Sustainability Considerations in the Public Procurement: The Power Sector Perspective

Submitted by:

Sharmin Nahar Quadir
Student ID# 20282001
Course# PSM 667

Supervised by:

Professor Niaz Ahmed Khan Ph.D.
Vice Chancellor, Dhaka University &
Former Pro Vice Chancellor
Independent University, Bangladesh (IUB)

A thesis submitted to the Department of BRAC Institute of Governance & Development (BIGD) in partial fulfillment of the requirements for the degree of Masters in Procurement and Supply Management (MPSM)

Master in Procurement and Supply Management
Brac Institute of Governance and Development
Brac University
August, 2024

Declaration

It is hereby declared that,

1. The thesis submitted is my own original work while completing degree at BRAC University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

_____

Sharmin Nahar Quadir
Student ID: 20282001

Approval

The thesis titled "Sustainability Considerations in the Public Procurement: The Power Sector Perspective" submitted by Sharmin Nahar Quadir (Student ID: 20282001, Fall 2020) has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Masters in Procurement and Supply Management (MPSM).

Examining Committee:

Supervisor:
(Member)

_____

Professor Niaz Ahmed Khan Ph.D.
Vice Chancellor, Dhaka University &
Former Pro Vice Chancellor
Independent University, Bangladesh (IUB)

Program Coordinator:
(Member)

_____

Mohammad Sirajul Islam
Senior Academic Coordinator
BIGD, Brac University

External Expert Examiner:
(Member)

_____

Mohammad Sirajul Islam
Senior Academic Coordinator
BIGD, Brac University

Departmental Head:
(Chair)

_____

Dr. Imran Matin
Executive Director
BIGD, Brac University

Ethics Statement

This study has been conducted solely as part of BRAC University's Masters in Procurement and Supply Management (MPSM) program and in conformity with the ethics guidelines of BRAC University. All procedures involving human participation in this study are performed in compliance with ethical norms and practice. It was carried out with professionalism and integrity, while maintaining the participant's anonymity and confidentiality. Respondents consented to participate in the interviews and were not coerced or deceived into doing so. The participants were provided with information, and they were aware that they were taking part in a study and knew the expectations. There was no conflict of interest among the author and the interviewees. Data was protected throughout the research process, from collection to publication. The results of the interviews are presented in the order in which they were received and information is not being misrepresented. However, the author is responsible for any errors or typos.

ABSTRACT

The objective of the research was to examine whether the existing country legal system and corresponding practices are supportive of implementing Sustainable Public Procurement (SPP). In order to achieve the objectives, a two-layered approach was undertaken: (i) reviewing the relevant literature on Sustainability issues from global perspective; and (ii) carry out a desk study on Public Procurement legal framework from country perspective. Combining the both areas of studies, an enhanced body of knowledge was formed on Sustainability Considerations in Public Procurement.

Three different power sector public organizations were then approached for face-to-face interview. These organizations were PWD (Public Works Department), PGCB (Power Grid Company of Bangladesh), and DPDC (Dhaka Power Distribution Company). The study was mainly qualitative and exploratory in nature. Hence semi-structured open-ended questions were asked to capture qualitative data in the form of technical narratives. At the end, a particular success story on sustainable procurement practice was discussed, which have been termed as "Case Study" under this research. The summary of the information and views received from the aforesaid studies and interviews have been presented as Research Findings at the end. Finally, based on the 28 (twenty eight) Research Findings and in light of the insights received from the interviews, 8 (eight) Recommendations have also been provided at the end of the report.

Documents reviewed during the literature review and desk study include, but not limited to, the followings: (i) Public Procurement Act and Rules, PPA 2006 & PPR 2008; (ii) The World Bank Procurement Regulations; (iii) PWD Schedule of Rates; (iv) Roadmap to Sustainable Public Procurement, GOB; etc.

Major research findings came out from the study include: (i) The country legal system and practices are supportive of implementing sustainability in public procurement; (ii) PPA 2006, PPR 2008 and associated Standard Tender Documents (STDs) provides ample opportunities in favour of SPP; (iii) The elements of sustainability are embedded in the form of equitable treatment, performance based specification, health & safety, labour welfare, domestic preference, threshold-based procurement methods, lots for SMEs, non-priced criteria, payment, etc. Findings also include major challenges, such as: (i) Building effective awareness on SPP; (ii) Lack of clear definition of sustainable products/ services/ supplier operations; (iii) Lack of well-defined procedures to evaluate sustainability offers by the market, etc.

Recommendations based on the findings of the research study include: (i) Implementation of massive training programs for procuring entities; (ii) Inclusion of special criteria aimed at promoting bidders with existing social/ environmental protection standards; (iii) Adoption of policy of reservation for some particular type of procurement for socially-disadvantaged groups, women-led businesses and small and medium enterprises.

Keywords: Sustainability; Public Procurement; Case Study; PPR; BPPA; CPTU; Power Sector.

Acknowledgement

I am indebted to Almighty Allah for providing me with the blessing and strength to pursue my Masters in Procurement and Supply Management course at BIGD, BRAC University.

I would like to express my deepest gratitude and sincerely acknowledge the extensive guidance, support and encouragement that I have received from my honorable supervisor Professor Doctor Niaz Ahmed Khan, Pro-Vice Chancellor, Independent University, Bangladesh (IUB). While writing this thesis, his inspiration, academic counsel, important feedback, constructive suggestions, and supervision motivated me a lot and gave me the courage to conduct the study and complete the research work.

My gratitude also goes to the senior and mid level officials of three power sector organization who shared their valuable public procurement experiences and insights during my face to face interviews with them. I am greatly thankful to all these respected officials.

I would like to acknowledge all the faculties, BIGD authority, course management, officers and staff of the Institute for their sincere guidance, support, and encouragement along the way.

Here I would also like to pay my heartfelt gratitude to my beloved parents, whom I lost during carrying out my MPSM coursework and this thesis as well. They motivated me doing the course despite their serious illness. I feel really sad for not being able to make them witnessed the completion of my course. I couldn't have accomplished this journey without the blessings of my parents and other family members.

Finally, I express my gratitude to all of my respected course teachers and classmates of MPSM course whose names are not separately mentioned here, but they helped me in many ways directly or indirectly for the successful completion of my MPSM course.

Sharmin Nahar Quadir
Dhaka, August, 2024

Table of Contents

List of Tables

List of Acronyms

AA	Approving Authority
ADP	Annual Development Programme
BIGD	BRAC Institute of Governance & Development
BPPA	Bangladesh Public Procurement Authority
CFL	Compact Fluorescent Lamp
CIPS	Chartered Institute of Purchasing and Supply
CPTU	Central Procurement Technical Unit
CSR	Corporate Social Responsibility
DESCO	Dhaka Electric Supply Company Ltd.
DOE	Department of Environment
DOFP	Delegation of Financial Power
DPDC	Dhaka Power Distribution Company Ltd.
DPM	Direct Procurement Method
DPP	Development Project Proposal
e-GP	Electronic Government Procurement
EIA	Environmental Impact Assessment
EMS	Environmental Management System
GCC	General Conditions of Contract
GHG	Green House Gas
GOB	Government of Bangladesh
HOPE	Head of Procuring Entity
IDA	International Development Association
IFT	Invitations for Tender
IMED	Implementation Monitoring and Evaluation Division
ISO	International Organization for Standardization
ITT	Instructions to Tenderers
JVCA	Joint Venture, Consortium or Association
KII	Key Informant Interview
KPI	Key Performance Indicator
LCC	Life Cycle Cost
LCS	Least Cost Selection
LTM	Limited Tendering Method

MEAT	Most Economically Advantageous Tender
NGO	Non-government Organization
NOA	Notification of Award
OTM	Open Tendering Method
PCC	Particular Conditions of Contract
PD	Project Director
PE	Procuring Entity
PM	Project Manager
PP	Public Procurement
PPA	Public Procurement Act 2006
PPR	Public Procurement Rules 2008
PWD	Public Works Department
QCBS	Quality & Cost Based Selection
RFQ	Request for Quotation
SP	Sustainable Procurement
SRFP	Standard Request for Proposal
SSS	Single Source Selection
STD	Standard Tender Document
TD	Tender Document
TEC	Tender Evaluation Committee
TER	Tender Evaluation Report
TOC	Tender Opening Committee
UN	United Nations
WLC	Whole Life Costing
WB	World Bank

Chapter 1

INTRODUCTION

1.1 Background

Sustainable Public Procurement (SPP) has its root in Sustainable Development Goals (SDG) of United Nations (UN). The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries in a global partnership. Each goal typically has 8-12 targets with a total of 169 targets, and each target has between 1-4 indicators to measure progress toward reaching the targets.

SDG 12 specifically addresses the need to "Ensure sustainable consumption and production patterns" through 11 different targets. SDG Target 12.7 aims to "Promote public procurement practices that are sustainable, in accordance with national policies and priorities." SDG Indicator 12.7.1 has been specifically set to measure the achievement towards this target officially designated as the "Number of countries implementing Sustainable Public Procurement policies and action plans".

Bangladesh is being considered as a developing country since long. The annual public procurement expenditure of Bangladesh is about US$ 24 billion, representing about 45.2% of total national budget, 85% of development budget, and 8% of GDP (FY2019). Usually, the largest share of procurement expenditure goes to civil works followed by Goods and related services. Hence, achieving sustainability in public procurement is of pivotal importance to reach the respective SDG.

The SDGs emphasize the interconnected environmental, social and economic aspects of sustainable development by putting sustainability at their center. Public procurement, therefore, can play a vital role in the resolution of environmental crises (e.g., increase of CO2 emission, pollution, waste disposal, etc.) and promotion/improvement of economic life of a product as well as social life (labor wage, health, safety, hygiene, etc.). It can also help promoting SMEs including women-led enterprise and Start-up businesses by favoring them with some special /preferential treatment.

The issue of sustainability have been on the international agenda for several decades, and both public & private sectors are concerned about the role they play in this issue. However, while sustainable procurement activities are common in many developed countries, the awareness and implementation of sustainable procurement is still comparatively low in most developing countries, like Bangladesh.

1.2 Research Problem

Any goods, works or services offered based on sustainability considerations involves high initial costs due to considerations of innovative renewable sources of production and commitment to long range environmental and socio-economic perspectives. This high initial cost would ultimately be balanced and products becomes effectively cheaper if we could consider whole-life costing of the item along with the socio-environmental benefits it might offer in the long run. On the other hand, currently, there exists a popular perception in the procurement community that the existing country legal system is not supportive of implementing sustainability in public procurement. Neither the Act nor the Rules on public procurement requires an award of contracts based on life-cycle costing rather than focused on the criteria for determining the lowest acquisition prices.

For example, if we consider the power generation case, the world is witnessing shortage of fuel, gas, coal etc. to produce electricity. Bangladesh is not out of this crisis. Government has tried to address this shortage issue through imposing load-shading on its citizen time to time. But certainly, this is not a sustainable solution. The real sustainable solution lies in optimum utilization of natural resources, renewable energy sources, fossil fuel etc. But then again, these sustainable solutions come up with additional initial costs that provide ultimate value for money in the long run. The legal system and the traditional practices of public procurement follows the contract award criteria primarily based on the lowest cost. However, opportunities are also embedded in the legal system to make use of such sustainability aspects in indirect forms. Here comes the question of opportunities versus challenges: whether the public procurement professionals involved in power sector are in a position to make use of the opportunities available in the legal framework to culture and promote sustainability? Or the challenges they face in this regard supersede the opportunities?

This research is intended to examine the sustainability aspects of public procurement in the selected sector in Bangladesh; more specifically, it focues on the extent of consideration of different sustainability factors (economic, social and environmental) in the procurement planning process in

the case-study organization; along with identifying the major challenges and opportunities of adopting and implementing the sustainability factors and solution in their procurement process.

All Government agencies implement public procurement country wide. For this particular study, the scope of the research has been kept limited to a particular public sector, i.e. Power Sector.

1.3 Objectives of the study

- To examine whether the existing country legal system and corresponding practices are supportive of implementing sustainability in public procurement.
- If yes, to examine the extent and prospects of adopting and implementing the sustainability factors and solution in the procurement process.
- If no, to identify the major challenges and hindrance of adopting and implementing the sustainability factors and solution in the procurement process.

1.4 Research Question

The study pursues a two-fold research question: Are the existing country legal systems and corresponding practices supportive of implementing sustainability in public procurement? How far sustainability factors are considered in the public procurement process at the studied organization; i.e. PWD (Public Works Department), PGCB (Power Grid Company of Bangladesh), and DPDC (Dhaka Power Distribution Company)?

1.5 Research Methodology

The study was mainly Qualitative and Exploratory in nature. In order to find out a solution to the research question along with achieving the research objectives mentioned above, several approaches and tasks were undertaken. The initial approach was to review the relevant literature and previous studies in two separate areas: (i) sustainability, and (ii) public procurement. Strengthening the background knowledge combining both areas, i.e. sustainability considerations in public procurement, three different public sector organizations (having experience of power sector procurement) were approached for face-to-face interview. These organizations were PWD, PGCB, and DPDC. The study was mainly qualitative and exploratory in nature. Hence semi-structured

open-ended questions were asked to capture qualitative data in the form of technical narratives. These primary data directly collected from source were then compared with the secondary data gathered from the preceeding literature review and previous studies. At the end of exhaustive data analysis with adequate validation, the research findings were reached out and some recommendations were made guiding future directions in this regard.

