

GREENHOUSE GAS (GHG) INVENTORY REPORT
UNIVERSITAS NEGERI JAKARTA



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CHAPTER 1

INTRODUCTION

1.1. Background

Universitas Negeri Jakarta (UNJ) is committed to supporting sustainable development by measuring and managing greenhouse gas (GHG) emissions. This inventory is conducted following the GHG Protocol standards to identify emission sources and develop appropriate mitigation strategies.

1.2. Objectives and Benefits

This report aims to:

- a) Calculate the total GHG emissions produced by UNJ over the past year.
- b) Identify major emission sources.
- c) Develop mitigation strategies to reduce UNJ's carbon footprint.

1.3. Scope

This inventory covers all academic and administrative units at UNJ, with analysis based on Scope 1, Scope 2, and Scope 3 categories as per the GHG Protocol standards.

CHAPTER 2

METHODOLOGY

Standards and Guidelines

This inventory follows the GHG Protocol Corporate Standard, incorporating emission factors aligned with national regulations.

2.1. Emission Scope

- a. Scope 1: Direct emissions from operational vehicles and electricity generators at UNJ.
- b. Scope 2: Indirect emissions from campus electricity consumption.
- c. Scope 3: Other indirect emissions from business travel, paper consumption, and waste.

2.2. Data Collection Methods

Data was collected through fuel consumption records, electricity usage logs, and surveys regarding business travel and campus waste.

CHAPTER 3

GHG INVENTORY RESULTS

Based on the data collected, the estimated GHG emissions at UNJ are as follows:

- a. Scope 1: 158.94 tons CO₂e (operational vehicles and generators)
- b. Scope 2: 8,684.12 tons CO₂e (electricity consumption from PLN)
- c. Scope 3: 1,194 tons CO₂e (business travel, waste, and paper consumption)

Total GHG emissions produced by UNJ over the year amount to 10,037.06 tons CO₂e.

CHAPTER 4

MITIGATION EFFORTS

4.1. Energy Efficiency

- a. Utilization of energy-efficient LED lighting.



Figure 4.1. The use of energy-efficient LED lightning in UNJ

Universitas Negeri Jakarta (UNJ) has implemented the use of energy-efficient LED lighting across its campus as part of its commitment to sustainability and environmental responsibility. By replacing conventional lighting with LED technology, UNJ significantly reduces its energy consumption and carbon footprint. LED lights are not only more durable and longer lasting, but they also consume less electricity, leading to cost savings on energy bills and reduced maintenance efforts. This initiative reflects UNJ's proactive steps toward creating a greener campus environment and promoting energy conservation among its academic community.

b. Implementation of automated electricity systems across campus.



4.2. Environmentally Friendly Transportation (Adoption of electric vehicles for internal operations)



Figure Electric Vehicle Charging Station in UNJ

4.3. Waste Management (Digitalization of administrative processes to reduce paper consumption)



Figure

SIPERAN (Surat Management Information System) at Universitas Negeri Jakarta (UNJ) (<https://siperan.unj.ac.id/>) is a digital system developed to manage the administrative process of correspondence more efficiently and in an integrated manner. The main goal of SIPERAN is to accelerate the distribution of official letters, simplify the documentation of incoming and outgoing mail, and enhance the accountability and efficiency of bureaucracy within UNJ. The system's core functions include the creation, submission, tracking, and digital archiving of official letters by members of the academic community. Users log in to the system using their official UNJ account, select the type of letter service they need, fill out the provided form, and upload any necessary supporting documents. The system then processes and distributes the letter to the authorized parties for approval or further action. With SIPERAN, administrative processes become faster, more efficient, and environmentally friendly by reducing paper usage.

CONCLUSIONS AND RECOMMENDATIONS

This inventory indicates that electricity consumption is the primary contributor to GHG emissions at UNJ. The following recommendations are suggested for emission reduction:

- a. Increased utilization of renewable energy.
- b. Expansion of energy efficiency initiatives.
- c. Implementation of sustainable business travel policies.

UNJ is committed to continuously monitoring and updating its emissions data annually to achieve more ambitious sustainability targets.