

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**EFFECT OF SUSTAINABLE PROCUREMENT PRACTICES ON  
OPERATIONAL PERFORMANCE – CASE STUDY GHANA GRID COMPANY  
LIMITED (GRIDCo)**

**BY**

**RICHARD KORANCHIE**

**(B. Ed Psychology, Accounting Option)**

**A Thesis submitted to the DEPARTMENT OF BUILDING TECHNOLOGY,  
COLLEGE OF ART AND BUILT ENVIRONMENT in partial fulfillment of the  
requirements for the degree of**

**MASTERS OF SCIENCE (MSC.) PROCUREMENT MANAGEMENT**

**SEPTEMBER, 2015**

## **DECLARATION AND CERTIFICATION**

I hereby declare that this submission is my own work towards the award of MSc. Procurement Management and that to the best of my knowledge, it contains no material already published by another person or material which has been accepted for the award of degree from another university, except where due acknowledgement has been made in text.

**RICHARD KORANCHIE**

.....  
**Signature**

.....  
**Date**

**PG Number: PG1768614**

**CERTIFIED BY:**

**Dr. BERNARD BAIDEN**  
**(SUPERVISOR)**

.....  
**Signature**

.....  
**Date**

**Dr. BERNARD BAIDEN**  
**(HEAD OF DEPARTMENT)**

.....  
**Signature**

.....  
**Date**

## **DEDICATION**

This Project is dedicated to my late grandmother, my mother, my wife Annette Amponsah, my children Ayeyi, Osomfo and Sika Koranchie and my head pastor, Rev. Danyel Ofori Yeboah.

## **ACKNOWLEDGMENTS**

My deepest gratitude goes to the Lord Almighty for grace and favour He bestowed on me throughout my study. Also, want to thank Him for the strength, wisdom and the mental will to undertake this project work.

I also want to express my sincere appreciation to Dr. Bernard Baiden and Dr. Kwame Ofori-Kuragu for their help and contributions towards the completion of this work. May God bless you.

I would also like to thank all respondents to the questionnaires who took time out of their busy schedule to respond to the questions. Without your help this work would not have been completed. God bless you.

Want to thank my pastor and members of Herald Family Chapel for their prayer support. I say thank you.

Finally want to thank my mum, Victoria Andoh for her financial support, my wife Annette Amponsah for the moral and emotional support throughout the study. My children Ayeyi, Osomfo and Sika Koranchie, it is because of you that I aspire for greater achievements. God bless you all.

## **ABSTRACT**

According to the World Bank report, between 50-70% of the national budget accounts for Public Procurement expenditures, 14% of the budget is attributed to the Gross Domestic Product (GDP) and 24% for total imports. It is against this background that institutions need to embed Sustainable Procurement Practices in their operation in order to maximise the efficient and judicious use of their scarce resources. Sustainability is defined as the right balance between people, planet and profit. These three elements are represented by the social, environment and economic factors. Procurement is a business management function that safeguards, identifies, source and manage the external resources an organisation needs to achieve its goals. Therefore sustainable procurement is the acquisition of goods, works and services that incorporate social, environment and economic issues in the procurement process. Public Entities procure without taking into consideration the effect that sustainability will have on the procurement process, staff handling procurement in the Entities are not aware of Sustainable Procurement Practice and the effect that it has on the procurement process. Sustainable procurement is a global phenomenon which ensures public sectors to buy goods and services in socially, economical and environmentally friendly ways. Sustainable Procurement practice is yet to receive the much needed attention in Ghana. This has given rise to the amendment of the Public procurement Act 2003 (Act 663) to incorporate sustainable issues such as Health and Safety, Security, Environment and Social in Public Procurement. This study aims to seek to assess the effect of Sustainable Procurement Practice on the operation of GRIDCo. To realise this aim, the following objectives were set out to assess the extent to which procurement processes in GRIDCo embed sustainability in their procurement process and also to identify the level of awareness of sustainable procurement practice in GRIDCo. A descriptive research design was adopted for this research where a qualitative approach was

employed in the collection of data through the administering of questionnaires. The sampling techniques adopted for this research is the purposive sampling techniques because of the technicality of the area that is being studied and that experts in the field were selected to respond to the questionnaires. The population for the study was all staff head office in the Procurement Unit in GRIDCo and also staff from other department in the head office who are involved in the procurement process. The findings on study indicated that, GRIDCo embeds sustainable procurement in their procurement practices and that it impact positively in their procurement process by achieving value for money over a long term period. The study also brought to light about challenges that hinders the full implementation of Sustainable Procurement Practice in GRIDCo. The study further revealed that the staff of GRIDCo is aware of sustainable procurement practice and they employ these practices in their procurement activities. The study also recommended that GRIDCo should roll out a policy document that spells out sustainable development in its operations and also recommended that capacity building and professional training should be given to staff who is involved in the procurement process.

**Keywords: Sustainable Procurement Practice, Public Procurement Authority**

## ACRONYMS

GRIDCo	Ghana Grid Company Limited
SPP	Sustainable Procurement Practice
PPA	Public Procurement Authority
PUFMARF	Public Financial Management Reform
SPSS	Statistical Package for Social Science
BSP	Bulk Supply Point
GDP	Gross Domestic Product
WSSD	World Summit on Sustainable Development
VRA	Volta River Authority
WLCC	Whole Life Cost
BPA	Bui Power Authority
TICO	Takoradi International Company
ECG	Electricity Company of Ghana
NEDCo	Northern Electricity Distribution Company
VALCo	Volta Aluminum Company Limited
PER	Public Expenditure Review
PFM	Public Finance Management
GOG	Government of Ghana
PMT	Project Management Team
OED	Oxford English Dictionary
WCED	World Commission Environment Development
MTF	Marrakech Task Force
CERGIS	Center for Remote Sensing and Geographical Information Services

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

The role electricity plays in our everyday life cannot be relegated to the background. It is the vehicle that industries use to realise its core business. Households and commercial entities need electricity to make them exist comfortably. Ghana Grid Company Limited (GRIDCo) was established as a limited liability company in 2008 to transmit electricity to bulk customers and distributing companies in the country and other neighboring countries. The transmission line spans over 4000 km which are connected to generating stations. The transmission network links various Bulk Supply Points (BSP) of over 50 which are scattered all over the country. The BSPs and the transmission line are constantly maintained to prevent outages in the system.

According to the 2013 Annual Report, Procurement takes 30-50% of GRIDCo's revenue and it is on this premises that sustainability should be embedded in the procurement process in GRIDCo (GRIDCo, 2013).

It is from this backdrop that Public Procurement should incorporate sustainability.

Though many countries are now embracing the idea of sustainability, more effort should be built in the developing countries public procurement systems to fully focus on sustainability for them to fully take advantage of the myriad of benefits that sustainable procurement bring to the procurement practice.

Public Procurement contributes to achieve sustainable development goals (WSSD, 2002).

The Johannesburg Plan was initiated to implement the promotion of the integration of the three component of sustainable development are independent and mutually reinforcing.

The purpose of the Plan was to encourage public procurement practice that stimulates development thereby diffusing environmentally sound goods and services. Three pillars of sustainability were derived in the Plan namely; Social development, Economic development and Environmental protection.

Considering the three pillars of sustainability means that the Procurement Entity should look beyond the three traditional conventions of price, quality and services when making buy or make decisions but consider the Whole life Cycle Cost (WLCC) of procurement. The WLCC does not consider only the initial cost of the item being procured but also takes into consideration the cost of operating, maintenance and subsequent disposal of the item to ascertain the real value of the money over a longer period.

With a slight detour from the traditional procurement which concentrate mainly on value for money as the main consideration to the procurement process, sustainable procurement as per the definition, goes beyond the achieving the value for money on a whole life-basis but also incorporating Economic, Environment, Health and safety and Social dimensions in the procurement process.

It is on this basis that the Act that governs procurement activities in Ghana, Public Procurement Act, 2003, Act (663) is being revised to include Social, Environment, Health and safety impact in the Tendering Document to improve the procurement process in the Country.

For this to be well embraced by the public sectors, implementation, monitoring and evaluation teams should be set up to ensure that the criteria and guidelines that have been set up by the Public Procurement Authority (PPA) are followed to the later and that stringent penalties should be levelled on institutions that flout the law.

## **1.2 Problem Statement**

Sustainable Procurement in Ghana has not been implemented in the sense that there are major challenges that have bedeviled the procurement practice in Ghana. Amongst them are; no policy document to provide guidelines which spells out criteria to the implementation of sustainable procurement practice. Public Entities procure without taking into consideration the effect of sustainability in the procurement process, Suppliers and Contractors are not abreast with the evolving trends of sustainable procurement and are not conscientise about the sustainability and Procurement staff not aware of the sustainable procurement practices. Procurement Entities do not think sustainably during the procurement process.

The highlight of the problem being studied is to assess the effect of sustainable procurement practices on operational performance of GRIDCo.