1.6 Major Research Methods

- **Secondary Literature Review:** The researcher explored available studies carried out so far in this field. It was done through browsing scholarly articles over the Internet, visiting libraries of BIGD, BRAC University, visiting Government websites of CPTU, PWD, PGCB, DPDC and other relevant offices.

- **Key Informant Interview (KII):** Assessment of the opportunities and challenges of adopting sustainable solution in public procurement was done by taking face-to-face interview with relevant public procurement professionals working in the case-study organizations (i.e. PWD, PGCB, and DPDC). A semi structured questionnaire was followed to collect qualitative data along with some relavant quantitative data from the target groups. Open ended questions were included to gather the required information.

- **Case Study:** The researcher accumulated few real life experiences (while collecting information through interviews) from the respective organizations as case study example.

1.7 Geographical/Target Area

All three case study organizations have countrywide field offices. But for this research purpose, it was convenient for the researcher to collect data within the Dhaka city. Hence the target area for the research has been chosen as Dhaka city area.

1.8 Justification for Choosing PWD, PGCB and DPDC

The research is focused on finding the sustainability considerations in the public procurement, specifically from the perspective of power sector procurement. There are few organizations in Government sector which deal with the aforesaid subject matter. Among them, PWD (Public Works Department), PGCB (Power Grid Company of Bangladesh), and DPDC (Dhaka Power Distribution Company) play important role in power sector procurement. PWD looks after the supply and installation of power distribution system exclusively in public buildings and infrastructures. PGCB is responsible for the efficient and effective management of national power grid for reliable and quality transmission of electricity throughout the country. DPDC is primarily responsible for distributing electricity/power to different public and private infrastructures. So, it is obvious that all three organizations have plenty of opportunities and challenges to implement sustainable procurement practices in their work arena. Hence, these three organizations have been chosen for this research study.

1.9 Limitations of the Study

Public sector procurement includes a wide range of organizations. Due to time constraint, this research has been made limited to focus only on three major public sector organizations dealing with power generation and distribution i.e. PGCB, DPDC and PWD. Few numbers of officials were interviewed due to time constraint and perceived discomfort felt by the public sector officials to disclose information.

1.10 Layout of the Study

The study is organized into six (6) separate chapters which are outlined below:

Chapter 1 (Introduction)

This chapter covers the background, research problem, objectives of the study, research question, research methodology, major research methods, geographical/target area, etc. It draws attention to the issue statement that motivated the researcher's choice of this particular study, in particular, justification for choosing three specific government departments. This chapter also discusses the limitations of the study.

Chapter 2 (Conceptual Overview/ Literature Review)

Based on the relevant literature, this chapter reviews the major literature related to the study and provides reviews of the major concepts used in the study. The chapter is comprised of 7 (seven) sections. The sections provide a details of the major concepts related to sustainable procurement. It includes concepts like sustainable development, public procurement, sustainable procurement, sustainable public procurement, etc. The chapter also explains the three major aspects of sustainable procurement, describes the benefits and drivers of sustainable procurement, speaks about the prior policies of the country which have direct or indirect influences towards formulation and implementation of a sustainable public procurement.

Chapter 3 (Desk Study on Public Procurement Legal Framework in Bangladesh)

This chapter largely discusses how public procurement legal framework of Bangladesh, either directly or indirectly, adheres to the principles of sustainable procurement. The chapter is comprised of 4 (four) sections. The sections inform us about the traditional process of awarding procurement contracts and its merits/demerits. It also covers the sustainable public procurement clauses embedded within the PPA 2006 and PPR 2008. Finally it discusses the power sector perspective in Bangladesh with a summary of opportunity/constrain for implementing sustainable public procurement.

Chapter 4 (Observations from the Interviews and Case Studies)

This chapter mainly discusses the views received from the 3 (three) target organizations, i.e. PWD, PGCB and DPDC through conducting face to face interviews. All three interviews also cover a particular success story (titled as “Case Study"), where a sustainable procurement had effectively been practiced within the inreviewed organization. The chapter is comprised of 3 (three) sections. The sections cover the views received from PWD, PGCB and DPDC respectively.

Chapter 5 (Research Findings)

The chapter is comprised of two sections. Three different public sector organizations (having experience of power sector procurement) were approached for face-to-face interview. These organizations were PWD, PGCB, and DPDC. The study was mainly qualitative and exploratory in nature. The summary of the views and information received from the aforesaid studies and interviews have been presented as a summary of research findings in the first part of this chapter. In the second part, a linkage between the literature review (drivers of sustainable procurement) and research findings (desk study and interviews/case study) was established and presented.

Chapter 6 (Conclusion and Recommendations)

Based on the research findings and in light of the insights received from the interviews, some recommendations were advised to enhance sustainability practices in the public procurement of Bangladesh.

References and Appendices

To further complement the study content, this research includes references and appendices.

Chapter 2

CONCEPTUAL OVERVIEW/ LITERATURE REVIEW

Based on the relevant literature, this chapter reviews the major literature related to the study and provides reviews of the major concepts used in the study. The chapter is comprised of 7 (seven) sections. The first section provides a brief introduction of the whole chapter. The second section provides details of the major concepts related to sustainable procurement and in particular, where the term has its roots. It includes concepts like sustainable development, public procurement, sustainable procurement, sustainable public procurement, etc. The third and fourth sections explain the three major aspects of sustainable procurement, such as, economic, environmental and social aspects. The fifth and sixth sections describes the benefits and drivers of sustainable procurement respectively. The last and seventh section speaks about the prior policies of the country which have direct or indirect commitment towards formulation and implementation of a sustainable public procurement.

2.1 Introduction

Sustainable Procurement (SP) is such type of procurement that relies on the principles of sustainable development; for example, assuring a strong and ethical society, living within environmental limits, and encouraging good governance. According to United Nations procurement website, procurement is called sustainable when it integrates requirements, specifications and criteria that are compatible and in favor of the protection of the environment, of social progress and in support of economic development, namely by seeking resource efficiency, improving the quality of products and services and ultimately optimizing costs (UNGM, 2011).

2.2 Major Concepts

2.2.1 Sustainable Development

A bunch of activities intended for improving human and social well-being, by the mean of generating and maintaining the wealth, social infrastructure, equity, education, employment, facilitating technologies and so on could be termed as Development. Subsequently it focuses on its big aim of improving the human life conditions. To achieve this broad goal, it thus grasps an array of social, economic, industrial and technological activity. Hence, sustainable development implies the notion of long term orientation. It should also make sure that, it does not put the well being of the future at risk in terms of resources of any kind. In view of this, sustainable development has two distinct dimensions: (1) ensuring economic development of the present generation without hampering the same for the future, and (2) to protect the present environment without endangering that of the future. The Brundtland Commission Report (1987), initiated by the UN, focused on the urge for ensuring a balanced relationship between socio-economic actions and the environmental stability, which would ensure a quality life for the future generations comparing to that of the present. The 1992 Rio Declaration on Environment and Development (issued by a UN Conference held in Rio de janeiro) further refined these concepts, in which the issue of human rights and social justice were explicitly reinforced.

Subsequently this three-pillar aspects of sustainability namely economic, environmental & social became broadly accepted. In 1997, John Elkington invented the term ‘triple bottom line’ (TBL) to emphasize the importance of performance measurement in terms of all the three aforesaid fields.

Sustainable development could be defined in various way. The definition proposed by the Brundtland Commission (1987) has been extensively popular. The definition emphasized the socio-economic development of the present world without depriving that of the future world. Therefore, So, civilization should be aware of the replenishment capacity of the nature while taking benefits form it. There should be a check and balance between development activities and the ecosystem.

2.2.2 Public Procurement

A robust public procurement system has been established, including The Public Procurement Act 2006, secondary legislation such as the Public Procurement Rules 2008 (with amendments) and associated standard bidding documents, e-GP Guideline 2011 (currently it is being amended), and

Delegation of Financial Power (DOFP). Central Procurement Technical Unit (CPTU) has been formed as the nodal agency under the Implementation Monitoring and Evaluation Division (IMED) of the Ministry of Planning.

To date, the Public Procurement Act No. 24 of 2006 (PPA 2006) (as amended in July 2007, November 2009, and July 2010) is the governing law in public procurement. To guide the procurement and implement the Act the Government promulgated Public Procurement Rules (PPR) 2008 based on PPA 2006. Since then, the public purchases are carried out in accordance with the Public Procurement Act, 2006 and Public Procurement Rules, 2008. To carry out the purpose of these Act and Rules, the Central Procuring Technical Unit (CPTU) was established under the Implementation, Monitoring and Evaluation Division (IMED) of the Ministry of Planning. Standard bidding documents (SBDs) and standard forms have been issued by CPTU.
Core Principles of Public Procurement: Public procurement is carried out by the Government bodies with the help of tax payer's money. Hence the main objective of public procurement has not been making profit, rather it is to achieve value for money. Based on this philosophy, few principles have been developed being the core to public procurement, which underpin the process of the procurement. These principals are: (i) Value for Money (VFM), (ii) Ethics, (iii) Competition, (iv) Transparency, and (v) Accountability.

Currently, neither The Public Procurement Act 2006 nor the Public Procurement Rules 2008 (PPR 2008) require an award of contracts based on life-cycle costing (LCC, i.e., life-cycle management of building materials, equipment, and appliances). The Act of 2006 or Rules of 2018 has not mandated the use of green public procurement (GPP) provisions and/or phased approach to the application of GPP either. While there are no prescribed environmental criteria and minimum standards for GPP defined; nor are bidders required to comply with environmental regulations to be eligible for contract awards, procuring entities may (concerning the particular object of procurement) opt to include requirements such as value for money against the cost of procuring works, services or goods; expected performance standards and longivity, including safety standards and tolerance, in technical specifications (Section 29, PPR 2008). In the procurement of generators, they may (for example) include performance requirements such as per hour generation of electricity output, per kilowatt hour consumption of fuel during operation, and allowance of noise level.

2.2.3 Sustainable Procurement

Sustainable Procurement (SP) could be thought of as an effective linkage between Sustainable Development and the process of Procurement. It could be defined as that type of procurement that relies on the principles of sustainable development. Sustainable development could be like confirming strong and ethical society, encouraging good governance, and abiding within environmental limits. When any purchasing decisions needs to be made, SP considers economic, environmental and social sustainability into account. In general, SP looks at what type of items are purchased, from where they come, how the items are made, who are making the item, how the purchased item will be used and last but not the least whether there is any necessity of purchasing such item. Hence, SP usually aspires to get answers of the following questions:

- Does procurement, meet the present needs of the organization, its customers and its wider stakeholders, without compromising the ability to continue to do so in future?
- Does procurement, enhance or protect the economic sustainability of the organization in every aspects, for example, value addition, cost control, continuity of supply, fulfilment of internal and external customer's need, development of collaborative supply chain relationships etc. without impacting the environment or society negatively?

Sustainable procurement could be named in many different ways, such as, socially responsible procurement, affirmative procurement, responsible procurement, green procurement, environmental procurement etc. The website of United Nations describes the theme as follows:

'Procurement is called sustainable when it integrates requirements, specifications and criteria that are compatible and in favor of the protection of the environment, of social progress and in support of economic development, namely by seeking resource efficiency, improving the quality of products and services and ultimately optimizing costs (UNGM, 2011).

Organizations are encouraged to engaged with the market balancing their purchasing power against sustainability features under sustainable procurement arrangement. It also establishes their choice of goods, works and services on economic, environmental and social considerations. It is very important for sustainable procurement to consider the social, environmental and economic consequences of several factors throughout the supply chain. Such factors could be design, method of production, logistics, delivery, usage of non-renewable material, ultimate use, O&M (operation and maintenance), recycling options, re-use, disposal and as a whole, competence of the suppliers

whether they could understand the aftermaths. Therefore, it is evident that sustainable procurement has a deep focus on the whole lifecycle and overall ownership of the procured item and its associated relationship costs.

2.2.4 Sustainable Public Procurement

One major concern of public procurement is to ensure the accountability of public sector organizations in spending the money of the tax payers through procurement. The guiding principles of public procurement is to ensure achieving value for money in public procurement while maintaining adequate transparency and accountability. Since the government plays the biggest role as customer within the country, hence it can use its buyer's power to control the supply behavious of the private sector organizations that produce or supply goods, works and services for them.

Hence it can be said that sustainable public procurement is a way to meet the requirement of public bodies with ensuring value for money on a TCO (total cost of ownership) basis considering the betterment of the society and economy without impacting the environment adversely.

