016 (upto 2041)

With the help of JICA ,the government did a detailed survey and developed a master plan titled – ‘Power System Master Plan 2016’ for the gradual solution of the power crisis. JICA, aims at assisting Bangladesh in formulating an extensive energy and power development plan up to the year 2041, covering energy balance, power balance, and tariff strategies. The latest master plan was made in 2016. Policy and vision of government, different sources of power like LNG, natural gas, coal, oil, solar etc are discussed in this master plan.The earlier master plan was made in 2010.

Background

The main source of energy is natural gas in Bangladesh. In the previous master plan energy source diversification and reduction in relying on gas only was pointed due to the probable decrease of gas supply; but that hadn't been implemented. So review was needed from the earlier master plan to accommodate the exponential increase of oil based rental power plants and development constraints of domestic primary energy. Another issue for preparing the Power System Master Plan 2016 was to accommodate the hydro power as an important issue due to the government's renewable energy promotion policy.

Major Policy Points

Some important constraints were mentioned in the master plan like the private plants don't have any binding for preventive maintenance works which is a shortcoming of the legal framework and stopping the plant and pursuing maintenance works is not possible because it will increase the shortage of power production. On the other hand public plants cannot buy necessary spare parts in advance for lack of money due to low tariff. JICA not only helped the government to formulate the master plan but also gave loans for constructing gas (combined cycle) , coal and hydropower based power plants , expand the transmission and distribution lines , developing renewable energy and technical assistance of which master plan is a part. The government's own planning to become a developed nation by 2041 and the PSMP 2016 are very much inter related because uninterrupted power supply in

the precondition for economic development. Moreover, the power sector will be required to cope with the changes of industrial structure in line with the economic growth as expected in order for Bangladesh to join the developed nations. In addition, maintaining quality is also important comparing with other countries. The master plan also covers the energy sector and describes the interface between power and energy sector.

Five viewpoints were the base for the master plan –

- 1 . Enhancement of imported energy infrastructure and its flexible operation
- 2 . Efficient development and utilization of domestic natural resources (gas and coal)
- 3 . Construction of a robust, high-quality power network
- 4 . Maximization of green energy and promotion of its introduction and
- 5 .Improvement of human resources, mechanisms related to stable supply of energy.

The Sustainable Development Goals (SDG) number 7,9 and 13 are linked in the plan. The study covered estimating future scenario of economic development, energy demand forecast, power supply master plan, analyze the cost and financial conditions and also the impact analysis of the tariff on national economy. In particular, the roadmap to establish the power plan is also mentioned.

BOO Projects

All the rental power/IPP's projects fall into the category of short term solution only. In the mid term government will implement more coal and imported LNG based plants and also renewable energy like solar power. In the long term the solution will be nuclear plant and enhancement of solar power systems. But this short term projects are being delayed due to the failure of timely implementation of the medium term phase. It is assumed that the oil based IPP plants will be extinct with this plan .

Source of Power

In order to maximize the 3E value (the total of the economic, environmental and energy security values) of the power source composition , a portfolio consisting of well-balanced proportions of gas, coal and other power sources is required. The increase in daily demand is projected to be from 10,000 MW to be more than 50,000 MW in 2041. The power development plan is prepared considering these things. As source of power, oil will be gradually reduced and other sources will be the sources of production like nuclear, coal, LNG and imported power. The investment cost for the use of renewable energy, which is larger than that of conventional energy sources, is expected to reduce in future with technological advancements and the gradual increase in the use of renewable energy. The potential of renewable energy sources in Bangladesh (solar, wind, biomass, biogas, waste, small hydro plant etc.) is 3,666 MW daily. In case of nuclear plant the first unit should start operation by 2024 with capacity of 1200 unit and the master plan mentions the implementation of six units gradually. In this field the safety issue and fuel cycle management is the vital issue. Very recently a contract has been signed with the German company Siemens with credit from the German government for 3600 MW LNG plant.

Among critical issues, exploring the natural gas efficiently is very crucial for Bangladesh . For this issue, several recommendations are done in the master plan; those are –

- 1) In order to attain efficient and economical development of domestic gas resources, introduction of technologically advanced and financially sound IOCs is considered very important. Policy and legal framework should be reviewed and changed.
- 2) Acquisition of energy resources from overseas is necessary (Mid/Long Term)
- 3) Gas Use Efficiency to be enhanced to the international level with the use of the best commercially available technology (Short/Mid Term).

Short/medium/long term targets

In the Power System Master Plan 2016 the targets are mentioned as follows-

i) Short term (up to 2020)

- ✚ Capacity building for MP revision
- ✚ Collaboration between organizations for power and energy master plan
- ✚ Periodic rolling revisions for milestone master plan
- ✚ Comprehensive statistical work function
- ✚ Introduction of KPI management
- ✚ Improvement in the investment climate
- ✚ Improvement of PPA
- ✚ Reinforcing tax exemption for FDI
- ✚ Prompt procedure
- ✚ Financial credit approval by international organization
- ✚ Eliminating rolling blackouts
- ✚ Reform of O&M of power plants and revision of electricity charges

ii) Short-to medium-term (up to 2025)

- ✚ Breaking away from the dependence on costly petroleum and rental power generation
- ✚ Promotion of PPP investment in power generation projects
- ✚ Reform of O&M of power plants and revision of electricity rates

iii) Medium-to very long-term (up to 2041)

- ✚ Establishment of reliable large-scale base power sources
- ✚ Promotion of PPP investment in power generation projects
- ✚ Reform of O&M of power plants and revision of electricity rates
- ✚ Realization of the best mix of power sources with high 3E (economic, environmental and energy security) values

We notice that in the medium and long term , PPP investment has been emphasized even more.

3.11 Overall Policy Level Shortcomings in Bangladesh

It is mentioned earlier (in 3.3) that a PPP framework should have several components of which the current framework in Bangladesh seems to cover all aspects except - separate 'risk management framework' and 'technical design and

service standards'. PPP website has other ingredients like project proposal format, approval procedure, sample contract etc. Another Problem found from the analysis of the relevant acts and policies that special policy level shortage for – 'Power Sector PPP' is there. The Power System Master Plan 2016 has the future plan for more involvement of private sector in the projects but it does not describe how it will be. The requirement for special policy is that BOO projects fall under PPP but the current PPP policies fail to clearly accommodate those.

