

Report On
Sustainable Procurement Practices in Ashuganj Power Station
Company Limited (An Enterprise of BPDB)

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A report submitted to the Brac Institute of Governance and Development in partial
fulfillment of the requirements for the degree of
Masters in Procurement and Supply Management

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Declaration

It is hereby declared that

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

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Letter of Transmittal

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Subject: Submission of Practicum Report

Dear Sir,

It is my pleasure to submit the report titled **“Sustainable Procurement Practices in Ashuganj Power Station Company Limited (An Enterprise of BPDB)”**, which I have prepared as per your direction.

I have made every effort to complete this report with all the essential information and proposed recommendations in a clear, concise, and comprehensive manner.

I sincerely hope that this report will meet your expectations and fulfil the intended requirements.

Sincerely yours,

Abdullah Al Mamun

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BRAC Institute of Governance and Development

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Date: November 25, 2025

Non-Disclosure Agreement

It is hereby declared that no portion of the work contained in this report has been submitted elsewhere for any degree or diploma.

Author

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Executive Summary

The given report will analyse sustainable procurement practices of Ashuganj Power Station Company Limited (APSCL) in terms of how the environmental, social and governance (ESG) principles are integrated into the procurement process and the operations of the company in general. The paper assesses the efforts of APSCL in adopting renewable energy, environmental and safety compliance due to the ISO requirements, digital procurement governance and community engagement. With the help of document analysis, field observations, and stakeholder interviews, the report determines that most of the advancement has been made in replacing outdated power units with high-efficiency combined cycle plants and using tools that ensure transparency, including e-GP, d-Nothi and the ASCL E-Auction system. The strengths identified in the analysis are policy support and alignment of the ESG, and the weaknesses are the gaps in compliance with the suppliers, and the cost restraints. To improve the sustainability of APSCL, the report recommends the adoption of a roadmap, which embraces ESG, better governance, improved vendor management and increased social and environmental interventions.

Keywords: Sustainable procurement; ESG; Power generation; e-GP; renewable energy; Bangladesh.

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List of Acronyms

APSCL	Ashuganj Power Station Company Limited
e-GP	Electronic Government Procurement
PPR	Public Procurement Rules
CCPP	Combined Cycle Power Plant
MW	Mega Watt
ISO	International Standard Organizations
DOE	Department of Environment
EIA	Environment Impact Assessment
ESG	Environmental, Social and Governance
BPDB	Bangladesh Power Development Board
MW	Home Team Wicket
SDG	Sustainable Development Goals
BGDCL	Bakhrabad Gas Distribution Company Ltd.
PPR	Public Procurement Rules
PPA	Public Procurement Act
SWOT	Strength, Weakness, Opportunities and Threats

Chapter 1: Introduction

1.1 Background

The contemporary energy industry has engaged in procurement and supply chain management based on sustainability. Nowadays, power generation companies are supposed to ensure that they operate and maintain their businesses guided by environmental, social and governance (ESG) principles. Sustainable procurement is no longer about the saving of costs. It also encompasses responsible sourcing, fair labour, resource conservation, as well as minimization of environmental effects already in life of a product.

Ashuganj Power Station Company Limited (APSCL) is the most significant power generation company in Bangladesh and it is necessary to fulfill the increasing electricity demand in Bangladesh. Being a state enterprise in the 25 per cent ownership of Bangladesh Power Development Board (BPDP), APSCL provides a significant portion of the national grid. The company operates a few Combined Cycle Power Plant (CCPPs) in which units that utilized outdated steam turbines has been substituted with more economical combined cycle plants. The steps indicate that APSCL is interested in energy efficiency and environmental sustainability.

Sustainable procurement in the power sector does not only have the meaning of updating plants. It also entails the selection of green certified suppliers, purchase of recyclable lubricants and filters, safe disposal of waste hazardous material as well as using renewable fuel sources such as solar energy. APSCL has also started implementing digital procurements like e-GP and d-Noti in an attempt to make procurement and tendering process more transparent, accountable, and efficient.

In this study, the sustainable procurement practices of APSCL are examined with the view of identifying strengths, compliance practices and the areas where international best practices can be employed. It also describes how ESG-based procurement can enhance the operations, promote the circular economy, and assist Bangladesh to achieve its sustainable development objectives.

1.2 Objectives of the study

In this report, the review and evaluation will be done on current procurement practices at Ashuganj Power Station Company Limited (APSCL) regarding the sustainable procurement of this company within the ESG framework. The main objectives are:

- a) The sustainability of APSCL procurement and supply chain practice in terms of the environment.
- b) Evaluation of the social compliance, labour welfare, and health and safety of operations associated with procurement.
- c) reviewing the governance systems that will guarantee transparency, responsible and ethical sourcing.
- d) Detection of the discrepancies between current practices and the international standards on sustainable procurement.
- e) Suggesting a roadmap based on sustainability to make the processes of procurement and supply chain in APSCL more efficient.

1.3 Scope of the Study

In the day-to-day business operation as well as project implementation, this report discusses the sustainable procurement practices of APSCL. The research will examine:

- a) Adherence to the compliance criteria like ISO 14001, ISO 9001 and ISO 45001 standards for selecting vendor.
- b) Procurement of energy-efficient and low emitting materials to generate power.
- c) Power plant stores, workshops, inventory management and handling of hazardous waste.
- d) Contract management of large projects like EPC contract based on sustainability.
- e) Electronic purchasing to enhance transparency and automation of the processes.
- f) Social and labour compliance in the shift operation and plant maintenance.

1.4 Rationale of the Study

Sustainable procurement is a strategic requirement of the organisations in energy intensive sectors in the public sector such as APSCL. With the world and national policies increasingly concerned with protecting the environment, resource efficiency, and social responsibility, it should be noted that procurement should be aligned with such values, and such areas like the modernization of the Combined Cycle Power Plants or integration of renewable energy should be brought up. The evaluation of current procurement sustainability will facilitate the sustainability of operations, regulating compliance, and alignment to Bangladesh Vision 2041 and Sustainable Development Goals (SDGs). The outcomes of this research will be useful to

enhance the internal administration of APSCL, promote the advent of digital transformation in the procurement process, and create a culture of responsible sourcing that could be followed by other state-owned power companies.

1.5 Methodology

The research applies qualitative-mixed methods. It involves analysis of documents, field visits, and interviews to provide a holistic view of sustainable procurement practices at APSCL.

1.6 Data Collection Methods

a) Document Review: The review of the procurement procedures, policy documents, tender evaluation reports, and contract samples of the APSCL.

b) Field Observation: Visiting power plant locations, stores, and supply chain executions in place to see how they are applied in practice.

c) Interviews: The interview with procurement officers, store managers, project engineers, and other key participants to get information on ESG integration.

d) Data Analysis: Assessing the performance of the vendors, patterns of material usage, and compliance indicators in terms of sustainability.

e) Analytical Approach: The research will find out trends, compliance rates, and improvement areas in the areas of environmental, social, and governance. The outcomes will assist in designing an effective sustainable procurement model based on the ESG that will be applicable to APSCL.

Chapter 2: Organisational Overview

2.1 Profile of Ashuganj Power Station Company Limited (APSCL)

Ashuganj Power Station Company Limited (APSCL) is a government-owned public limited company and the largest power hub in Bangladesh. It was incorporated on June 28, 2000, through an amendment to the Companies Act 1994, as one of the projects of Government of Bangladesh under the Power Sector Development and Reform Program. The company is established C-40630 (2328)/2000. On May 22, 2003, APSCL took over the Ashuganj Power Station Complex, including its assets and liabilities, through an agreement with the Bangladesh Power Development Board (BPDB). The company began operations on June 1, 2003, led by the Managing Director and Executive Directors for Operations & Maintenance, Planning & Development, and Finance. APSCL's main office is at Navana Rahim Ardent (Level 8), 185 Shahid Syed Nazrul Islam Sarani, Bijoy Nagar, Dhaka. The company runs six generating units with a total installation capacity of 1,647 MW and a net output of 1,571.03 MW. These units are:

- a) A 50 MW Gas Engine Power Plant commissioned in 2011
- b) A 200 MW Modular Power Plant commissioned in May 2015
- c) A 225 MW Combined Cycle Power Plant (GT & ST) commissioned in December 2016
- d) The Ashuganj 450 MW Combined Cycle Power Plant (South) was commissioned in July 2016
- e) The Ashuganj 450 MW Combined Cycle Power Plant (North) was commissioned in June 2017
- f) The Ashuganj 400 MW Combined Cycle Power Plant (East) was commissioned in November 2022

APSCL helps drive Bangladesh's economy by providing over 6.6% of the country's electricity. The power it generates is fed into the national grid and distributed across the country. The company uses natural gas from Bakhrabad Gas Distribution Company Ltd. (BGDCL) as fuel, and water from the Meghna River for steam and cooling. After use, the water is returned to the river, and during the dry season, it helps irrigate about 40,000 acres in Ashuganj, Sarail, and Brahmanbaria Upazilas.