2.3 Pillars of Sustainability

Sustainable development and the sustainability of activities in general often described as being made up of three main pillars. Historically in 1972, the concept of sustainability was developed, but it actually shaped up since 1987. The goals of sustainable development along with the three pillars of sustainability were explained through the publication of Brundtland-Report. The pillars can be described as follows:

- **Economic** considerations: how an activity influences the finances or resources of individuals, organizations, markets and national economies. It emphasizes on a balanced combination of price, quality, functionality, availability etc; which ultimately ensure best value for money;

- **Environmental** aspects (or green procurement): how an activity affects ecosystems, environments and the abundance of natural resources. How the environment is being impacted over the whole lifecycle of the products or services under the procurement; and

- **Social** aspects: how an activity affects people, relationships, cultures, laws and political situations. It emphasizes on the impact of procurement on issues such as poverty, equity, labor condition, human rights, health & safety, employment, child labor, gender equity, etc.

2.4 The Tripple Bottom Line (3P)

The concept of 3Ps of sustainability is widely popular in business world; which refers to People, Planet, and Profit. This is also well-known as the triple bottom line (TBL) jargon. Hence the concept of 3Ps and sustainability issues are well connected. The TBL concept is also well connected with the balanced scorecard approach. Under this philosophy, companies measure their performance in three distinct criterias and ultimately derive at their targeted objectives. The concept of 3Ps may be described as follows:

- **Profit:** the economic focus of an organization's in terms of generating financial wealth from selling of its products or services.
- **People:** the socio-cultural focus of an organization in terms of its stakeholders, i.e. the people it employs, the people it operates within and the people (markets) it sells to.
- **Planet:** the environmental focus of an organization in terms of its ecosystems, i.e. ground water contamination, unbalanced withdrawl of resources, etc.

2.5 Benefits of Sustainable Procurement

Since products are made for buyers; hence buyers possess a lot of control over what is produced, and how it is produced. In fact, when the buyer is purchasing something, they are literally supporting the company that has produced that item. If the company, from whom the buyers are purchasing their products, are engaged in unethical practice, then the buyers are actually supporting those companies to continue that unsustainable practice. For example, if the company disobey the labor law, damage the environment through their operational activities, then purchasing anything from such companies actually means promoting unsustainable practice from buyers' side. Government is the biggest purchasing power for any country. So, Government purchasing power should be used to support those companies who produce sustainable products. Therefore, to ensure long term real value for money without compromising environmental and social responsibilities, public procurement should consider sustainability issues in its procurement practice. Such practice would facilitate achieving the development targets through the procurement without adversely impacting

the society and environment. In view of these, sustainable procurement stands on making long term influence on the economy, sociaty and environment, by facilitating to:

- sustain economic development
- achieve value for money
- enhance ethical behavior of suppliers
- improved air and water quality
- reduce harmful emissions
- reduce waste generation
- make local companies using sustainable procurement
- make local companies internationally competitive
- improve living standards
- improve working conditions (health & safety issue)
- reduce labor confrontation
- help achieving the MDG (Millennium Development Goals) and
- create a better society

2.6 Drivers of Sustainable Procurement

The term “drivers of sustainable procurement” generally implies the factors that provokes actions for attaining sustainable procurement. Stakeholders pressure, scarcity of resource, shareholders expectations, legal considerations, reputational risk, business opportunities etc. may be considers as some of the major driving factors for organizations that trying to achieve sustainable practice. Drivers usually preceeds the adoption of sustainability programs. Drivers for sustainable procurement could be categorized in two ways: external and internal. Some of the common external and internal drivers for sustainable procurement are described in the following Table 2.1 and Table 2.2.

Table 2.1 General external drivers for sustainable procurement

External Drivers	Examples
Political factors	Government policy, targets and standards, incentives and penalties, Government practice as a buyer/ supplier and employer
Economic factors	Loss of market demand for unsustainable products/ services, rising market demand for sustainable products/ services
Social/ Ethical factors	Social attitudes and values creating media, public, labor and consumer pressure for sustainable practices, emerging social justice and ethical issues (e.g. corporate governance, citizenship, corruption, trading ethics, fair trade, human and labor rights), industry/ professional codes of ethical practice
Technological factors	Competitor/ market innovation and take-up of sustainable technologies (new products, materials, processes, etc.), exposure of unsustainable technologies (e.g. resource usage, wastes), opportunities in new sustainable technology markets (e.g. alternative energy.
Legal factors	National and international legislation on sustainability (or threat thereof), waste, pollution, emissions, employment rights, health and safety, consumer rights, corporate governance, public sector procurement etc.
Environmental factors	Resource depletion and costs (especially energy costs), issues of concern to key stakeholders (e.g. climate change, GHG emissions, deforestation, water management, conservation, biodiversity, pollution, waste reduction, etc.), national targets under international agreements.
External stakeholder factors	Interest and pressure in any or all of the above factors, creating threats and opportunities for the organization in obtaining resources and collaboration (e.g. customers, labor, investors, pressure group activism, potential for cause-related marketing).]

[Source: Sustainable Procurement, the official CIPS course book in partnership with PROFEX Publishing]

Table 2.2 General internal drivers for sustainable procurement

Internal Drivers	Examples
Corporate Goals	Corporate vision, mission and objectives including sustainability values and aspirations.
Organizational status	Existing CSR and/ or corporate citizenship objectives/ policies.
Top level buy-in	Senior management visionaries, champions and supporters of sustainability.
Business factors	Business case arguments for sustainability, enhanced reputation, brand strength and sales revenue, cost/ waste reduction (eco-efficiencies), enhanced supply chain innovation and efficiency, reduced regulatory burden.
Accountability factors	Accountability mechanisms, which demonstrate seriousness, and make reward contingent on sustainability progress/ performance.
Risk awareness	Priority given to risk management, perception of business, reputational and supply risk from non-sustainability, reputational damage
Stakeholder factors	Internal stakeholder demand for sustainability (e.g. need to attract and retain quality managers, employees, investors and supply chain partners).

[Source: Sustainable Procurement, the official CIPS course book in partnership with PROFEX Publishing]

2.7 Prior Policy Commitments Supporting SPP

2.7.1 The National Sustainable Development Strategy (NSDS)

Bangladesh has a national policy and strategy for sustainable development - The National Sustainable Development Strategy (NSDS) 2010/2021, which mentioned its strategic priority in the area of persistent economic growth, social protection, growth of priority sectors, environment, and disaster management. Though there was no specific provision highlighting Sustainable Public Procurement in its sustainable development strategy, it is worth noting that Bangladesh has recognized, among others, the importance of adopting results-based approach (instead of project-by-project approach) in accomplishing its sustainable development agenda. In doing so, the NSDS targeted improving project management capacity of officials in ensuring efficiency in procurement (among others). The 2019 Sustainable Development Solutions Network survey shows that only two governments (Bangladesh and India) have conducted (or sponsored) an estimate of incremental financing needed to implement the SDGs.

2.7.2 Environmental Policy

As early as 1992, Bangladesh has issued regulatory instruments for environmental standards as regulatory instruments that are still enforceable--- the Bangladesh National Environmental Policy (NEP) of 1992, which serves as the general environmental policies and then the Environmental Protection Act of 1995 that provides for the regulatory frameworks to protect the environment from activities in sectors such as forestry, agriculture, transport, and industry. The NEP of 1992 provides direction to persistent development from environment friendly perspective having a long term focus with the following objectives:

- Preservation and improvement of the ecological balance;
- Identifying and controlling all environment polluting and degrading activities;
- Minimizing the impact of natural disasters on the environment;
- Ensuring environment friendly development in all sectors;
- Ensuring long-term sustainable/environmentally sound utilization of natural resources; and
- Active promotion and participation in all international initiatives for the improvement of the global/regional environment [The Fourth Five Year Plan, 1990–1995].

2.7.3 The National Agriculture Policy of Bangladesh 1999

The National Agriculture Policy of Bangladesh 1999 has a section on creating awareness to reduce the use of chemical fertilizers and pesticides to prevent environmental protection.

2.7.4 Renewable Energy Policy

In 1995, Bangladesh formulated the first National Energy Policy (NEP) of 1995. It emphasizes the exploration, production, transmission, distribution, and use of energy sources in a way that ensure fulfilling expanding demand on a persistent basis. It involves, among others, study, exploration, and distribution of indigenous natural gas, including the necessary steps to enhance renewable energy development activity to meet the future challenge. The NEP (1995) stated that Bangladesh lacked the funds to encourage private sector participation in the development of the energy sector, resulting in the formulation of policy statements that focused on technology development and dissemination. Bangladesh Environmental Conservation Act was adopted in the same year, with its accompanying 1997 Rules for the preservation, quality standard enhancement and control through extenuation of environmental pollution.

Addressing the challenges brought by the 1995 NEP, the 2005 NEP focused on increasing access to microfinance, joint ventures and structured loans to improve access to energy for the majority of the population. This policy also stated that it aimed to reduce the dependence on external donors gradually by internal financing to the extent possible and new mechanisms of project financing.

In 2008, Bangladesh adopted the National Renewable Energy Policy, which created an innovative financial mechanism using domestic funding for commercial lending, a micro-credit system for the purchase of renewable energy technologies and provided financial incentives for renewable energy producers (i.e., exemption from value added tax (VAT).

2.7.5 Low Carbon Policy (Climate Change)

Several policies are issued with specific reference to climate agreements , which support strategic actions towards global environment-related initiatives and may include the use of green public procurement to reduce greenhouse gas emissions. (Baniya, et.al., 2021) These include policies such as:

- The NDC of Bangladesh (2016), REDD + readiness roadmap (2012) and the Bangladesh Climate Change Strategy and Action Plan (2009), which highlighted the importance of community participation and the engagement of public sector employees to aware the relevant stakeholders. It also emphasized the importance of environmental protection, climate change mitigation, significance of local and international NGO consultation, engagement of private sector organizations, civil society organizations, etc. (i.e., in line with Article 11.1 of the Paris Agreement on enhancement capacity and ability for effective climate actions).

- The Strategic Transport Plan (2005) and its revised version (2015), along with vehicle emissions standards, provide for specific aims of reducing GHG emissions and consumption of other fossil fuels by using compressed natural gas and improved fuel technology.

2.7.6 Strengthening SMEs Policy

The National Industrial Policy (2010) has started to incentivize industries, including SMEs. The policy contains guidelines to adopt manufacturing processes and practices that do not adversely affect the environment. It also promotes investment in projects which supports greenhouse gasses reduction under the Kyoto Protocol's Clean Development Mechanism (CDM). The policy likewise supports the establishments of facilities that encourage establishment of waste recycling industry, while inspiring entrepreneurs to pursue the 3Rs (Reduce, Reuse and Recycle) when founding and operating their businesses. In fact, SMEs have been identified as a major driver of economic growth, with specific focus on organic pesticide industry to safeguard the environment by means of the conservation of beneficial insects, aquatic life, and soil microbes (Hasan and Islam, 2015). It also states that the bio/ herbal pesticide industry will be provided with financial incentives.

While there is no specific national policy that supports sustainable public procurement, the above-mentioned development visions and strategies are, in fact, favorable to support sustainable procurement, which requires an explicit policy instrument to either reinforce sustainable consumption and production habits or mandate green public procurement.

Chapter 3

DESK STUDY ON PUBLIC PROCUREMENT LEGAL FRAMEWORK IN BANGLADESH

This chapter largely discusses how public procurement legal framework of Bangladesh, either directly or indirectly, adheres to the principles of sustainable procurement. The chapter is comprised of 4 (four) sections. The first section informs us about the traditional process of awarding procurement contracts based on LCT that cannot ensure Value for Money (VFM); as LCT does not include other relevant costs attributed to the product and services to be procured, such as social cost and environmental cost that are generated over the entire lifecycle of the product. Given that the concept of sustainability and public procurement were briefly discussed in the previous chapter, the discussion in the 2nd section will cover the sustainable public procurement clauses embedded within the PPA 2006 and PPR 2008. Then it moves on to the 3rd section that discusses the power sector perspective in Bangladesh, and lastly in the 4th section, it provides a summary of discussion that speaks of the opportunity and constrains for implementing sustainable public procurement.

3.1 Introduction

The public procurement legal framework (PPLF) of method selection, processing, approval & implementation of contracts is comprised of three major documents: (i) the Public Procurement Act 2006 (the PPA 2006), (ii) the Public Procurement Rules 2008 (the PPR 2008) and (iii) Delegation of Financial Powers (DOFP). In addition, a set of Standard Tender Documents (STD) is used as main operational documents reflecting legal provisions process and is considered as the main Tenders Documents. When applicable, Government's procurement officials may also use the Development Partner's Procurement Guidelines/Regulations (instead of the PPA/PPR) and their Standard Bidding Documents (instead of the STDs). Central Procurement Technical Unit (CPTU) was founded in 2002 as a nodal agency under the Implementation Monitoring and Evaluation Division (IMED) of the Ministry of Planningas the field level implementation unit for carrying out necessary procurement reform and subsequent monitoring of its progress.

Standing on the widely accepted principles of equitable treatment, transparency & accountability, and free & fair competition, the country legal framework for public procurement supports the use of 'lowest-cost tender' (LCT). Nonetheless, tender evaluation committee (TEC), in exceptional

cases, may recommend the award of a tender not based on LCT but on technical, social, or economic grounds. A higher price may also be considered in cases of extreme urgency (i.e., for faster delivery or immediate availability) or when late delivery may result in heavy consequences to the procuring entities, provided that the intention to favor early delivery should be clearly indicated in the procurement documents. The evaluation report must demonstrate clearly that the award is based on sound economic criteria, not mainly based on LCT.