## **1.3 Research Questions**

- 1 To what extent does GRIDCo practice Sustainable Public Procurement?
- 2 What are the benefits in the implementation of sustainable procurement practices in GRIDCo?
- 3 Does GRIDCo face some challenges in the implementation of Sustainable Public Procurement?
- 4 What are the recommendations to the attainment of SPP in GRIDCo?

## **1.4 Aim of the Study**

The aim of this study is to assess the effect of Sustainable Procurement Practices on GRIDCo's operations.

## **1.5 Research Objectives**

The research objectives of the study are as follows:

- 1 To assess the extent to which procurement processes in GRIDCo embeds Sustainability.
- 2 To identify the benefit in the implementation of Sustainable Public Procurement.
- 3 To identify challenges faced in the implementation of Sustainable Public Procurement.

## **1.6 Scope of Research**

The research work predominantly looked at the staff of the Procurement Unit and other staff of GRIDCo in other departments other than Procurement that are involved in the Procurement activities in Ghana Grid Company Limited. The research was conducted in Ghana Grid Company Limited, Tema and was limited to staff in the Head office.

## **1.7 Significance of the study**

The project is to assess the effect of Sustainable Procurement Practice in Ghana Grid Company Limited and its effect on the operations of GRIDCo and recommend the incorporation of Sustainable Procurement Practice in the procurement process to achieve an effective implementation of Sustainable Procurement Practice thereby achieving a green organization.

Research findings of the work will help to improve upon the environmental issues that bedevil the operations of GRIDCo. It would also improve social wellbeing by reducing poverty and enhancing the standard of living. The economic benefit would also not be left out which would encompass the generation of income, cost reduction and transfer of knowledge and innovation. This study would also serve as a secondary source of information for other researchers.



Effective sustainable procurement practice will help the promoting transparency, fairness, efficiency, value for money etc. which are the objective of public procurement systems.

### **1.8 Research Methodology**

The population for the study was drawn from the staff in the Procurement Unit in GRIDCo and staff from other departments who are involved in the procurement activities of Ghana Grid Company Limited. The units of the sample were Managers, Engineers, Lawyers, Accountants and Procurement Specialist.

Both Primary and Secondary sources of data were employed in the study. The Primary data was acquired by the administration of questionnaires to respondent to elicit their responses on the effect of sustainable procurement practice on the operations of GRIDCo. The Likert scale was used for the questionnaires.

The data was analysed by the used of Statistical Package for Social Science (SPSS) where statistical tools like Mean and Standard Deviation were used. The research also employed other statistical tools like Relative Importance Index (RII) to assess the relative importance of the stated objectives.

Secondary data was sourced from Publications, Journals, Articles and GRIDCo's Annual Reports.

### **1.9 Limitation of the Study**

The scope of the study was limited in the sense that there was limited budget and time frame which made it impossible for the researcher to cover all the operational areas that GRIDCo operate in. The Researcher was also unable to retrieve all the questionnaires that were administered due to uncontrollable factor.

### **1.10 Organization of the Study**

The research is divided into five 5 chapters as seen below:

The first chapter includes study's background, problem statement, research questions, aim and objectives of the study, significance of the study, scope of the study, research methodology and the organization of the study. The second chapter presents literature on theoretical and empirical relevance to the chosen topic. The chapter three presents the methodology of the study where data requirement and sampling procedures as well as analytical tools would be covered. The fourth chapter is devoted to analysis and interpretation of data. Finally, the summary of findings of the work as well as conclusions and recommendations of the research work would be presented in chapter five of the research work.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter provides overview of relevant literature in connection with the project topic in order to provide theoretical foundation for the study for general understanding of the research topic.

#### **2.2 Overview of Ghana Grid Company Limited**

Ghana Grid Company Limited (GRIDCo) was established and incorporated in December 15, 2006 as a limited liability company. It became operationalized in August 1, 2008. It was established in accordance with the Energy Commission Act, 1997 (Act 541) and the Volta River Development (Amended) Act 2005, (Act 692). The Act provides the operation of the National Interconnected Transmission Systems which is separate and independent from Volta River Authority (VRA) (Energy Commission, 2015).

##### **2.2.1 Vision**

To be the model electricity grid Company

##### **2.2.2 Core Values**

**Responsiveness:** We attend to internal and external customer needs with focus, speed and skill and effectively engage our stakeholders.

**Integrity:** We adhere to moral and ethical principles as well as non-discrimination and transparency in our service delivery

**Excellence:** We strive to be outstanding in everything we do. We consistently create better ways of doing our work.

**Caring:** We are committed to act with compassion in all situations, to listen with respect to employees, customers and stakeholders and to value their differences (GRIDCo, 2009).

### **2.2.3 Mode of Power Transmission**

The Energy produced by the generating stations such as Bui Power Authority, Asogli Power Plant, Volta River Authority are transmitted to VRA power sale consumers through the interconnected transmission network which are delivered to distributing companies like the ECG, VALCo, the Mines other Bulk Supply Points (BSPs) .

The existing voltage levels are 161kV, 69kV and 225kV. This transmission grid is made off of a various substations and transmission line of over 4000km of high voltage transmission line which are operated through 161kV and 69kV and a 225kV which is interconnected to Cote d'Ivoire.

Ongoing project will see the replacement of 161kV with a 330kV as a primary transmission voltage (GRIDCo, 2009).

### **2.2.4 GRIDCo OPERATIONAL AREAS**

The maintenance and operations of the transmission network is being handled by two Departments.

These Departments are further divided into seven (7) areas which are widely spread all over the country with various substations namely Akosombo, Volta, Kumasi, Takoradi, Tamale, Prestea and Techiman (GRIDCo, 2011).



The table below constitutes the assets of Ghana Grid Company

- 330kV 429km
- 161kV 4,193.36
- 225kV 74.3km
- 69kV 138.8
- Transformers 103
- Transformer Capacity 3,870.86MVA

(GRIDCo, 2012)

### **2.3 PUBLIC PROCUREMENT REFORMS**

In the early 90's, the annual Public Expenditure Reviews (PERs) revealed problems in the Public Finance Management (PFM). Lack of strategic planning, lack of budget ownership, ineffective public expenditure monitoring and controls were some of the myriad of problems discovered by the PERs. To cure this canker, efforts were made to address these problems which were conducted in an isolated and disjointed manner and did not address a panacea for the canker (Ameyaw, Mensah and Osei-Tutu, 2012).

Public Financial Management Reform (PURMARP) was conceived by the Government of Ghana (GoG) as a more comprehensive and integrated approach to solving the problems. PUFMURP was launched in July, 1995 at Akosombo and was officially initiated in 1996 with the setting up of secretariat and a Project Management Team (PMT). It was funded by Government of Ghana (GoG) and other multi-lateral donors such as the World Bank and other donor agencies with the ultimate objective to enhance the efficiency, transparency and accountability of financial management function of the Government (Iddrisu, 2006).

The Government of Ghana set up a committee to oversee the management and improvement of complete reforms in the sector. The Public Procurement Act, 2003 (Act 663) was developed with the establishment of Ghana's procurement authority, the Public Procurement Authority to oversee the effective implementation of the Act 663 (Ameyaw, Mensah and Osei-Tutu, 2012).

## **2.4 DEFINITIONS OF SUSTAINABILITY**

Sustainability is defined as the right balance between People, Planet, and Profit (Elkington, 1998). According to this definition, People represent social impacts such as human rights, suppliers, workforce and exclusion of child labour. Planet represents environmental impact, e.g. biodiversity, energy use, carbon dioxide emission, wastewater, and landfill. Profit represents a healthy economic situation, with realistic profit margins for all involved in the supply chain, payment term and good corporate governance. According to the definition, three principles which evolves on sustainability are; environment, social and economic.

## **2.5 DEFINITIONS OF PROCUREMENT**

According to CIPS Australasia, in their publication, defines procurement as a business management function that safeguards, identifies, source and manage the external resources organisations need to achieve their goals (CIPS, 2013).

Sustainable procurement practices is therefore the acquisition of goods, works and services from an external source by an individual or an organisation whereby social, environmental and economic thinking is incorporated in the procurement process.

## **2.6 OBJECTIVES OF SUSTAINABILITY**

There are a number of reasons that many institutions and countries are moving from the traditional way of buying to a more sustainable way. Amongst the objectives are; reducing energy consumption, reducing soil, water and air pollution, promoting fair working conditions and protecting habitat and biodiversity (William et al., 2007).

## **2.7 AIMS OF SUSTAINABLE PROCUREMENT**

The aims amongst other thing of sustainable procurement practice is minimizing the damaging effect of procuring items or logistics being is goods, works or services throughout the procurement process, ensuring fair contract process and terms are applied in the procurement process and providing opportunity of small and medium scale business.

## **2.8 SWISS-GHANA SUSTAINABLE PROCUREMENT PROJECT**

The Switzerland and the Ghana Governments entered into an agreement to help improve the public procurement practice in Ghana by introducing sustainable Public Procurement. The project was financed by the Swiss government through a grant of \$2.7million (PPA, 2015).

