

# Counting Carbon Footprints

A Carbon Accounting Report of  
UDO's Operations, 2023-24



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# FOREWORD

As the Executive Director of UFAQ Development Organization (UDO), it brings me immense pride to present this Carbon Accounting Report for the Fiscal Year 2024-a pioneering effort in Pakistan's non-profit sector. This report reflects UDO's commitment to environmental responsibility and its realization that development and sustainability must go hand in hand.

This initiative, conceived and developed by MAHER Consulting, marks the first carbon accounting exercise undertaken by any NGO in Pakistan. I would like to extend my heartfelt gratitude to Amer Ejaz, Chief Executive Officer of MAHER Consulting, and Ebraheem Akram, Research Associate, for their dedication to data collection and report writing. Their expertise and meticulous efforts have been instrumental in quantifying our carbon footprint and setting a foundation for our future sustainability strategies.

I would also like to recognize Ashar Naqvi from UDO, whose collaboration ensured the availability of complete operational data for the previous year, enabling this analysis to be both accurate and comprehensive.

This report is not just a measurement of emissions-it is a roadmap for change. UDO is committed to reducing its environmental impact, integrating carbon offsetting measures into its projects, and becoming a carbon-neutral organization. As we continue to serve communities through housing, water supply, and educational initiatives, we also aim to lead by example, demonstrating that small organizations can play a significant role in addressing global climate challenges.

I invite stakeholders, donors, and partners to join us on this journey toward a greener, more sustainable future.

Sincerely,  
Malik Muhammad Sarfaraz  
Executive Director  
UFAQ Development Organization (UDO)  
Multan, 23 December, 2024

# Acknowledgement

As the CEO of MAHER Consulting, I take great pride in presenting this pioneering Carbon Accounting Report-a first-of-its-kind effort in Pakistan's non-profit sector. This report, developed under my leadership, reflects our unwavering commitment to addressing climate change and supporting organizations like UFAQ Development Organization (UDO) in quantifying and reducing their carbon footprint.

I would like to express my gratitude to UDO's leadership for their forward-thinking vision and collaboration on this milestone initiative. I would also like to extend my heartfelt appreciation to Ebraheem Akram, Research Associate at MAHER Consulting, for his contributions to data analysis, to Ms. Khadija Amer, Research Assistant, Climate Change at MAHER Consulting for her valuable support in report writing, and to Ashar Naqvi and Shahbaz Hussain from UDO for their pivotal role in providing access to critical data from the previous year.

At MAHER Consulting, we are deeply committed to promoting climate mitigation through innovative research and practical solutions. By bringing forward studies like this, we aim to equip organizations with the tools and knowledge to integrate sustainability into their operations and contribute meaningfully to climate action.

This report sets a benchmark for other development organizations, emphasizing that every institution-regardless of size-has a role to play in combating climate change. Moving forward, MAHER Consulting will continue to pioneer research and initiatives that create a positive and lasting impact on the environment and society at large.

Sincerely,  
Amer Ejaz  
CEO  
MAHER Consulting  
Islamabad, 27 December, 2024

# Introduction

This report is to evaluate UDO's carbon emissions and provides a baseline for future sustainability actions. Carbon accounting serves as a crucial tool to quantify and assess the environmental impact of an organization, particularly in today's climate-conscious global context.

With the increasing focus on achieving carbon neutrality after COP28 in Dubai, UDO recognizes its responsibility to align its operations with sustainable development practices. This report follows globally accepted standards such as the ISO 14064 and the Greenhouse Gas Protocol, ensuring accuracy and credibility.

By conducting this exercise, UDO aims to:

- Understand its carbon footprint.
- Identify areas for emission reduction.
- Develop actionable strategies for sustainability.

Despite being a relatively small organization with operations primarily centered in Multan and its adjacent districts, UDO has demonstrated commendable leadership by proactively evaluating its carbon footprint. This initiative reflects the management's foresight and commitment to sustainability—a forward-thinking approach that sets UDO apart in the non-profit sector.

Over the past year, UDO's key operations have included:

- Construction Works to provide housing and infrastructure for underprivileged communities.
- Water Supply Schemes ensuring access to clean drinking water in underserved areas.
- Disbursement of Educational Scholarships to empower girls through education.