Moreover, the Government acknowledges the importance of sustainability in public procurement by adopting the Sustainable Public Procurement (SPP) policy with a detailed implementation roadmap on how to gradually integrate SPP criteria into the public procurement process.

Traditional process of awarding procurement contracts based on LCT cannot ensure Value for Money (VfM) as LCT does not include other relevant costs attributed to the product and services to be procured, such as social cost and environmental cost that are generated over the entire lifecycle of the product. Therefore, it is advisable that Procuring Entity should select the 'Most Economically Advantageous Tender' (MEAT). After carefully and judiciously calculating the cost of other attributes over the entire life cycle of a product, comparison of responsive tenders on the basis of MEAT vs LCT could demonstrate the Value for Money in real sense.

3.2 Sustainability- PPA 2006 & PPR 2008 Perspective

Currently, neither The Public Procurement Act 2006 nor the Public Procurement Rules 2008 (PPR 2008) require an award of contracts based on life-cycle costing, i.e. MEAT. The Act of 2006 or Rules of 2008 has not mandated the use of green public procurement (GPP) provisions. While there are no prescribed environmental criteria and minimum standards for GPP defined; nor are bidders required to comply with environmental regulations to be eligible for contract awards, procuring entities may (concerning the particular object of procurement) opt to include requirements such as value for money against the cost of procuring works, services or goods; expected performance standards and longivity, including safety standards and tolerance, in technical specifications (Section 29, PPR 2008). In the procurement of generators, they may (for example) include performance requirements such as per hour generation of electricity output, per kilowatt hour consumption of fuel during operation, and allowance of noise level.

While there are no express provisions supporting SPP in the existing procurement act and regulations in Bangladesh, there are several provisions both in PPA 2006 and PPR 2008 that can support the introduction of social considerations in the procurement practices. Such as:

3.2.1 Equitable Treatment

Introduction of socio-economic considerations find support in one of the express objectives, i.e., equitable treatment, of PPA 2006, which provides that "the aim of the public procurement policy in Bangladesh is to ensure efficiency, equitable treatment, transparency and accountability in procurement, and, to ensure free and fair competition amongst all prospective organizations willing to participate in the procurement" [Preamble to the PPA 2006].

3.2.2 Performance based Specification

Introduction of environmental considerations finds support in Para. 15 on the preparation of specifications and terms of reference, more particularly, on the use of performance-based specifications, which is widely considered to be one of the best practices for implementing green public procurement.

3.2.3 Health & Safety

PPA 2006 promotes social issues by prohibiting procuring entity from including any condition in any procurement-related documents that does not contradict with provisions the associated with standard wages of workers, occupational health and safety, social benefits, and the prohibition of child labor [Para. 16, PPA 2006].

3.2.4 Joint Venture provision

It is also worth noting that Pars. 33 (c) (vii) and (viii) of PPA 2006 allows the use of Bid preference and Joint Venture with local partners in the case of International procurement (ICB), provisions that may promote social and inclusive procurement favoring local enterprises, which includes small and medium enterprises.

3.2.5 Domestic Preference

There are provisions for the use of local materials and domestic suppliers/contractors in public procurement. Rule 83 of the PPR 2008 gives a preferential treatment to local manufacturers, suppliers, and contractors in order to promote domestic products and industries as long as the tenders are of equivalent quality and the price differential does not exceed 15% of the delivered price for Goods and 7.5% of the contract price for Works.

3.2.6 Threshold-based Procurement Methods

In fact, in determining the method of procurement and in consolidating Good packages, a procuring entity is required, among others, to take into consideration the availability of local goods, their quality, sources and brands available in the local market, including their price levels and potential risks to local and international supply (Rule 15.2, PPR 2008). The same is true in the procurement of Works, i.e., procuring entity is required to consider the capacity of local contractors [Rule 15(7), PPR, 2008].

3.2.7 Lots for SMEs

Rule 17(3) benefits small and medium enterprises (SMEs) by allowing the procurement by lots. It establishes that the procuring entity may divide the contracts into smaller packages or smaller lots taking into consideration not only the size and nature of the procurement, but also the capacity of the local markets and the geographical locale of the project. The splitting of goods, works or service into separate lots allows more participation of SMEs.

3.2.8 Sub-contracting & Direct contracting

Other provisions that may encourage SMEs participation include provisions for sub-contracting and advance payment. Rule 76 (h) even authorized procuring entities to use direct contracting in favor of small local industries for specialized products subject to approval by competent government agencies or statutory bodies.

3.2.9 Output based Evaluation

PPR 2008 allows procuring entity to assess technical specifications in terms of performance or output requirements (where appropriate), which may include, for example, per hour generation of electricity output , per kilowatt-hour consumption of fuel during operation, and the maximum noise level [Rule 29 (2), PPR 2008].

3.2.10 Non-priced Criteria (Not Lowest)

It is also worth noting that when justifiable, tenders may be awarded not to the lowest priced quotation but on technical, social or economic grounds [Rule 73 (2), PPR 2008], thereby, manifesting the possibility of using non-priced criteria for the evaluation of tenders.

3.2.11 Health & Safety

Clauses on safety and security of workers states that: "The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein: (a) take all reasonable steps to safeguard the health and safety of all workers working on the Site and other persons entitled to be on it, and to keep the Site in an orderly state [GCC 26.1, STD-PW3].

3.2.12 Labor Welfare

Clauses on protection of labor, such as the prohibition on child labor [GCC 29.1, STD-PW3] and of any work on the Site on the weekly holidays, or during the night or outside the normal working hours, or on any religious or public holiday, without the prior written approval of the Project Manager [GCC 27.1, STD-PW3], compliance with relevant labour Laws applicable to the Contractor's personnel relating to their employment, health, safety, welfare, immigration and shall allow them all their legal rights [GCC 28.1, STD-PW3].

3.2.13 Hygiene at Workplace

Clauses on the provision of proper accommodation with proper water supply, sanitary arrangements, including necessary hygienic requirement and for the prevention of epidemics in accordance with relevant rules [GCC 28.2, STD-PW3].

3.2.14 Payment

PPR 2008 ensures that the payment of reasonable wages on time and in the event of delay on the part of the procuring entities, payment should be covered by the contractor subject to reimbursement from the procuring entity [GCC 28.3, STD-PW3].

3.2.15 Environment

The SBD for Works required the contractor to "take all reasonable steps to protect the environment" [GCC 26.3, STD-PW3].

3.3 Power Sector Procurement in Bangladesh

3.3.1 Three Segments of Power Sector

Power sector is one of the most important sector in Bangladesh. This sector has profound contribution in the development of the country through the activities of. employment generation, economic growth, poverty alleviation and many more. Bangladesh power sector is divided into three segments like other countries of the world. These are generation, transmission and distribution. The first segment is generation where electrical energy are produced. Both public and private sector generation take place in Bangladesh whereas public sector is the most of the percentage responsible for generation. Different types of fuel, renewable energy are used to produce electricity. In near future nuclear energy will also contribute to the generation. And also some of the power imported from India. The second segment is transmission where electrical energy carried major distance from generation end to distribution end through grid. The third segment is distribution where received electrical energy from transmission and distributed to consumer premises.

3.3.2 Public Sector Perspective

However, irrespective of their activity, any power sector organization operating in the country directly or indirectly has to follow the regulation of Bangladesh Energy Regulatory Commission (BERC). Being the regulator of all power sector organizations, BERC has no specific guideline on procurement. But being funded by the public money, the power sector organizations of the government are bound to follow the government rules and regulations while implementing their procurement activities. As such all the public power organizations are following the PPA 2006 and PPR 2008 as the basis of their procurement.

3.3.3 Development Sector Perspective

For project procurement, organizations own fund, government fund and donor agencies fund are also used for procurement. If donor agencies funded, instructions or guidelines from them also being followed during procurement. Though most of the project of power sector are done by turnkey basis. But for private sector there has no significant guidelines for procurement. For example, rental or quick rental power plants mostly operated by private sector. They procure their power plant machineries themselves. Bangladesh Power Development Board (BPDB) buy energy from them and also fuel is given to them by government. This selling price and fuel cost is preset by

government through a contract. So, here is wide range of opportunity to do works related to sustainable procurement.

3.3.4 Private Sector Perspective

Another issue is renewable energy. Most of the solar system of Bangladesh are implemented by private organizations. They are not the manufacturer. They procure this system from foreign country and only responsible for the installation, whereas the end user not very concern for using this solar systems. So, here is also many opportunity for doing works related to sustainable procurement. Also nuclear power plant installation works going on. Here, waste management is a vital issue.

3.3.5 Importance of Sustainability in Power Sector Procurement

Bangladesh power sector booming fast day by day to achieve sustainable development though maintaining proper economic growth. To maintain proper economic growth, power sector has a vital role to play. So, a proper sustainable procurement is needed for sustainable development in power sector as well as for Bangladesh.

3.4 Summary of Desk Study

While the words “green” or “sustainable” are not specifically mentioned in the public procurement Law and Rules governing public procurement in Bangladesh, there are provisions that can serve as legal basis for procurers to promote SPP.

3.4.1 Opportunity for sustainable procurement

PPA 2006, PPR 2008 and its associated Standard Tender Documents (STDs) provides ample opportunities in favour of sustainable public procurement. Some of these opportunities have been included in the documents in a more straight forward way. On the other hand, the legal system has left many unspoken opportunities which are embedded within the principle of the Act and Rules. It is the skill and competency of the procuring entity to utilise those embedded opportunities in the legal documents in favour of sustainable procurement. Here comes the examples of opportunity that is converted from constraint.

3.4.2 Constraints for sustainable procurement

The major constraint in implementing sustainability in procurement comes from the principal of economy; i.e. lowest cost offered by the competitive bidding process. The public procurement system of Bangladesh (Goods and Works procurement) mainly relies on competitive bidding. Subject to having a threshold qualification, the lowest bid is generally awarded the contract. This plays as the main constraint in the implementation of sustainable procurement.

CHAPTER 4

OBSERVATIONS FROM INTERVIEWS AND CASE STUDIES

This chapter mainly discusses the views received from the 3 (three) target organizations, i.e. PWD, PGCB and DPDC through conducting face to face interviews. The interviews cover few general open-ended questions, such as, the extent of sustainability considerations, utilization of the embedded opportunities in favor of sustainable public procurement, etc. At the end, a particular success story was discussed in depth where a sustainable procurement had successfully been practiced within the inreviewed organization. These success stories have been termed as "Case Study" under this research. The chapter is comprised of 3 (three) sections. The 1st, 2nd and 3rd Section describes the views received from PWD, PGCB and DPDC respectively. Each subsection covers few repeated issues like the extent of sustainability considerations, utilization of the embedded opportunities in favor of SPP, the levels of procurement cycle to ensure sustainability under the case study (at specification level for PWD, at bid evaluation level for PGCB, and at contract management level for DPDC).

4.1 Views from Public Works Department (PWD)

4.1.1 Extent of Sustainability consideration in PWD Procurement

Public Works Department is mainly responsible for construction of public infrastructures, buildings, landscapes, national monuments, etc. As ancillary works, PWD is also responsible for installing electric substitutions, solar panel system, lifts, LED bulbs/tubes, electric wirings/points/features etc. that falls under procurement of Goods category. They are basically power sector products which are essentially highly dependent on huge energy resources. Apart from these, being a regulatory authority in the construction sector of Bangladesh, PWD develops and publishes two knowledge document, i.e. Schedule of Rates and Analysis of Rates, on periodical basis; which is followed by other government agencies.

During the interview, two items were particularly discussed to demonstrate the sustainability practices in PWD procurement:

(i) Solar panel system
(ii) LED bulbs/tubes

There were lots of challenges to procure these sorts of products to match the requirement of sustainability and legislative requirement of PPR 2008. Recently, technical specification for these items have been developed in light of sustainability consideration and subsequently included in the Schedule of Rates with detailed specification and estimated unit cost.

(i) Solar Panel System

(a) Sustainability Features

- Renewable Energy: Solar panels uses sunlight, a renewable energy source. It helps to reduce dependence on fossil fuels, which are non-renewable and contribute to greenhouse gas emissions.
- Reduced Carbon Footprint: Solar panels generate electricity without emitting greenhouse gases, such as carbon dioxide and methane, which have significant contribution in global warming and climate change.
- Energy Independence: By utilizing solar panels, individuals, businesses, and communities can generate their own electricity.
- Low operating cost: Once installed, solar panels have low operating and maintenance costs compared to traditional fossil fuel-based power plants.

(b) Practices in PWD

PWD has started the solar panel practice in their projects. Recently PWD installs solar panel in Jhigatola Officer's quarter project of 15KW where the solar energy meets the common space energy consumption and the rest portion directly contributes to the main line. Moreover, PWD uses the modern solar panel system where dry type transformer is used which requires air as cooler instead of oil.