2.2 Organisational Structure

Being a state-owned enterprise, APSCL has a hierarchical structure to operate its activities and objectives. The company is headed by the Managing Director, who is assisted by the departments of Generation, Procurement, Finance, and Human Resources. The Procurement Department plays an important role in ensuring the goods and services required in the operations of the plant are obtained. It addresses supplier relations, tenders, and contracts and adheres to the national and international norms.

2.3 Business Functions

The core business operations of APSCL are:

- a) Power Generations: Operating thermal power plants and the combined-cycle power plants to generate electricity.
- b) Procurement and Supply Chain Management: Purchasing necessary equipment, materials, and services necessary to operate the plant.
- c) Maintenance and Operations: The in-service of the working process of the power plants.
- d) Environmental and Sustainability Management: Adopting environmentally friendly practices to reduce environmental influences and enhance sustainability.

2.4 Procurement and Supply Chain Overview.

APSCL adheres to the Bangladesh Public Procurement Rules 2008 and their Procurement Rules 2017 in all its procurement. Being an enterprise of the Bangladesh Power Development Board, it adheres to government procurement policies. The company deploys electronic Government Procurement (e-GP) system of the Bangladesh Government to handle tenders, which maintains transparency and efficiency of the process.

The procurement at APSCL involves the purchase of spare parts, fuel, machinery, and services required in running and maintenance of the plant. The supply chain team liaises with suppliers, contractors as well as regulators to ensure timely delivery of materials and services that are of quality. APSCL pays attention to the evaluation of the suppliers in terms of their quality, prices, their delivery time, and their adherence to the environmental and safety regulations.

2.5 Sustainability and ESG Action at APSCL.

APSCL is concerned about environmental sustainability and adheres to according standards and regulations. The company undertakes Environmental Impact Assessments (EIAs) of its projects to eliminate the possibilities of environmental hazards. Examples include the 225MW CCPP, 450 MW CCPP (South), 450 MW CCPP (North) and 400 MW CCPP (East) plants, all of which in their EIA, identified potential air pollutants and consequently to treat them by taking remedies to reduce emissions.

Regarding governance, APSCL has a transparent and accountable procurement process. These activities are monitored by the Procurement Review Committee so as to confirm that they do not violate the rules. APSCL also contributes to the local communities by means of education and other infrastructure endeavors. The company also offers training and development to the employees to develop skills and ensure they work in a safe environment.

Chapter 3: Theoretical Framework and Literature Review

3.1 The Concept of Sustainable Procurement.

It is possible to define sustainable procurement as a process that entails integrating the environmental, social, and governance (ESG) aspects in the procurement processes to ensure that procurement of goods and services is undertaken in a way that would not be harmful to the environment, society, and that includes governance ethics and culture. Sustainable procurement is not constrained in its core understanding to conventional cost-efficiency metrics but is a long-term solution that includes the environmental and social impacts [1]. It can particularly be applied to organizations, where the implementation of sustainability within the procurement functions may lead to efficient running of the organization and benefits to society at large. Sustainable procurement is characterized by the following points:

a) Environmental Sustainability: Decision-making about products and services, which may be employed to reduce the ecological footprint of an organization, i.e., energy-saving products, renewable resources, sustainable materials, etc. [2]. This is necessary in industries where the consumption of resources in huge quantities is carried out, since the practices can lead to massive environmental benefits.

b) Social Responsibility: Ensuring that suppliers respect viable labor conduct, supporting diversity, and enhancing the quality of life of neighboring communities [3]. It could be the choice of suppliers whose impact on the safe working environment and community progress is favorable in the case of an organization.

c) Governance: This should be done to make sure that the procurement practices are transparent, ethical, and responsible in line with preventing corruption and instilling trust in the stakeholders [4].

Having such principles, the organizations will be able to meet both the requirements of the regulations as well as positively influence their community and the environment.

3.2 Environmental, social, and governance structure (ESG).

ESG models play a critical role in shaping the procurement decisions made since they take into consideration the environmental custodianship, social stewardship, and governance standards enjoyed by the suppliers. The long-run performance and corporate image of firms that take into account the ESG considerations during their purchasing processes are higher [5]. The energy and power generation sector should adopt an ESG model due to the high degree of environmental and social concerns in the industry.

a) Environmental (E): Procurement-related choices have to revolve around energy-saving technologies and green resources, reduce carbon footprint, and contribute to the global climate agenda [6]. For example, to achieve, introducing renewable energy solutions into the procurement processes is able to guarantee the achievement of sustainability requirements and minimize the dependence on fossil fuels.

b) Social (S): Social responsibility takes a direct course related to selecting the supplier, which demonstrates their interest in a fair working environment, the health of workers, and the populations [7]. The procurement operations should take into account the suppliers in the perspective of diversity, inclusion, and ethical labour practices.

c) Governance (G): Governance is the visibility in supplier selection, conformance to the law in a country, and easing ethical sourcing [8]. This means they must select suppliers that possess good ethics and good integrity in their operations and with the utmost accountability.

The integration of the ESG principles in procurement will promote a culture of transparency and accountability and conform to the regulatory provisions.

3.3 Relevant International Standards.

The global standards play a great role in assisting organizations to attain sustainable procurement practices. The ISO 14001 (Environmental Management System), ISO 45001 (Occupational Health and Safety Management System) and ISO 9001 (Quality Management System) are relevant standards that provide a procedural approach of integrating sustainability in the procurement decision process.

a) ISO 14001: This standard works in reducing the environmental impact and improving the environmental performance. The ISO 14001 provides an organization with a framework to analyze and minimize the adverse impact their activities have on the environment, to ensure the procurement practices are sustainable development question-oriented [9]. This can be in terms of using energy-efficient turbines or getting materials which have smaller environmental footprint.

b) ISO 45001: ISO 45001 provides principles on the aspect of healthy and safe working conditions. This is one of the criteria necessary for organizations whose employee safety and the well-being of the supply chain workers ought to be taken into consideration [10]. In the selection of suppliers during the procurement processes, adherence to ISO 45001 could assist in making a decision that would select suppliers that will not harm the workers and be working under the international labor standards.

c) ISO 9001: ISO 9001 is a system of setting the requirements of a quality management system and this is anchored on principles like customer focus, leadership, process approach, and continuous improvement. This standard guarantees that the procurement activities are always of the expected level to the customers and the stakeholders since the suppliers chosen to supply to them are of high quality with regard to production practices and are constantly innovative in enhancing their processes. The ISO 9001 can be used to facilitate the simplification of the procurement processes, minimize errors, and ensure the quality of products and services remains at the same level.

Adhering to these standards will help an organization to make its procurement activities socially responsible and environmentally friendly.

3.4 Best Practices in Sustainable Procurement CCPP

Combined Cycle Power Plants (CCPPs) have sustainable procurement processes, which are essential in reducing environmental effects and improving social responsibility. Based on industry literature, these best practices will enable organizations to incorporate sustainability in all stages of the procurement process.

3.4.1 Vendor Selection: One of the most effective methods to guarantee sustainable procurement is to choose a vendor according to sustainability criteria, in this case, compliance with ISO 14001, ISO 45001, and ISO 9001 [11]. The companies are to make judgments of the suppliers regarding their conservation of resources, their waste disposal methods, as well as how they exercise their social responsibilities.

3.4.2 Energy-efficient and low-emission equipment: The use of energy-efficient equipment is one of the main practices of carbon reduction in the power sector. It can be said that a reduction in operational costs can be achieved by selecting energy-efficient technologies that

include advanced gas turbines and low-emission power generation systems, to help achieve the sustainability goals [12].