These activities, while critical for community development, are inherently resource-intensive and contribute to greenhouse gas emissions, particularly in Scope 3 (value chain emissions). Recognizing this, UDO has taken a pioneering step to quantify and document its environmental impact—becoming the first NGO in Pakistan to initiate such an assessment.

This leadership underscores UDO's unique position as a trailblazer in aligning community development with environmental responsibility. By integrating carbon accounting into its operations, UDO not only sets a benchmark for other organizations in the sector but also highlights that even small-scale entities can contribute meaningfully to global sustainability goals.

Such initiatives pave the way for a future where development projects prioritize environmental stewardship alongside social impact, reinforcing UDO's role as a responsible and visionary organization.

# Organizational and Operational Boundaries

Organizational boundaries define the physical and operational extent of the organization for which GHG emissions are accounted. This includes facilities, assets, or operations owned or controlled by the organization.

## Organizational Boundaries

UDO operates out of a two-floor office facility spanning 1900 sq. ft. in Multan, Pakistan:

- **Ground Floor:** Dedicated to administrative operations and documentation.
- **Upper Floor:** A center for vocational training aimed at empowering local women.

UDO's dual-purpose facility not only optimizes operational efficiency by integrating management and training spaces within a limited footprint but also serves as a hub for community uplift. By offering vocational training programs to empower local women with marketable skills, UDO directly contributes to financial independence and social mobility in underserved communities. Simultaneously, the organization's adoption of solar energy for facility operations showcases its commitment to balancing environmental responsibility with social impact, setting a model for sustainable and inclusive development. The facility also acts as a focal point for engaging with local stakeholders and facilitating collaboration on community development projects.

## Operational Boundaries

UDO's operational footprint extends to nearby districts, including Multan, Khanewal, Vehari, Sahiwal, Muzaffargarh, Rajanpur, D.G. Khan, Faisalabad, Pakpattan and Bahawalpur where the organization focuses on community support and sustainable development projects. Its operations include:

1. **Housing Support:** Construction of homes for vulnerable families.
2. **Food Distribution:** Provision of food packages to underserved communities.
3. **Prayer Facilities:** Development of communal prayer spaces in areas lacking infrastructure.
4. **Vocational Training:** Equipping women with skills to achieve financial independence.

These operations rely on:

- **Construction Materials** (cement, steel, wood).
- **Transportation** (logistics and staff travel).
- **Office Operations** (energy use, waste generation).

# Priority SDGs

There are 17 SDGs and 169 targets in total.

While they are all important and interrelated, some will be more relevant to our goal towards NetZero emission. This section identifies the specific SDGs and targets UDO is prioritizing.



## CLIMATE ACTION

Take urgent action to combat climate change and its impacts.

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## LIFE ON LAND

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

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## CLEAN WATER AND SANITATION

Ensure availability and sustainable management of water and sanitation for all.

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## LIFE BELOW WATER

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

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## SUSTAINABLE CITIES AND COMMUNITIES

Ensure access to affordable, reliable, sustainable and modern energy for all.

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## RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns.

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## INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

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# Methodology

The carbon accounting process undertaken by UDO was meticulously designed to ensure accuracy, transparency, and adherence to globally recognized standards. By following established frameworks, UDO aimed to quantify its GHG emissions comprehensively and identify areas for targeted reductions.

## I. ADHERENCE TO INTERNATIONAL STANDARDS

The process adhered to two key international standards:

- ISO 14064: This standard provided the foundation for quantifying, monitoring, and reporting GHG emissions in a structured and verifiable manner.
- Greenhouse Gas (GHG) Protocol: The protocol was used to categorize emissions into Scope 1 (direct emissions), Scope 2 (indirect emissions from purchased energy), and Scope 3 (all other indirect emissions), ensuring a holistic view of UDO's carbon footprint.

## II. EMISSIONS CLASSIFICATION

The collected data was categorized into three distinct scopes, as outlined by the GHG Protocol:

- Scope 1: Direct emissions originating from facilities owned or controlled by UDO, such as fuel combustion for heating and refrigerant leaks from cooling systems.
- Scope 2: Indirect emissions resulting from the purchase of electricity. This primarily included emissions from grid-supplied energy used for office operations, which have now been mitigated through UDO's transition to solar energy.
- Scope 3: All other indirect emissions occurring outside UDO's direct control but linked to its activities. These included:
  - Emissions from construction materials used in UDO's infrastructure projects.
  - Emissions from waste disposal during operations.
  - GHG contributions from employee commuting and official business travel.

