GHG Emissions Report for SEGi University, Kota Damansara

Reporting Period: 2024

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1. Introduction

i. **Purpose of the Report**:

This report has been prepared to measure and manage the greenhouse gas (GHG) emissions generated by SEGi University for the year 2024, following the guidelines of the GHG Protocol Corporate Standard. The objective is to track emissions, implement reduction strategies, and demonstrate the university's commitment to sustainability.

ii. **Organization Overview**:

SEGi University is a leading higher education institution located in Kota Damansara, Malaysia. The university offers a variety of undergraduate and postgraduate programs and is dedicated to promoting a sustainable and green campus environment.

iii. **Reporting Boundary**:

The operational boundary for this report is defined based on the **Operational Control** approach, meaning SEGi University includes all operations over which it has operational control, including academic buildings and student facilities within its main campus in Kota Damansara.

iv. **Reporting Period**:

This report covers the period from **January 1, 2024, to December 31, 2024**.

2. Organizational Boundaries

i. **Control Approach**:

The reporting is based on the **Operational Control** approach as per the GHG Protocol Corporate Standard. This means that the university is responsible for the emissions from all operations it controls.

ii. **Entities Included**:

This report includes all buildings and activities under SEGi University’s operational control, including classrooms, administration offices, libraries, laboratories, and recreational areas.

3. GHG Emission Inventory

Scope 1 Emissions (Direct Emissions)

i. **Fuel Combustion**:

The university does not report significant fuel combustion for heating or transportation purposes. Emissions from any mobile sources or heating equipment are negligible.

ii. **Process Emissions**:

There are no significant process emissions identified in the reporting period.

iii. **Fugitive Emissions**:

There are no notable fugitive emissions such as those from refrigeration systems or leaks.

iv. **Other Direct Emissions**:

The only significant direct emission source is **electricity consumption**, which contributes to the Scope 2 emissions (described below).

Scope 2 Emissions (Indirect Emissions from Purchased Electricity)

i. **Electricity Consumption**:

The university consumed **2,556,002 kWh** of electricity in 2024. The emissions associated with electricity consumption are calculated using national or regional grid emission factors.

ii. **Emission Factor**:

Based on Malaysia's national grid emission factor (approximately **0.785 kg CO_2/kWh**), the Scope 2 emissions from electricity consumption are calculated as follows:

Scope 2 Emissions=2,556,002 kWh×0.785 kg CO_2/kWh=2,005,366 kg CO_2

Scope 3 Emissions (Other Indirect Emissions)

i. **Upstream Activities**:

Emissions from purchased goods and services, such as office supplies, are not fully accounted for in this report.

ii. **Downstream Activities**:

There are no significant emissions from the use of products sold (such as course materials) or from the disposal of waste generated by the university's activities.

iii. **Encouragement of Sustainable Practices**:

SEGi University actively encourages students to use the nearby **Mass Rapid Transit (MRT)** system to reduce transportation-related emissions. In addition, SEGi University has implemented an initiative to **switch off air conditioning for one hour** during lunchtime (12:00 PM - 1:00 PM) across all buildings.

4. GHG Emissions Calculations

i. **Methodology**:

The emissions calculations are based on the **GHG Protocol Corporate Standard** using emission factors relevant to Malaysia. The total Scope 2 emissions are derived from the electricity consumption of 2,556,002 kWh, multiplied by the regional grid emission factor.

ii. **Data Sources**:

- **Electricity Consumption**: SEGi University's electricity consumption data was provided by the university's facilities management team.
- **Emission Factor**: The emission factor for Malaysia's electricity grid was sourced from the most recent national GHG inventory data.

iii. **Emission Factors**:

The emission factor used is **0.785 kg CO_2/kWh**, based on Malaysia's electricity grid emissions factor.

iv. **Assumptions**:

- All electricity consumed was assumed to come from the national grid.
- No major changes in the university's operational or energy mix were assumed during the reporting period.

5. GHG Reduction Activities

i. **Installation of Solar Panels**:

SEGi University has made significant strides towards reducing its carbon footprint by installing **solar panels** across campus buildings. The installation is expected to reduce the demand for grid electricity and, in turn, lower Scope 2 emissions. A full calculation of the emissions reduction will be included in future reports.

ii. **Encouraging Use of Public Transportation**:

The university actively promotes the use of the nearby **MRT** to reduce the carbon footprint from commuting. Students and staff are encouraged to utilize this public transportation option, which helps lower transportation emissions.

iii. **Switching off Air Conditioning during Lunchtime**:

As part of the university's commitment to reducing energy consumption and its carbon footprint, SEGi University has implemented an initiative to **switch off air conditioning for one hour** during lunchtime (12:00 PM - 1:00 PM) across all buildings. This practice not only reduces electricity consumption during peak hours but also encourages the campus community to adopt more sustainable behaviours. The estimated energy savings from this initiative will be monitored and included in future reports.

6. GHG Performance Metrics

i. **Total GHG Emissions**:
   - **Scope 1 Emissions**: Not applicable (no significant direct emissions).
   - **Scope 2 Emissions**: **2,005 tons of CO_2**.
   - **Scope 3 Emissions**: Not fully quantified for this report but includes activities like student commuting and supply chain emissions.

ii. **Emission Intensity**:
Emissions per unit of energy consumed:

$$\text{Emission Intensity} = \frac{2,005 \text{ tons of } CO_2}{2,556,002 \text{ kWh}} \approx 0.785 \text{ kg } CO_2/\text{kWh}$$

This is consistent with the national grid's emission factor.

iii. **Trends**:
Historical emissions data will be tracked in future reports to monitor the effectiveness of emissions reduction strategies.

7. Verification

- **Third-Party Verification**:
  As of now, the GHG emissions data has not been verified by a third party. SEGi University plans to undergo third-party verification in the coming reporting periods to ensure the accuracy and credibility of the emissions inventory.

8. GHG Reduction Goals and Future Actions

i. **GHG Reduction Targets**:

SEGi University has set an ambitious goal of reducing **Scope 2 emissions by 20% by 2030** through further investments in renewable energy technologies, particularly through expanding solar panel installations.

ii. **Actions to Achieve Targets**:

- Increase the number of solar panels installed on campus to cover a larger proportion of the university's energy needs.
- Promote sustainable transport options, including further encouragement of MRT usage and the adoption of electric vehicles for campus-related activities.
- Continuously monitor and improve energy efficiency in all campus buildings.

iii. **Timeline**:

- **Short-term (2024-2025)**: Expand solar panel installation and introduce energy-saving initiatives.
- **Medium-term (2025-2027)**: Reduce energy consumption through efficiency improvements.
- **Long-term (2027-2030)**: Achieve a 20% reduction in Scope 2 emissions.

9. Conclusion

SEGi University is committed to reducing its carbon footprint and fostering a sustainable future. The GHG emissions for 2024 have been calculated, and the university is taking proactive measures to reduce emissions through energy efficiency improvements, renewable energy adoption, and encouraging sustainable practices among students and staff. With clear targets set for the coming years, SEGi University aims to lead by example in the higher education sector in Malaysia in the fight against climate change.

Appendices

- **Appendix A**: Emission factors used.
- **Appendix B**: Energy consumption data for 2024.
- **Appendix C**: Scope 3 emission data for 2024.

This format follows the GHG Protocol Corporate Standard, ensuring that all necessary information about SEGi University's emissions and reduction efforts is included and clearly communicated.