



CARBON FOOTPRINT REPORT

REPORTING YEAR 2022



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LIST OF ABBREVIATIONS

AC	Air Conditioning
BHB	Bahrain Bourse
CF	Carbon Footprint
CH ₄	Methane
CO ₂	Carbon Dioxide
EF	Emission Factor
EPA	Environmental Protection Agency
GHGI	Greenhouse Gas Inventory
GHGs	Greenhouse Gases
GWP	Global Warming Potential
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
KFH	Kuwait Finance House
Kg	Kilograms
KPIs	Key Performance Indicators
L	Liter
m ²	Square Meter
N ₂ O	Nitrous Oxide
PFCs	Perfluorocarbons
SF ₆	Sulfur Hexafluoride
SI Units	International System of Units
tCO ₂ e	Tons of Carbon Dioxide Equivalent
UNFCCC	United Nations Framework Convention on Climate Change
KSE	Kuwait Stock Exchange
KFAS	Kuwait Foundation for the Advancement of Sciences
SD	Sustainable Development

LIST OF TERMS AND DEFINITIONS

Activity Data	A quantitative measure of an organization's activity that results in a GHG emission or removal.
Assumed Parameter	A parameter that is not site-specific but based on best practices, global averages, etc., that is more or less representative of the actual value.
Base Year	A historical year used to compare the preceding year's emissions. It can be a calendar year or averaged over several years (Time Series).
Climate Change	Long-term shifts in temperatures and weather patterns. These shifts may be natural or human-driven activities.
Carbon Dioxide Equivalent	Standardizing all greenhouse gases to reflect the global warming potential relative to carbon dioxide.
Direct Emissions	Greenhouse gas emissions from facilities/sources owned or controlled by the organization.
Emission Factor	A factor allowing GHG emissions to be estimated from a unit of available activity data (e.g., Tons of fuel consumed, etc.) and absolute GHG emissions).
Fugitive Emissions	Emissions that are not physically controlled but result from the intentional or unintentional releases of GHG.
Greenhouse Gas (GHG)	A gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect.
GHG Emission / Removal Factors	The specific value used to convert activity data into greenhouse gas emission/reduction values.
GHG Inventory	List of emission sources and the associated emissions quantified using standardized methods.
Greenhouse Gas Emission	The total mass of a GHG released into the atmosphere over a specified period.
Greenhouse Gas Project	Activity(s) that alter the conditions identified in the baseline scenario, which cause GHG emission reductions or GHG removal enhancements.
Greenhouse Gas Report	Stand-alone document intended to communicate an organization or project's GHG-related information to its intended users.
Greenhouse Gas Source	Physical unit or process that releases a GHG into the atmosphere.
Halal	Sharia-compliant finance (halal, which means permitted) consists of banking in which the financial institution shares in the profit and loss of the enterprise it underwrites. Of equal importance is the concept of gharar.
Indirect Emissions	Greenhouse gas emissions from facilities/sources that are not owned or controlled by the organization but for which the activities of the organization are responsible (electricity purchase).

Inventory Boundary	An imaginary line encompasses the direct and indirect emissions included in the inventory. It results from the chosen organizational and operational boundaries.
IPCC	The Intergovernmental Panel on Climate Change is an inter-governmental body of the United Nations responsible for advancing knowledge on human-induced climate change.
Mobile Combustion	The burning of fuels by transportation devices such as cars and buses.
Operational Boundaries	The operational boundary determines the emissions associated with operations, classification of emissions as direct or indirect, and categorizes the different Scopes of GHG emissions.
Organizational Boundaries	Organizational boundaries determine which operations to include or exclude from the carbon footprint calculations of the organization.
Other Indirect Greenhouse Gas Emissions	GHG emissions, other than energy indirect GHG emissions, which are a consequence of an organization's activities, but arise from greenhouse gas sources that are owned or controlled by other organizations.
Refrigerant	A refrigerant is a substance or mixture, usually, a fluid, used in a refrigeration cycle.
Riba	The word "Riba" means excess, increase or addition, which correctly interpreted according to Shariah terminology, implies any excess compensation without due consideration (consideration does not include time value of money).
Scope 1 (Direct Emissions)	A reporting organization's direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by the organization itself.
Scope 2 (Indirect Emissions)	A reporting organization's indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling.





CHAIRMAN MESSAGE



I am honored to present Kuwait Finance House (KFH)'s Carbon Footprint Report, a testament to our persistent dedication and unwavering commitment to placing environmental responsibility at the core of our operations.

We understand that financial prosperity goes hand-in-hand with environmental well-being. We're not just building a better future for our customers and shareholders; we're actively investing in a healthier planet for generations to come.