## III. CALCULATION TOOLS

To ensure precision and credibility, emissions were quantified using UNFCCC-authorized tools. These tools provided reliable conversion factors and standardized methodologies for translating activity data into GHG emissions. By leveraging such tools, UDO was able to produce a robust and verifiable carbon accounting report.

# Data Collection

A robust data collection process was implemented to gather information from relevant sources across UDO's operations. This involved close collaboration with the organization's internal departments to ensure all activities contributing to emissions were accounted for. Key data sources included:

## 01 ————— Utility Bills

Electricity and gas consumption records were analyzed to quantify emissions related to office operations.

## 02 ————— Travel Log

Comprehensive records of business travel, including employee commuting and official trips, were assessed to estimate transportation-related emissions.

## 03 ————— Inventory Record

Data on construction materials, water supply, and other resources utilized in UDO's projects were carefully reviewed to calculate emissions from procurement and operational activities.

The systematic approach to data collection provided a solid foundation for accurate emissions calculation while highlighting areas where data management practices can be further refined.

# Emission Data

The carbon emissions data for UDO has been categorized into three scopes following the GHG Protocol. This classification highlights the sources of GHG emissions, providing insights into their relative contributions and areas requiring targeted interventions.

## SCOPE 1 (DIRECT EMISSIONS)

Scope 1 emissions represent direct GHG emissions originating from sources controlled or owned by UDO. These emissions occur on-site as a result of organizational activities.

| Source            | tCO2e |
|-------------------|-------|
| Fuel Combustion   | 1.62  |
| Refrigerant Gases | 0.65  |
| Total             | 2.28  |

Scope 1 emissions for UDO are relatively minimal, contributing 0.8% of total emissions. They arise mainly from fuel combustion used for heating and small-scale equipment and refrigerant leaks from cooling systems. These emissions reflect UDO’s operational reliance on basic energy needs within its controlled facility. While Scope 1 emissions are low, their management remains essential to minimize direct environmental impact.

## SCOPE 2: INDIRECT ENERGY EMISSIONS

Scope 2 emissions are indirect emissions resulting from the generation of purchased electricity consumed by UDO’s operations.

| Source      | tCO2e |
|-------------|-------|
| Electricity | 0.62  |
| Total       | 0.62  |

Scope 2 emissions account for 0.2% of the total footprint and stem from grid-based electricity consumption. Notably, UDO has successfully mitigated these emissions by transitioning to renewable energy (solar power) in March 2024. This proactive step not only reduces reliance on fossil fuels but also aligns with UDO’s commitment to carbon neutrality.

## SCOPE 3 (VALUE CHAIN EMISSIONS)

Scope 3 emissions encompass all indirect emissions occurring outside UDO's direct control but linked to its operations. These emissions are typically the largest component of an organization's carbon footprint.

| Source              | tCO <sub>2</sub> e |
|---------------------|--------------------|
| Purchased Materials | 247.44             |
| Waste Generated     | 0.58               |
| Employee Commuting  | 9.69               |
| Business Travel     | 11.00              |
| Food Consumption    | 6.06               |
| Total               | 275.87             |

Scope 3 emissions dominate UDO's carbon footprint, contributing 98.9% of total emissions. The primary driver is purchased materials, accounting for 247.44 tCO<sub>2</sub>e, which largely stem from UDO's extensive construction projects and water supply schemes over the past year. These activities, while critical to community development, inherently involve emissions from material manufacturing, transportation, and usage.

Additional contributors include:

- Employee Commuting (9.69 tCO<sub>2</sub>e): GHG emissions from daily travel between employees' homes and the workplace, reflecting UDO's reliance on conventional transportation.
- Business Travel (11.00 tCO<sub>2</sub>e): Emissions from trips necessary for project implementation and stakeholder engagement.
- Food Consumption (6.06 tCO<sub>2</sub>e): GHG emissions associated with food procured for organizational activities.