3.4.3 Recycling and Waste Reduction Programs: Waste management programs, such as recycling programs, must be embraced to greater heights to improve the concepts of the circular economy [13]. Companies should give greater priority to suppliers who depict good waste management practices, such as the provision of products to recycle, as well as those with low risks of causing harm to the environment, such as the provision of low-hazardous waste.

3.4.4 Renewable Energy Incorporation: Long-term sustainability can also be achieved with the introduction of renewable energy in the procurement processes. Renewable energy solutions are one of the most important aspects of environmental mitigation required to ensure sustainability in the globe [14].

3.4.5 Supply Chain Transparency and Traceability: Supply chain Transparency helps organizations to understand where they can encounter sustainable threats, e.g., unethical labour practices or environmental abuse. Online procurement systems like e-GP can also enhance the level of transparency and accountability in the selection of suppliers [15].

These best practices will assist the organizations to make the procurement strategy aligned with the global sustainability goals, decrease the effects they have on the environment and contribute to the circular economy.

3.5 Government Policies and Compliance in Bangladesh

There are several policies and regulations that govern sustainable procurement in the government in Bangladesh. Important about these policies lies in that they ensure that

organizations incorporate sustainable procurement standards and are not contravened by the laws of their countries.

3.5.1 e-GP (Electronic Government Procurement): Due to the establishment of the e-GP system in Bangladesh, the procedural procurement has been turned to a revolution as it has introduced transparency, reduced corruption, and increased efficiency. The e-GP system allows the submission and evaluation of tenders online and therefore promotes transparency and openness in the process of procurement [16]. The introduction of e-GP in organizations assists organizations to evade disputes with country laws, in addition to triggering the computerization of purchases in Bangladesh.

3.5.2 Public Procurement Rules (PPR): Public Procurement Rules (PPR) are to ensure that there is transparency in the public procurement in Bangladesh, besides being competitive and environmentally friendly. The PPR is concerned with the selection of suppliers who appreciate sustainability, socially responsible labour, and environmentally friendly products and services [17].

Furthermore, the implementation of the United Nations Sustainable Development Goals (SDGs) in Bangladesh, and particularly SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) corresponds to the sustainability goals of organizations. The energy efficiency and renewable energy government policies will assist organizations in adopting sustainable procurement measures.

Chapter 4: Existing Sustainable Procurement Practices at APSCL

The chapter is a thorough study of the current sustainable procurement practices that are being applied at Ashuganj Power Station Company Limited (APSCL). The aspects of this analysis are the environmental, social, and governance (ESG) of the procurement itself, and the application of digital platforms and the standard of practices towards storage and distribution. Also, observations of the cases of key projects implemented, like the 450 MW Combined Cycle Power Plants in South and North, the 400 MW Combined Cycle Power Plant (East), and the 225 MW CCPP, are provided to give practical advice.

4.1 Environmental Sustainability

One of the aspects of the APSCL procurement strategy relates to environmental sustainability. The company has incorporated sustainable environmental practices in its procurement decisions as a requirement, whereby the process is based on the choices of the products and services that have the least impact on the environment during their life cycle. These involve the procurement of energy-efficient equipment, minimizing carbon emissions, and adherence to local and international standards of environmental regulations.

APSCL is also vigorous in finding eco-friendly suppliers, such as those materials that can be recycled, non-toxic, and energy efficient. In addition, the environmental performance is also tracked during the procurement cycle, starting with the tender phase and up to the operational phase, whereby all the projects are in accordance with the sustainability objectives of APSCL. Key practices include:

4.1.1 Renewable Energy: APSCL is paying attention to the acquisition of energy-saving equipment and the advancement of renewable energy in its operations. It has developed one of the largest projects, a 120 MW (AC) Grid-Tied Solar Power Plant, in Raipura Upazila,

Narsingdi District. In the ECNEC meeting on 02 July 2024, the Development Project Proposal (DPP) of the 368-acre land acquisition to be used to develop the project was approved. After that, the application was filed with the Deputy Commissioner of Narsingdi on 11 August 2024 to start the process of land acquisition. The proposal was later passed by the Central Land Allocation Committee in its 145th meeting on 08 April 2025. It is planned that the process of land acquisition will be completed by 30 June 2026.

Besides that, the IIFC has completed the Detailed Feasibility Study (DFS), initial Environmental Examination (IEE), Environmental Impact Assessment (EIA), and Social Impact Assessment (SIA) on the project. The DFS shows that it is possible to build a solar power plant with 150 MW (AC) on the site, as compared to the initial project that planned to build 120 MW (AC). The Planning Commission has been provided with the Preliminary Development Project Proposal (PDPP). APSCL has also been communicating with the NDB, EIB, and IDB to find funding for the project.

4.1.2 Waste Minimization: Procurement processes are designed in a manner that minimizes wastage and are concerned with cutting down the carbon footprint of materials, transportation, and packaging. It has also established sustainable waste minimization procedures in its key power stations in the last ten years, such as the 450 MW CCPP (South), 450 MW CCPP (North), 400 MW CCPP (East), and the 225 MW CCPP. APSCL has also established potential sources of waste by conducting detailed Environmental Impact Assessments (EIAs) and has incorporated superior machinery with high efficiency, i.e., advanced gas turbines and heat recovery systems, which use less fuel and less wastage. Waste management practices, such as segregated waste, such as oil and chemical waste, recycling, and reusing of waste, such as flue gases, have been incorporated to reduce the environmental

effects. Constant environmental scanning leads to constant enhancement, which proves the desire of APSCL to be sustainable and a leader in the energy industry.

4.1.3 Variations of Audits: Annual audits have been performed at Ashuganj Power Station Company Limited (APSCL) so far to verify that the management is adhering to worldwide management requirements and to determine the overall sustainability of the organization. The third-party certification organization TNV Certification Pvt. Ltd. conducted ISO audits of the company on 22-23 June 2025, and their audit findings and certifications are presented in Annex A. These audits include the Environmental Management System (ISO 14001), Occupational Health and Safety Management System (ISO 45001), and Quality Management System (ISO 9001). All these standards are crucial in enhancing environmental stewardship, occupational safety culture, and quality assurance practices of APSCL. These systematic evaluations have ensured that APSCL continuously checks its performance as a buyer and a supplier, making sure that it meets national and international sustainability requirements.

More so, being a responsible energy producer, APSCL has been carrying out various Environmental Management plans (EMPs) at the major stages of project execution. To facilitate objective assessment of the environment and effective mitigation of the environmental impacts, these EMPs were prepared using the services of third-party environmental consultants. Also, to provide end-to-end services on monthly environmental and social protection and reporting of activities in the working period of the plants of the 450 MW CCPP North, 450 MW CCPP South, and 225 MW CCPP, APSCL retains the services of third-party consultants. Such reports are heaped every now and then to the government bodies like the Department of Environment, so that these newly set up plants can be transparent and sustainable. An example is that this year APSCL appointed Quality Environmental Solutions Pvt. Ltd. (QES Pvt. Ltd.) after the competitive bidding to carry out monthly, quarterly, and

semi-annual reports on environmental and social monitoring of the 450 MW plant CCPP South. An example of such a report, which contains some notable results, is presented in Annexes B and C. The third-party consultants offered plant-specific studies, which included emissions, waste management, ecological preservation, and community health factors. Both reports had an elaborate analysis of the key environmental impacts of the plants in question and strategic mitigation and monitoring requirements reported, in accordance with the national environmental laws and global best practices. These efforts reinforce the fact that APSCL has long been committed to the implementation of sustainability concepts as part of its operational and project management process.

4.2 Social Responsibility and Labour Compliance

In accordance with the current trend of corporate social responsibility (CSR) in the world, Ashuganj Power Station Company Limited (APSCL) has efficiently incorporated compliance with labor and social responsibility in its procurement strategy. Being both a provider of power and a purchaser of numerous spares and consumables to its power plants, APSCL is determined to follow the principles of social sustainability, where all its activities consider the rights of the workers, provide them with fair wages and working conditions. The ethical sourcing commitment of APSCL is manifested as follows:

4.2.1 Fair Labor Practices: APSCL requires all suppliers to adhere to the national labour regulations and international labour practices. These involve a total ban on child labour, forced labour, as well as discrimination in the workplace. Besides this, APSCL also makes sure that its suppliers provide an environment that encourages equality in all workers, irrespective of their gender, ethnic background, or social background. APSCL, as a company, also adheres to the labour laws in order to ensure that the rights of its own employees are not

violated by ensuring that the company pays fair wages, benefits, and a safe working environment as dictated by the local laws and best practices of international companies.