The aim of the project was to help the government of Ghana to develop a policy on Sustainable Procurement Practice, to create awareness for public organisation and procurement officers, train procurement officers and practitioner on Sustainable Procurement Practice among others.

## **2.9 PROCUREMENT METHODS**

There are different methods of procurement that can be used in any procurement process. The Public Procurement Act, 2003, (Act 663) enumerates five (5) methods of procurement



made up of the following; Competitive Tendering, Two-Stage Tendering, Restrictive Tendering, Sole/Single Source Tendering and Price quotation.

The World Bank Guidelines on Procurement under IBRD Loans and IDA Credits also mentions some methods under which procurement activity will be undertaken. These methods are International Competitive Bidding (ICB), Limited International Bidding (LIB), National Competitive Bidding, Direct Contracting and Shopping (World Bank, 1999).

### **2.9.1 INTERNATIONAL COMPETITIVE BIDDING**

This is a type of procurement that is adopted for values that set out in the threshold. It is an opportunity that foreign and local companies to compete to offer their product and services in the procurement activity. It is the most transparent method of procurement according to World Bank Guidelines. To aid more competition, the procurement noticed is advertised in world journals to elicit more competitors to compete for the contract. The objective of using this type of procurement is to enable eligible bidders to be timely and adequately notified so that they could bid in the goods, works or services being required by the borrower (World Bank, 1999).

### **2.9.2 NATIONAL COMPETITIVE BIDDING**

National Competitive bidding contrary to the International Competitive Bidding is advertised in the National newspaper with wide circulation which includes Daily Graphic and Times. In Ghana, notices for tender are also advertised on the Public Procurement Authority's website. It is a type of procurement that is reserved for companies that are registered in a particular country.

With this type of procurement, it is used to ward of foreign bidders from participation in the bidding process. Also, the value involved in the contract will not be something that will attract foreign bidders (World Bank, 1995).

### **2.9.3 LIMITED INTERNATIONAL BIDDING**

This type of procurement is an international procurement where there is little competition in the procurement activity. Bidders are selected and invited to bid without any open advertisement. It is used where the contract to be awarded is very complex and only a few bidders can do the work. It is also used when the value of the contract is not huge (World bank, 1999).

### **2.9.4 DIRECT CONTRACTION/SOLE SOURCING**

This type of procurement is done without any competition in the procurement process. The goods and services that are required by the borrower are negotiated directly between the borrower and a preferred contractor or supplier. This type of procurement normally happens when the goods or works that is to be procured is an emergency and also when there is an existing contract with a contractor or supplier. This type of contract can also be formed when there is a proprietary or standardized item that only one supply is able to supply. A justification is always made to ensure that the method of the procurement is not abused (World Bank, 1998).

## **2.10 EMBEDDING SUSTAINABILITY IN PROCUREMENT PROCESS**

According to a study conducted by the University of Bath School of Management, UK in 2007, it was concluded that in the public sector, the concept of sustainable procurement is of great importance but has not be understudied.

A degree of public sector over the world according to a study has revealed that sustainable procurement practices are incorporated in their procurement process and the magnitude to

which is it incorporated in the their procurement practice varies from country to country (Brammer and Walker, 2007).

A value for money has been the major consideration of the traditional procurement over the years. Sustainable procurement involves not only the achievement of value for money but goes a set further to assess the whole life cost of the procurement being undertaken taking into consideration the principles of sustainable procurement namely; social, economic and environmental. The public procurement act does not address sustainable issues as it stands now. It is on this backdrop that a review is being done on the Act 663 to incorporate sustainability issues so as to have a comprehensive Act to address sustainable procurement (Mensah and Ameyaw, 2012).

## **2.11 PROCUREMENT PROCESS**

Procurement process goes through five (5) stages for an effective procurement cycle. They are the Preparation of Process, Definition of Requirement, Selection of suppliers, Contractors and Consultants, Evaluation of Tender and award of contract and finally, Contract implementation.

At all stages of the cycle, sustainability dimension could be embedded so as to carry out a smooth sustainable public procurement.

### **2.11.1 PREPARATION OF PROCESS**

During the preparatory stage, the principle surrounding the entire procurement process should be established. What to buy, when to buy and how to buy (NL Agency, 2011). It is very important to define the needs to avoid unnecessary purchase and also the procurement practitioner should ensure compliance to all institutional and legal policy framework throughout the process (Schaltegger and Petersen, 2008).

### **2.11.2 DEFINITION OF REQUIREMENT**

At the definition of requirement stage, what to buy is the basic consideration in this cycle. Developing of specification is the major hurdle at this stage. There should be a movement from the tight product specification to the output or outcome base definition of requirement.

Use of variant and common product criteria could be inserted in the document. This means that desired outcome should be identified and suppliers should decide the best way to meet the needs (European Commission. 2011).

### **2.11.3 SELECTION OF SUPPLIER, CONTRACTORS AND CONSULTANTS**

It is the responsibility of Procurement Department in a Procurement Entity to be part of the evaluation and selection of suppliers in any contracting agreement. The method used in this process is very important and that it requires a professional skill to be able to effectively select a Supplier, Contractor or a Consultant. Supplier's selection requires a strong distinctly human intuition to be able to carry out that object (Sollish and Semanik, 2012).

Contracting Authorities must take into account specific environmental, social and economic dimension in the selection of a company (European Commission, 2010).

### **2.11.4 EVALUATION OF TENDER AND AWARD OF CONTRACTS**

Transparency and fairness should be ensured in the award of contract. From the sustainability point of view, it is important that procurement law allows for the selection of the most economically advantageous tender instead of the traditional least priced tender. Possible techniques include matrix comparison and relative weighing. The whole life cost of the product is to be considered and also the disposal cost at the end of the product life's cycle (Roos, 2012).

In the traditional evaluation of the tenders, the award criteria could be the lowest evaluated tender. For a tenderer to be considered for an award, the tenderer must conform to the entire necessary requirement stated in the bidding document (OECD, 2003).

The required criteria for the award of the contract and all others factors that will be asses in the evaluation of the tenders should be clearly published in the Entities' Request for Inquiry.

### **2.11.5 CONTRACT IMPLEMENTATION**

In the contract implementation stage, performance clauses should be included in the tender document to include social and environmental issues. Some factors that could be incorporated in the tender document may include recruitment of unemployed persons or persons with disabilities, setting up training programs and compliance of fundamental human right (European Commission, 2010).

## **2.12 CONCEPT OF SUSTAINABLE PROCUREMENT**

### **2.12.1 ENVIRONMENTAL PURCHASING**

The term sustainable procurement is frequently used interchangeably with green purchasing and environmentally preferably purchasing but the there is a distinction. Green purchasing considers the effect of the environment and the cost associated with the acquisition of works and other related items whereas sustainable procurement relates to the repercussion that procurement will have on the society, the environment and the economy (Eco-buy, 2009).

### **2.12.2 GREENWASH**

This is the practice of making false, misleading and deceptive claim about the environmental practice of a company or the environmental attribute or benefit of its product or services.

Green wash is often unintentional and can include claims that are vague, irrelevant or inaccurate or that only tell a part of the story about the environmental impacts of a product. To avoid being green washed, it is very important to assess the degree to which the environment affect the entire product cycle and the relevant eco-labels, certification or standards that apply (Chamber et.al, 2008).

### **2.13 CHALLENGES OF SUSTAINABLE PROCUREMENT**

There are myriad of challenges that bedevil sustainable procurement practice in Ghana. Below are some of the challenges that an Entity faces in implementation of Sustainable Procurement Practice.

1. No internal Management structures in the Procurement Entity
2. Lack of Social drive
3. Low technical and management capacity: Capacity and training
4. Low Multi-stakeholder approach
5. High initial cost of green product:

(Prince of Wales, 2004; Helmsing and Knorringa, 2008; Lacy et al., 2009; Ning et al. 2003; Edelman, 2009)

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY AND METHODS**

#### **3.1 INTRODUCTION**

This chapter determines the insight of the methodology that was adopted too collect relevant data that was used for the research and how the data that was collected was analysed to achieve the stated objective of the research.

The chapter talks about the type of research design employed for the research and also the sampling technique that was used. It also mentions the sources of data that was gathered for the research. It further dealt with the population, the type of instruments used in the gathering of the data and the methods used in analysing the data.

The objective of this research was to assess the effect of sustainability public procurement in the operation of GRIDCo.

It is of great importance to clearly spell out the methodology in a paragraph so that the result of the research would be convincing and at least credible. The focus should be on the difficult problem which when solved adds material value to the study (Remenyi, 1996).

“The three philosophical questions” that should be addressed on the onset of any research are; why research is undertaken, what to research and how to research (Remenyi, 1996).

Chapter 1 and 2 addresses the why and what in research and this chapter would provide a detailed analysis of how the research was conducted.

### **3.2 RESEARCH DESIGN**

Creswell, 2003 indicated the three main research approach exists namely; qualitative, quantitative and mixed approach. “Mixed methods research has come of age”, (Creswell, 2003) which the combination of both qualitative and quantitative approach. For this study, the qualitative approach was used. The reason for adopting this method was because it is helpful in designing and validating instrument and also helps to generalize to a degree qualitative data and it makes it easier to position research in a transformative framework.