The emissions data reveals that Scope 3 emissions are the most significant contributors, reflecting the impact of UDO's value chain activities such as construction and resource procurement. However, the organization's leadership in measuring and reporting these emissions positions it as a pioneer in environmental responsibility among NGOs in Pakistan. By identifying key emission sources, UDO is now equipped to implement strategies that drive meaningful reductions in its carbon footprint.

# Future Action Plan

UDO's strategy for achieving carbon neutrality reflects a forward-thinking approach to sustainability, with a focus on actionable and measurable interventions. The following initiatives outline the organization's roadmap for reducing its carbon footprint while maintaining operational efficiency and community impact.

## I. EXPANDING SOLAR INFRASTRUCTURE

Building on the successful installation of solar panels in March 2024, UDO plans to scale up its solar energy capacity to meet 100% of its energy needs.

- Timeline: Full solar energy transition by December 2025.
- Milestone: Achieve a cumulative reduction of 0.8 tCO<sub>2</sub>e annually, effectively eliminating Scope 2 emissions.

Impact: This expansion will solidify UDO's reliance on renewable energy and minimize its dependency on fossil fuels.

## II. ADOPTING LOW-EMISSION VEHICLES

To address transportation-related emissions under Scope 3, UDO will transition to low-emission or electric vehicles for staff commutes and logistics.

- Timeline: Phase 1 (pilot) by June 2025; full implementation by 2026.
- Milestone: Reduce commuting and logistics-related emissions by 30%, targeting a decrease of 3-4 tCO<sub>2</sub>e annually.

Impact: This initiative will improve air quality in operational areas while directly reducing transportation emissions.

## III. PROMOTING DIGITAL OPERATIONS

Recognizing the environmental impact of resource use, UDO will shift to paperless operations and adopt cloud-based digital systems for project management and reporting.

- Timeline: Transition to 80% paperless operations by March 2025.
- Milestone: Reduce paper use by 70%, minimizing emissions associated with purchased materials under Scope 3.

This measure will improve resource efficiency, reduce costs, and contribute to sustainability in day-to-day operations.

## IV. SUSTAINABLE PROCUREMENT PRACTICES

UDO will adopt a sustainable procurement policy prioritizing low-carbon and eco-friendly construction materials for its infrastructure projects.

- Timeline: Policy rollout by January 2025, with immediate implementation in new projects.
- Milestone: Achieve a 10% reduction in emissions from construction materials by 2026, translating to an estimated decrease of 24-25 tCO<sub>2</sub>e annually.

Impact: Sustainable procurement will directly address UDO's largest emission source (Scope 3: purchased materials) while promoting responsible resource use in the supply chain.

## V. IMPROVED WASTE MANAGEMENT PRACTICES

UDO will take steps to minimize waste generation during its construction and office-based activities. This includes implementing proper waste disposal protocols and encouraging recycling practices where feasible.

Timeline: Phase 1, 50% reduction by June 2025

Milestone: Reduce (0.087tCO<sub>2</sub>e) 15% of operational waste from landfills by promoting recycling and composting.

Impact: These efforts will contribute to a minor but significant reduction in Scope 3 emissions associated with waste management.

## VI. EMPLOYEE AWARENESS AND SUSTAINABLE PRACTICES

UDO will introduce awareness programs encouraging its employees to adopt sustainable practices,

Timelines: June 2025

Milestones: Encouraging carpooling and public transport to lower 5% emissions from employee commuting.

Impact: A reduction in commuting emissions by an estimated 5% (equivalent to approximately 0.5 tCO<sub>2</sub>e) will be achieved by June 2025

### Measurable Milestones for Accountability

| Initiative                        | Timeline         | Milestone                                 | Estimated Reduction                 |
|-----------------------------------|------------------|-------------------------------------------|-------------------------------------|
| Expanding Solar Infrastructure    | Dec 2025         | 100% transition renewable energy          | 0.8 tCO <sub>2</sub> e (Scope 2)    |
| Adopting Low-Emission Vehicles    | June 2025 – 2026 | 30% reduction in transportation emissions | 3–4 tCO <sub>2</sub> e (Scope 3)    |
| Promoting Digital Operations      | March 2025       | 70% reduction in paper usage              | 0.5 tCO <sub>2</sub> e              |
| Sustainable Procurement Practices | Jan 2025 – 2026  | 10% reduction in emissions from materials | ~24–25 tCO <sub>2</sub> e (Scope 3) |
| Waste management                  | June 2025        | 15% reduction in operational waste        | 0.087 tCO <sub>2</sub> e (Scope 3)  |
| Employees practices               | June 2025        | 5% reduction in emission from commuting   | 0.5 tCO <sub>2</sub> e              |