(ii) LED Lights (Bulbs/Tubes)

(a) Sustainability Features

- Energy Efficiency: LED lights consume significantly less electricity compared to traditional incandescent or fluorescent bulbs. Hence they are considered highly energy-efficient. This leads to lower energy consumption, reduced greenhouse gas emissions, and lower electricity bills.
- Long Lifespan: LED lights have significantly longer lifespan compared to traditional bulbs. They can last up to 25 times longer, hence the replacement frequency of LED lights are significantly reduced, and so is the amount of waste generated from discarded bulbs.
- Reduced Waste: Due to their long lifespan, LED lights contribute to waste reduction. Fewer bulbs need to be manufactured, reducing the consumption of raw materials and the energy required for production.
- Mercury-Free: Unlike fluorescent bulbs, which contain mercury, LED lights are mercury-free, making them safer for both the environment and human health.

(b) Practice in PWD

PWD has started the practice of using LED lighting system in some of its projects such as Judges complex project, Secretariat quarter project. PWD has also emphasized in cross ventilation system which allows more day light in the buildings as well as introduced automated sensor which reduces loss of power.

4.1.2 Utilization of the embedded opportunities in favour of SPP

PWD is utilizing the unspoken opportunities embedded within the principle of the Act and Rules in favour of sustainable procurement. As mentioned earlier, there are some opportunities for sustainable procurement built in within the public procurement system of Bangladesh. PWD primarily relies on those acts and rules to implement sustainable aspects in its procurement. The scopes and opportunities are described below:

- **Economic sustainability:** Rule 15 (Procurement planning and selection of procurement methods) Para 15.7 describes that in the case of determining the method of Procurement for Works, the Procuring Entity shall consider the estimated cost, competitive state of market, contractors' capacity etc. Based on the principle of this rule, PWD goes for OTM (Open Tendering Method) to procure works above the threshold of BDT 3.0 crore and LTM (Limited Tendering Method) below this threshold. This ensures sustainability from economic perspective, since for lower value goods/works, the market responds very well and going for OTM seldom adds value due to involvement of more time and higher administrative cost.

- **Environmental sustainability:** GCC Clause 26.1.c of PW3-standard bidding document (Safety, Security and Protection of the Environment) describes that the contractor is responsible for taking all reasonable steps to protect the environment during the execution of his work, and have to reduce the pollution and noise level arising from his work.

- **Social and Ethical sustainability:** GCC Clause 26.1.a (Health and safety of the workers); 27.1 (Working hours); 28.1-3 (Welfare of labours); 29.1 (Child labours) etc. of PW3-standard bidding document obligates the contractor to ensure the worker's safety, protect them from excessive work, ensure proper accommodation & necessary hygienic requirements for them, restrain them from taking advantage from the economical exploitation of child labour. Based on the principles of these rules, PWD ensures in their construction site appropriate signage for the stakeholders, adequate netting arrangement to prevent accidental damage to both workers and neighbourhood, sufficient lighting arrangement at night etc. PWD also ensures equal payment irrespective of gender and age to be paid by the contractor. In case of land acquisition and land development work, PWD looks after the rehabilitation and compensation of the affected people as per the prevailing laws of the country.

4.1.3 Levels of Procurement Cycle to ensure Sustainability

Public Procurement is a cyclic process. It takes place following some organized pre-established steps or cycles. For example, at the outset, purchase needs are identified and codified in Procurement Plan. Then specification of Goods or Works are developed, Qualification criteria of the prospective bidders are established, Condition of contracts are set. Based on all these activities, tender documents are prepaed and invitation for tenders (IFT) are published soliciting response from the market. Tenders are submitted by the bidders, opened by the procuring entity, and evaluation takes place to identify the best offer. After the end of this sourcing process, contracts are awarded to the lowest evaluated responsive bidder. Contract management process begins to facilitate the supply of the Goods, execution of the Works, or perform the Service.

Within this entire procurement cycle, sustainability could be ensured at multiple levels, such as, specification level, qualification criteria level, evaluation criteria level, contract condition level, contract manegment level etc. While discussing with PWD officials, a sustainability dimension practiced during specification development level was explored under this research study.

4.1.4 CASE STUDY - PWD

Ensuring Sustainability at Specification Level

Procurement of goods is normally initiated through the development of specification. PPR requires that this specification should be non-restrictive in nature, i.e. not biased in terms of brand, country of origin etc. Moreover, the bid complying the specification with lowest price has to be awarded.

On the other hand, sustainable products usually come with higher cost since it focuses on value for money. As a result, products with sustainable features were unable to compete fairly with its counterpart products in the bidding process.

However, in the recent days, global awareness toward sustainable products has been increased due to increasing scarcity of natural resources in the supply chain, and this wave also has shaken the procurement arena of Bangladesh. In this context, PWD has recently (2022) incorporated some power sector items in its control documents titled “Schedule of Rates”. For this research study, two

particular items were discussed and explored to see how sustainability could be ensured at specification development level. These two items are: (i) Solar panel system; (ii) LED bulbs/tubes.

Once incorporated in the Schedule of Rates, PWD can now directly procure these sustainable products without hampering the core principal of public procurement legal framework, i.e. value for money, competition, equal opportunity etc. All bidders now have to offer the product complying the same technical specification on mandatory basis, even the lowest bidder as well. This development of sustainable specification creates a level playing field for both ordinary and sustainable products.

This case study tried to explore the detailed technical specification of these sustainable products along with their estimate cost. The following table captures the scenario stated above.

Table 4.1: Technical Specification (Solar Panel System & LED Bulb/Tube)

Item No.	Description of Items	Unit	Unit Rate BDT
1	**OFF-GRID SOLAR PANEL SYSTEM** Supplying, installation, testing & commissioning of following capacity solar system (off grid) for 2 Hrs backup with required quantities of mono / poly crystalline silicon solar PV modules, Solar suited Deep Cycle Lead Acid battery (12V), with required size maximum power Point tracking (MPPT)/PWM charge-controller & inverter as per relevant international standards & certification such as IEC I CE I UL as per following specification to produce AC- 220V, 50Hz pure sine wave for suitable use of all standard AC appliances with battery racks / cabinet, solar PV mounting structure, combiner box, fuse box, meter etc. system includes compatible solar cables, equipotential bonded and earthed with the building earth electrode which is conventional and / or chemical electrode system and all accessories as required to complete the installation with one year free operation & maintenance of the system which shall have the following features:	N	X.00

2	**ON-GRID SOLAR PANEL SYSTEM** Supplying, installation, testing & commissioning of solar power system (on grid / grid tie) with required quantities of mono / poly crystalline silicon solar PV modules, inverter, energy meter, etc. as per following standards, specifications and certification. The system will be able to produce power for supplying to grid with required compatible solar cables (DC cables) and all necessary accessories to complete the installation providing one year free operation & maintenance of the system. Solar system shall have to comply following specification:		
3	**LIGHT SOURCE: 9W LED BULB** Material: Brass/SS wire, Brass alloy, Brass/SS sheet, Glass H-220mm, B-185mm, P-170mm Gloria- GWB-1551-2135 FR Energy, Cat No-8043 Cosmo Cat No- BDTCL-GWB-05 Asha Cat No- ACS-BS87G540BP Crescent-CB-562-620-F or equivalent		
4	**LIGHT SOURCE T-8 LED TUBE** Material: MS Sheet Gloria cat no- GTF (LED) – 888x1x20W Energy: FPTT-1025 Asha Cat No-ACS-LTLS 353x1x20W (4') LED Crescent-CTLS-7x1x40 Watt or equivalent		

[Source: PWD Schedule of Rates 2022 (Revised), Sixteenth Edition, effective from 23 February 2023]

4.2 Views from Power Grid Company of Bangladesh (PGCB)

4.2.1 Extent of Sustainability consideration in PGCB Procurement

PGCB is the sole organization in Bangladesh which is involved in electricity transmission throughout the entire country since its establishment in 1996. The main purpose of the company is to ensure effective management of national power grid of Bangladesh. In order to deliver its objective, PGCB undergoes various activities, such as, devising required plan, conducting primary feasibility study, doing research, preparation of substation & transmission line design and constructing transmission lines and Grid Sub-station. In parallel, PGCB is doing operation and maintenance of transmission line, grid sub-station & National load dispatch centre (NLDC).

All the distribution Company of Bangladesh are the customer of PGCB. They take power mostly at 33 KV Voltage level, and some take at 132 KV Voltage level as well. These companies are BPDB, all PBS, NESCO, WZPDCL, DESCO and DPDC. In addition, some industries take power from PGCB directly at 132KV & 230 KV Voltage level. PGCB gets its energy wheeling charge from its clients (distribution entities) at the rate fixed by Bangladesh Electricity Regulatory Commission (BERC). PGCB also gets a huge revenue by giving rent its reliable optical fibre to ISP.

A large number of projects are undertaken each year by PGCB to discharge its mandated responsibilities. Contractors are selected to run those projects, where many International bidders usually participate in the bidding process. High voltage transmission system is a vital infrastructure of the country. Hence, the sustainability issues of these development projects has been a major concern of the Government as well as the development partners.

4.2.2 Sustainability Consideration for PGCB Projects

Department of Environment (DoE) has been established by the Government to oversee the social and environmental impacts of any development project. No project gets approval to be executed without having the clearance letter of DoE (Environmental Clearance Certificate). Usually, some assessments are to be undertaken prior to get approval of projects, like- (a) IEE (Initial Environmental Examination), (b) EIA (Environmental Impact Assessment), (c) SIA (Social Impact Assessment), (d) RAP (Resettlement Action Plan), etc. Third-party consultants are generally hired to produce those reports. Also an exclusive 'Environmental Act' has been developed by the Government, which is judiciously followed during procurement. To ascertain the economic viability of any project, NPV (net present value), IRR (Internal rate of return), and other financial parameters are measured. After all these studies and reports, the projects of the large investments have to be approved by the ECNEC before being executed.

This is clear that, before the approval of projects; the social, environmental and economic viability of the proposed projects are to be ensured. PGCB also follows those approval procedures. Its activity generally covers all those sustainability concerns. So this study is a further step to address some of those sustainability issues in PGCB.

4.2.3 Role of Procurement Function of PGCB in SPP

PGCB is undertaking a big amount of electricity infrastructure development projects with the help of GOB (Government of Bangladesh) fund and fund of other development partners, such as, World Bank (WB), Islamic Development Bank (IDB), Asian Development Bank (ADB), Japan International Cooperation Agency (JICA) and a number of foreign organizations (Contractors) like Siemens AG, ABB Switzerland, ABB India and local contractors like Energypac Engineering Ltd. and so on.

4.2.4 Utilization of the embedded opportunities in favour of SPP

PPR 2008 and its associated standard bidding documents (STDs) provides ample opportunities in favour of sustainable procurement. PGCB relies on those provisions and is utilizing the unspoken opportunities embedded within the principle of the Act and Rules in favour of sustainable procurement.

The GCC part provides the general conditions of contract to be undertaken, while the PCC part has left opportunities for PGCB to customize those conditions as per the need of a particular procurement. PGCB applies its skill and competency to utilise those embedded opportunities in the legal documents in favour of sustainable procurement. Some of these opportunities have been explored during the study with PGCB as follows:

- Working Hours (PCC 22.2.5): Normal working hours are from 9:00am to 5:00pm.
- In the special (particular) conditions of contract, one additional clause has been added under "Rates of wages and conditions of labours", indicating diversity and equality:

  Rates of Wages and Conditions of Labour (PCC 22.2.4): The Contractor shall: (i) comply with all applicable labour laws and related international treaty obligations of the Employer country ; (ii) may engage women workers as wage laborers depending on their skill; and (iii) provide equal wages for equal work between men and women.
- In the special (particular) conditions of contract, one additional sub-clause has been added under Clause 22 (Installation) to ensure the monitoring the environmental management:

  PCC 22.9: The Contractor shall carry out its responsibility of implementing the EMP, Environmental Code of Practice (ECoP) and other environmental and safety measures to complying with the requirement of the Bidding document. The Contractor shall not design, purchase, and install transformers containing PCB materials which is strictly prohibited. To perform the work the contractor must hire at least one environment, health and safety supervisor for this contract who should report monthly to the Employer for any breach of guideline.

4.2.5 Levels of Procurement Cycle to ensure Sustainability

Refering back to earlier case of PWD, it has been found that, procurement is a cyclic process. It maintains a clearly defined cycle from bid invitation to awarding. At the outset, a procurement notice is advertised, bidding documents are sold/distributed among the prospective bidders, bids are received from them and evaluated by the purchaser, and at last the successful bidder is awarded the contract.

Sustainability in procurement may be ensured at any of the aforesaid cycle. While discussing with PGCB officials, a sustainability dimension practiced during bid evaluation level was explored under this research study. It was a procurement of design, supply, installation, testing and commissioning of 230/132 kV and 132/33 kV GIS Sub Station at some districts of Bangladesh.