Over the past few years, we've proudly taken significant strides in reducing our carbon footprint, firstly in promoting green finance. Our subsidiary in Turkey; KFH-Turkey has issued green Sukuk, the first-of-its-kind in Sharia-complaint finance. We've also transitioned to technology-driven solutions, minimizing paper consumption, providing quick access to archived transactions, and enhancing KFH's efforts towards digital transformation in line with the sustainability and environmental preservation strategy of the Bank. Our commitment to sustainable infrastructure has led to energy-efficient upgrades across KFH Group's locations.

These achievements haven't come without challenges. Implementing these changes requires ongoing investment, adaptation, and a shift in mindset. However, we know the stakes are higher than ever. Climate change isn't just an environmental crisis; it's an economic and social one. The urgency to build a resilient, low-carbon future is undeniable.

Given that sustainability is a priority for KFH, it partnered with the United Nations Development Programme (UNDP) to set solid standards for sustainable development goals for Sharia-compliant finance, especially in green finance.

The Memorandum of Understanding (MoU) signed with UNDP establishes stronger alignments with the sustainable development goals across the Bank, as the UNDP provides technical support to facilitate investments through key tools such as the SDGs, and the Green Finance Framework. Moreover, KFH launched the (Keep it Green) campaign to serve as an umbrella for all KFH sustainability initiatives. In a testament to its successful environmentally friendly initiatives, KFH Auto showroom won the GSAS Gold Level Sustainability Assessment System Certificate, the first-of-its-kind in Kuwait.

In conclusion, sustainability stands as an integral pillar of our fundamental strategy, deeply ingrained in our mission and vision. We remain steadfast in our commitment to continuously improve and will continue to explore innovative solutions and collaborations that enable us to further reduce our carbon footprint and create a lasting, meaningful impact.

HAMAD ABDULMOHSEN AL MARZOUQ
KFH CHAIRMAN



ACTING GROUP CEO MESSAGE



At Kuwait Finance House (KFH), we believe that financial leadership comes with environmental responsibility. We're not just building a stronger bank; we're building a more sustainable future for everyone.

Through its innovative initiatives, KFH is keen on making a lasting impact on society, tailoring eco-friendly financial products and services, adopting sustainable practices, and making responsible choices that contribute to a greener future. We're actively engaging with local communities, supporting environmental protection projects, and promoting awareness about climate change solutions.

Our commitment to sustainability extends beyond operational changes and financial offerings. We actively advocate for responsible environmental policies, engaging with governments and regulatory bodies to ensure a level playing field and accelerate the transition to a low-carbon economy.

Given its extensive reputation, trusted commitment, and outstanding contributions, KFH holds a distinctive position in leading the sustainable finance market and capitalizing on its significant growth potential.

Within its own operations, KFH has implemented a range of innovative initiatives to enhance energy efficiency, reduce waste, and lower greenhouse gas (GHG) emissions.

In addition, KFH took part in the 28th Conference of Parties (COP28) in Dubai. This participation is part of the Bank's commitment towards supporting sustainability initiatives, countering climate change implications, promoting the role of green finance, and underlining the importance of the Islamic Finance sector in such efforts.

Under (Keep it Green) Initiative, KFH implemented numerous initiatives and signed several strategic partnerships to boost the sustainability efforts. These include the MoU with the UNDP, the collaboration with the Kuwait Environment Public Authority, the joint initiative with the Capital Governorate to beautify its buildings and roads, and the beach cleaning campaigns, and the cooperation with the scientific Center, a subsidiary of Kuwait Foundation for the Advancement of Sciences (KFAS) to organize a series of workshops on environment preservation and reducing plastic waste.

In conclusion, I would like to thank our shareholders, employees, customers, stakeholders, and all partners for their trust and support of KFH Group. We will continue focusing our efforts on achieving innovative sustainable solutions in all communities within our wide network.

ABDULWAHAB IESA AL RUSHOOD
KFH ACTING GROUP CEO



EXECUTIVE SUMMARY

Kuwait Finance House (KFH), as a prominent financial institution, is keenly aware of the current and future implications of climate change. Recognizing the Paris Agreement as a global framework for addressing climate issues, KFH sees it as a significant opportunity to contribute positively, drive innovation, and ensure sustainability practices.

This Carbon Footprint (CF) Report serves as the foundation for proactive climate initiatives, offering a clear understanding of KFH's role in climate change. It identifies key areas requiring intervention to significantly reduce greenhouse gas (GHG) emissions in the coming years. The report comprehensively evaluates GHG emissions associated with KFH operations, covering its 51 banking branches and four major offices, Head office, Baitak Tower, Dajeej Admin 18, and Shuwaikh showroom KFH Auto (Shuwaikh, 150), across all Kuwaiti governorates.

KFH conducted a GHG emissions assessment for its primary activities from January 1st to December 31st, 2022. This includes direct emissions from equipment and assets under KFH's control (Scope 1) and emissions from purchased electricity (Scope 2). The analysis adheres to recognized standards such as the GHG Protocol Corporate Accounting and Reporting Standard, ISO 14064-1:2018- Part 1, and IPCC guidelines for greenhouse gas inventories (GHGI).