In addition, being a purchaser of outsourced manpower, APSCL will have an assurance that outsourced service providers and contractors adhere to the local and international labour legislation. This is to make sure that those workers who are employed at some outsourcing or contract rates are also subjected to the same terms of fair labour practices under the protection of their rights and working conditions. APSCL is actively involved in compliance monitoring, which means labour standards are applicable in all spheres of its activity.

4.2.2 Community Engagement: APSCL is highly concerned with local suppliers which encourage communities surrounding industries to grow, and they enjoy the benefits of the operation of the company to have procurement that is carried out by the company. This will not only favor local businesses, but will also guarantee equal treatment and equal pay of the workers in the general development of the society.

Besides this, APSCL is also proactive in its contribution to the local community through financing the Agro Irrigation Project. By means of water release through the power plants, APSCL has served to irrigate about 36,000 acres of land in Ashuganj, Sarail and Brahmanbaria Upazilas. The same initiative has a great benefit to the local farmers in that they have a source of sustainable water irrigation, which has boosted agricultural production and raised livelihoods. The project has also been significant in the survival of the local community since it aids in crop production, which consequently enhances the economic status of the individuals living in such districts.

Combining these efforts with its system of operations, APSCL makes it clear that it is committed to the continued growth of the local area and the improvement of the

socio-economic status of the local population, but it also shows that it remains sustainable and inclusive to its business acquisitions and operations.

4.2.3 Supplier Diversity: APSCL is fully committed to diversity in its supply chain. Businesses owned by minorities, women, and other disadvantaged groups are also welcome at the company. APSCL acknowledges the fact that these businesses should be supported to create a culture of equal opportunity and empowerment to enable economic growth in different groups, which are found in society. This supplier diversity will guarantee an extension of growth and development opportunities to a vast pool of suppliers, which will make the economy more inclusive and equitable.

4.2.4 Training and Development: APSCL understands that the success of its supply chain in the long run will be achieved through the creation of a skilled labour force. In this way, the company motivates its suppliers to spend on the professional growth of their workers. APSCL promotes suppliers to provide training schemes that will help in augmenting the workforce and hence the productivity as well as provide the workers with career growth. APSCL contributes to developing a sustainable workforce that can fit the changing demands of the power generation sector, that can meet the workers as well as the industry at large by encouraging a continuous learning process and growth to enhance productivity.

4.2.5 Stakeholder Management: Stakeholder engagement is an important part of APSCL's social responsibility and transparency. Faithful stakeholders, which are banks, distribution companies, i.e., Bangladesh Power Development Board (BPDB), Power grid company Bangladesh limited (PGCB), fuel gas supply company, i.e., Bakhribad Gas Distribution Company Limited (BGDCL), and other suppliers, are unionised in these meetings. The meetings are a moderating tool where the stakeholders can conduct open discussions on the performance of APSCL as a buyer and a supplier.

The meetings take place at the beginning of every month, and the stakeholders are invited to raise issues, provide suggestions, and give advice on the business operations of APSCL. APSCL does not ignore these inputs and feedbacks are utilized to enhance operational efficiency, improve relations with the suppliers, and overall performance of the company. This frequent communication makes APSCL responsible to its stakeholders and constantly working towards excellence in all aspects of its operations.

Through the regular interaction with the stakeholders, APSCL is guaranteed of a good and transparent rapport with all the stakeholders, hence reinforcing its corporate social responsibility and sustainable conduct.

4.3 Governance Systems and Digital Platforms

Ashuganj Power Station Company Limited (APSCL) has established elaborate governance practices that are transparent, responsible, and equitable in its procurement and management practices. The implementation of the Public Procurement Rules and other digital platforms has also played a key role in the successful operations of the APSCL, and at the same time, the standards of governance are kept high. The section indicates the major digital tools, which have been deployed on the APSCL procurement and administrative services, including e-GP, d-Noti, and the ASCL E-Auction System, and its well-established auditing practices. These e-channels have made significant contributions to the efficiency, transparency, and accountability of the operations at APSCL.

4.3.1 Public Procurement Rules (PPR): APSCL complies with the Public Procurement Rules (PPR) 2008, which is founded on the Public Procurement Act 2006, and its internal procurement rules, which in turn are founded on the Delegation of Financial Power (DoFP)

2017. These regulations are adhered to ensure the performance of APSCL in terms of procurement procedures and the highest level of accountability.

In Bangladesh, the legal framework of the entire issue of public procurement is founded on the Public Procurement Act 2006, which obligates the government to maintain transparency and fairness in the process of purchasing. The Public Procurement Rules 2008 provide the business plan that sets the tendering, awarding of a contract and compliance.

4.3.2 e-GP (Electronic Government Procurement): APSCL has incorporated the e-GP server [Fig. 4.1] into its purchasing system, up-to-date, and simplifying the tendering procedure. The e-GP website makes procurement notices, tender documents, and contract awards more transparent and accessible by making them publicly. This integration reduces the chances of corruption, increases accountability since all the processes of procurement can be traced. This makes e-GP a fair system as all potential suppliers are made to compete equally by giving them all access to the procurement information. Consequently, e-GP encourages an open and competitive process in the award of contracts that is much more efficient in terms of efficiency and transparency of the procurement process.

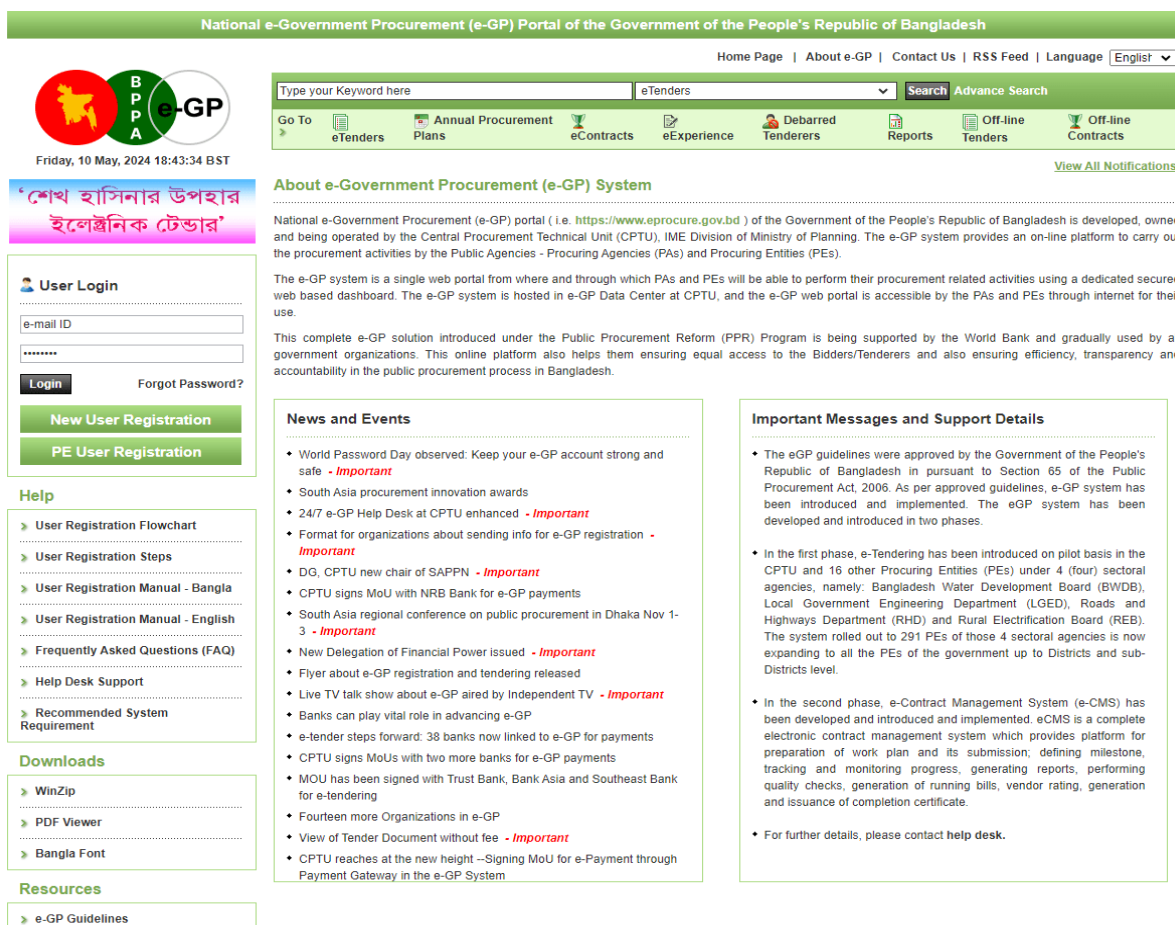


Fig. 4.1 e-GP Sever

4.3.3 d-Noti (Digital Notification): d-Noti platform [Fig. 4.2] is very important in the administrative processes of APSCL, especially in the handling of files and documents within various departments. D-Noti, unlike other platforms, will be specifically created to initiate, track, and handle different kinds of files, including procurement-related files, leave applications, and additional administrative requests. The process of digitization of the file processing system makes d-Noti considerably more efficient in terms of operational efficiency, as every action and request should be recorded, traced, and addressed within a reasonable time frame.