In a paper named *The State of the Governance in the Power Sector of Bangladesh: Problems and the Way Out* published in 2007 by Transparency International Bangladesh (TIB) it was mentioned that there were "Limitation and Ineffectiveness of the Electricity Acts" and the reasons for policy level failure were also mentioned in the context of that period. The major reasons for governance failure were mentioned as – "Limitations and malpractice within the procurement process, Inadequate financial capacity, Constraints and inefficiency in reform measure, Conditional loans from International Financing Agencies and Its Effectiveness, IPP policy and Its Inequality and Ineffectiveness of Bangladesh Energy Regulatory Commission" (TIB,2007). The policies, acts and guidelines described in this chapter are mostly prepared after 2007. With the PPP Act 2015 and guidelines followed by the act, the scarcity at policy level has been covered to a great extent.

3.12 Cross-country Comparison

World Bank has recently published a paper in 2017 evaluating 82 countries across the world taking some countries from each region which include Bangladesh, named 'Benchmarking PPP procurement: Assessing Government Capability to Prepare, Procure and Manage PPPs'. In the context of those 82 countries, the findings on PPP framework is – "The 82 economies reflect a range of regulatory frameworks and institutional arrangements for PPPs. All have in place specific frameworks for regulating PPPs, with 71 percent either having a concession or a specific PPP law (25 percent of which coexist with a concession law), 11 percent having PPP guidelines or policies, and the remaining 18 percent resorting to the general procurement law to

govern their PPP contracts. Although regulatory frameworks may differ, the fact that an economy uses a general procurement law does not prevent it from doing PPP projects. In fact, 13 out of the 15 economies that use general procurement law had committed investments in PPPs in the past five years. PPP units are very common (85 percent of the economies measured have them), but only 16 percent of them play a leading role during the PPP procurement phase by for example conducting the tendering process.” The 82 countries included Bangladesh; but we see that Bangladesh is clearly in a better position in terms of PPP framework than most other countries because Bangladesh has PPP Act, relevant guidelines and policies, separate office that is ‘Public Private Partnership Authority which oversees(though not leading role) the tendering process in a PPP Procurement. So, comparing to other developed and developing countries of different regions of the world, the current framework of PPP is moderately well.

3.13 Conclusion

This chapter focused on policies, relevant institutes and chronologically shows the development in framework. It helps to understand the context of this study of power generating PPP Projects and also the two projects of study- where those fit in the framework and legal compliance etc.

Chapter 4

Methodology & Data presentation

4.1 Introduction

The fourth chapter is on research methodology and presenting the data. Justification of following certain methods for the study is discussed. Data collected from different sources are also arranged here according to the variables and indicators.

4.2 Methodology

This section focuses on the selection of research methods and approaches. Research methods and approaches, data collection techniques, data analysis methods are discussed here. This study is totally qualitative. Case Study method is used here. "The term case study usually refers to a fairly intensive examination of a single unit, such as a person, a small group of people or indeed a single organization. Case studies involve measuring and studying what is there and how it got there. In this sense it is historical. It can enable us to explore, reveal and understand problems, issues and relationships. The goal of the case study is to provide an accurate and complete description of the case. It is not useful in generalization rather useful in finding specific or rare phenomenon." (Aminuzzaman,2011)

As described in the method part of chapter 1, it is a comparative case study. This sort of studies are usually helpful to generalize the findings of causal questions or factors. The cases are two extreme examples of power project success and failure which are selected using deviant case sampling method. The prime sources of information were the interviewees and the 'Power Purchase Agreements' of both the cases. The selection of the respondents was purposeful which is common for qualitative method. It was also mentioned in the first chapter that fourteen semi structured interviews would be taken. One of the interviews was taken over telephone due to the inconvenience of the interviewee from one of the two companies.

4.2.1 Qualitative Research Method

In social research, researchers can use two common methods such as qualitative method and quantitative method. The justification of using qualitative method in this research is obvious. "It is considered that the application of qualitative research method is more noticeable in market study and business research but social research can also be effectively conducted by applying qualitative methods" (Yin, 2013). In this study in depth finding was important. "In-depth data analysis and observation are two major benefits of using qualitative research" (Creswell, 2014). As stated earlier, case study is about generalizing the findings, so case study usually involves qualitative method. "Qualitative research method is also necessary to for broader generalization of the collected data" (Strauss, 2008).

4.2.2 Semi-Structured Interview Guideline

Semi-structured interview guideline is a useful data collection tool for conducting qualitative social research. "Semi-structured interview guideline is helpful to conduct qualitative interviews and focus group discussion because it provides liberty in terms of the response of the participants" (Punch, 2013). Semi-structured interview guidelines were necessary in this study to explain the indicators, discuss the technical aspects. It was specially useful because PPP's academic issues were not familiar to personnel from the power sector. Three types of interview guidelines were made because the respondents were of three categories broadly; the bureaucrats and engineers both of who are government officials and the personnel from the private sector. The engineers of BPDB and power cell can answer technical questions which the other groups usually cannot. The Private sector can best describe their experience and problems. As it was in-depth interview, many points were discussed in response to the answers and other points were revealed also.

4.2.3 Case Sampling

Question may rise that what is the necessity of comparative case study as the research question is about effectiveness on PPP ground. The focus here is – power sector PPP; case studies of two projects generalize the findings for others. This is why one case study is not enough evidence to conclude. It can be found from the comparison of two cases. Again the cases are selected as IPP success and failure using deviant sampling method. The reason for this is to find the relevance of IPP success or failure with PPP relevance which was one objective of the study. As PPP perspective is different from mere power generation or financial success of the rental power plant or IPP, taking two deviant samples doesn't hamper the analysis rather it clarify the different perspectives of success as PPP Project and as a power project.

4.2.4 Unit Of Analysis

Unit of analysis means who or what is being studied; in other words the actual source of information. "The choice of proper unit of analysis may occur if the researcher can appropriately justify the primary research questions" (Yin, 2013). In this study, the BOO project is the 'case'. It has 'multiple unit of analysis'. Comparison has been done on 'general attributes', power purchase agreement and core PPP criteria.

4.2.5 Data Collection Techniques

Mainly in-depth interviews are used to collect data; but collecting data from private companies were more challenging because they have a tendency not to disclose business facts. Also data about success is easier to collect but to collect data about failures is more difficult specially if any company is part of the problem and also for going through long legal procedures. Content analysis was used which also reveal the validity of data found from the interviews. Secondary sources like newspapers may reveal some crucial facts but in research newspaper data validity is least.