# Achieving Net Zero Status

## 1. Carbon Offsetting Strategies

While reducing emissions remains the priority, offsetting residual emissions will be essential to achieve net zero. UDO can invest in certified carbon offset programs, including:

- Afforestation and Reforestation Projects:
  - Partner with local or international tree-planting initiatives to offset emissions from construction activities and material usage.
- Renewable Energy Credits (RECs):
  - Purchase RECs to support clean energy generation beyond UDO's operational boundaries.
- Community-Based Carbon Projects:
  - Initiate local projects that focus on clean cooking solutions, waste-to-energy technologies, or water treatment systems that reduce emissions in underserved communities.

Impact: Offsetting 20-30% of residual emissions (~55-80 tCO<sub>2</sub>e) annually through verified programs.

## Considerations for Effective Carbon Sequestration [Afforestation]

To offset 278 tCO<sub>2</sub>e of emissions through plantation:

- One mature tree absorbs approximately 21 kg of CO<sub>2</sub> per year.
- To absorb 278,000 kg of CO<sub>2</sub> (278 tCO<sub>2</sub>e), UDO would need to plant approximately 13,238 trees.

1. **Tree Growth Time:** A tree typically takes 10-20 years to mature and reach its maximum annual CO<sub>2</sub> absorption capacity.

2. **Species Selection:** Native, fast-growing species with high carbon sequestration potential should be prioritized.

3. **Survival Rate:** Plan for an additional 20-30% buffer to account for tree mortality (e.g., planting around 16,000 trees for a 75% survival rate).

4. **Land Availability:** UDO would need sufficient land or partnerships with afforestation programs.

This effort could serve as a long-term carbon offset strategy while delivering biodiversity benefits and aligning with UDO's community development goals

# Challenges and Limitations

While UDO's commitment to carbon accounting is commendable, the process has revealed several challenges and limitations that need to be addressed to improve the accuracy and efficiency of future emissions reporting.

## I. DATA AVAILABILITY

UDO faced challenges in acquiring comprehensive and accurate data for specific activities, particularly related to:

- **Construction Materials:** Records for material procurement /usage during infrastructure projects were incomplete, leading to reliance on estimates for emissions calculations.
- **Travel Activities:** Documentation for business trips and employee commuting was fragmented, impacting the accuracy of Scope 3 emissions assessments.

**Impact:** Data gaps have limited the precision of emissions calculations, particularly in high-impact areas such as purchased materials and transportation.

**Recommendation:** UDO should establish a centralized digital data management system to record and monitor all activities contributing to emissions, including construction, travel, and procurement. This will enable seamless data retrieval for future assessments.

## II. KNOWLEDGE GAP

As a relatively small organization, UDO currently has limited expertise in advanced carbon accounting practices. This knowledge gap posed challenges in:

- Understanding the technical nuances of Scope 3 emissions, which form the majority of UDO's carbon footprint.
- Applying advanced emission reduction strategies beyond basic energy transitions.

**Impact:** Limited internal expertise may hinder UDO's ability to innovate and adopt global best practices for emissions reduction.

**Recommendation:** Conduct capacity-building workshops and staff training sessions on carbon accounting and sustainability practices. Collaborating with external sustainability consultants can further bridge this gap and enhance organizational knowledge.

## III. RESOURCE CONSTRAINT

As a small NGO operating within Multan and surrounding areas, UDO faces budgetary and technological limitations that restrict its ability to adopt advanced sustainability solutions, such as:

- Transitioning to electric vehicles for logistics.
- Implementing comprehensive waste management infrastructure.
- Expanding renewable energy systems beyond the office facility.

**Impact:** Resource constraints may slow the pace of UDO's efforts to achieve carbon neutrality despite its strong leadership and intentions.