APSCL has been able to enhance transparency in its internal operations due to the use of d-Noti. The system saves time wasted in handling the manual documents, and it also

minimizes the chances of losing or misplacing the documents. Moreover, it allows timely informing the relevant stakeholders about the changes, actions that have to be undertaken, or approvals, and makes it possible to make decisions faster and reduce delays in the administrative processes. Consequently, the d-Noti has turned out to be a useful tool employed to improve the communications, promote efficiency in the operations, as well as promote transparency in the daily operation of APSCL.

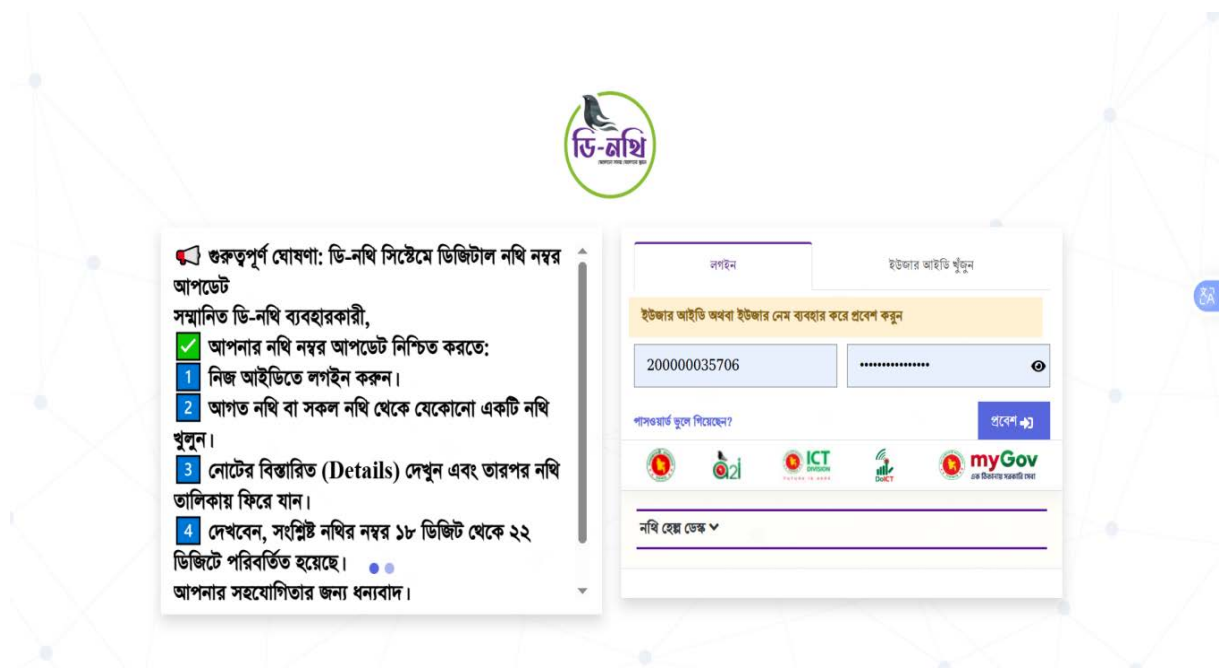


Fig. 4.2 D-Nothi Server

4.3.4 ASCL E-Auction System: APSCL has launched the "ASCL E-Auction" System [Fig. 4.3], which is an additional improvement in its procurement process. It is a platform that is specially aimed at auctioning surplus goods, which include the used lube oil, rejected spares, and other wastes. Through the use of an electronic auction process, APSCL guarantees that the process of the auction is transparent and efficient. The system will be able to engage in real-time bidding and evaluation, making sure it is a fair and competitive process.

The ASCL E-Auction System simplifies the process of disposing of excess materials, and it does not present the complexities that are involved with the traditional process of auctioning.

It also assists in minimizing risks of fraud or manipulation as all the transactions are stored digitally, which guarantees complete responsibility and transparency in the disposal of the assets of APSCL. With a more accessible auction process, APSCL is maximizing the value of the surplus assets and conducting the process ethically and fairly.

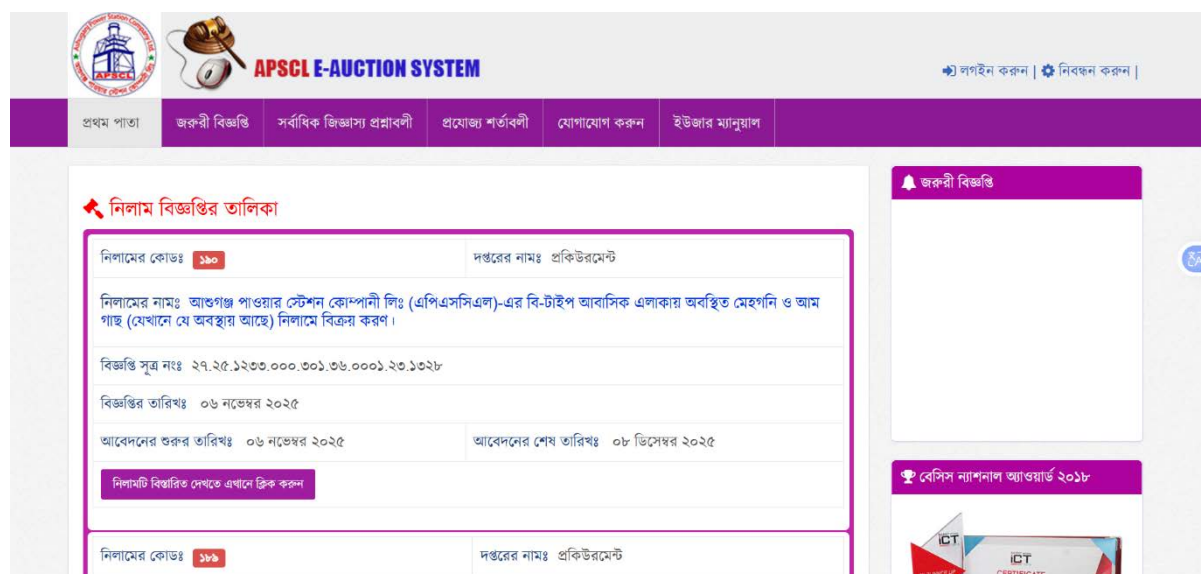


Fig. 4.3 APSCL E-Auction System

4.3.4 Procurement Audits

APSCL performs periodic procurement audits to ensure transparency and accountability of its procurement processes. These audits are one of the facets of the APSCL governance system, which will guarantee adherence to the internal policies and also external regulatory provisions. The procurement audit process of APSCL includes two major steps:

4.3.4.1 APSCL Internal Audit Department: This is an independent department that involves carrying out regular audits on procurement files. The internal audit team also assures

that all the procurement activities are in accordance with the internal policies and procedures of APSCL and the Government policies and procedures. The step gives the process an extra level of enquiry, which assists in upholding the procurement process.

4.3.4.2 Government Audit Department: The procurement activities at APSCL are also being audited by the Government Audit Department after every five years alongside the internal audit. The latest audit was conducted between September 1-30, which is a guarantee that the procurement activity of APSCL is in line with all the national standards and regulations. This is an external audit that serves as a protection measure against the mistakes that may have occurred during the procurement process and assures the stakeholders that APSCL is following best practices in the governance process.