4.2.6 Data Analysis Method

According to Saunders, Lewis and Thornhill (2009), there are several steps of analyzing qualitative data such as transcribing data, using electronically textual data including scanned documents, using inductive approach, data summarizing, data categorizing, data unitizing, and data structuring using narrative. Some processes are called finding codes; codes are frequently used words in the interviews. But some of these methods are more of statistical nature which is have similarities with quantitative procedures. So some of the mentioned methods are used in this study to analyze data.

4.2.7 Ethical Considerations

Ethical issues are very important for conducting social research and designing methodology. There are some useful ethical issues of research activities argued by Saunders, Lewis and Thornhill (2009). The following issues were taken into consideration.

- ✚ Consent of sharing information is taken from the participants of data collection process;
- ✚ Due to the presence of non-disclosure condition, data like the core financial data of the companies and some other data were out of reach.
- ✚ Privacy and confidentiality is ensured while providing data for the research;
- ✚ It is also assured to have voluntary nature of participation by the respondents
- ✚ The identity of the respondents are not mentioned directly which is important to maintain the anonymity of the respondents.

4.3 Data Presentation

4.3.1 Secondary data on Power Sector

In this study secondary sources include contract papers, documents and relevant papers found in the official website of BPDB & power division, policy documents,

articles etc. This study starts with the state of power generation and PPP in Bangladesh. Before going to the case analysis, basic idea about the power sector could be useful. In 1998 Power Division was established under the Ministry of Power Energy and Mineral Resources (MPEMR) and the institutional framework for power sector was like this at that time –

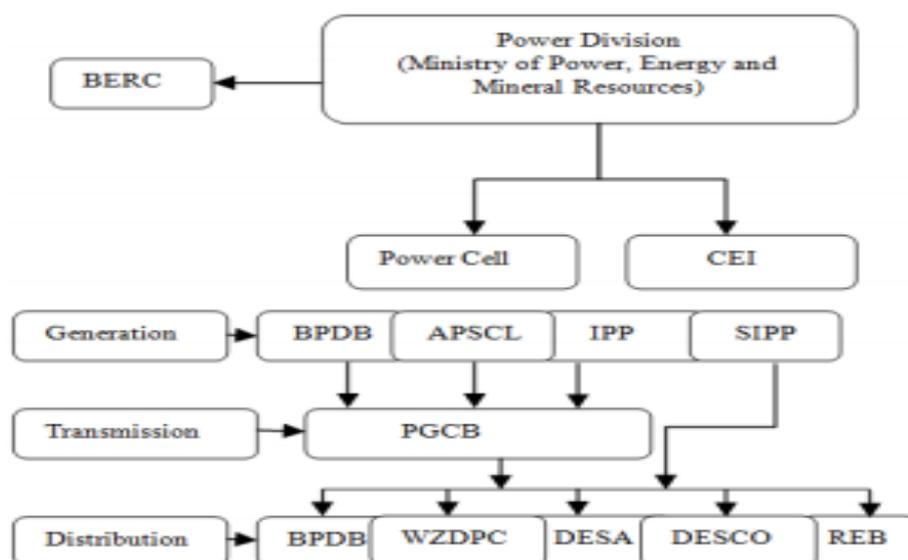


Figure 4.1: Institutional framework of Power Sector.

Source: ‘Bangladesh Power Sector Reform and Multi-Dimensional Reflections’ (Gupta et al.,2012)

From the website of Bangladesh Power Development Board the present installed generation capacity (MW) by the power companies owned by government and private sector is found (as on 30 September, 2017)

Public Sector	Installed Generation Capacity (MW)
Bangladesh Power Development Board	4402
Ashuganj Power Station Company Ltd.(APSCS)	1508
Electricity Generation Company of Bangladesh (EGCB)	622
North West Power Generation Company Ltd.(NWPGL)	718
Rural Power Company Ltd. (RPCL)	77
BPDB-RPCL Joint Venture	149
Subtotal	7,476 MW
Private Sector	
Independent Power Producers(IPPs)	3245
Small IPPs (BPDB)	99

SIPPs (REB)	251
15 YR. Rental	169
3/5 YR. Rental	1721
Captive Power Plant	2200
Power Import	660
Subtotal	8345 MW
Grand total	15,821 MW

Table 4.1: Power generation capacity

Here is a list of daily electricity production (by year) which shows how the generation capacity is increasing over the years.

Fiscal Year	Maximum Production (MW)
1995	2087
1996	2114
1997	2136
1998	2449
1999	2665
2000	3033
2001	3218
2002	3458
2003	3622
2004	3751
2005	3812
2006	3718
2007	4130
2008	4037
2009	4296
2010	4699
2011	3925
2012	4956
2013	4965
2014	6134
2015	6285
2016	7991
2017	9507

Table 4.2: Daily production by year.(Source: BPDB website)

4.3.2 Primary Data on BOO projects

From primary sources in BPDB , a key informant at IDCOL and another key informant from Public Private Partnership Authority it is found that the regulatory body for power projects are not PPPA; as the PPP office started working after PPP Policy 2010 and established by the PPP Act 2010 they monitor the projects taken during and after that period. The regulatory body is IPP cell of the BPDB which is located beside Bangladesh Secretariat. For monitoring these projects, there are three cells – IPP

Cell-1, IPP Cell -2 and IPP Cell-3, each headed by a deputy director from the engineers. Power projects are distributed among these cells. These cells monitor the daily production. There are provisions for penalty for keeping the production stopped beyond certain days and also for less production . BPDB has been divided into some companies like WZPDC, DPDC, PGCB , REB etc. A key personnel from the Power Division claimed that the decision making process is to some extent done by these companies; some matters of government involvement are only forwarded to the Ministry. He also mentioned that from the experience of the rental projects government has moved to IPPs that are lengthy in tenure (usually 15 to 20 years) which is now considered the lifetime of the plant. He also told that in many cases government doesn't contract with foreign companies ; rather the local companies make agreements with the government and they take investment from some foreign companies. In some cases government makes direct agreement with the foreign company. A deputy secretary from the power division also told that the government has already made a shift from rental plants to IPP. The major differences of Rental and IPP are in few areas like fuel, set up time, tenure etc. Usually rentals use oil, can be set up within few months and have contracts for five years. One engineer from the power cell claimed that these rental plants were originated to supply electricity during wartime with portable facility. The deputy secretary from ministry also added that ministry and government are gradually gaining experience and skill in negotiating the contracts; the contracts which would cost per unit much more now costing around 12 taka due to negotiation.