4.2.6 CASE STUDY - PGCB

Ensuring Sustainability at Bid Evaluation Level

PPR 2008 and its associated standard bidding documents (STDs) provides ample opportunities in favour of sustainable procurement. Under the case study procurement, Section III- Evaluation and Qualification Criteria of the bidding document described the required technical responsiveness criteria for the competing bidders. The financial part of the evaluation was grounded on “economic evaluation” which was based on operating and maintenance cost of the offered products.

The function of transformer is to step down high voltage into low voltage. In this procedure of stepping down, some energy is usually being lost within the process. It is obvious that transformers having low price (TCA- total cost of acquisition) with high energy loss will ultimately results in high TCO (total cost of ownership). This is not in line with sustainability concept. Hence, it will not ensure value for money to consider the lowest offered bid for awarding the contract without considering the aforesaid energy loss.

PGCB, in its bid evaluation process, therefore used a “loss capitalization formula”. Operating costs of the transformers i.e. capitalization cost (Evaluated price of Transformer loss) due to transformer loss evaluation was taken into account in accordance with the following formula:

Evaluated price of transformer loss = N.a + L.b + M.c

Where,

N = No load loss (core-loss) at rated voltage in kW

L = Load loss (copper-loss) at 75OC, 50 Hz maximum continuous rating in kW

M = Total load of transformer cooling fans at transformer maximum continuous rating in kW (when all the cooling fans are in operation)

a = Cost/kW of no-load loss (core-loss) valued at Taka 600,000.00

b = Cost/kW of load loss (copper-loss) valued at Taka 300,000.00

c = Cost/kW of auxiliary power valued at Taka 300,000.00

It should be noted that the value of N, L, M comes from the standard lab test carried out by some concerned internationally reputed third-party organization and it must be made available in the offered bid. Bidders have no option to manipulate the value of these coefficients by themselves.

Once the Evaluated price of transformer loss (A) is determined, then the Evaluated Bid Price (C) is calculated as follows:

Evaluated unit price (CIP) of each transformer shall become:

C = Evaluated unit price of each Transformer = A + B

Where,

A = Evaluated Price of losses of each Transformer = (N) x (a) + (L) x (b) + (M) x (c)

B = Unit Price (CIP) of Transformer

Hence, we can see from the aforesaid formula that a transformer even having high initial price (B) with low energy loss (A) still have opportunity to win the bid and being awarded the contract considering the overall value for money it offered to the purchaser.

This is a clear demonstration of ensuring the economic aspect of sustainable procurement.

4.3 Views from Dhaka Power Distribution Company (DPDC)

4.3.1 Extent of Sustainability consideration in DPDC Procurement

Dhaka Power Distribution Company Limited (DPDC) is a Public Limited Company under the Power Division of the Ministry of Power, Energy and Mineral Resources, Government of Bangladesh, which manages the distribution of electricity to the customers of the Dhaka City Corporation area. It is one of the largest power distribution companies in Bangladesh, which had been incorporated on 25th October, 2005 under the Companies Act 1994. The government owns 100% share of the company. DPDC started its commercial operation on 1st July, 2008 by taking over all assets and liabilities from its predecessor company, the then DESA (Dhaka Electric Supply Authority). While the company started its operation the number of customers were 655,908 and the number is around 1,685,842 as of 31 July, 2023. DPDC runs under a Board of Directors, which is comprises of 12 (twelve) directors nominated by the Government. Its strategic functions are run by a management team headed by the Managing Director and 5 (five) executive directors.

An electrical power system has three major segments. These three segments are generation, transmission and distribution. At the generation side, electricity is produced from primary fuel. At the transmission side, the power produced at generation is carried to the major load centers (known as grid) . At the distribution side, the transmitted power is finally connected to the end users i.e. retail customers. As long as an economically viable electricity storage system is developed, the demand created at the distribution system must be satisfied promptly by the producing power at the generating points and transmit through the transmission network, which ties between the demand end (distribution) and the supply end (generation).

4.3.2 Sectoral Perspective of DPDC Procurement

The power sector procurement ranges from simple goods or services to purchase of large power plant project. Simple procurement covers items like clips or cleaning services, while complex procurement covers projects like development of infrastructure, purchase of large machineries (such as generator, turbine and power transformer etc.) and installation of automation system (such as

SCADA etc). Procurement in the power sector principally differs between the public sector procurement and private sector procurement. The main objective of procurement in the private sector is basically profit oriented; whereas that in the public sector is to achieve value for money within the stipulated budget. In addition to this, power sector procurement needs to address the considerations of integrity, accountability, national interest and effectiveness since this sector deal with common people's interest.

4.3.3 Sustainability Consideration for DPDC Procurement

Dhaka Power Distribution Company Limited (DPDC) has several departments like engineering, operation, legal, audit, finance, procurement etc. Among them, DPDC gives huge importance to its Procurement unit, which has dedicated man power to manage the procurement related tasks. An Executive Director led this unit to manage all the procurement functions within the organization, supported by one Chief Engineer (Procurement & Store) and two Superintending Engineer (Contract & Procurement; Store Manager) under his administrative chain of command. As a government owned company DPDC has to follow PPA 2006, PPR 2008 and guidelines from CPTU for during procurement through public funds. However, procurement under the funds of development partners, DPDC also follows Procurement Regulations/Guidelines of the respective donor agencies. Both arrangements have particular guidelines in terms of sustainable procurement.

4.3.4 Utilization of the embedded opportunities in favour of SPP

Like PWD and PGCB, DPDC is also utilizing the unspoken opportunities embedded within the principle of the Act and Rules in favour of sustainable procurement. PPR 2008 and its associated standard bidding documents (STDs) provides ample opportunities in favour of sustainable procurement. By reling on those acts and rules, DPDC applies its skill and competency to utilise those embedded opportunities in the legal documents in favour of sustainable procurement. Some of these opportunities have been explored during the study with DPDC.

Specific KPI (Key Performance Indicator) for sustainable procurement is not set yet in power sector. But some issues related to sustainable procurement is maintained during procurement. These are value for money, no child labor, equal opportunity, ISO 2008-9001 standard accredited

organizations (i.e. BPDB, BREB, DESCO) etc. But, these are not enough for sustainable procurement.

4.3.5 Tripple Bottom Line consideration in DPDC Procurement

Social/ Ethical issues

DPDC follows the following Social, Environmental and Economic issues to be complied with in its supply chain, in general:

- Child labor are not allowed.
- DPDC also prohibit its outsourced organization from the recruitment of child labor.
- During recruitment, dedicated quota for women are given according to government rules to promote women participation.
- Besides running on commercial basis, DPDC also recognizes some social responsibilities, such as, collects electricity bills at a nominal rate from various social welfare organizations.
- In accordance with the Government initiative to introduce e-GP system to put an end to tender manipulation, DPDC commence the use of e-GP system to facilitate its procurement process.
- DPDC outsourced people to do some of its logistics functions like cleaner, security guard, some sort of transport, maintenance and operational gang etc. As a result management able to reduce some sort of operational cost every year.
- DPDC encourages consumers to use energy saving bulb, electric appliances etc.
- DPDC installed pre-paid meter in customer premises to reduce misuse of electricity.
- DPDC install solar panels to its different office premises to extract green energy.
- As per Government guidelines. DPDC ensures the implementation of solar panel to consumer premises according to sanction load at consumers own cost.
- Solar charging station has been planned to construct and install to charge the easy bike or auto rickshaw, hence saving the resources.

4.3.6 Levels of Procurement Cycle to ensure Sustainability

In a procurement process, there are opportunities to carry out sustainable practice in several phases; such as bidding, evaluation, contract management etc. Each phase handles the sustainability issue in its own mechanism. Sometimes compliance is the key tool, while sometimes competitive advantage plays the key role. There exist a distinct reference points, before and after which, mechanism of ensuring sustainability in procurement changes significantly. This decoupling point is known as the signing of the contract. Pre-contract mechanisms are proactive in nature, while the post-contract mechanisms are eseentially reactive. Contract management activities are the end part of the procurement cycle.

Sustainability in procurement may also be ensured at this end part of the cycle. While discussing with DPDC officials, a sustainability dimension practiced during the contract management level was explored under this research study. It was a procurement of 11/0.4 kV 250 kVA Distribution Transformer.

4.3.7 CASE STUDY - DPDC

Ensuring Sustainability at Contract Management Level

Often there is a huge time gap between publication of the advertisement of a procurement activity and final contract award. Also, there are cases where it takes more than years to complete the contractual obligation. Procurement of system installation and construction works very often fall under this category. For both cases the procurement suffers from price increase due to price hike of materials & labor, inflation in economy etc.

The fixed-price contracts or admeasurement contracts are very traditional in nature, where the suppliers or contractors are paid a fixed price agreed and signed at the outset with little variation based on measurement against actual work done. As a result, either the supplier/contractor suffers from financial loss or the work suffers from quality perspective. Sometimes, this situation provokes

dispute between parties. This is clearly against the sustainability principle from economic perspective

In order to make procurement sustainable, PPR addressed this issue by including a provision of "price adjustment clause" in the contract document, which could be exercised during the contract management phase. This is noteworthy that this is an optional clause which the purchaser may use if the contractual period is more than eighteen months. Usually this sustainability provision has been found not practiced widely by the purchaser, since they might not comprehend the inner benefit of using such clause.

However, during the discussion with DPDC procurement officials, it has been found that the organization uses this price adjustment provision as a safeguard against non-sustainable practice and hence ensure a win-win situation for both parties. The detail mechanism of the procedure is given below:

- **ITB Clause 27.9 of the Bidding Document states that:**

If so stated under ITT Sub Clause 27.9, Tenders are being invited with a provision for price adjustments. The quoted unit rates by the Tenderers are subject to adjustment throughout the performance of the Contract as per General Condition of Contract (GCC) Clause 69 and, under this situation, the Bidding document shall provide the indexes and weightings or coefficients in Appendix to the Tender (Table 1.1 and Table 1.2) for the applicable price adjustment formulae as specified in the Particular Conditions of Contract (PCC).

- **The corresponding TDS 27.9 states that:**

The prices quoted by the Tenderers shall be fixed for the duration of the Contract; OR; The prices quoted by the Tenderers shall be adjustable.

[Price adjustment clauses are usually permitted for Contracts, execution of which will take more than eighteen (18) months from Start Date to Completion Date. The Procuring Entity must consider each Contract on its individual merit; approval of HOPE required for Contracts of less than eighteen (18) months. If prices shall be adjustable, the base value of the Indexes including sources and, its

corresponding weightings or coefficients for adjustment should be specified in the Appendix to Tender: Table 1.1 and 1.2 and in the Contract].

- **ITB Clause 56.4 of the Bidding Document states that:**

The effect of any price adjustment calculated under GCC Clause 71 will not be considered in the Tender evaluation process, since the price adjustment arrangement is meant to be applied over the period of execution of the Contract.

- **GCC Clause 69.1 of the Contract Document states that:**

Fluctuations in the cost of inputs will only be considered for Price Adjustment provision, if provided for in the PCC. In such cases, the respective price adjustment factor shall be applied on the amounts as certified in each payment certificate before deducting for Advance Payment, the payment amount shall be so adjusted. The formulae indicated below applies:

P= A + B (Im/Io)

Where:

P is the adjustment factor

A and **B** are Coefficients which represents the nonadjustable and adjustable portions mentioned in the **PCC**; and

Im is the Index during the month the work has been executed and

Io is the Index prevailing twenty-eight (28) days prior to the deadline for submission of Tender.

The Indexes to be used is as published by the Bangladesh Bureau of Statistics (BBS) on a monthly basis. In case not available, then other countries or authorities of the sources mentioned in Appendix to the Tender may be used.

- **The corresponding PCC Clause 69.1 of the Contract Document states that:**

The Contract is subject to price adjustment, the formulae and weightings or coefficients of indexes for adjustment are:

[Price Adjustment Formulae to be applicable if stated under ITT Sub Clause 27.9 and ITT Sub Clause 27.10 shall be specified here].

Example:

P= A + a (Lm/Lo)+ b (BIm/BIo)+ c (CEm/CEo)+ d (RSm/RSo)+ e (STm/STo)+ f (BRm/BRo)+g (MIm/MIo) + h (FUm/FUo)+ etc

Where;

L= Labour, BI=Bitumen, CE=Cement, RS=Reinforcing Steel, ST=Stone, BR=Bricks, MI=Miscellaneous, FU= Fuel

Weighting or Coefficient A equals between 0.10 and 0.15 and, B (a+b+c+d+e+f+g+h+etc) equals between 0.90 and 0.85.