4.4 Standard Sustainable Procurement Practices in Storage and Distribution

APSCL has an extensive scope of sustainable procurement practices, both in storage and distribution processes, with its environmental and economic objectives. This is put into the context of minimizing the effect on the environment, maximizing operational efficiency, and making sure that all the practices in this sector are sustainable. The areas of major concern are:

4.4.1 Energy-Saving Storage Solutions: APSCL has invested strategically in energy-saving storage solutions that would save on the general consumption of energy. This involves the installation of LED lighting in the storage facilities, the introduction of climate-controlled stores to ensure the products are in optimum condition, and the installation of energy-saving machines in the warehouses and other stores. Such practices are beneficial in minimizing the carbon footprint of storage activities of APSCL as well as minimizing long-term operational expenses.

4.4.2 Optimized Transportation: The company emphasizes energy-efficient transportation of the procured products for distribution. In the majority of situations, the products can be shipped by the own fleet of vehicles by APSCL, in particular in situations when there is a direct procurement method. This can help the company to control the transportation process and to ensure that the transportation solutions that are employed are energy efficient. APSCL has particularly been keen on minimizing emissions by retiring old models and investing in low-emission models that are applied in the transportation of goods. When a vehicle is disposed of after completion of its life cycle, it is auctioned by APSCL after making sure there are adequate approvals. This will keep only the energy-efficient vehicles on the road, which makes the company even less effective on the environment.

4.4.3 Inventory management: APSCL uses a highly developed centralized inventory management tool referred to as the Store Management Application [Fig. 4.4] to boost the efficiency of the inventory management control. All the products procured are centrally stored, and requisitions are made by the user divisions using this software to ensure that all inventories have an accurate and updated record. Other vital information that is captured by the system includes the availability of products, past procurement prices, its current stock, and the amount it has purchased over the past five years. Upon a request being placed by the user division, the store division initially checks the inventory to confirm the availability of the required products and also to confirm that they are in stock. This system reduces the unnecessary inventory levels, both in terms of costs and impact on the environment as the inventory levels are optimised.

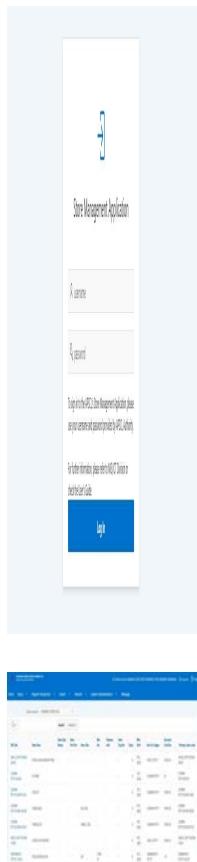


Fig. 4.4 APSCL Store Management System

4.4.4 Packaging and Waste Management: APSCL pays very close attention to the reduction of the waste of packaging by choosing suppliers that use environmentally friendly packaging materials. Secondly, the packaging of the products at APSCL is crafted in a manner that will allow the products to be stored safely and stay in good condition till their lifecycle. Once the products have reached the end life cycle, the store division would be responsible for segregating the products and then disposing of or recycling them accordingly. All items that cannot be utilized are auctioned after being taken by the departments concerned. The process ensures that the products that are outdated are properly disposed of and lead to the reduction of waste and encouraging recycling through the storage and distribution procedures.

Such practices altogether guarantee that storage and distribution operations of APSCL are in line with the principle of sustainable procurement that promotes environmental stewardship of the company as well as ensuring operational efficiency and minimizing costs.

4.5 Sustainable Procurement Practices from Implemented Projects

When APSCL was first started, the power plant was made of six plants, which were Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, and the Combined Cycle Power Plant (CCPP). These units formed a part of the long-term energy plan of Bangladesh, and the first two units were commissioned in 1970, and Units 3 and 4 were commissioned in the late 1980s. The CCPP was built in the early 1980s as a result of the UK financing and included two gas turbines (56 MW each), and one steam turbine (34 MW), making the total capacity 146 MW. These units, however, over time, became very inefficient. Units 1, 2, 3, 4, and 5 had efficiencies of 29.97, 30.87 and 29.89 and 31.75 and 34.86, respectively. Also, the CCPP unit efficiency decreased to approximately 19.86 using gas turbines. This deterioration caused the consumption of more fuel, high operating expenses, and a dire requirement for modernization. In reaction to

this, APSCL introduced a sustainable procurement model that comprised retiring or phasing out the old units and acquiring or constructing new high-efficiency combined cycle plants with modern technology, enhanced fuel conversion, and increased capacity. The next subsections give information about the implemented projects.

4.5.1 225 MW CCPP Project: APSCL's first sustainable procurement project is the 225 MW combined-cycle power plant [Fig. 4.5], to replace old steam and gas turbines, which was initiated in 2013 and started to operate commercially in April 2015, having a generating capacity of about 223 MW. This project was a major move in replacing the old units that consume less energy with a more efficient gas-based CCPP with an efficiency of 48.45. The acquisition of modern gas turbine and steam cycle equipment allowed APSCL to maximize the fuel-to-electricity ratio and minimize the amount of emissions per unit of electricity produced, which can be interpreted as the evident sustainability orientation due to the choice of more efficient technology to be incorporated into the existing infrastructure. The plant factor of the plant at the time is 81.66, the availability factor is 89.38, and the efficiency is 48.45. The structure of older units and relative capacity improvements are further details in the second section below.



Fig. 4.5 225 MW CCPP Plant

4.5.2 450 MW CCPP (South) Project The 450 MW CCPP South project [Fig. 4.6], which was a part of the Ashuganj complex, is the large-scale replacement of the old infrastructure. This combined cycle gas turbine (CCGT) plant was commissioned in July 2016 and had a gross capacity of approximately 382 MW and a net capacity of approximately 359 MW. APSCL chose global EPC contractors among them, Inelectra International AB of Sweden, TSK Electronica y Electricidad S.A, of Spain and Siemens turbines and contractors, which guaranteed the acquisition of superior quality equipment. This option has contributed greatly to thermal efficiency and fuel consumption, as well as operation life and met the sustainable procurement requirements, such as technological modernization, vendor selection, and life cycle cost reduction. Moreover, gas-based combined cycles help the government to achieve the diversification and efficiency targets in fuel. This plant has a capacity of 383 MW and a plant factor of 66.01, a factor of availability of 87.81, and a plant efficiency of 56.69,



Fig. 4.6 450 MW CCPP (South) Plant

4.5.3 450 MW CCPP (North) Project: As an addition to the South CCPP, the 450 MW CCPP North project [Fig. 4.7] was brought online in June 2017. It was a project initiated in April 2014 and developed in partnership with contractors Tecnicas Reunidas S.A. (Spain) and TSK. Much like the South unit, the procurement strategy focused on high-efficiency combined cycle turbines, manufactured by Siemens, namely the SGT5-4000F gas turbines and SST-3000 steam turbines, and generators thereof (SGen5-2000H). The 10.17-acre size of the plant neighboring the existing infrastructure enabled the possibility to reuse the site assets and to reduce the acquisition of new territory. This unit has an installed capacity of 386 MW and is expected to save about 795,884 tons per year of CO₂ emissions as compared to the older unit that is operated on steam. The sustainable procurement strategy of APSCL was reflected in its incorporation of environmental and economic factors in its operations, where it proved to have high output per unit of fuel, low emission rates, longer life of operation, and increased the use of the facilities in the site. The efficiency of the plant is 53.63 and has a factor of 63.26 plant and 84.76 availability. The investments mainly in this project were made by ADB and IDB.



Fig. 4.7 450 MW CCPP (North) Plant

4.5.4 400 MW CCPP (East) Project: The most recent significant project to be added to the production portfolio of APSCL is the 400 MW (occasionally reported as 420 MW) CCPP East [Fig. 4.8], which has been built on the location of the previous older plants. The construction started in July 2018, and commercial operation started in November 2022. This was done by an EPC consortium that was based in China, funded by the Asian Development Bank (ADB), Islamic Development Bank (IDB), and the Government of Bangladesh. The installed gas-fired combined cycle plant is 420 MW capacity and it replaces the old units, which were already retired. The plant symbolizes the complete shift of APSCL to the modern high-efficiency generation using updated technology, which is one of the long-term goals of the sustainable procurement strategy of APSCL. Some of the advanced practices that are reflected in this project include lifecycle cost analysis, choice of advanced technology, compliance with climate and fuel diversification policies, and reuse of existing infrastructure. The efficiency of the plant will be 53.89, the plant factor will be 62, and the availability factor will be 83.31.