One director of the IPP Cell told that government is still working on the plan for future growth in this sector including matters like limiting PPP projects to certain (below 50) percentage of the total power generation, adoption of fuel source like LNG , Coal etc. Primary sources from the private companies told that there is usually three stage bidding process- short listing, technical and lowest quotation ; but current government make most projects in one bidding for reducing the time. Major challenges include having land in suitable place and getting the site clearance . The site has to have certain facilities like fuel transportation etc. Sometimes

government changes law afterwards which can be a problem. Another problem can be preparing the initial papers.

4.4 Comparison of two cases

4.4.1 General attributes

Comparison is being done in general attributes, power purchase agreement and by the indicators of the analytical framework which is based on 'PPP criteria'. Before going to the data about the indicators of the dependent variable let us have a look on the basic difference of the two projects of case study-

Point of Difference	QPCL Project at Noapara, Jessore	BEDL Project at Fenchuganj, Sylhet
Investors	Otobi Ltd., Shantou Sez Gas Turbine Power Plant Co. Ltd., East Base Investment Ltd. And Supreme Marketing Co. Ltd.	Local and Non Resident Bangladeshis
Capacity in contract	105 MW	51 MW
Bidding	Unsolicited proposal	Competitive bidding
Fuel	Furnace Oil	Gas
EPC Contract	Tellhow SCI-Tech Co. Ltd., China	Self (saves money).
Tenure of Contract	5 years	15 years
Source of fuel	Import by BPC. low capacity of fuel reserve at plant location(only 2500 tonnes for 10 days-)	Jalalabad gas field, Sylhet . Contract was made for 15 years gas supply.
Strategic importance of plant location	No strategic advantage. Land provided by government without rent. Newspaper reports reveal security problem, theft etc.	Own land. Near two large Government power projects availability of National Grid Line, Gas Transmission Center, River.
Generator & Supplier	8 Nigata & 5 NKK engines supplied by EPC Contractor Tellhow SCI-Tech Co. Ltd., China.	19 of GE Jenbacher, Austria. Direct purchase.
Prior experience	None in Power sector. Main business in furniture sector in local market and exports .	None in Power sector. Management team having experience in diversified sector.

Table 4.3 : Comparison of the two Projects

4.4.2 Comparison of the two Power Purchase Agreements

In a venture of PPP there are certain degrees of involvement for private partner like build-own-operate, build-operate-transfer, design-build-operate, service contract etc. which were mentioned earlier. In case of power generation according to government policy all projects are BOO that is build-own-operate basis. Primary data from Summit Power and IPP Cell reveal that there are usually three agreements done in this sort of Power projects – Power Purchase Agreement (PPA), Land Lease Agreement (LLA) and Implementation Agreement. The first one is a must and the latter two is done in accordance with the need of the project. If land is not provided by the government, then LLA is not done; initially Rentals had mostly PPA only but later IPPs mostly have IA also.

Both the power purchase agreements are almost similarly arranged; because it was mentioned in the power policy made by the government that model agreement would be produced by the government to save time and efforts. The PPA with Barakatullah has 22 sections whereas the QPCL PPA has 26 sections with one deleted section (number 24). The three extra sections contain about import controls – right to import, customs clearance and export and re-import; then site for the project - because the land of QPCL is provided by the government and the last one about fuel agreement. Barakatullah used gas, so they had a gas supply agreement with Jalalabad Gas Transmission and Distribution System Ltd. (JGTDSL). Among the common sections first one starts with the agreement part headed “Rental Power Agreement” describing the two parties and preconditions. After this the definitions are given but mentioned in the end that those are for convenience only and will be ignored as part of the Agreement. Other common sections include termination of contract conditions, warranties and other terms of agreement. After those procedures in pre-operational period were discussed like permits, licenses and approval, documents to be submitted, company progress report etc. After that sections include commercial operation test and what will happen if there was failure or delay in commercial operations. After these sections management issues like control and operation of the facility, joint coordination committee, interconnection

facilities, metering, billing and payment, insurance and liability were discussed. Then force majeure events, taxes, environmental regulations, legal settlement of disputes, notices and miscellaneous provisions were mentioned. The PPA ends with some attachments like functional specifications, technical limits, commissioning and testing, interconnection and transmission facilities, metering system, financial security, reference tariff which was submitted during bidding process, reporting and finally GOB approval. For the two projects in study, other agreements like land lease agreement, implementation agreement and fuel supply agreement are not done; all are included in the Power Purchase Agreement.

4.5 Dependent Variable

In this study the dependent variable is – ‘Effectiveness of the project as PPP’. Here we are judging the project by the extent it conforms to the criteria of PPP. It has four indicators which originates from the definition and attributes of PPP. Those are-

1. Levels of sharing of public & private; 2. Role of Public; 3. Fulfillment of agreement conditions (production, COD); 4. Levels of satisfaction of public & private

4.5.1 Levels of sharing of public & private

The sharing is a core feature of PPP which is absent here because the risk is on the agent, finance is also agent's. IDCOL, on behalf of the government arranges the loans only but no financial participation by the government. PPP Act 2015 defines the fields where the government can finance in a PPP project; those are- financing in technical assistance, viability gap, loan & equity and financing in linked components but these projects were taken earlier to enactment of PPP Act 2015. From interviews it was found that transfer of the public good (like BOOT) after a period (example- flyover) is not happening for BOO projects. Some respondents mentioned it to be a reason for the projects not falling under PPP criteria. But that is not the criteria of PPP and BOO is a form of PPP.

4.5.2 Role of Public

It is found that in case of power sector projects government acts mainly as regulator after launching the project. In PPP project government is supposed to become the partner but here regulatory role is dominant. On the part of government there is difference in the role before and after project launching commercial operation. It is mentioned in the Power Purchase Agreement that before starting these projects government will help to manage all sorts of permissions, legal documents etc. on behalf of the private partner. Primary data reveal that in practice it does not happen because those relevant agencies are not under the power ministry. In both cases key personnel from the companies told and also one director of IPP cell confirmed that – after starting operation, government becomes only the ‘sole buyer’ of the produced electricity and supply of the fuel is done by other agencies of the government like BPC or JTCL etc. Operation, maintenance and all other matters are on the private partner.