[*Insert figure*] non-adjustable component (**coefficient A**)

[*Insert figure*] adjustable component (**coefficient B**)

*[The sum of **A+B** shall equal **ONE** (1). It is usual to have value of **A** between 0.10 and 0.15 and that of **B** between 0.90 and 0.85. Breakdown of **B** shall be provided in **Appendix to the Tender.]***

[Reference is drawn to ITT Sub Clause 27.9 and ITT sub Clause 27.10]

The mechanism how the Price Adjustment Clause was used:

From our interview with the DPDC officials, it has been found that in one of its turnkey contracts for procurement of 11/0.4 kV 250 kVA Distribution Transformer, the application of price adjustment formula was successfully applied, and it resulted in value for money. At the outset, a 5-member committee was formed to take decision about price adjustment issues for major Goods under the contract. Examples of some major goods were Distribution Transformer, Cable (Copper), Steel Pole & Pole fittings, Conductor etc. Terms of References for the committee were set to derive the desired outcomes from them within a stipulated timeframe. Committee was required to put recommendations and findings on price escalation issue after analyzing data taking from the turnkey contractor and the project office. It was mentioned in the contract document that: 'Payment implication due to price escalation will be settled at the end of the contract". Hence it was decided that the price escalation would be calculated after all the Goods be delivered at the site. During the process, the required Price Index were collected from IEEMA (India) and LME (India). Rough estimation of the 'price escalation' was then prepared using these indices in the formula available under the 'price adjustment clause' of the contract. This estimated price escalation (positive or negative) was then negotiated with the turnkey contractor. Once agreed, the revised contract price considering the adjustment due to price escalation was applied during payment.

The case study observed that the price of most of the raw materials required for the finished products were decreased during the manufacturing time. As a result, the purchasing organization was able to adjust the reduced contract price (app. of an amount more than BDT 30.0 lacs) during final payment. This may not be the case for all the time, but this price adjustment brings a win-win result for both parties by making either the savings of the purchaser or the profit of the contractor more justifiable. This exerts a profound implication on the overall economic sustainability of the procurement.

Chapter 5

RESEARCH FINDINGS

The chapter is comprised of two sections. The objective of the research was to examine the whether the existing country legal system and corresponding practices are supportive of implementing sustainability in public procurement. A two-layered approach was undertaken to attain the objectives. At the outset, a vigorous review of the associated literature and previous studies was carried out in two separate areas: (i) sustainability, and (ii) public procurement. Strengthening the background knowledge combining the both areas, three different public sector organizations (having experience of power sector procurement) were approached for face-to-face interview. These organizations were PWD, PGCB, and DPDC. The study was mainly qualitative and exploratory in nature. The summary of the views and information received from the aforesaid studies and interviews have been presented as a summary of research findings in the first part of this chapter. In the second part, a linkage between the literature review (drivers of sustainable procurement) and research findings (desk study and interviews/case study) was established and presented.

5.1 Sumumary of Research Findings

5.1.1. PPA 2006, PPR 2008 and its associated Standard Tender Documents (STDs) provides ample opportunities in favour of sustainable public procurement, some of which have been spelled out in a more straight forward way.

5.1.2. The legal system has left many unspoken opportunities which are embedded within the principle of the PPA 2006 and PPR 2008. It is the skill and competency of the procuring entity to utilise those embedded opportunities in the legal documents in favour of sustainable procurement.

5.1.3. The concept of sustainability in procurement has its footing resting on three strong pillars: Economic, Environmental, and Social.

5.1.4. Government of Bangladesh has recently developed and adopted a Sustainable Public Procurement (SPP) policy with a detailed implementation roadmap.

5.1.5. In PPA 2006, PPR 2008, and associated STDs; elements of sustainability are embedded in the form of: Equitable Treatment, Performance based Specification, Health & Safety, Joint Venture provision, Domestic Preference, Threshold-based Procurement Methods, Lots for SMEs, Sub-contracting & Direct contracting, Output based Evaluation, Non-priced Criteria (Not Lowest), Labor Welfare, Hygiene at Workplace, Payment, Environment, etc.

5.1.6. Traditional practice of awarding contracts based on lowest cost (LCT) cannot ensure Value for Money (VFM); since LCT does not include other relevant costs attributed to the product and services to be procured, such as, social cost and environmental cost that are generated over the entire lifecycle of the product.

5.1.7. Procuring Entity should select the 'Most Economically Advantageous Tender' (MEAT) after carefully and judiciously calculating the cost of other attributes over the entire life cycle of a product. Comparison of responsive tenders on the basis of MEAT could only demonstrate the Value for Money in real sense.

5.1.8. Based on the principle of Rule 15 (Para 15.7) of PPR 2008, PWD goes for OTM (Open Tendering Method) to procure works above the threshold of BDT 3.0 crore and LTM (Limited Tendering Method) below this threshold. This ensures sustainability from economic perspective, since for lower value goods/works, the market responds very well and going for OTM seldom adds value due to involvement of more time and higher administrative cost.

5.1.9. PWD utilizes the provision of GCC Clause 26.1.c of STD-PW3 (Safety, Security and Protection of the Environment), which describes that the contractor shall be responsible to undertake all reasonable measures to safeguard the environment througout the execution of his work, and have to reduce the pollution and noise level arising from his work.

5.1.10. PWD utilizes the provision of GCC Clause 26.1.a (Health and safety of the workers); 27.1 (Working Hours); 28.1-3 (Welfare of Labors); 29.1 (Child Labors) etc. of STD-PW3, which obligates the contractor to ensure the worker's safety, protect them from excessive work, ensure proper accommodation & necessary hygienic requirements for them, restrain them from taking advantage from the economical exploitation of child labor.

5.1.11. Based on the principles of PPR 2008 rules, PWD ensures in their construction site appropriate signage for the stakeholders, adequate netting arrangement to prevent accidental damage to both workers and neighborhood, sufficient lighting arrangement at night etc.

5.1.12. In case of land acquisition and land development work, PWD looks after the rehabilitation and compensation of the affected people as per the prevailing laws of the country.

5.1.13. Government of Bangladesh has formulated exclusive 'Environmental Act' to be followed. Without the Environmental Clearance Certificate of the Department of Environment, no project gets approval to be executed.

5.1.14. Before approval of a Project, the economic, social, environmental viability and sustainability are to be ensured. The activity of PGCB follows those principles and cuts across all the sustainability concerns mentioned above.

5.1.15. PGCB utilizes the provision of PCC 22.2.5 Clause (Working Hours) of STD, which describes normal working hours are from 9:00 am to 5:00 pm.

5.1.16. In the PCC of STD, PGCB added one additional clause under "Rates of Wages and Conditions of Labors", which indicates equality and diversity. PCC 22.2.4 describes that the Contractor shall: (i) abide by all applicable laws related to labor and associated with international treaty obligations assumed by the Employer country; (ii) engage women workers as wage laborers as per their skill, if required; and (iii) provide equal wages irrespective of men and women for equal work.

5.1.17. In the PCC of STD, PGCB added one additional sub-clause under Clause 22 (Installation) to ensure the supervision of the environmental management. PCC 22.9 describes that the implementation of the EMP, Environmental Code of Practice (ECoP) and other environmental and safety measures as mentioned in the Bidding document shall be carried out by the Contractor.

5.1.18. Within this entire procurement cycle, sustainability could be ensured at multiple levels, such as, specification level, qualification criteria level, evaluation criteria level, contract condition level, contract management level etc.

5.1.19. In one of its turnkey contracts for procurement of Distribution Transformer, DPDC achieved value for money through the successful application of Price Adjustment formula during contract management. The case study observed that the price of most of the raw materials required for the finished products were decreased during the manufacturing time. As a result, the purchasing organization was able to adjust the reduced contract price (app. of an amount more than BDT 30.0 lacs) during final payment.

5.1.20. The case study carried out in PWD, PGCB and DPDC; the demonstration was made in favor of ensuring sustainability at Specification Development level, Bid Evaluation level, and Contract Management level.

Findings on major challenges of adopting and implementing SPP

5.1.21. Perception that the products and/or services which are sustainable in nature could be more expensive compared to the traditional one.

5.1.22. Lack of obligatory rules &legislation on sustainable procurement, lack of strong leadership intervention from political and organizational perspective on SPP.

5.1.23. Lack of clear definition of sustainable products, services and/or supplier operations.

5.1.24. Lack of expertise on SPP implementation.

5.1.25. Understanding of what exactly is a sustainable product; and understanding the importance of making sure that the products that they procure are sustainable.

5.1.26. Companies may create false or misleading claims about sustainability benefits of their products (also known as 'Greenwashing').

5.1.27. Greenwashing is done either through 'selective disclosure' (i.e., advertising only the favorable information regarding the environmental performance of a product and at the same time, hiding the adversarial one) or 'symbolic actions' (i.e., highlighting minor issues such as carbon offsets while ignoring the climate impact of its investment portfolio.

5.1.28. While there are existing "Ecolabels" that could be a good tool to fight greenwashing, procuring entities may not be confident enough to possibly integrate these labels in their public procurement practices, as shown by the popular perception of 'lack of expertise on SPP implementation'.

5.2 Linkage between Literature Review (Drivers of Sustainable Procurement) and Research Findings (Desk Study and Interviews/ Case Study)

Table 5.2.1 Linkage between External Drivers for SPP and Research Findings

SL	External Drivers	Description of the Driver	Linkage with the Research Finding
1	**Political factors**	Political factors are the external forces affecting an organization that are brought on by government. They typically cover areas including different government policies like tax policy, labor law, environmental law, tariff & non-tariff barriers, trade restrictions, foreign policy, political stability, etc.	In this research study, it has been found that the Government of Bangladesh already adopted various policies in different area, which have direct profound impact on the implementation of sustainable public procurement. These prior policies are: • The National Sustainable Development Strategy (NSDS) • Environmental Policy • The National Agriculture Policy of Bangladesh 1999 • Renewable Energy Policy • Low Carbon Policy (Climate Change) • Strengthening SMEs Policy
2	**Economic factors**	External economic factors can have profound impact on a business and its future strategy. These factors may include economic growth, exchange rate, inflation rate, interest rate, etc. The impacts may include loss of market demand for unsustainable products or services, rising	In this research study (case study of DPDC), it has been found that DPDC did not go for traditional "fixed-price contract" strategy, which do not consider any rise or fall of component/material cost due to inflation. This is against the sustainability principle from economic perspective. In order to

SL	External Drivers	Description of the Driver	Linkage with the Research Finding
		market demand for sustainable products or services, etc.	make procurement sustainable, DPDC kept the provision of "price adjustment clause" in one of its important contract document, which acted as a safeguard against non-sustainable practice and hence ensure a win-win situation for both parties.
3	**Social/ Ethical factors**	Social/Ethical factors may influence decisions relating to manufacturing, the use of raw materials, how a business prices & markets a product and the relationship between a company and its customers, in general. It includes labor and consumer pressure for sustainable practices, emerging social justice and ethical issues like corporate governance, corruption, fair trade, human & labor rights, professional & industrial codes of ethical practice, etc.	From the desk study, it has been found that various contract clauses (GCC, Works) used in the public procurement address different aspects of Social & Ethical factors. These include health and safety of the workers (26.1.a), working hours (27.1), welfare of labors (28.1-3), child labors (29.1) etc. Based on the principles of these clauses, PWD was found compliant to these factors during the visit to the organization for interview. PWD ensures in their construction site appropriate signage for the stakeholders, adequate netting arrangement to prevent accidental damage to workers/ neighborhood, sufficient lighting arrangement at night, equal payment irrespective of gender & age to be paid by the contractor, etc.
4	**Technological factors**	Technology is a significant external factor affecting businesses sustainability. It has profound impacts on competitor/ market innovation and take-up of	The public procurement rules require that the specification of products should be non-restrictive in nature. Moreover, the bid complying the

SL	External Drivers	Description of the Driver	Linkage with the Research Finding
		sustainable technologies (new products, materials, processes, etc.); exposure of unsustainable technologies (e.g. resource usage, wastes); and opportunities in new sustainable technology markets (e.g. alternative energy). It may include technological aspects like R&D activity, automation, technology incentives, new product & market development, etc.	specification with lowest price has to be awarded. On the other hand, sustainable products usually come with higher cost since it focuses on value for money. As a result, products with sustainable features were unable to compete fairly with its counterpart products in the bidding process. In this research study (case study of PWD), it has been found that PWD has recently (2022) incorporated some power sector items in its control documents titled "Schedule of Rates", which demonstrates how sustainability could be ensured at specification development level. Once incorporated in the Schedule of Rates, PWD can now directly procure these sustainable products without hampering the core principal of public procurement legal framework.
5	**Legal factors**	Legal factors are intrinsically linked to political factors, and changes in the law may depend on the policy agenda of the Government. In fact, legal factors examine the practical application of the political factors into rules and regulations that impact organization's business or customers. These factors could impact supplies, imports and exports, quality standards and regulations, employment and working conditions. Legal factors	From the desk study, it was found that the public procurement legal framework of Bangladesh (PPA 2006 and PPR 2008) adheres to the principles of sustainable procurement. These acts & rules support both the use of lowest-cost tender as well as award based on technical, social, or economic grounds. Also, the Government recently adopted the Sustainable Public Procurement (SPP) policy. During the desk study, several explicit provisions

SL	External Drivers	Description of the Driver	Linkage with the Research Finding
		may include national/ international legislation on sustainability, waste, pollution, emissions, employment rights, health and safety, consumer rights, corporate governance, public sector procurement etc.	supporting SPP have been found in PPA 2006 and PPR 2008. Some out of these SPP provisions were also seen to be practiced at field level during the field study at all three case study organizations (i.e. PWD, PGCB, and DPDC).
6	**Environmental factors**	Environmental factors have significant impact on a business and its future strategy. These factors include waste disposal, recycling, energy consumption, pollution levels, etc. They are affected by weather, geography, climate change, and health crises. Environmental factors may impact on resource depletion and costs (especially energy costs), issues of concern to key stakeholders (e.g. climate change, GHG emissions, deforestation, water management, conservation, waste reduction, biodiversity, pollution, etc.), national targets under international agreements.	In this research study (case study of PGCB), it has been found that PGCB takes Environmental Clearance Certificate from the Department of Environment prior to commence any development project. Some environmental and social assessments are done before undertaking these projects. These include IEE (Initial Environmental Examination), EIA (Environmental Impact Assessment), SIA (Social Impact Assessment), RAP (Resettlement Action Plan), etc. Third-party consultants are employed to survey and generate those reports.
7	**External stakeholder factors**	External stakeholder factors include interest and pressure in any or all of the above factors (i.e. political, economic, social/ethical, legal, technological, and environmental); creating threats and opportunities for the organization in obtaining resources and collaboration (e.g. customers, labor, investors,	Political factors drive toward adoption of policies supporting SPP. Economic factors drive toward achieving value for money against lowest cost. Social & Ethical factors drive for the consideration of health & safety of the workers, working hours, welfare of labors, child labors etc. Technological factors drive toward research &

SL	External Drivers	Description of the Driver	Linkage with the Research Finding
		pressure group activism, potential for cause-related marketing, etc).	development for new product specification supporting SPP. Legal factors drive towards adherence to PPA 2006 & PPR 2008. Environmental factors drive for the requirement of carrying out necessary environmental and social assessments, taking Environmental Clearance Certificate prior to undertaking projects.