Fig. 4.8 400 MW CCPP (East) Plant

Combined, these projects show the shift of APSCL, which has aged and inefficient units, to a fleet of high-efficiency combined cycle plants. The purchasing choices were oriented to contemporary equipment and the choice of the vendor, aiming to improve the fuel and thermal consumption, reusing the site and infrastructure to cause minimal impact on the environment, and compliance with the national energy policy, such as fuel diversification and the reduction of emissions. The case, therefore, gives a good understanding of sustainable procurement in the large-scale energy infrastructure.

Chapter 5: Findings and Discussion

5.1 SWOT Analysis of Sustainable Procurement at APSCL

A SWOT analysis was carried out to examine how sustainable procurement is being practiced at APSCL. The analysis was used to identify the strengths, weaknesses, opportunities, and threats shaping the current system. Through this process, APSCL's position within its organisational and policy environment is better understood.

5.1.1 Strengths

5.1.1.1 Commitment to ESG Integration

The procurement of APSCL is demonstrating a commitment to ESG principles. ESG criteria are being implemented in the selection of tenders up to awarding the contract. The strategic courses and the long-term planning of the firm are responding to this integration.

5.1.1.2 Renewable Energy Adoption

Renewable energy projects are undertaken on a large scale. The 120 MW solar power project is also seen to be a significant move towards less dependence on fossil fuels. This change is geared towards national energy priorities and global climate aspirations.

5.1.1.3 Government Policy Support

A supportive framework is being applied in government policies. APSCL is complying with regulations that promote the use of transparency and sustainable energy. E-GP, among other tools, is being employed in the minimization of procurement risks and concerns relating to corruption.

5.1.1.4 Compliance with International Standards

International regulations are being upheld, i.e., ISO 14001, ISO 9001, and ISO 45001, for the application to enhance the credibility and operational discipline of APSCL. These benchmarks are the activities that are being put in place in procurement activities.

5.1.2 Weaknesses

5.1.2.1 Supplier Compliance Issues

Supplier compliance with ESG criteria is found to be inconsistent. Many local suppliers lack adequate systems or awareness. This gap is being identified as a major barrier to APSCL's sustainability goals.

5.1.2.2 Higher Cost of Green Procurement

Higher upfront costs for eco-friendly technologies are being observed. Cost pressures are being felt during financially challenging periods. Balancing sustainability with operational affordability is being recognised as a difficult task.

5.1.2.3 Limited Awareness and Training

Awareness of sustainable procurement is uneven within APSCL. Lower-level staff are being identified as needing more training. This gap is viewed as a risk to long-term commitment to sustainability.

5.1.3 Opportunities

5.1.3.1 Expanded Renewable Energy Projects

Opportunities for expansion in solar and wind projects are being identified. Government incentives and international financing are being offered for such developments. APSCL is being positioned to play a larger role in clean-energy growth.

5.1.3.2 Supplier Capacity Building

Training programs for suppliers are being recognized as a major opportunity. By guiding local vendors, APSCL's supply chain can be strengthened. A more sustainable and locally rooted supplier network is being created through this approach.

5.1.3.3 Digital Transformation

Digital tools such as e-GP and d-Noti are being expanded for better data management. Real-time tracking of procurement activities is being enhanced. These systems are seen as useful for ESG monitoring and reporting.

5.1.3.4 Collaboration with International Bodies

Partnerships with global organisations are viewed as beneficial. Technical knowledge, financial support, and training opportunities are being offered through such collaborations. These partnerships are considered important for APSCL's capacity development.

5.1.4 Threats

5.1.4.1 Policy Changes

Frequent shifts in government policy are being seen as a potential threat. Adjustments in energy regulation or procurement rules can impose new compliance requirements. Such changes are being recognised as a source of operational uncertainty.

5.1.4.2 Technological Obsolescence

Rapid technological advancement is being identified as a risk. Existing equipment may become outdated quickly. Continuous investment is required to remain competitive.

5.1.4.3 Economic Instability

Economic constraints at the national or global level are being viewed as a major threat. Budget limitations can delay sustainability initiatives. Long-term commitments to green procurement may be affected during tight financial periods.

5.2 Major Implementation Problems

There are various issues that are being witnessed in the process of implementing sustainable procurement at APSCL.

5.2.1 Haphazard Supplier Compliance: The compliance of suppliers with ESG standards is in an irregular pattern. APSCL is also engaging in audits, yet complete harmonization is not being realized. The local suppliers, in most cases, do not have the resources to address the requirements.

5.2.2 Trade-off between Cost and Sustainability: The increased price of green products is being realised as a limitation. Though long-term savings are what is expected, the first economic push is being experienced now. This is creating a discrepancy in decision-making.

5.2.3 Regulatory Uncertainty: Changes in policies are being witnessed. Alterations in the environmental regulations or energy subsidies have the potential to disturb the procurement plans. APSCL has to change often to remain in conformity.

5.2.4 Operational and Technological barriers: State-of-the-art technologies are big investments and require knowledge. Local technical capacity is also proving difficult to get, particularly in the integration of renewable energy. When new systems are introduced, the functionality barriers are realized.

5.3 Alignment with ESG Framework

The procurement practices at APSCL are being aligned to the ESG framework, and observable strides have been realized in all three aspects.

5.3.1 Environmental (E): Rebates are being offered for energy-efficient equipment and renewable technologies. These measures minimize the carbon footprint of APSCL. Through such initiatives, national climate objectives are being facilitated.

5.3.2 Social (S): Promotion of fair labour practices is being encouraged. The suppliers are also being made to abide by the national and international labour standards. There is the introduction of community development projects, like irrigation support, to enhance the local livelihood.

5.3.3 Governance (G): Digital systems are enhancing transparency in terms of e-GP and d-Noti to make selections of suppliers fair. Auditing is regularly being done to ensure accountability.

These steps are strengthening the image of APSCL as a responsible organisation.

5.4 Stakeholder Insight (Interview and Field Observations)

The interviews and field observations will help in further exploring the issue and getting a better perspective on how the parameters to be explored relate to the stakeholders. The perspectives of major stakeholders are being utilized to realize the progress and challenges that APSCL is facing.

5.4.1 Procurement Engineers: The engineers in procurement are showing their consent towards sustainability. Balancing problems with the sustainability of costs is being recognized. Engineers also demand additional training for suppliers to enhance ESG compliance.

5.4.2 Suppliers: There is mixed feedback from suppliers. Others are celebrating the sustainability concern by APSCL, and others are in panic over the high prices of acquisition and the low local capacity. Non-compliance issues are being extensively covered.

5.4.3 Field Observations: On-site inspection in the 400 MW CCPP (East) project is showing some tangible improvement. They are using energy-efficient systems and waste-management practices. Nevertheless, supply chain sustainability is identified as being disproportionate, and more can be done to work closely with suppliers locally.

Chapter 6: Recommendations

The increasing ESG demands are influencing the procurement system of APSCL. Accordingly, some adjustments are being determined to be required to improve in the long run. The suggestions below are being put across in the light of identified gaps in current practice.

6.1 EGG-Integrated Roadmap for APSCL Procurement

An effective ESR map is being proposed to ensure that the procurement decision-making is driven by transparent sustainability priorities. It is observed that this road map is a tool that would help to connect the results in the field of environmental, social, and governance to the actual procurement work.

6.1.1 Environmental Sustainability Goals: Certain environmental objectives can be prescribed like emission reduction, increased energy efficiency, and the increased use of renewable materials. Vendors of low-carbon solutions or energy-saving measures are being given precedence, and their products are proving to be more viable within the long-term scope of operations of APSCL.

6.1.2 Social Responsibility: Better interaction with suppliers regionally can be promoted. Most of the vendors are not sensitised to the labour and safety standards. Proposals have been carried out for training to ensure that the suppliers are aware of the practices that are

expected. Through this, social compliance in the supply chain will be empowered. The role of governance and transparency holds importance in this plan.

6.1.3 Governance and Transparency: APSCL can extend the use of more digital platforms to ensure that all procurement steps are traceable. The ERP systems or blockchain tracking introduction is also under consideration so that clear audit trails can be formed, and possible errors during documentation can be minimized.