4.5.3 Fulfillment of agreement conditions (production, commercial operation date)

There are rental or IPP projects which failed partially or to a large extent to fulfill the electricity production benchmark mentioned in the agreement. As for the two projects of study , the Noapara project of QPCL failed by huge margin . It was supposed to supply 105 MW to the national grid everyday. From secondary sources it is found that it supplied 15 to 20 MW . In case of the project of BEDL it is quite okay and satisfactory that is confirmed by key informant from IDCOL and also the company personnel.

Secondary sources reveal that QPCL began commercial operation 18 months after the contract signing instead of nine months. The contract allows Quantum to keep its plant shut for 876 hours (or 36 days) in each contract year, but it remained most of the time out of operation. On the other hand the project of BEDL started test operation on 10 th October 2009 and Commercial Operation on 24th October 2009. It was supposed to start operation from 1st January though. After COD it continued successfully.

4.5.4 Level of satisfaction of public & private

In case of the Quantum's project both party are dissatisfied. Quantum couldn't repay bank loan & fine (1000 million bdt + \$34.2), then filed case to hinder the payment of fine. In case of Baraka Power, both party seems satisfied; one proof is their next project of Baraka Patenga Power for which they got huge loan from Bangladesh Bank. Their loan repayment is also satisfactory which is confirmed by IDCOL source.

From a private partner's perspective the most important factor in a project is its profitability or return on the investment. But these projects have only one buyer by the agreement that is the BPDB or government; so only way to profit is to be able to sell regularly and get the money. In case of the QPCL, it had two power project with the government – a 110 MW project in Bheramara and a 105 MW project in Noapara, Jessore. It was found from secondary source that the two plants were penalized over the years \$33.5 million and \$ 34.2 million totaling to \$67 million and for delaying the Bheramara project alone they were fined \$11.4 million but paid only \$8.2 million. The company had huge bank loan which it couldn't pay- information of loan repayment was confirmed from IDCOL source. IDCOL financed the Noapara project with bdt 1000 million. But the company couldn't repay the loan. On the other hand, Baraka power is financially and overall a success story. They had a strong financial backup and was founded by some NRB (Non Resident Bangladeshi) businessmen who belong to Sylhet. From primary data from company personnel and IDCOL confirmed the profitability of the project. They also took IDCOL finance of \$ 4 million. This company converted from private to public limited company on 25th September 2008 and later on 6th April 2011 released Initial Public Offering (IPO). These information are available in company website, financial statements and company shares have strong condition in the Dhaka Stock Exchange. They achieved ISO 9001:2008 certification from Moody International for quality management system and Credit rating Long Term AA2 by CRAB. Another indication of their financial condition is getting loan of USD 23.03 million for their next project from the Bangladesh Bank under the Investment Promotion and Financing Facility (IPFF) of World Bank Fund.

4.6 Independent Variables

4.6.1 Incentives

Incentive is mainly financial. Here land and fuel issues are also discussed.

Land

From the Power Purchase Agreement, it is found that between the two projects , one had the land provided by government without any rent on the condition that it will not be used for other purpose; that is the Noapara project of QPCL. It is found from secondary data that this location had some disadvantages like fuel transport and reserve problem and security problem also having incidents like theft and fire.

The other project at Fenchuganj of BEDL was in their own land and important personnel of the company confirmed that government did not pay for the land separately but the capacity payment was enough for the company to cover that expenditure. He added that for any rental or IPP project land is one of the crucial factors to start the plant appropriately. For the Fenchuganj project, selection of the location was important because it had some strategic advantages which are described earlier.

Financial Incentives

It consists of a number of advantages provided by government like Capacity & Energy Payments, Exemption of taxes and duties etc. In case of oil based plant, government is paying market price for oil to the company , so government also indirectly giving subsidy because all oil is imported by government and subsidized.

Capacity and energy payment

Monthly payment done by BPDB to the private company comprises of two sorts of tariff – capacity or rental payment and energy payment. It is calculated as follows-

$TP_m = RP_m + EP_m$; where TP_m is the monthly Tariff Payment; RP_m is the monthly Rental Payment and EP_m is the monthly Energy Payment.

$RP_m = RRP * DC$; where RRP is the Reference Rental Price which is set \$9.492/kW-Month In case of QPCL project and BDT 494.13 for BEDL project. DC means Dependable Capacity of the facility.

$EP_m = VOMP_m + FP_m$; where VOMP_m is the Variable Operation and Maintenance Payment for month which is \$.0058 for QPCL project and 0.20 for BEDL/kWh/Month and FP_m is the liquid fuel payment for month which is BDT 5.7615 for QPCL project and BEDL BDT 0.8480 for /kWh/month.

The reference rental payment was part of the bidding proposal. We notice that in all category the price of Quantum is much higher than that of Barakatullah. If the electricity is not being produced, still government has to pay the company the rental price. From interview of an ex power secretary it is found that prices were re-negotiated with private power producers during contract renewal which saved the government more than five thousand crores taka.

Subsidized Fuel

It applies to imported oil by BPC . So using oil for any purpose govt. has to subsidize that. Recently price of petroleum has fallen in the world market. But when these projects ran there was high price in the international oil market ; which govt. would import , subsidize and supply. So by supplying oil to QPCL or any other project , govt. has to indirectly give huge subsidy for fuel.

Exemption of Tax & Import Duties

To encourage the private investors in the power sector some tax incentives were provided. The company personnel from Barakatullah , Summit and Quantum all admitted that these incentives are enough to motivate the private sector. These were specified in the Power Policy 2004. It was mentioned that the private power companies will get tax waiver for 15 years. There will also be exemption of import duties upto 10% of the value of total plant which will continue for 12 years. They can join the capital market and give dividend to shareholders, their foreign investors will also get tax waiver in Bangladesh. The companies usually have an obligation to get

insurance from the government insurance companies named Shadharan Bima Corporation but in this case the private power producers are free to get insurance coverage according to their need and choice. They are also exempted from paying stamp duty for instruments and deeds. They are also eligible to get other local and foreign investments. All other facilities that are given to industrial sectors will also be given to power generation as it is declared as industry.

Some additional tax exemptions are there for exclusively the foreign investors like tax exemption for technical assistance, technical know-how, royalties, interest on foreign loans etc. Other permissions include no restrictions on issuing work permits to foreign nationals, Facilities for repatriation of invested capital, profits and dividends, Provision of transfer of shares held by foreign shareholders to local investors, local currency taka would be convertible for international payments in current account , re-investment from dividend will be considered as new foreign investment, foreign companies will get similar loan facilities like local ones. So it is obvious that Non Resident Bangladeshi investors like Barakatullah could take the additional advantages that local companies like Quantum could not take.