Descriptive survey method was used for the study through the administration of the questionnaire.

### **3.3 DATA SOURCES**

The task of collection of data for a research begins after the researcher’s problem has been defined and research design planned out successfully. Whiles deciding on the type of data collection to be used in your research, what must come to mind are that there are two methods to which data can be collected. These are Primary and Secondary data.

Data used for the study was primary and secondary data. Questionnaires were used as the primary data. Structured questionnaires were used to collect primary data. A qualitative approach was adopted in the collection of data on the effect of Sustainable Public Procurement in GRIDCo.

Likert type of questioning was used to elicit responses from the respondents using structured questions to collect the data.

### **3.4 SECONDARY DATA**

According to Kothari, (2004), secondary data are those that have already been used and it exists in the world of knowledge. It is the kind of data that has been used by some body



and has gone through a statistical process. Secondary data can be sourced from Textbooks, Publications, Journals Annual Reports and Articles were used as the secondary data.

### **3.5 PRIMARY DATA**

Primary data are data that has not been collected before and does not exist in any study. It is that type of data that is collected to address a specific problem (Wiid and Diggines, 2009).

The questionnaire was categorised into four (4) to address the research objectives below:

1. The extent to which GRIDCo embeds sustainable procurement practice in their operation.
2. Identify the benefit in the implementation of sustainable procurement.
3. Identify challenges faced in the implementation of Sustainable Procurement.
4. Recommend the attainment of sustainable procurement practice

The data was analysed using Statistical Package for Social Science (SPSS) where certain statistical tools were employed. Mean and Standard Deviation were the tools that were employed to analyse the data. Relative Importance Index (RII) was also employed as a statistical tool to analyse the data. The analysed data was represented with Bar Charts and Pie Charts.

#### **3.5.1 RELATIVE IMPORTANCE INDEX (RII)**

Relative Importance Index (RII) method was used as a statistical tool to analyse the data in this research. It was used to determine the relative importance of the challenges, benefits and recommendations to the attainment of Sustainable procurement Practice in Ghana Grid Company Limited.

A five-point scale ranging from 1-5 where 5 is the highest was adopted and translated into Relative Importance indices. The points were given as follows;

Strongly Disagree -1; Disagree -2; Neutral -3; Agree -4; Strongly Agree -5

The Relative Importance Index can be arrived at the formula below;

$$RII = \frac{\sum W}{A * N}$$

Where

RII = Relative Importance Index

W = is the weighting given to each factor by respondents ranging from (1 to 5)

A = highest weight (i.e. 5 in this case)

N = Total no. of respondents

The RII value had a range from 0 to 1 (0 not inclusive), the higher the value of RII, the more important or frequent was the challenge, benefit or highly recommendable in the attainment of Sustainable Procurement Practice.

### **3.6 POPULATION OF THE STUDY**

Due to the relatively small number of respondents, the census approach was adopted for this research. The approach also eliminated sampling errors and provided data on all the respondents in the population. The population for the study was made up of twenty five 25 staff who are involved in procurement activities in GRIDCo comprising; Engineers-6; Procurement Specialist-8; Lawyers-3; Accountants-4 and Estates Officers-4.

These are the staffs that are involved in procurement activities in GRIDCo and for that matter, they were all contacted as the population for the study.

### **3.7 DATA INSTRUMENT**

The questionnaire was designed to reflect lessons drawn from the literature review. It also integrates the central themes of the research questions and the project objectives. The aim of the questionnaires was to assess the effect of sustainable procurement practice in GRIDCo's operations and also recommend the attainment of Sustainable Development in the Procurement Practice in GRIDCo.

The questionnaire was design to take into consideration the awareness of Sustainable Procurement Practice in GRIDCo among Procurement Staff and the challenges and benefits that would arise from the use of Sustainable Procurement Practice.

Twenty Five questionnaires were administered and seventeen (17) questionnaires were returned.

A total of 15 questions were asked. Close ended questions were used because they are easier to analyse, and answers could be given weight to ease statistical interpretation. Attached as appendix one (1) is a copy of the questionnaire used for the study.

### **3.8 MEASUREMENT CONSTRUCT**

The Likert type of questioning was used for this study. Numerical values ranging from 1-5 were assigned to the scale with 5 being the highest. The scale for the study elicits responses to the extent to which respondent Strongly Agree to Strongly Disagree to the predetermined variables. The study required the respondent to answer the questions based on their knowledge and experience in the area of Sustainable Procurement Practice.

### **3.9 DATA ANALYSIS**

The data was analysed using descriptive statistics and qualitative methods in this study.

A statistical tool used for analyses of data called the Statistical Package for Social Science Research (SPSS) was used to analyse the data. Preparation of data edited, coded and entered. The raw data was converted into structured format that aided in the analysis of the data. The data that was collected from the field was analysed using statistical tools like Mean, Standard Deviation and Relative Importance Index (RII) .Findings of the study was analysed critically ensuring consistency with the objective of the study.

### **3.10 ETHICAL CONSIDERATION**

Ethical issues are necessary when research is done through interaction with people, especially when conflicts of interest may occur (Babbie and Mouton, 2001). Research should not infringe on the privacy of the intended participant (Saunders and Thornhill, 2000). This study was carried out for academic purpose and any information provided will be used confidentially.

Permission was sought from the Managers of the respondents before the questionnaires were administered. The participants were assured that their responses would be intended for the intended purposes only.

## CHAPTER FOUR

### DATA ANALYSIS AND DISCUSSION

#### 4.1 INTRODUCTION

Data collected for this study from the field was analysed and the results were discussed in this chapter. The data from the field has been organised into five (5) main sections. Section one of this chapters talks about the respondents' background. Section two assesses the awareness of Sustainable procurement Practice in GRIDCo. The third section looks at how GRIDCo embeds Sustainable Procurement Practice in its procurement process. The fourth section examines the challenges and benefit of effective sustainable procurement practice in GRIDCo's operations. The final section evaluates recommendation for effective Sustainable Procurement Practice in GRIDCo's operations.

#### 4.1 RATE OF RESPONSE

In this Table 1, a total of twenty five (25) questionnaires were distributed to staff who were involved in the procurement activities in Ghana Grid Company Limited. Seventeen (17) questionnaires were returned which translate to 68.00% of the response rate.

**TABLE 4.1: Rate of Response**

Respondent	Administered	Received	Response Rate
GRIDCo Procurement Staff	25	17	68%
<b>Total</b>	<b>25</b>	<b>17</b>	<b>68.00%</b>

**Source: Researcher's Field Work, 2015**

#### 4.2 GENDER OF RESPONSE

The study revealed that out of 17 questionnaires were returned by the respondents, the Researcher realised that, ten (10) respondents were males whiles seven (7) were female representing 58.8% and 42.2% respectively.

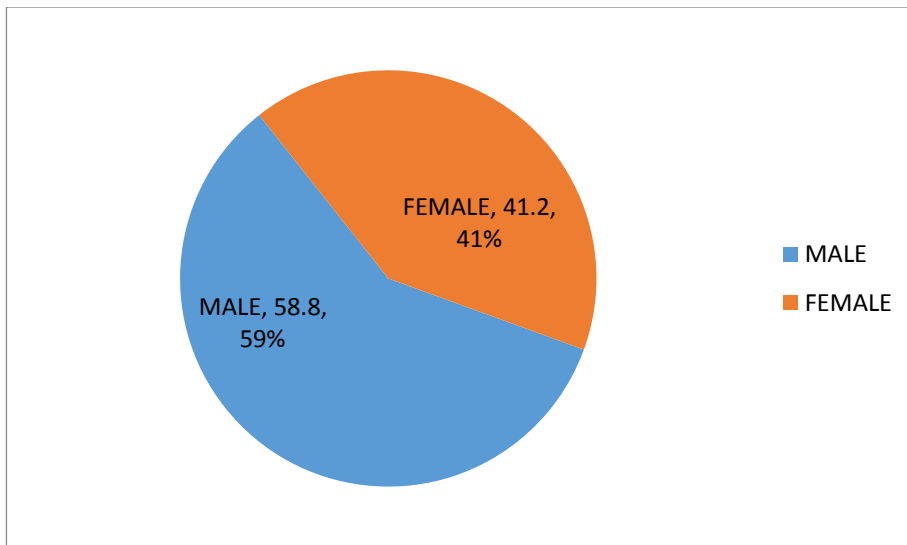


FIGURE 4.1 Gender of Response- Researcher's Field Work, 2015

### 4.3 AGE OF RESPONDENT

The figure below indicates that the most of the respondents for the study are between the ages of 30-39 years. They form 29.4% of the staff that were used for the study. The least category of staff used for the study was staff between the ages of 50 years and more. They make up 5.9% of the study.