**Recommendation:** Explore partnerships and funding opportunities with environmental agencies, donors, and sustainability-focused organizations. Securing grants for green technologies and carbon reduction projects can accelerate progress while reducing financial burdens.

# Conclusion

The UFAQ Development Organization is setting a strong precedent for small organizations by embracing sustainability and measuring its carbon footprint. With total emissions of 278.76 tCO<sub>2</sub>e, dominated by Scope 3 activities, UDO has already taken significant steps, such as transitioning to renewable energy. By addressing challenges and expanding its initiatives, UDO aims to emerge as a carbon-neutral, socially responsible organization in the coming years.

Achieving net zero status will require UDO to combine emission reduction strategies with carbon offsetting efforts while strengthening internal capacities and partnerships. By focusing on Scope 3 emissions, scaling up renewable energy solutions, and investing in verified carbon offsets, UDO can establish itself as a leader in sustainable development and environmental responsibility in Pakistan's NGO sector. This comprehensive effort, though resource-intensive, will not only reduce UDO's carbon footprint but also align its operations with global sustainability standards.

## **Integrating Carbon Offsetting in Donor-Funded Projects**

To align with global sustainability goals and enhance project impact, UDO plans to negotiate the inclusion of carbon offsetting measures during the project planning and approval process with donors. By incorporating activities such as tree plantation, energy-efficient infrastructure, and the purchase of Renewable Energy Credits (RECs) into project budgets, UDO can address its carbon footprint while delivering additional community benefits. This approach not only supports climate action priorities under SDG 13 (Climate Action) but also strengthens UDO's position as a forward-thinking partner committed to balancing development work with environmental responsibility.

# Appendix A

UFAQ Development Organization-July 2023-June 2024 GHG emissions report

| Category                                                                 |         | Emission source category                                                                                                  |                                                                     | t CO2e |        |
|--------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------|--------|
| GHG Protocol Standards: Corporate Scope - 1 and 2, Value Chain - Scope 3 | Scope 1 | Direct emissions arising from owned or controlled stationary sources that use fossil fuels and/or emit fugitive emissions | Fuels                                                               | 1.62   |        |
|                                                                          |         |                                                                                                                           | Bioenergy                                                           | -      |        |
|                                                                          |         |                                                                                                                           | Refrigerants                                                        | 0.65   |        |
|                                                                          |         | Direct emissions from owned or controlled mobile sources                                                                  | Passenger vehicles                                                  | -      |        |
|                                                                          |         |                                                                                                                           | Delivery vehicles                                                   | -      |        |
|                                                                          |         | Total Scope 1                                                                                                             |                                                                     |        | 2.28   |
|                                                                          | Scope 2 | Location-based emissions from the generation of purchased electricity, heat, steam or cooling                             | Electricity                                                         | 0.62   |        |
|                                                                          |         |                                                                                                                           | Heat and steam                                                      | -      |        |
|                                                                          |         |                                                                                                                           | Electricity for Evs                                                 | -      |        |
|                                                                          |         |                                                                                                                           | District cooling                                                    | -      |        |
|                                                                          |         | Total Scope 2                                                                                                             |                                                                     |        | 0.62   |
|                                                                          | Scope 3 | Fuel-and energy-related activities                                                                                        | All other fuel- and energy related activities                       | 0.42   |        |
|                                                                          |         |                                                                                                                           | Transmission and distribution losses                                | 0.03   |        |
|                                                                          |         | Waste generated in operations                                                                                             | Waste water                                                         | 0.00   |        |
|                                                                          |         |                                                                                                                           | Waste                                                               | 0.58   |        |
|                                                                          |         | Purchased goods                                                                                                           | Water supplied                                                      | 0.00   |        |
|                                                                          |         |                                                                                                                           | Material use                                                        | 247.44 |        |
|                                                                          |         | Business travel                                                                                                           | All transportation by air                                           | -      |        |
|                                                                          |         |                                                                                                                           | Emissions arising from hotel accommodation associated with          | 1.50   |        |
|                                                                          |         |                                                                                                                           | All transportation by sea                                           | -      |        |
|                                                                          |         |                                                                                                                           | All transportation by land, public transport, rented/leased vehicle | 9.50   |        |
|                                                                          |         | Upstream transportation and distribution                                                                                  | Freighting goods                                                    | 0.40   |        |
|                                                                          |         | Employees commuting                                                                                                       |                                                                     |        | 9.69   |
|                                                                          |         | Food                                                                                                                      |                                                                     |        | 6.06   |
|                                                                          |         | Home office                                                                                                               |                                                                     |        | 0.24   |
|                                                                          |         | Total Scope 3                                                                                                             |                                                                     |        | 275.87 |
|                                                                          |         | Total Emissions                                                                                                           |                                                                     |        |        |