This incentives were applicable to both the project of QPCL and BEDL . Both the companies had foreign investors ; but Barakatullah seems to have a much better approach for taking these advantages provided by the government. BEDL went for issuing Primary Shares to the stock market and thus gathered more fund. It was allowed to raise local or foreign investment with consultation with the Board of Investment. But the other additional taxes exemption and investment friendly facilities or incentives given to foreign investors was capitalized by BEDL.

4.6.2 Goal Conflict

This Independent Variable has two indicators – coordination and legal dispute. Goal conflict is a basic assumption in Principal-agent theory which hampers the project. The agent's goal is usually profit maximization. It is evident in the project of Quantum that the malfunctioning machinery may be the outcome of goal conflict. In

case of BEDL some minor matters were found like govt. being reluctant to negotiate the change in tax provision in favor of BEDL.

Coordination

The relation between coordination and conflict is reverse; lack of coordination usually lead to the rise of conflict among other reasons. In the power purchase agreement a committee was formed for coordination having three member from each side headed by a personnel from government. They were assigned for implementing the PPA prior to launching the plant and don't have any authority to go beyond the PPA in any matter.

But it has a significant finding from personnel of Summit power, Barakatullah and Quantum and also from IPP Cell that after launching the project , government acts mainly as buyer; and the scope for formal coordination is very limited; communication happens mainly on personal basis. BEDL reported no major problem in coordination; but Quantum clearly had problems as they did not respond in the initial letter from BPDB, could not amicably settle the issues, eventually the matter went to legal procedure.

Legal dispute

Personnel from Summit Power claimed that these incidents are very rare; and there is scope for amicable settlements. So in very exceptional case it goes upto the legal procedure . Barakatullah has two projects ; one in Fenchuganj and the other one in Patenga. They had no major issues of dispute. Another forum for settling the disputes is their association of private power producing companies who discusses any matter if necessary to the relevant authority .

But the issue with QPCL is exceptional . It was found that they filed case and barred the government from collecting their huge fine due to delay and less production. They even forced BPDB legally, so BPDB couldn't collect the fine but had to pay Quantum for power purchase . It was also found from secondary sources that after Quantum some other defaulter companies also barred government legally from

collecting fines; but eventually those projects were renewed because they were in a better condition than Quantum. In interview of an important personnel from Quantum , he claimed that though their both projects are shut down, those are in the process of being renewed through negotiation. There are clauses in the PPA on how to tackle the dispute. But it is the sign of failing the coordination and ultimate form is legal dispute.

4.6.3 Agency cost

It has two indicators. Information asymmetry and cost effectiveness .According to Principal-Agent problem, agency cost is the result of information asymmetry and the moral-hazard problem according to which the agent usually don't opt for cost effective methods or machinery because principal is paying.

Information asymmetry

A number of things have been found that falls in this category. Usually the agent has more information ; but in case of Quantum a two way asymmetry was found. Their planning and import of generators are evident of having information gap with government ; again they quoted low price which indicates the company (Quantum) had less information about the market. From the interview of personnel from IPP Cell 2 which monitors these projects, two major reason for the failure of the project of Quantum were found – old machineries and being inexperienced in this business which resulted in not managing the issues that came. Also from primary data from company personnel, the low price issue and inexperience issue were supported. So, a two way asymmetry of information is found in case of the Noapara project . Their Engineering Procurement and Construction (EPC) work was done by a Chinese company named 'Tell-how'; they are also partially liable because they were the supplier.

Cost effectiveness

In Noapara, Jessore project of Quantum the Engineering, Procurement and Construction works were done by a foreign company which was not cost effective.

The use of furnace oil can be considered in the category of moral hazard problem because govt. is totally paying the fuel cost where there is option for less cost fuel. Even the other project of Quantum is diesel run which is even costlier than the furnace oil. Their Rental Price is also much costlier than that of Barakatullah. On the other hand Barakatullah's plant is gas run which is cost effective. They had EPC works done by themselves; diversified experience of company owners might be helpful for this.

4.7 Summary of the chapter

Comparative case study has been done in qualitative method. Interview of 14 key personnel were taken and power purchase agreement and other relevant documents of both the projects were analyzed. Both the projects were mainly self-financed; only the arrangement of syndicated loan was done by the IDCOL which is a government agency. That is why sharing of finance is not taking place. As Baraka Power was formed including some NRB investors, they could avail some more tax incentives applicable for that category. Other than natural calamity, no other risk is covered by government; that is why risk is also not shared. After starting the commercial operation, government monitors production and pays the price; or fines if the production falls short. Both the projects delayed in the starting of their commercial operation. Baraka Power has maintained the production (51MW daily) according to the agreement ; but Quantum has failed tremendously, it produced nearly 15MW-20MW instead of 105 MW in agreement. Government has not renewed the project of Quantum; rather fined it and the dispute went to court. In case of Baraka Power government seems satisfied which shows in taking another project with them named 'Baraka Patenga Power'. Baraka purchased their own land; but land was given to Quantum for free – but they could not capitalize on the advantage. Comparing the tariff of both companies by the agreement, it is obvious that the price of Quantum was much higher than Baraka; additionally Quantum used oil which is a subsidized product. Two way information asymmetry is found in the case of Quantum not disclosing the information of their machinery prior to the agreement and quoting low price which is a sign of having less information

themselves. Their EPC(Engineering, procurement and construction) works were done by a foreign company which was not cost effective. Baraka shows no information gap and they did the EPC works themselves. Quantum could not coordinate with government which eventually became legal dispute. Baraka Power has well coordination with the government which built long term relationship.

4.8 Conclusion

The data is presented in comparative way as the case study is being done in a comparatively. Some technical data are there because it involves two power plants. Focus has been done to keep the data within the indicators of the variables.

Chapter 5

Findings & Policy Implications

5.1 Introduction

This is the final chapter of the thesis. It mainly answers the research questions; and also presents the key findings and analysis of those. This chapter also discusses how the findings can be used for policy related matters.

5.2 Objectives & Research Questions

There were four objectives and two research questions in this study. Objectives were-

1. To compare one financially successful IPP and one failure one;
2. To analyze the project attributes in compatibility with effective PPP criteria;
3. To find out the relevant factors that have impact on the project from PPP point of view.
4. To find out the inter-dependency of being successful PPP Project and successful IPP (Independent Power Producer) Project.