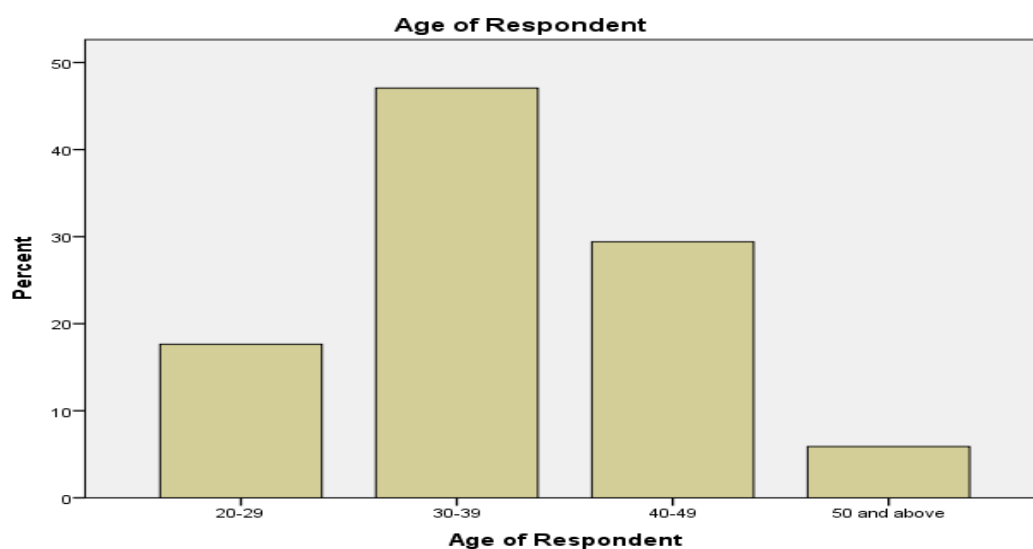


FIGURE 4.2: Age of Respondent- Researcher's Field Work, 2015

#### 4.4 PROFESSION OF RESPONDENT

The study as per the figure below indicated that majority of the respondents of the questionnaire are procurement professionals. They constitute 23.5% of the study. The least category of professionals in the study were Accountants and they form 5-9% of the study. Professions with Electrical, mechanical and legal background constitute 11.8% each of the respondents used in the study. Professionals with other background that was not predetermined in the study forms 11.8% as per the study.

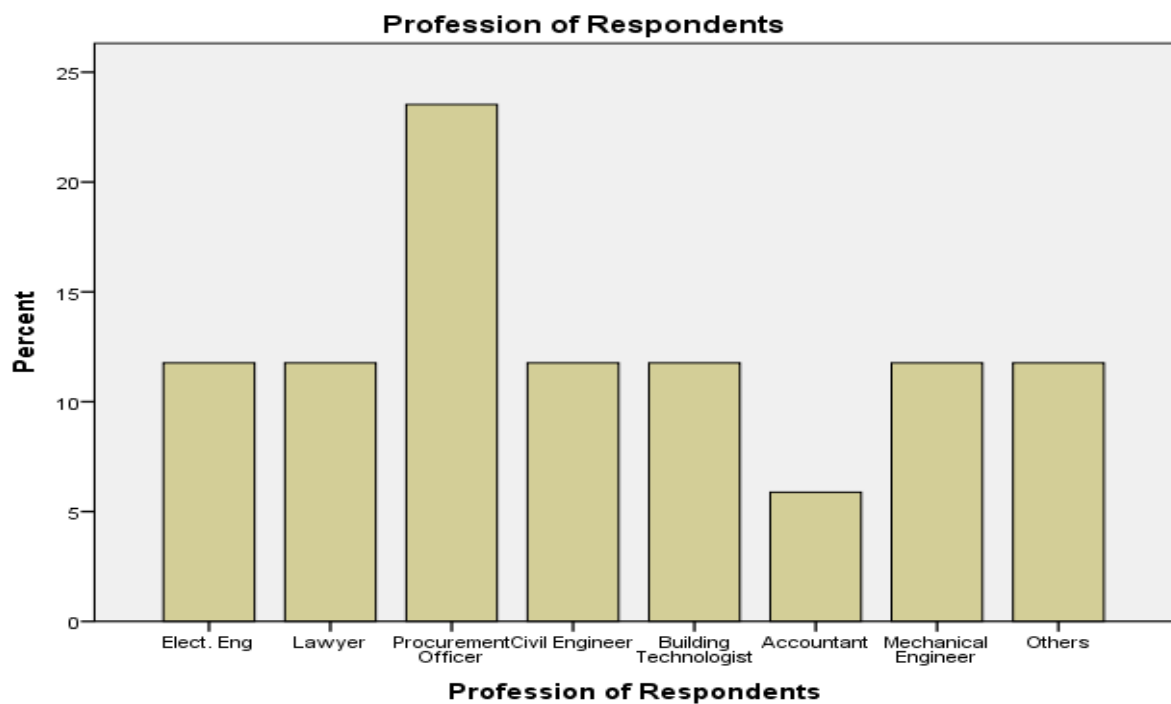


FIGURE 4.3: Profession of Respondents- Researcher's Field Work, 2015

#### 4.5 HIGHEST EDUCATION LEVEL OF RESPONDENT

From the figure below, the Researcher aimed at soliciting responses from the respondents on their highest educational level. The figure below indicated that majority of the staff hold a Bachelor's degree and they represents 41.2% of the staff that returned the questionnaire that was administered.

The other educational qualification on the staff that returned their questionnaire constitute 58.8% of the staff that were administered the questionnaire.

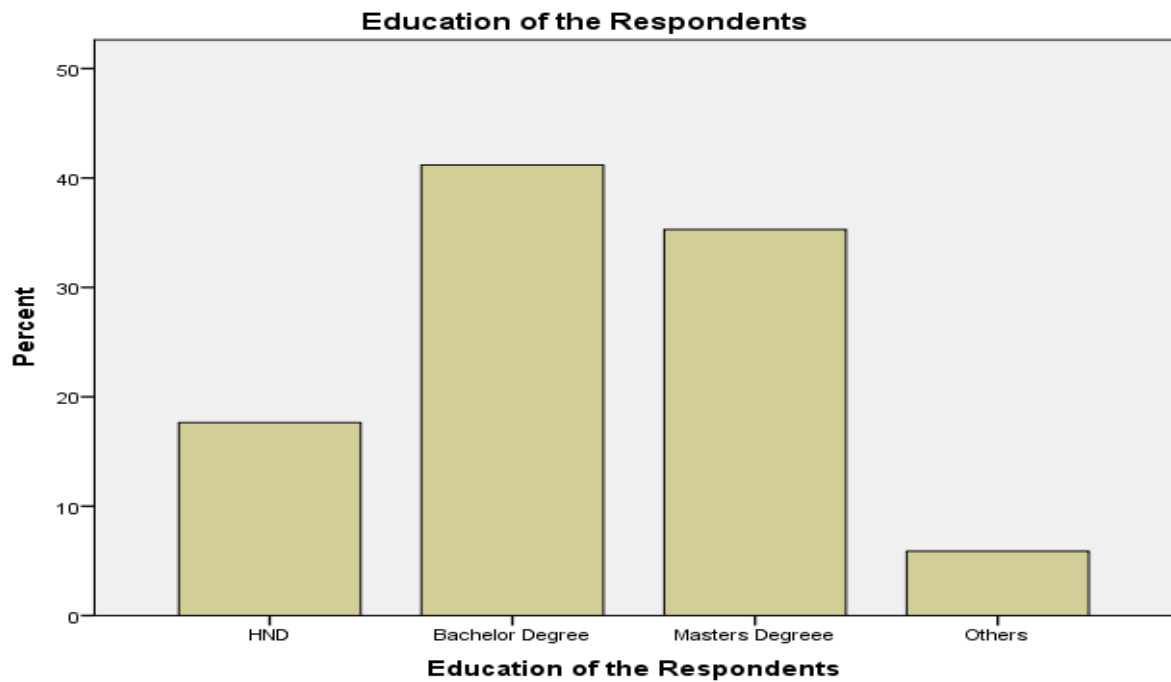


FIGURE 4.4: Highest Educational Level of Respondents

#### 4.6 RESPONDENTS NUMBER OF YEARS WORKED

The study revealed that most of the respondents used in the study who have worked for the organization between 1-5 years. They make up 52.9% of the study. Only 17.6% of the respondents have worked with the company for more than 20 years.





FIGURE 4.5: Respondents Number of Years Worked

#### 4.7 RESPONDENTS AWARENESS OF SUSTAINABLE PROCUREMENT PRACTICE

From the figure below, the Researcher realized that 88.2% of the respondents were aware of Sustainable Procurement practice in GRIDCo.

