GHG INVENTORY REPORT OF UP SMART CARDS LTD. REPORTING YEAR: 2023

Prepared By
Bureau Veritas (Bangladesh) Private Limited

Company Information			
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1. Company Profile

UP Smart Cards Ltd., headquartered at 85/2 Mokter Bari Road, Auchpara, Tongi, Gazipur-1710, Bangladesh, is a premier provider in the field of smart card manufacturing, with a particular focus on scratch cards. Established in 2015, the company has quickly become a vendor for major telecommunications companies. Its manufacturing facility spans 12,000 square feet and is equipped with machinery, including the German-made Atlantic Zeiser (Cardline Versa) personalization machine, which allows to securely personalize cards while ensuring the integrity and confidentiality of hidden or secret information. Product Offerings: UP Smart Cards Ltd. specializes in the production of high-quality scratch cards used for mobile recharge, vouchers, and lotteries. They adhere strictly to international and industry standards, utilizing a secure VPN system for data loading and generation. It has ability to produce up to 6,750,000 PINs per day, depending on the configuration (4 in 1, 5 in 1, 10 in 1, 20 in 1, or 25 in 1).

.2. Purpose and Objectives of the Report

The primary purpose of this Greenhouse Gas (GHG) Inventory Report is to provide a comprehensive and transparent account of the GHG emissions associated with UP Smart Cards Ltd's operations for the reporting period of January 1, 2023, to December 31, 2023. This report aims to:

- Align with the requirements of GHG Protocol and ISO 14064-1 for quantification and reporting of greenhouse gas emissions.
- Evaluate the company's commitment to environmental stewardship and sustainable development.
- Establish a baseline for measuring future performance and setting achievable GHG reduction targets.
- Enhance stakeholder trust through transparent communication of GHG emissions and sustainability efforts.

3. Organizational, Operational, and Reporting Boundaries

3.1 Organizational Boundaries

UP Smart Cards Ltd has established its organizational boundaries based on the control approach, as per ISO 14064-1 standards. The company accounts for 100% of the GHG emissions from operations over which it has operational control, including:

- **Main Manufacturing Plant**: Encompasses all production lines, warehousing, and administrative offices.

- **Auxiliary Facilities**: Includes utility sheds,.
- **Owned Transportation Fleet**: Site does not have their own vehicle

3.2 Operational Boundaries

The operational boundaries delineate specific GHG emission sources included in the inventory, categorized into scopes:

- **Scope 1 (Direct Emissions)**: Emissions from sources owned or controlled by UP Smart Cards Ltd , including:
  - **Stationary Combustion**: Emissions from generators,
  - **Other** : Air conditioners,
- **Scope 2 (Indirect Emissions from Energy Consumption)**: Emissions associated with the consumption of purchased electricity from the DESCO
- **Scope 3 (Other Indirect Emissions)**: Not calculated for the 2023 reporting year due to a lack of information.

5. Verification of GHG Inventory

UP Smart Cards Ltd is committed to ensuring the accuracy and credibility of its GHG Inventory Report. To achieve this, the organization has engaged Bureau Veritas, a globally recognized verification body, to conduct an external verification of its GHG inventory. The verification process follows a structured approach to assess the reliability, completeness, and conformity of the GHG data with ISO 14064-1 standards.

6. Greenhouse Gas Emission Sources

6.1 Scope 1: Direct GHG Emissions

- Stationary Combustion:
  - Diesel Generators: 1 numbers of Diesel Generator of Capacity 100 KVA,
- Process Emissions:
  - 16 numbers of Air conditioners.

6.2 Scope 2: Indirect GHG Emissions from Energy Consumption

- **Purchased Electricity**: Emissions from the generation of electricity purchased from the DESCO, measured by an on-site electricity meter.

7. Greenhouse Gas Emission Exclusions

All types of greenhouse gases (GHGs) were considered in the GHG Inventory Report, including carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3). No exclusions were claimed.