# Appendix B

## Understanding Scope 1, Scope 2, and Scope 3 Emissions

To accurately assess and address greenhouse gas (GHG) emissions, the Greenhouse Gas (GHG) Protocol categorizes emissions into three distinct scopes. This classification helps organizations understand the sources of their emissions, set reduction targets, and develop strategies to minimize their environmental impact.

### Scope 1: Direct Emissions

Scope 1 emissions are direct GHG emissions from sources that are owned or controlled by the organization. These emissions typically occur on-site and result from activities such as:

- Fuel Combustion: Emissions from burning fuels (e.g., diesel, natural gas) in boilers, generators, or vehicles owned by the organization.
- Fugitive Emissions: Leaks from refrigerants, air conditioning systems, or other equipment that release greenhouse gases.

Example in UDO: Emissions generated from fuel used in heating systems and refrigerant gases in cooling units fall under Scope 1.

### Scope 2: Indirect Energy Emissions

Scope 2 emissions are indirect emissions resulting from the generation of purchased energy, such as electricity, heat, or steam. While these emissions occur off-site at power plants, they are attributed to the organization because they result from its energy consumption.

Scope 2 emissions highlight the importance of energy efficiency and transitioning to renewable energy sources such as solar, wind, or hydroelectric power.

Example in UDO: Electricity consumed at the office facility, previously sourced from the power grid (fossil fuels), falls under Scope 2 emissions. The installation of solar panels has now reduced these emissions significantly.

### Scope 3: Value Chain Emissions

Scope 3 emissions are all other indirect emissions that occur in the organization's value chain, both upstream (before operations) and downstream (after operations). These emissions are the most extensive and often the largest contributor to an organization's carbon footprint.

Key categories of Scope 3 emissions include:

# Appendix B

Key categories of Scope 3 emissions include:

- Purchased Goods and Materials: Emissions from manufacturing and transporting raw materials or products used by the organization.
- Employee Commuting: GHG emissions from employees traveling to and from the workplace.
- Business Travel: Emissions from air travel, public transport, or rented vehicles used for official purposes.
- Waste Management: Emissions from waste disposal and wastewater treatment.
- Transportation and Distribution: Emissions from logistics and supply chain operations.

Example in UDO: The significant carbon footprint resulting from construction materials, employee commuting, and business travel all fall under Scope 3. At 98.9% of total emissions, these activities constitute the majority of UDO's carbon footprint.

## **Why the Three Scopes Matter**

Understanding the three scopes is essential for organizations because it:

1. Pinpoints Emission Sources: By categorizing emissions, organizations can identify where reductions are needed the most.
2. Prioritizes Actions: Scope 1 and 2 emissions are usually easier to address through energy efficiency and renewable energy adoption. Scope 3 emissions, while complex, highlight the importance of supply chain engagement and broader sustainability strategies.
3. Supports Transparency: Reporting emissions under all three scopes ensures transparency and builds trust with stakeholders.

For UDO, this report identifies Scope 3 emissions as the primary focus for future sustainability efforts, particularly in the areas of material usage, travel, and commuting.

# About UFAQ Development Organization

UFAQ Development Organization (UDO) is a not for profit, non-governmental development organization aiming to improve the socio-economic conditions of most disadvantaged population particularly woman, children and the unemployed youth in both rural and urban areas in Pakistan through program interventions in the fields of poverty alleviation, education, health and nutrition, water, sanitation and hygiene (WASH), governance, agriculture & food security, environment/climate change, disaster risk mitigation and reduction and combating violent extremism.

**We thank MAHER Consulting for continued support in our efforts to contribute to the SDGs.**

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