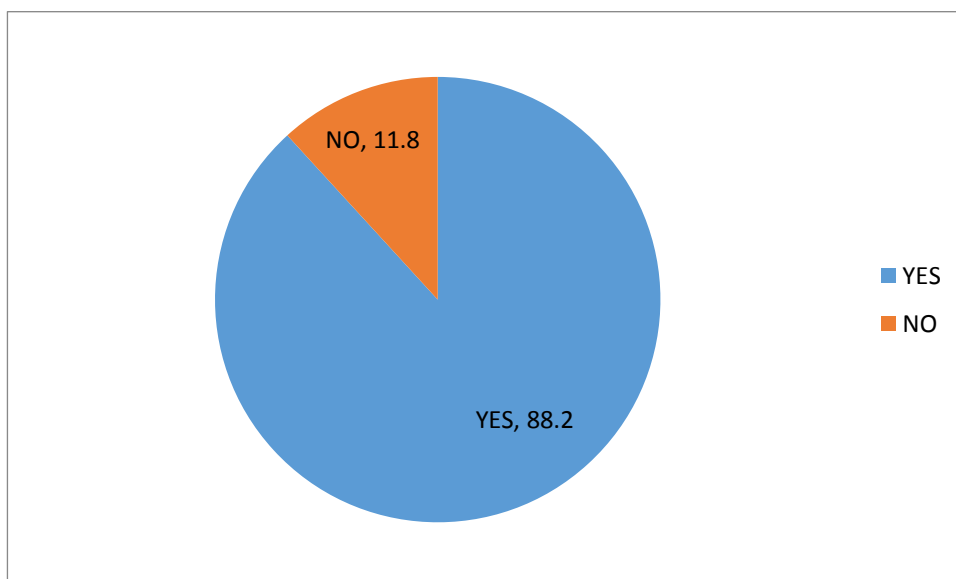


FIGURE 4.6 Respondents Awareness of Sustainable Procurement Practice

#### 4.8 HOW DOES GRIDCO PERCIEVE SUSTAINABLE PROCUREMENT PRACTICE

**TABLE 4.2: How Does GRIDCo Perceive Sustainable Procurement Practice?**

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean	Standard Deviation
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent		
Socially Responsive Procurement	2	11.8	11	64.7	1	5.9			1	5.9	3.87	0.915
Environmentally Responsive Procurement	6	35.3	7	41.2	1	5.9			1	5.9	4.3	1.06
Economically Responsive Procurement	6	35.3	5	29.4	1	5.9	2	11.8	1	5.9	3.87	1.305

Source: Researchers Field Work, 2015

Respondents were asked how they perceive Sustainable Procurement Practice in GRIDCo. The Researcher provided three (3) responses as the perception for Sustainable Procurement Practice for the Respondents to choose from. The three responses are; Socially Responsive Procurement, Environmentally Friendly Procurement and Economically Responsive Procurement. The Table above indicates the responses from the Respondents.

Eleven (11) respondents agreed that Sustainable Procurement Practice is a socially responsible procurement, two (2) respondents strongly agreed to that assertion while one (1) respondents each disagreed and was neutral to the perception. It could be seen that 64.7% of the respondents agreed the assertion.

On the definition of Sustainable Procurement Practice as an environmentally friendly procurement, the table above indicated that six (6) respondents strongly agreed to the definition while seven (7) respondents agreed to it. One (1) respondent each strongly disagreed and neutral to the assertion. 41.2% of the respondents in the study agreed to the definition.

On the economic definition, one (1) respondent each strongly disagreed and remained neutral to the assertion that Sustainable Procurement Practice is economically responsive , while two (2) disagreed to that definition. Six (6) of the respondents strongly agreed to the definition while five (5) agreed to it. The percent of respondent that strongly agreed was 35.3%.

It could be deduced from the from the table that more of the respondent were inclined to agree to the definition that Sustainable Procurement Practices is perceived among the staff in GRIDCo as a socially responsive procurement. This is being confirmed with a standard deviation of 0.915.

#### 4.9 ELEMENTS INCORPORATED IN PROCUREMENT ACTIVITIES

**TABLE 4.3: Respondents' Responses to Elements Incorporated In Procurement Activities**

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean	Standard Deviation
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent		
Promoting Fair Employment Practice	3	17.6	10	58.8	1	5.9	0	0	0	0	4.14	0.535
Promoting Workforce Welfare	6	35.3	6	35.3	2	11.8	0	0	0	0	4.29	0.726
Fair Trade and Ethical Sourcing practice	4	23.5	8	47.1	2	11.8	0	0	0	0	4.14	0.663
Impact on Natural Habitat	7	41.2	6	35.3	1	5.9	0	0	0	0	4.43	0.646
Water use and Water quality impact	5	29.4	9	52.9			0	0	0	0	4.36	0.497
Reducing Whole Life Cycle Cost	7	41.2	6	35.3			1	5.9	0	0	4.36	0.842
Reducing End of Life Disposal Cost	9	52.9	4	23.5	1	5.9	0	0	0	0	4.57	0.646

Source: Researcher's Field Work, 2015

From the Table above, the Researcher elicited responses from the Respondents on which Sustainable Procurement elements that GRIDCo incorporates in the procurement process to achieve effective procurement. List of elements were provided to the Respondents in the questionnaire to choose from.

The element that was listed in the questionnaire was to elicit responses from the respondents which of the elements in their view were incorporated in the procurement processes in Ghana Grid Company Limited.

It was realized from the Mean and Standard Deviation of the table above that elements such as Reducing End of Life Disposal Cost, Promoting Workforce Welfare, Impact on Natural Habitat, Water use and water Quality and Reducing Whole life Cycle Cost were elements that are greatly incorporated in the procurement processes in GRIDCo.

Element as Promoting Fair Employment Practice and fair and ethical sourcing practice were rarely incorporated in the procurement process.

#### **4.10 DOES GRIDCo INCOPORATE SPP IN PROCUREMENT ACTIVITIES**

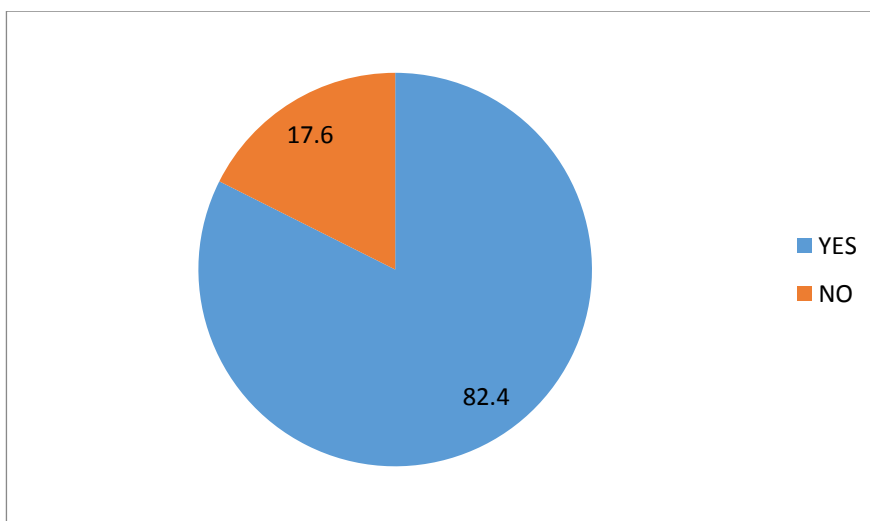


FIGURE 4.7: Respondents' Responses on the Incorporation of SPP In Procurement

The figure above elicited responses from respondents to ascertain whether Ghana Grid Company Limited incorporates Sustainable Procurement Practice in their procurement process.

The Researcher realized that 82.4% of the respondents responded that GRIDCo incorporates sustainable Procurement Practice in their procurement activities while 17.6% responded that GRIDCo does not incorporate Sustainable procurement Practice in their procurement activities.

#### **4.11 DOES GRIDCo HAVE ENVIRONMENTAL POLICY DOCUMENT**

**TABLE 4.4: Respondents' Responses on GRIDCO's Environmental Policy Document**

	Outcome	Percentage
Neutral	1	5.9
Agree	12	70.6
Strongly Agree	4	23.5
Total	17	100.0

Source: Researcher's Field Work, 2015

The Researcher aim with this question to ascertain whether GRIDCo has an environmental Policy. From the responses that were received by the Researcher, it was realized from the table above that GRIDCo has an environmental policy document. 70.6% of the respondents agreed that GRIDCo has a policy document on environmental. 23.5% of the responses also agreed strongly that GRIDCo has an environmental Policy while just 5.1% were neutral to the question asked.

#### 4.12 WHICH STAGE OF PROCUREMENT CYCLE DOES GRIDCo EMBEDS SPP

**TABLE 4.5: Respondents' Responses to Stages in the Procurement Cycle That GRIDCo Embeds Spp**

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Mean	Standard Deviation
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent		
Preparation Stage	4	23.5	12	70.6	0	0	0	0	1	5.9	4.06	0.899
Definition of Requirement Stage	6	35.3	9	52.9	1	5.9	0	0	1	5.9	4.12	0.993
Selection of Suppliers, Contractors	8	47.1	5	29.4	2	11.8	1	5.9	1	5.9	4.06	1.197
Evaluation of Tender and Contract Award	8	47.1	6	35.3	2	11.8	0	0	1	5.9	4.18	1.0740
Contract Implementation	8	47.1	8	47.1	0	0	0	0	1	5.9	4.29	0.985

Source: Researcher's Field Work, 2015

Respondents were asked in which stage of the procurement process in GRIDCo is Sustainable Procurement Practice embedded. Predetermined variables were listed for respondents to choose from. The stages made available were Preparation Stage, Definition of Requirement, Selection of Suppliers and Contractors, Evaluation of Tenders and Contract Implementation. Above are the responses that were received from respondents on the stage of procurement cycle that sustainable procurement is embedded.