The research questions were –

1. To what extent the project is an effective or an ineffective PPP ?
2. What are the factors responsible for being an effective or ineffective PPP?

5.3 Answer to Research Questions

5.3.1 Effective or Not Effective

We studied two power projects as cases, one being successful as IPP and another being failure as IPP and tried to find whether those are effective from the perspective of public private partnership to answer the first question. PPP perspective was defined in the study by four criteria which were the indicators of the dependent variable; those are – level of sharing, role of the government, fulfillment of contract conditions and level of satisfaction of Public and Private from the

partnership. The key finding is that both the projects are *NOT EFFECTIVE*. It was found that the project of Baraka Power fulfills two criteria and the project of Quantum does not fulfill any criterion out of the four. The case samples were taken as the Baraka project as a financially successful IPP project. But it only complies to 50% of the criteria of an 'effective PPP' as defined in the analytical framework. We may then consider that, a financially successful IPP is not necessarily an effective PPP project. The other case that is the project of QPCL was taken as a financially non successful IPP project. That project too is also not effective from PPP perspective. But as the financially successful IPP complies with 50% criteria of PPP, the effectiveness of a PPP power project is to some extent dependent on being a financially successful IPP project; which was among the study objectives of this thesis. So an effective PPP power project primarily has to be a successful IPP project, then it has to fulfill other criteria.

5.3.2 Factors for being 'Not Effective'

The second question was to find the factors for being effective or not effective of the studied cases. As both the projects are not effective on the grounds mentioned in the framework, there are some reasons common to both project for being 'not effective'. And they are:

1. Sharing of risk, finances and other resources is not taking place. Sharing is one of the core differences of traditional procurement and PPP .
2. All power sector Build-Own-Operate projects being implemented in Bangladesh, have limitations as PPP project. The government's role is more of a regulator rather than being a partner. Primary data suggests that after launching the commercial operation of the project, government mainly becomes regulating authority.
3. The common problem is with the framework. Initial power policy had some deficiencies which were barriers for both the projects. Though it followed the BOO format but initially the efforts were not there to make the projects effective PPPs.

5.3.2.1 Exclusive Factors for The Case of Quantum

1. The project of Quantum was a case of failure in many ways. They could not supply electricity according to the agreement. As the Power Purchase Agreement describes the conditions of the project, not fulfilling the agreement conditions alone is the major reason for failure.
2. We see that satisfaction for Public and Private was out of question because the dispute went to court and no terms of settlements were reached by the parties.
3. Conflict in interest and consequently agency cost (financial loss) occurred in the project of Quantum due to their initial use of malfunctioning machinery.
4. All companies described the incentives to be enough ; Quantum claimed that their initial price was low and admitted that it was due to their lack of experience at that time. This finding from the primary data is self explanatory.
5. The inexperience of Quantum was a crucial factor; which is one sort of lack of information on their part or information asymmetry.
6. It is also found that Quantum got an added advantage comparing to Baraka Power in the form of free land from the government; however they could not capitalize on this advantage; they made small reservoir for fuel which was a barrier for the smooth operation of the plant. Poor judgment of strategic advantages is evident .
7. Lack of sound planning on the part of Quantum. EPC, location , fuel, Partners
8. Lack of financial management -IPO, Quality Purchase and not being able to take full advantage of the incentives.
9. Not adopting cost effective methods in selecting fuel; also in appointing foreign company for Engineering Procurement and Construction (EPC).

10. Failed to maintain coordination and become trustworthy

11. Adopted the approach for short term profit rather than long term approach.

5.4 General Findings from the analysis

As case study method is done to generalize the findings for similar other similar cases, some general issues regarding BOO projects, PPP and also Planning of Power generation come out from the study.

1. Adverse selection of the Private Partner

It is a common assumption of the agency theory that prior to the contract, selection of the private partner can be wrong which is termed as 'adverse selection prior to contracting'. As in the case for Quantum, the selection was obviously wrong; this can happen to other projects also. Lobbying and corruption also can lead to such wrong selection. Coordination is not a problem with other companies but a company in trouble often claims that there is coordination problem. Very few issues move to the court; here also wrong selection of company is the central problem. The companies with good track records in implementing PPP can be given rating points to have a better selection of private partner.

2. Goal Conflict

It is understandable that a private company will try to make profit. But in case of BOO contract government is keeping the room for sufficient financial benefit . A potential 'trouble project' has to be identified by the government before signing the contract. Several ways can be devised, like corporate intelligence, verifying their project proposal according to capacity and past record or experience.

3 . 'IPP success and 'PPP success'

It was one of the objectives of the study to analyze and find from the comparison - the dependency of 'PPP success' on the 'IPP success'. IPP success indicates the success of the Barakatullah Project as an IPP. The findings from the study show that

this project matches two criteria among the four; so the project can be said to conform to 50% criteria of PPP. A successful IPP is not equal to a successful PPP; but some dependency is being found. If the project is a failure as IPP then it must be failure as a PPP. Successful IPP should have some additional attributes to become a 'PPP success'. Those are mentioned before. The additional criteria are mainly dependent on the 'PPP framework' of the country.

4. Sharing of risk

According to the risk sharing method of Principal agent theory risk should be given to the partner who can manage the risk well. In BOO projects of Bangladesh , all risk (except natural calamity) is on the private partner. This should be modified.

5. Variation in performance

PPP projects including power projects are often seen to vary to a great degree in performance. From our study of two extreme cases, it has become obvious that approach and preparation to the business from the part of private is the reason for this huge difference.

6. Fine of high scale

The financial base for Bangladeshi companies are not too firm. BOO projects keep the scope for fine in favor of the government in million dollars which might be a cause for disaster if a company falls in early trouble. It could be difficult for the company to pay fine by millions of dollars for delay in commercial operation and then again get back to business.

7. Information asymmetry in reverse order

In case of the failure IPP project, asymmetry of information which is one partner having more information prior starting the partnership. Usually it is assumed in the Principal agent theory that the private partner will have more information than the government. In this case the private did not reveal some issues prior to the commencement of the project; but on contrary to usual, the private company had

lack of information significantly before the signing of the agreement. This was about the power generation business, own capability, management issues and price. Therefore, it is not always the public who has less information, it can be the other way round.