6.1.4 Tree Plantation as an ESG Activity: Tree-planting program as part of the carbon-offset activities in open areas within the APSCL premises can also be done. This program is considered a feasible solution to enhance carbon absorption and to show responsibility of APSCL as a green organization.

6.2 Sustainable Vendor and Inventory Management Strategies

The process of selecting vendors and inventory management strategies can be pointed out as key factors impacting APSCL in the areas of its sustainability performance. There can be a number of suggested improvements.

6.2.1 Vendor Care and Audits: It is being suggested that regular audits of vendors should take place. The audits are verifying the conformity of the suppliers to the environmental and social requirements. The highly compliant vendors are being looked into getting longer-term contracts, which is rather being viewed as an incentive to continue improving.

6.2.2 Green Procurement Policy: A formal green procurement policy can be introduced, where using environmentally friendly products will be the key agenda. The products from recycled products that save energy are ranked higher on the list. Close collaboration with the

suppliers through joint product development is also being promoted, such that emissions are being reduced at an early phase.

6.2.3 Management of Inventory Optimisation: Analytics of inventory can be introduced to avoid a shortage of stock. It is found that forecasting tools can be used to minimize wastage and decrease storage expenses. Purchasing only the essential supplies the environmental impact is also being minimized, and the resources are more efficiently used.

In this section, the author examines the topic concerning the role of government bodies in safeguarding the digital environment and emphasizes the crucial responsibilities such institutions hold regarding the efficiency of their information disclosures.

6.3 Governance and Digital Transparency

Enhancement of governance mechanisms can also be an area being identified as a priority in APSCL. Such as:

6.3.1 Expand Digital Tools: There can be integration of procurement data in the central monitoring system. Processing delays and coordination to a greater extent will be reduced through this integration. An information flow in real time is found to be vital in making decisions on time.

6.3.2 Public Reporting: It is recommended to implement annual sustainability reporting where the performance of the procurement process, vendor evaluation, and environmental or social impacts are made available to the stakeholders through reports. This strategy can be employed as a way of generating confidence in people and enhancing organisational accountability.

6.3.3 Enhance Internal Auditing: Internal audit can be strengthened by applying tools that can identify irregularities at the initial stages. The reason why AI-supported systems are being proposed is that such tools allow detecting inconsistencies faster and aiding in keeping the ESG-related compliance.

6.4 Suggestions on Social and Environmental Interventions

More interventions are being suggested to enhance APSCL to contribute more broadly to social and environmental issues.

6.4.1 Community Engagement and Development Projects: The interaction of APSCL with the communities can be extended. Education, small infrastructure investment, and local businesses can be encouraged. These programs are being regarded as a long-term donation to social welfare.

6.4.2 Sustainable Waste Management Practices: There is a scope for improvement in the waste management systems. The opportunity of recycling products can be enhanced, and the disposal of hazardous waste can be done with greater disease caution. Waste-to-energy is also under consideration in such a way that waste streams are being utilized instead of being thrown away.

Chapter 7: Conclusion

The research is demonstrating that the environmental, social, and governance issues are impacting the procurement operations of APSCL, yet the degree of integration is also shown to be skewed. In response to this, an ESG-based approach is being suggested to make procurement decisions more uniform.

An organized plan is perceived to be required to enhance the long-term improvement. By means of this, the objectives of APSCL in the environment of the reduction of emissions, the fairness of the social institution, and the transparency of governance are going to be coordinated with the day-to-day procurement activities. The implementation of the potential tree-planting program is viewed as a direct move to decrease the APSCL carbon footprint in addition to enhancing the local environmental factors.

Areas that are undergoing specific improvement are vendor engagement, inventory control, and integration via digital services and efforts. Accountability is being enhanced by using stronger auditing and public reporting. These measures are deemed to be fundamental in coming up with a more accountable procurement system.

Being the national power player, the activities of APSCL are scrutinized. With an improved sustainability practice, APSCL is finding itself in a state of affecting the entire energy market in Bangladesh. The current focus on investing in clean technologies, supporting the local population and open administration is being identified as the way towards a more resilient and sustainable future.

References

- [1] Carter, C. R., & Easton, P. L. (2011). Sustainable supply chain management: Evolution and future directions. *International Journal of Physical Distribution & Logistics Management*, 41(1), 46-62.
- [2] Carter, C. R. (2008). The influence of purchasing on sustainable supply chain management. *Journal of Supply Chain Management*, 44(3), 15-30.
- [3] Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16(15), 1699-1710.
- [4] Handfield, R. B., et al. (2005). Sustainable supply chain management: A case study approach. *Business Strategy and the Environment*, 14(4), 262-275.
- [5] Elkington, J. (1997). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. New Society Publishers.

- [6] Ahi, P., & Searcy, C. (2013). A comparative literature analysis of definitions for green and sustainable supply chain management. *Journal of Cleaner Production*, 52, 329-341.
- [7] Pagell, M., & Wu, Z. (2009). Building a more complete theory of sustainable supply chain management. *Journal of Supply Chain Management*, 45(2), 37-56.
- [8] Müller, M., & Seuring, S. (2008). The role of governance in sustainable supply chains. *International Journal of Physical Distribution & Logistics Management*, 38(8), 614-637.
- [9] Luken, R., & Stares, R. (2005). The sustainability of ISO 14001 in the UK and US. *Business Strategy and the Environment*, 14(5), 302-316.
- [10] Fleming, M., & Lardner, R. (2002). Safety management systems: ISO 45001 implementation and impact. *Occupational Health and Safety Journal*, 6(4), 32-39.
- [11] Linton, J. D., et al. (2007). Sustainable supply chains: A research agenda. *International Journal of Operations & Production Management*, 27(6), 622-632.
- [12] Zhao, X., et al. (2013). Energy-efficient technologies and their impact on procurement decisions in power generation. *Energy Economics*, 36(4), 1574-1582.
- [13] Joustra, D., et al. (2016). Circular economy practices in supply chain management: A review of literature. *International Journal of Production Economics*, 182, 231-244.
- [14] Awerbuch, S., & Sauter, R. (2006). Portfolio-based electricity generation planning: Implications for renewables and climate change policy. *Energy Policy*, 34(17), 2008-2022.
- [15] Chard, S., & Svensson, G. (2015). The role of transparency in sustainable procurement. *Journal of Business Ethics*, 127(3), 597-608.

[16] Rahman, S., & Beg, N. (2012). E-Government Procurement: A comparative study of the e-GP system in Bangladesh. *Public Procurement Journal*, 15(2), 121-135.

[17] Chowdhury, S. (2015). The impact of public procurement rules on sustainable procurement practices in Bangladesh. *Asian Journal of Public Administration*, 7(2), 111-123.

[18] www.apscl.org.bd

Appendix A

The certificate is issued by TNV (Neutral, Transparent, Veritas) and certifies the Integrated Management System of Ashuganj Power Station Company Ltd. (APSCL) in Brahmanbaria, Bangladesh. It covers the scope of electricity generation by natural gas and is valid until July 2027. The certificate number is 240730108001.

Certificate of Registration

This is to Certify that the Integrated Management System of

Ashuganj Power Station Company Ltd. (APSCL)

Ashuganj, Brahmanbaria-3402, Bangladesh.

has been assessed and registered by TNV as conforming to the requirements of:

Integrated Management System

** Comprises Certification No.*

240730018001 (ISO 9001:2015),
240730028001 (ISO 14001:2015),
240730038001 (ISO 45001:2018)

For the following Scope

Generation of Electricity By Natural Gas

TNV is accredited by United Accreditation Foundation (UAF), Status of Certificate can be verified on www.tnvworld.com & www.iafcertsearch.org

Certificate Number	240730108001	Initial Issue Date	30 th Jul. 2024
Current Issue Date	30 th Jul. 2024	Validity of this Certificate	29 th Jul. 2027
1 st Surveillance Date	30 th Jun. 2025	Recertification due on	29 th Jul. 2027
2 nd Surveillance Date	30 th Jun. 2026	Revision No./Date	00
Issue No.	01	IAF Code	25

Appendix B

Monthly Environmental and Social Monitoring Report Ashuganj 450 MW CCPP (South) (September-2025)



Prepared and Submitted By:

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**ASHUGANJ POWER STATION COMPANY LIMITED
(APSCL)**

Submitted on September, 2025

Appendix C



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