It was realized from the Table that GRIDCo embeds Sustainable procurement practice mostly in the Contract Implementation and the Evaluation of Tender and Contract Award stages.

The definition of requirement stage was also considered in terms of embedding Sustainable procurement practice in the procurement activities in GRIDCO.

Stages like the Preparation and the selection of Suppliers, Contractors and consultants stages experience little of the Sustainable procurement Practice factors when it comes to the procurement.



#### 4.13 WHAT ARE THE CHALLENGES IN THE IMPLEMENTATION OF SPP

**TABLE 4.6: Respondents' Responses on the Challenges of Sustainable Procurement Practice**

Factor	Responses					RII		
	1	2	3	4	5	Weight	RII	Rank
Absence of Internal Structure	2	1	2	9	3	61	0.7176	2nd
Low Technical and Management Capacity	0	4	5	5	3	58	0.6823	4th
Low Stakeholder Approach	0	3	4	7	3	61	0.7176	2nd
Higher Initial Cost	1	0	0	9	7	72	0.8470	1st
Legal Framework does not allow Sustainable Procurement	2	7	5	3	0	43	0.5058	6th
Donor Guideline does not allow Sustainable Procurement Practice	4	4	5	4	0	43	0.5058	6th
Negative Impact on Small and Medium Scale Enterprises	1	7	4	3	2	49	0.5764	8th
Lack of Guideline Materials	2	4	3	7	1	38	0.4470	9th
Sustainable Procurement Practice too Complex	1	4	4	6	2	55	0.6470	5th

Rank: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

Source: Researcher's Field Work, 2015

The Researcher used this question to seek from respondents challenges that affect the implementation of Sustainable Procurement Practice in GRIDCo. The aim of this question is to identify the extent to which these listed challenges are likely to affect the Sustainable Procurement Practice in GRIDCo.

The following lists of challenges were made available for respondents to choose from.

1. Absence of internal management Structure
2. Low technical and Management Capacity
3. Low Multi-Stakeholder Approach
4. Higher Initial Cost
5. Legal Framework does not allow Sustainable Procurement Practice

6. Donor guidelines do not allow Sustainable Procurement Practice
7. Negative impact on Small and Medium scale Companies
8. Lack of guidelines materials and practical tools
9. Sustainable Procurement practice is too complex

As per the table above, the top five (5) challenges that affect the implementation of sustainable Procurement Practice are;

1. Higher Initial Cost
2. Low Multi-Stakeholder Approach
3. Absence of Internal Management Structure
4. Low Technical and Management Capacity
5. Sustainable Procurement Practice is too complex

The other challenges that will affect the implementation of Sustainable Procurement Practice are indicated in the Table above.

#### 4.14 SPP FACTORS CONSIDERED IN THE PROCUREMENT CYCLE

**TABLE 4.7: Respondents' Responses on the Factors Considered In the Procurement Cycle in Sustainable Procurement Practice**

Factor	Responses					RII		
	1	2	3	4	5	Weight	RII	Rank
Ensure Compliance to Legal Framework throughout the Process	0	0	1	9	7	74	0.8705	4th
Materials used for the Manufacturing of the Product	0	1	2	8	6	70	0.8235	8th
Renewable Raw Material Usage	0	0	6	1	10	72	0.8470	6th
Durability of the Product	0	0	1	8	8	75	0.8823	3rd
Keeping the Process Simple	0	1	2	12	2	66	0.7764	10th
Advertise Widely in a well Circulated Newspaper	0	0	3	6	8	73	0.8588	5th
Using Whole Life Cycle Cost	1	0	4	3	9	70	0.8235	8th
Debriefing of Unsuccessful Tenderers	0	1	1	8	7	72	0.8470	6th
Health and Safety Policy	0	0	1	7	9	76	0.8941	2nd
Environmental Management Measures	0	0	1	6	10	77	0.9058	1st

Rank: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

Source: Researcher's Field Work, 2015

The Researcher used this question to seek from respondents factors considered in the procurement cycle to achieve a Sustainable Procurement practice. The aim of this question is to determine factors that GRIDCo establishes in the procurement cycle to achieve effective sustainable procurement.

The Table above lists ten (10) factors that were made available to the respondents to choose from. From the analysis of their responses with the use of the Relative Importance Index (RII), it was realized that the following are the top five (5) factors that are used in the attainment of Sustainable Procurement in GRIDCo that are incorporated in the procurement Cycle.

1. Environmental Management Measure
2. Health and Safety Policy
3. Durability of Products
4. Ensure Compliance of Legal Framework throughout the Process
5. Advertise widely in well circulated newspapers

It could be realized from the table that factors such as Using Whole Life Cycle Cost, Materials used to make the product and Keeping the process simple are not considered in the procurement of good, works and services in GRIDCo.

#### 4.15 BENEFITS IN THE IMPLEMENTATION OF SPP

**TABLE 4.8: Respondents' Responses on the Benefit in the Implementation of Sustainable Procurement Practice**

Factor	Responses					RII		
	1	2	3	4	5	Weight	RII	Rank
Long-term Efficiency Savings	1	0	1	8	7	71	0.8325	4th
More Efficient and Effective use of Natural Resources	0	0	2	8	7	73	0.8588	3rd
Reducing harmful impact of Pollution and Waste	0	0	1	7	9	76	0.8941	2nd
Reducing Impact of Hazardous Substance on Human and Environment	0	0	1	3	13	80	0.9411	1st
Providing Strong Signals to the Sustainable Procurement Practice Market	0	0	2	12	3	69	0.8117	5th
Practical Expression of Organizational's Commitment to Sustainable Procurement Practice	0	1	2	9	5	69	0.8117	5th

Rank: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

Source: Researcher's Field Work, 2015

The Researcher used this question to seek from respondents the benefits that will arise in an effective implementation of Sustainable Procurement Practice in GRIDCo. The aim is to assess the effect of sustainable procurement on the operation of GRIDCo and the benefit that will arise when SPP is implemented effectively.

The following list was made available to respondents to choose from;

1. Long-term efficiency savings
2. More efficient and effective use of natural resource
3. Reducing harmful impact of pollution and waste
4. Reducing impact of hazardous substance on human and environment
5. Providing strong signal to the sustainable Procurement Markets
6. Practical expression of organisational's commitment to Sustainable Procurement practice.

From the analysis of their responses with the use of the Relative Importance Index (RII), it was realized that the following are the top three (3) benefits will be realized when GRIDCo uses effective sustainable procurement procedures in its procurement process.

These three benefits are as follows;

1. Reducing impact on hazardous substance on human and environment
2. Reducing harmful impact of pollution and waste
3. More efficient and effective use of natural resources.

The table above indicated the rest of the benefits that will be realized in the effective use of sustainable procurement in the order of ranking using the Relative Importance Index.

#### 4.16 RECOMMENDATIONS FOR EFFECTIVE SPP

**TABLE 4.9: Respondents' Responses on the Efficient Attainment of Sustainable Procurement Practice**

Factor	Responses					RII		
	1	2	3	4	5	Weight	RII	Rank
Capacity Building to Provide Professional Training	0	2	0	4	11	75	0.8823	2nd
Have a Policy on Sustainable Procurement Practice that reflect Sustainable Development	0	0	1	7	9	76	0.8941	1st
Embed Whole Life Cycle Cost thinking in the Procurement Process	1	0	3	5	8	70	0.8235	5th
Setting clear Measurable Targets on Sustainable Procurement Practice	0	0	0	12	5	73	0.8588	4th
Monitoring the Implementation of the Action Plan	0	0	2	9	6	72	0.8780	3rd
Engage with key Markets to secure Capacity within the Markets	1	1	2	6	7	68	0.8000	6th
Conduct Study on Impact on Sustainable Procurement Practice	1	2	1	8	5	65	0.7647	7th

Rank: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly Disagree

Source: Researcher's Field Work, 2015

The Researcher used this question to seek from respondents the necessary recommendation to the achievement of an effective sustainable procurement practice in GRIDCo. The aim of this question is to seek recommendation from respondents as to how GRIDCo can achieve effective sustainable procurement. A list of recommendations was made available for the respondents to choose from.

The following list was made available to respondents to choose from;

1. Capacity building to provide professional training
2. Have a policy that reflects sustainable Development
3. Embed Whole Life Cycle Cost thinking in the Procurement process
4. Set clear measurable targets on SPP
5. Monitor the implementation of the action plan

6. Engage with key markets to secure capacity within the market
7. Conduct study on impacts of SPP

From the analysis of their responses with the use of the Relative Importance Index (RII), it was realized that the following are the top three (3) recommendations were given to achieve and effective sustainable procurement procedures in GRIDCO's procurement process.