8. Summary of Greenhouse Gas Emissions

The total GHG emissions for UP Smart Cards Ltd for the reporting year are summarized as follows:

Final calculation summary of the GHG emission :FY 2023					
GHG (CO_2) Emission	**Emission Source**	**Consumption**	**Unit**	**CO_2e Conversion Factor (Kg/Unit)**	**tCO_2e Emission**
Direct Emission (Scope 1)	Diesel Consumption (Generator)	1325.0	Liter	2.66	3.52
	Refrigerant Consumption (R134A)	4.0	Kg	1430	5.72
	Refrigerant Consumption (R410A)	1	Kg	1924	1.92
	Refrigerant Consumption (R 22)	2.0	Kg	1760	3.52
Total Direct Emission in tCO2e					**14.69**
Indirect Emission Scope 2)	Purchased Electricity (Meter Account Number: 37239861)	110.77	MWhr	0.67000	74.22
Total Indirect Emissions					**74**
Total Emission in tCO_2e (Scope 1 + Scope 2)					**88.90**

9. Emission Factors

Emission factors were derived from reputable sources, including the Intergovernmental Panel on Climate Change (IPCC) Emission Factor Database and the U.S. Environmental Protection Agency (EPA) Emission Factors for Greenhouse Gas Inventories. These factors were crucial for calculating total GHG emissions.

10. Data Collection and Quantification Methodology

Data for the GHG inventory was collected through various methods:

- **Fuel Consumption Data**: Recorded in fuel consumption registers for diesel generators
- **Electricity Consumption Data**: Total purchased electricity is measured using an electricity meter.

11. Uncertainty Management

To ensure the accuracy and reliability of the GHG Inventory Report, UP Smart Cards Ltd implements several strategies for uncertainty management, including:

- Regular calibration and maintenance of metering equipment.
- Adoption of standardized emission factors from reputable sources.
- Robust data collection and documentation procedures.
- Periodic internal audits and reviews to identify and correct potential errors.
- Ongoing training for personnel to ensure adherence to best practices.

12. Future Opportunities for Greenhouse Gas Reduction and Removal

UP Smart Cards Ltd recognizes the importance of continual improvement in GHG emissions management. Future opportunities for reduction and removal include:

- **Renewable Energy Adoption**: Transitioning to renewable energy sources, such as solar or wind energy, to reduce the carbon footprint. Site can significantly reduce GHG emission by installing Solar Power System. At present site does not have any Solar power system

- **Energy Efficiency Improvements**: Upgrading to more energy-efficient machinery and optimizing production processes.

- **Process Optimization and Waste Reduction**: Implementing lean manufacturing techniques and recycling programs to minimize waste and improve resource utilization.

- **Supplier Engagement**: Encouraging suppliers to adopt eco-friendly materials and improve logistics efficiency.

13. Greenhouse Gas Removal Initiatives

UP Smart Cards Ltd is committed to supporting afforestation and reforestation projects to sequester carbon dioxide from the atmosphere. Collaborating with environmental organizations for tree planting initiatives can enhance biodiversity and ecosystem health while contributing to GHG removal efforts.

14. Results and Conclusion

The total GHG emissions for UP Smart Cards Ltd for the reporting year amount to **88.90 tCO2e (Scope 1 + Scope 2)** . This GHG Inventory Report serves as a valuable baseline for the company, enabling it to track progress, identify reduction opportunities, and enhance sustainability efforts moving forward.

References

- ISO 14064-1:2018 - Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
- IPCC Guidelines for National Greenhouse Gas Inventories.
- U.S. Environmental Protection Agency (EPA) Emission Factors for Greenhouse Gas Inventories.
- GHG Protocol Corporate Accounting and Reporting Standard
- UP Smart Cards Ltd internal data on fuel consumption and electricity usage.
- Department for Environment, Food & Rural Affairs - GOV.UK (Greenhouse gas conversion factors of UK)
- Sustainable And Renewable Energy Development Authority (SREDA) , Bangladesh
- Department of Environment, Bangladesh

End of Report