[Source: Analysis of the linkage between Primary data (Desk & Case Studies) & Secondary data (External Driver) used in this thesis report by the Author]

Table 5.2.2 Linkage between Internal Drivers for SPP and Research Findings

SL	Internal Drivers	Description of the Driver	Linkage (demonstration) with the Research Finding
1	**Corporate Goals**	Corporate vision, mission and objectives including sustainability values and aspirations.	Commitment to SPP
2	**Organizational Status**	Existing CSR and/ or corporate citizenship objectives/ policies.	Adherence to PPA 2003 & PPR 2008
3	**Top level Buy-in**	Senior management visionaries, champions and supporters of sustainability.	Follow the Threshold-based DOFP (HOPE, AA, PE)

SL	Internal Drivers	Description of the Driver	Linkage (demonstration) with the Research Finding
4	**Business Factors**	Business case arguments for sustainability, enhanced reputation, brand strength and sales revenue, cost/ waste reduction (eco-efficiencies), enhanced supply chain innovation and efficiency, reduced regulatory burden.	Value for Money Adherence to Budget
5	**Accountability Factors**	Accountability mechanisms, which demonstrate seriousness, and make reward contingent on sustainability progress/ performance.	Accountability: Post review, Audit Transparency: IFT in Newspaper & Website, Public opening, de-briefing, complaint handling Equality: Non-restrictive Competition: OTM
6	**Risk Awareness**	Priority given to risk management, perception of business, reputational and supply risk from non-sustainability, reputational damage	Procurement Plan Official Cost Estimate PPSD
7	**Stakeholder Factors**	Internal stakeholder demand for sustainability (e.g. need to attract and retain quality managers, employees, investors and supply chain partners).	Procurement Unit Procurement Professional Training

[Source: Analysis of the linkage between Primary data (Desk & Case Studies) & Secondary data (Internal Driver) used in this thesis report by the Author]

Chapter 6

CONCLUSION AND RECOMMENDATIONS

Based on the research findings and in light of the insights received from the interviews, following recommndations may be advised to enhance sustanibility practices in public procuremt of Bangladesh.

6.1. A legal framework for sustainable public procurement should be developed and adopted.

6.2. The existing procurement Acts & Rules should be revised by incorporating specific provisions that expressly support sustainable aspects (economic, environmental and social) of SPP.

6.3. Procuring Entities should be trained to apply every opportunity available in the Sustainable Public Procurement (SPP) policy recently developed and adopted by the Government of Bangladesh.

6.4. Procuring Entities should be trained to apply their skills and competencies to utilize the embedded opportunities in the legal documents in favor of sustainable procurement.

6.5. To ensure sustainability in procurement, Procuring Entities should utilize opportunities available under each cycle of procurement, such as, procurement planning level, specification level, qualification criteria level, evaluation criteria level, contract condition level, contract management level etc.

6.6. In the preparation of procurement plan, it may be recommended to reserve some particular type of procurement for socially-disadvantaged groups, women-led businesses and small and medium enterprises.

6.7. In the preparation of procurement plan, procuring entities should be allowed to split a single procurement work into more than one package and packages into more than one lot; in order to facilitate a particular procurement activity, such as, reserved procurement for socially disadvantaged groups, women-led businesses and small and medium enterprises.

6.8. In setting the prequalification and qualification criteria for the bidders, procuring entities should be allowed to include special criteria aimed at promoting bidders with existing social and environmental protection standards, to the extent compatible with existing regulations.

6.9. In the preparation of specifications and terms of reference, procuring entities should be allowed to include environmental characteristics in terms of operational performance and requirements.

6.10. In the preparation of specifications and terms of reference, procuring entities should be allowed to include requirements for ‘eco-labels’ or equivalent standards, which have been scientifically developed, adopted following specific procedures and are available in the market.

6.11. In setting the bid evaluation criteria for the bidders, procuring entities should be allowed to use ‘non-priced criteria’, such as, rated criteria, preferential treatment of local goods, operation costs, cost effectiveness, after-sales service, technical assistance, life-cycle assessment, quality of goods & service, technical merit, innovation, etc.

6.12. In setting the contract condition for the bidders, procuring entities should be allowed to include mandatory or preferencial conditions to comply with applicable environmental law and regulations.

REFERENCES:

1. GoB (2023). Sustainable Public Procurement (SPP) Policy, 2023. Central Procurement Technical Unit CPTU), Implementation Monitoring and Evaluation Division (IMED), Ministry of Planning (MoP), Government of the People's Republic of Bangladesh. Bangladesh Gazette, dated 10 December 2023.

2. GoB (2006). Public Procurement Act (PPA) 2006. Central Procurement Technical Unit CPTU), Implementation Monitoring and Evaluation Division (IMED), Ministry of Planning (MoP), Government of the People's Republic of Bangladesh. Bangladesh Gazette, dated 06 July 2006.

3. GoB (2008). Public Procurement Rules (PPR) 2008. Central Procurement Technical Unit CPTU), Implementation Monitoring and Evaluation Division (IMED), Ministry of Planning (MoP), Government of the People's Republic of Bangladesh. Bangladesh Gazette, dated 24 January 2008.

4. GoB (2009). Public Procurement Act (PPA) 2006: **amendment**. CPTU, IMED, MoP, GoB. Bangladesh Gazette: 16 June 2009.

5. GoB (2011). Public Procurement Rules (PPR) 2008: **amendment**. CPTU, IMED, MoP, GoB. Bangladesh Gazette: 29 March 2011.

6. MoF (2020). Delegation of Financial Powers, Finance Division, Ministry of Finance (MoF), Government of the People's Republic of Bangladesh, dated: 24 August 2020.

7. GoB (2011). Bangladesh e-Government Procurement (e-GP) Guidelines. Central Procurement Technical Unit CPTU), Implementation Monitoring and Evaluation Division (IMED), Ministry of Planning (MoP), Government of the People's Republic of Bangladesh. Bangladesh Gazette, dated 15 February 2011.

8. World Bank. (2023). The World Bank Procurement Regulations for IPF Borrowers, Procurement in Investment Project Financing for Goods, Works, Non-Consulting and Consulting Services, Fifth Edition, September 2023.

9. World Bank (2019). Sustainable Procurement: An introduction for practitioners to sustainable procurement in World Bank IPF projects. April 2019.

10. World Bank (2020). Assessment of Bangladesh Public Procurement System, Bangladesh. Governance Global Practice, South Asia Region, The World Bank. June 5, 2020.

11. Public Works Department (2023). PWD Schedule of Rates 2022 (Revised), Sixteenth Edition (Revised), Public Works Department, Government of the People's Republic of Bangladesh. Effective from 23 February 2023.

12. Request for Bids; Plant Design, Supply and Installation (Without Prequalification) (Two-Envelope Bidding Process), Bidding Document For Procurement of Design, Supply, Installation, Testing and Commissioning of 230/132 kV GIS SS at Kachua, 132/33 kV GIS SS at Muradnagar, Lakhsam, Chandina, Koshba, Laxmipur. Power Grid Company of Bangladesh Limited. Volume 1 of 2. 2019.

13. Procurement Policy Note and Roadmap to Sustainable Public Procurement. Peoples' Republic of Bangladesh. July 2022.

14. Sustainable Procurement: Scope and Practice in the Public Sector in Bangladesh. Md. Kamruzzaman. Dissertation submitted in partial fulfillment of the requirements for the Degree of Masters in Procurement and Supply Management. Institute of Governance Studies, BRAC University. December 2012.

15. The Procurement System of Bangladesh Election Commission: A Focus on Decentralization. Fahmida Sultana. A thesis submitted to the Department of BRAC Institute of Governance & Development (BIGD) in partial fulfillment of the requirements for the degree of Masters in Procurement and Supply Management (MPSM). December, 2023.

16. CIPS. (2014). Chartered Institute of Purchasing and Supply. UK. Retrieved on 14 September 2014 from www.cips.org

17. Blackburn, W. R, 2007. The Sustainability Handbook. pp 2-3

18. Brundtland Commission Report, 1987: "The Report of the U.N. Brundtland Commission, Our Common Future, 1987" as Report of the World Commission on Environment and Development

19. UNGM, 2011, United Nations Global Marketplace. Retrieved 09 October 2011 from http://www.ungm.org/sustainableprocurement/default.asp

20. https://onstrategyhq.com/resources/pestle-analysis-examples/

21. https://en.wikipedia.org/wiki/PEST_analysis

22. https://uk.indeed.com/career-advice/career-development/what-is-steeple-analysis

23. https://www.masterclass.com/articles/steeple-analysis

Appendix A. QUESTIONNAIRE

BRAC Institute of Governance and Development (BIGD)
BRAC University, Dhaka
Masters in Procurement and Supply Management (MPSM)

Key Informant Interview (KII) Guidelines

Research Topic:
"Sustainability Considerations in the Public Procurement: The Power Sector Perspective".

Name of the Researcher: Sharmin Nahar Quadir.

The objective of the research was to examine the whether the existing country legal system and corresponding practices are supportive of implementing sustainability in public procurement. In order to achieve the objectives, three different public sector organizations (having experience of power sector procurement) were approached for face-to-face interview. These organizations were PWD, PGCB, and DPDC. The study was mainly qualitative and exploratory in nature. A semi structured open-ended questionnaire was used. The key informant interviews (KII) were initiated with some basic questions on common procurement related practices being exercised in the respondent's organization. As the time passes, subsequent relevant questions were asked on top of the previous questions to form a chain of broader perspective and enhanced body of knowledge on sustainability issues. The basic questionnaire is as follows:

1. Please provide a brief description about the scope of work of your organization.
2. To what extent your organization is related with public procurement? Could you please provide an idea about the share of the procurement expenditure in comparison to the total annual budget/expenditure?
3. Do you follow PPA 2006 and PPR 2008 in your procurement? Are there any different procurement regulations to be followed other than PPR 2008?
4. Do you use e-GP system administered by CPTU?
5. Please share your experience on the extent/scope of your organization to consider sustainability aspects in your procurement.

6. Do you follow any standardized specification while procuring Goods/ Works/ Services? If yes, how far these specifications support sustainability features?
7. Do you feel any conflict between costs vs. features (i.e. LCT vs. VFM) considerations in your procurement? If yes, how do you resolve the conflict?
8. Does the whole-life-costing consideration play any significant role in your procurement? If so, please share some examples that demonstrate the issue.
9. Please share your experience regarding various environmental considerations in your procurement (if any), such as, carbon footprint, energy efficiency/ independence, renewable energy, long lifespan, reduced waste, pollution-free production system, etc.
10. Please share your experience regarding various social and ethical considerations in your procurement (if any), such as, health and safety of the workers, working hours, welfare of labours, child labours, rates of wages, conditions of labour, environmental code of practice, etc.
11. Within this entire procurement cycle, such as, specification level, qualification criteria level, evaluation criteria level, contract condition level, contract management level etc.; to what extent you enjoy the opportunity to implement various sustainability features in procurement. Please share some of your experiences in this regard.
12. Do you feel any difference between national and international bidding in implementing sustainability in your procurement activities?
13. Is there any requirement to go for environmental assessments prior to commence a project? Does project need any approval or clearance form relevant authority?
14. Please share your valuable experiences with respect to the utilization of the embedded opportunities in favour of sustainable public procurement.
15. Do you have any internal policies regarding the triple bottom line consideration in procurement?
16. Please share one particular success story (case study) where a sustainable procurement had successfully been practiced within your organization.

Many thanks for your kind patience and valuable insights for this research study.