These three recommendations are as follows;

1. Have a policy on SPP that reflect sustainable development
2. Capacity building to provide professional training
3. Monitor the implementation of the action plan.

The table above indicated the rest of the recommendations that will be realized in the effective use of sustainable procurement in the order of ranking using the Relative Importance Index.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of the study, the findings, conclusions that have been arrived at and recommendations. This study looks to achieve the objective of assessing the extent to which GRIDCo embeds Sustainable Procurement Practice in their procurement activities; it also seeks to identify the challenges that affect the implementation of sustainable Procurement Practice.

The chapter also presents areas for further research which were identified by the researcher during his research work.

#### **5.2 FINDINGS**

##### **5.2.1 Assessing the Extent that GRIDCo Embeds SPP in its procurement activities**

The staff of GRIDCo in one way or there other embeds sustainable procurement in their procurement activities. It was realized that most of the sustainable procurement was embedded in the contract implementation and evaluation of tender and contract award.

It was realized that in the preparation and requirement definition stages of the procurement cycle, GRIDCo does little in the SPP.

##### **5.2.2 Challenges that affect the implementation of SPP**

From the study, it was realized that, there are many challenges that affects the use of sustainable procurement practice in GRIDCo. The research found out that because of the high initial cost that comes with sustainable procurement, it prevents institutions to embark on using effective sustainable procurement methods in their procurement activities.



Absence of internal structures and low stakeholder approach amongst others also pose a challenge to the implementation of sustainable procurement practice in GRIDCo.

### **5.2.3 Identifying the benefits of the implementation of sustainable procurement**

The researcher identified that there are many benefit that GRIDCo would realized in the implementation of sustainable procurement practice. Looking at the positive effect that it will bring to GRIDCo, it is imperative that GRIDCo embrace SPP. It was realized that key amongst the benefit are the reduction of the impact of hazardous substance on human and environment and also the reduction of harmful impact of pollution and waste.

### **5.2.4 Identifying the level of awareness amongst staff**

The researcher identified that the staff of GRIDCo had an appreciable knowledge of sustainable procurement practice. Though most of the staff had some level of understanding of sustainable procurement practice, there should be enough opportunities for them to acquire more understanding by exposing to new trends in the sustainable environment.

## **5.3 RECOMMENDATIONS**

There should be capacity building and professional training for staff who are involved in procurement for them to be abreast with the revolving trends in the world of sustainable development. Training programmes should be tailored made to enhance their ability to appreciate the effect of sustainable development.

GRIDCo should come out with a policy document that spells out sustainable development in their entire operation. From the study, it could be realized that the world is gradually moving to the green environment and institutions should prepare themselves for the move.

I also recommend that even though GRIDCo embeds SPP in their procurement, a little has been done to incorporate sustainability in all stages of the procurement cycle. I recommend that GRIDCo should move a step further to embed sustainability thinking in all stages in the procurement cycle so as to achieve the optimum effect.

#### **5.4 CONCLUSION**

With sustainable procurement practice being a new phenomenon which is being implemented world all over, Ghana Grid Company Limited has no objection than to embrace this new concept of sustainability in public procurement.

Incorporating social, environment and economic criteria in the procurement process should be encouraged by the Management of GRIDCo to be able to keep up with the changing trends in the procurement process.

Extensive training programmes on sustainability development should be drawn for staffs of GRIDCo who are involved in the procurement activities.

The amendment that is being done in the Public Procurement Act, 2003, Act 663 to include sustainable procurement factor should be hasten so that Procurement Entities can enjoy the great benefits that sustainable procurement offers.

Promulgating the amended Act should not be the final step but stringent measures should be advanced to punish institutions that flout the regulation when implemented.

#### **5.5 FURTHER STUDIES**

Since the study was limited to staff of GRIDCo in the head office who are directly involved in procurement and cannot be used to draw a final conclusion for all staff of GRIDCo, the researcher therefore, advise upcoming MSc. Procurement Management

students to assess the impact sustainable procurement practices in GRIDCo with the user department that goods are procured for them to be used.

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# APPENDIX 1

## QUESTIONNAIRE-APPENDIX A

### TOPIC: IMPACT OF SUSTAINABLE PROCUREMENT PRACTICES ON OPERATIONAL PERFORMANCE-CASE STUDY OF GRIDCO

#### PERSONAL DATA

**1. SEX:**

☐ Male

☐ Female

**2. AGE:**

20 to 29 years ☐ 30 to 39 years ☐ 40 to 49 years ☐ 50 years and above ☐

**3. PROFESSION**

Electrical Engineer ☐ Lawyer ☐ Procurement Officer ☐ Civil Engineer

☐ Building Technologist ☐ Accountant ☐

Mechanical Engineer ☐ Others (Please Specify) ☐

**4. HIGHEST EDUCATIONAL LEVEL:**

Senior High School ☐ Higher National Diploma ☐ Bachelor's Degree ☐

Master's Degree ☐ others, please specify ☐

**5. HOW MANY YEARS HAVE YOU WORKED WITH GRIDCo**

1 to 5 years ☐ 6 to 10 years ☐ 11 to 15 years ☐ 16 to 20 years ☐

More than 20 years ☐

**6. ARE YOU AWARE OF SUSTAINABLE PROCUREMENT PRACTICES IN  
GRIDCo? YES ☐ NO ☐**

**If you chose NO in Q.6, please go to Q. 8**



**7. HOW IS SPP COMMONLY PERCIEVED**

	<b>Strongly Disagree(1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly Agree (5)</b>
<b>Socially Responsible Procurement</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Environmentally Friendly Procurement</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Economically Responsible Procurement</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Combination of all the three above</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**8. DOES GRIDCo INCORPORATE SPP IN THEIR PROCUREMENT?**

YES ☐

NO ☐

If you answer NO to question 8, please go to Question 10

**9. On a scale of 1 to 5 where 5 is the highest, if you chose yes in question 8, what are some of sustainable elements incorporated in the procurement activities**

	<b>Strongly Disagree(1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly Agree (5)</b>
<b>Promoting fair employment practice</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Promoting workforce welfare</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Fair trade and ethical sourcing practice</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Impact on natural habitat</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Water use and water quality impact</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Reduced whole life cycle cost</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Reducing end of life disposal cost</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**10. GRIDCo HAVE AN ENVIRONMENTAL POLICY DOCUMENT**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐

Strongly Disagree ☐

**11. On a scale of 1 to 5 where 5 is the highest, please state to what extent you agree with the following suggestions about what stages GRIDCo embeds SPP**

	<b>Strongly Disagree(1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly Agree (5)</b>
Preparation of Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Definition of Requirement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Selection of Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evaluation of Tender and Contract Award	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contract Implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**12. On a scale of 1 to 5 where 5 is the highest, please indicate to what extent the following challenges affect sustainable procurement at GRIDCO**

	<b>Strongly Disagree(1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly Agree (5)</b>
Absence of internal management structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low technical and management capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low multi-stakeholder approach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Higher initial cost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal framework does not allow SPP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Donor guidelines do not allow SPP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Negative impact on small and medium scale companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of guideline materials and practical tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPP is too complex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**13. On a scale of 1 to 5 where 5 is the highest , please indicate the extent you agree with the following as the factors considered at every stage of the procurement process**

	<b>Strongly Disagree(1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly Agree (5)</b>
Define needs to avoid unnecessary purchase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure compliance of legal framework throughout the process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conduct market research to determine new technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Materials used to make the product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using of renewable raw materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Durability of the product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keeping the process simple	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advertising widely in well circulated newspapers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communicating evaluation requirement to foster competition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using whole life cycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debriefing of unsuccessful tenderers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reuse and recycling of packaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health and safety policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental management measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**14. On a scale of 1 to 5 where 5 is the highest ,please indicate to what extent you agree with the following as potential benefits of Sustainable Procurement**

	<b>Strongly Disagree(1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly Agree (5)</b>
Long term efficiency savings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More efficient and effective use of natural resource	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reducing harmful impact of pollution and waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reducing impact of hazardous substance on human and environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Providing strong signals to the SP Market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Practical expression of organisational's commitment to SPP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**15. On a scale of 1 to 5 where 5 is the highest , please indicate the extent you agree with the following as measures that can be taken to attain efficient sustainable procurement process in GRIDCo**

	<b>Strongly Disagree(1)</b>	<b>Disagree (2)</b>	<b>Neutral (3)</b>	<b>Agree (4)</b>	<b>Strongly Agree (5)</b>
Capacity building to provide professional training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a policy on SPP that reflects Sustainable development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Embed life cycle thinking in the procurement process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting clear measurable targets on SPP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitoring the implementation of the action plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engage with key markets to secure capacity within the market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conduct study on the impacts of SPP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>