5.5 Findings Related To Policy

1. Financing areas are mentioned for a PPP project in the PPP Act 2015; it has not been integrated with the mode of financing for BOO project. Separate policy for BOO project is needed including the mode of financial participation of government according to PPP Act 2015.
2. In many countries the participation of government and private in power sector are synergic. The advantage of synergy from PPP can be obtained if utilization of resources, experiences and institutional framework can be done to the full.
3. PPP is a long term contract. Instead of comparatively short term rental projects, IPPs are being taken by the government. Long term relationship has to be emphasized.
4. Normally BOO projects are those whose lifetime are similar to the project period. In Bangladesh initially the rental power plants contracts were made for less period than the lifetime of the plant; afterwards, Independent Power Producers (IPP) projects become for longer period which are closer to the lifetime of the plant. However, BOO is a form of PPP worldwide and describing it not to be PPP only points to the *lack of academic knowledge of the relevant professionals*.
5. It was mentioned earlier that institutional framework for monitoring all PPP project from the same office is lacking. Projects taken under initial framework which are mostly power generating projects are monitored separately.

6. Consistency among the policy framework is lacking. We mentioned three framework or level of development of the PPP framework; but in practice it was found that government considered the initial framework and projects taken under that framework separately – not the same approach for the BOO projects as with projects taken later under PPP Policy 2010 or PPP Act 2015. PPP Policy 2010 did not inherit the early guideline which is Private Sector Infrastructure Guideline 2004.

7. Most government officials do not think the BOO projects as PPP; but the fact is that worldwide BOO is a form of PPP which was discussed earlier. This indicates the shortage of academic perspective.

8. Most of the projects are run with a local investor in the lead role. In the financial incentive package, there are some provisions that give more advantage to foreign investors; it can be a comparative disadvantage for local investors.

9. The power purchase agreement usually has a clause so that government is compelled to pay the rental payment while the production is not going on. It is a disadvantage for the government.

10. The Power System Master Plan 2016 which is the blueprint for the power sector up to 2041, mentions the plan of government to initiate more PPP power projects but does not have the specifications or format of those projects. Clearly, government concept of PPP project is not the same as current form of BOO.

5.6 Policy Implications

This study involves policies like Power Policy, PPP Act and Guidelines and Financial Incentives which is related to tax policies. The study adds to the existing literature about Power Sector PPPs in Bangladesh and finds out the partnership and regulatory perspectives of government in these projects including the weaknesses in managing and implementing these type of Projects. The study is very much policy oriented.

Firstly, the main policy implication of this study is the position of Build-Own-Operate Projects in the field of PPP in Bangladesh. The study finds out that there is lack of understanding about the concept of BOO projects among professionals; the study clarifies the position of these projects as PPP.

Secondly, the monitoring agency of all PPP project being Public Private Partnership Authority, these Power Sector Projects are monitored separately by IPP Cell and IDCOL. The PPPA is established by the PPP Act 2015. The Act does not mention about BOO projects ; also don't mention which sectors are included; So there is scope for ambiguity in PPP Act .

Thirdly, one of the most important point on the part of the government is not to make 'adverse selection of private partner'. For this purpose track record reference and objective judgment of the project proposal both are needed.

Fourthly, modifications is needed in the PPP Act, guideline is required for BOO projects, master plan has to adopt that guideline in terms of specifying PPP in Power Sector. Policies in Bangladesh are made very much with current need; not with long-term vision. This is evident in modification and enactment of several policies over the years and delay to make the PPP Act.

Fifthly, capacity building in the field of negotiation is required for ministry officials and other relevant government personnel to protect own interest. Understanding of academic perspective is very crucial for the officials who are working in the relevant ministries or regulatory agencies .

Sixthly, conforming to standards set worldwide, power sector project can have the synergy of partnership between public and private which is currently missing. It also demands flexibility in contract mechanism, risk allocation and funding according to the need of the specific project.

Seventhly, provision of high fine is a useful thing for the government but it can also lead to the financial damage of the private partner. It should be adjusted according to country situation.

Eighthly, adjustments of incentive package is needed for local investors who are usually the lead investors in implementing BOO projects.

5.7 Conclusion

The findings of this study is important because it points out the potential uses of the findings. Policymakers and relevant agency should address these issues to modify the relevant act, policies, monitoring mechanisms, contracting issues etc. to increase the effectiveness of BOO projects of power sector.

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Annex -1

Semi-Structured Interview Guideline for Bureaucrats

[This information will be only used for research so privacy and confidentiality is ensured]

Title: Public Private Partnership in Bangladesh: A Case Study Of Two Power Sector Projects

Name :

Designation:

Organization:

- 1.What is the state of PPP in the Power Sector?
- 2.How was PPP introduced in the power sector?
3. What is the structure of decision making about a project?
4. What is the procedure of taking a BOO project?
5. How the investment take place usually?
- 6.Is the financial arrangement okay for the government?
- 7.Does any coordination problem occur with the private?
8. How do government deal with influential private parties?
- 9.What is the evaluation of the two projects of Quantum and Baraka Power?

Annex -2

Semi-Structured Interview Guideline for Government Personnel (Engineers)

[This information will be only used for research so privacy and confidentiality is ensured]

Title: Public Private Partnership in Bangladesh: A Case Study Of Two Power Sector Projects

Name :

Designation:

Organization:

- 1.What is the state of PPP in the Power Sector?
- 2.What is the difference of IPP and Rental projects?
- 4.What are the main contents of a Power Purchase Agreement(PPA)?
- 5.How monitoring of electricity production is done?
- 6.What the government does if the production fall short?
- 7.What risks are covered by the government?
- 8.What is the role of government before and after starting commercial operation of the project?
- 9.Does any coordination problem occur with the private?
- 10.What is the evaluation of the two projects of Quantum and Baraka Power?
- 10.What were the reasons for failure of the project of Quantum?

Annex -3

Semi-Structured Interview Guideline for Personnel of Private Companies

[This information will be only used for research so privacy and confidentiality is ensured]

Title: Public Private Partnership in Bangladesh: A Case Study Of Two Power Sector Projects

Name :

Designation:

Organization:

- 1.What is the state of PPP in the Power Sector?
- 2.What is the current condition of your Project?
- 3.What are the contracts made for a BOO Project?
- 4.How does the government contribute as partner?
- 5.Are the companies satisfied with the incentives?
- 6.What are the difficulties from private company perspective?
- 7.Does any coordination problem occur ?
- 8.Was your company involved in any legal dispute with the government ?
- 9.Was there any gap of information?
10. How was the land and EPC (Engineering, Procurement and Construction) Contract taken?
11. To what extent the company is satisfied with the Project?