In the reporting year, KFH's total GHG emissions within operational boundaries amounted to 42,012.65 tCO₂e. Scope 1 direct emissions accounted for 19.55%, while Scope 2 indirect emissions accounted for 80.45%. The distribution across operational boundaries saw 47.01% attributed to offices and 52.99% to banking branches. A detailed breakdown of GHG emissions by source is presented in Table 1.

Table 1. Breakdown of Total GHG Emissions by Source for 2022

Scope	GHG Emission Sources	GHG Emissions (tCO ₂ e/year)	Contribution to Total GHG Emissions
Scope 1	Stationary Combustion Sources	48.399	0.12%
	Mobile Sources	91.198	0.22%
	ACs and Refrigerants	8,060.792	19.19%
	Fertilizers	14.713	0.04%
	Fire Suppressants	0.017	0.00%
Scope 2	Purchased Electricity	33,797.525	80.45%
Total	Total GHG Emissions in 2022	42,012.65	100%

Aligned with KFH's dedication to sustainability, the report underscores its commitment to transparency and accountability as a leading financial services provider. Recognizing its critical role in addressing climate change, the report measures KFH's CF, identifies areas for environmental impact reduction, and outlines its approach to managing its carbon footprint. By providing valuable insights, the report enables KFH to make informed decisions and implement enduring measures for a more sustainable future.

Measuring KFH's CF offers insights into the environmental impact of its opera-

tions, products, and services. This analysis identifies key emission sources, prioritizes areas for improvement, and serves as a foundation for implementing CF Management Strategies. These strategies aim to reduce greenhouse gas emissions, optimize resource usage, and contribute to the global effort to combat climate change. The report concludes with the results of KFH's CF assessment, presenting an overview of its emissions inventory and an analysis of its environmental performance, alongside its ongoing commitment to sustainable practices and future targets for emissions reduction.



KFH PROFILE

KFH stands as a groundbreaking institution in the realm of Islamic Finance and Sharia-Compliant Banking. Established in 1977, KFH emerged as Kuwait's inaugural Islamic bank and has evolved into a leading global Islamic financial entity. Demonstrating continual growth and success, KFH has positioned itself as a Pioneer in Islamic banking and a key player in the broader banking sector. It holds a prominent listing on the Kuwait Stock Exchange (KSE- Bursa Kuwait) and Bahrain Bourse. KFH provides a diverse array of Sharia-compliant banking products and services spanning real estate, trade finance, investment portfolios, commercial, retail, and corporate banking. Its operations extend across various countries, including State of Kuwait, Kingdom of Saudi Arabia, Kingdom of Bahrain, Republic of Turkey, Republic of Egypt, Germany, Malaysia, the United Kingdom and several other countries. As a major Financer in local and regional markets, KFH has earned a reputation as a reliable financial institution, offering comprehensive banking solutions to individuals and businesses alike.

Recognizing the pivotal importance of environmental sustainability and the pressing need to mitigate negative impacts while fostering positive outcomes, KFH, as a pioneer in Islamic Banking, has undertaken a series of initiatives over the years. These initiatives aim to align operations with responsible environmental practices,



concentrating on energy efficiency, waste reduction, and responsible resource consumption.

With a vision to lead international development in Islamic financial services and become the most trusted and technologically advanced Sharia-compliant bank globally, KFH places a strong emphasis on corporate governance and ethical business practices.

As an Islamic bank, KFH integrates Islamic finance principles into its operations, emphasizing ethical and socially responsible practices that align with its commitment to sustainability. Adhering to principles like avoiding interest-based transactions (Riba) and investing in permissible (Halal)

and socially beneficial activities enables KFH to advocate responsible banking practices that prioritize societal and environmental well-being.

KFH's dedication to sustainability and ethical practices underscores its commitment to being a responsible corporate citizen. Recognizing that environmental stewardship and responsible business conduct are crucial for creating a sustainable future, KFH strives to calculate and manage its carbon footprint, contributing to a more sustainable and equitable world through green banking practices, rigorous governance frameworks, and the integration of Islamic finance principles.

02

CARBON FOOTPRINT ASSESSMENT APPROACH AND STANDARDS

- ADOPTED STANDARDS



CARBON FOOTPRINT ASSESSMENT APPROACH AND STANDARDS

The CF is an assessment indicating the quantity of GHGs produced and released due to the activities and consumption patterns of the organization. This encompasses operations at the headquarters, administrative offices, and branch offices. The purpose of this CF report is to systematically identify sources of GHG emissions and quantify the emissions associated with each operational activity of KFH. Through this thorough analysis, the organization gains insights into specific areas that necessitate a reduction in CF. Figure 1 illustrates the process flow for estimating the CF of KFH.

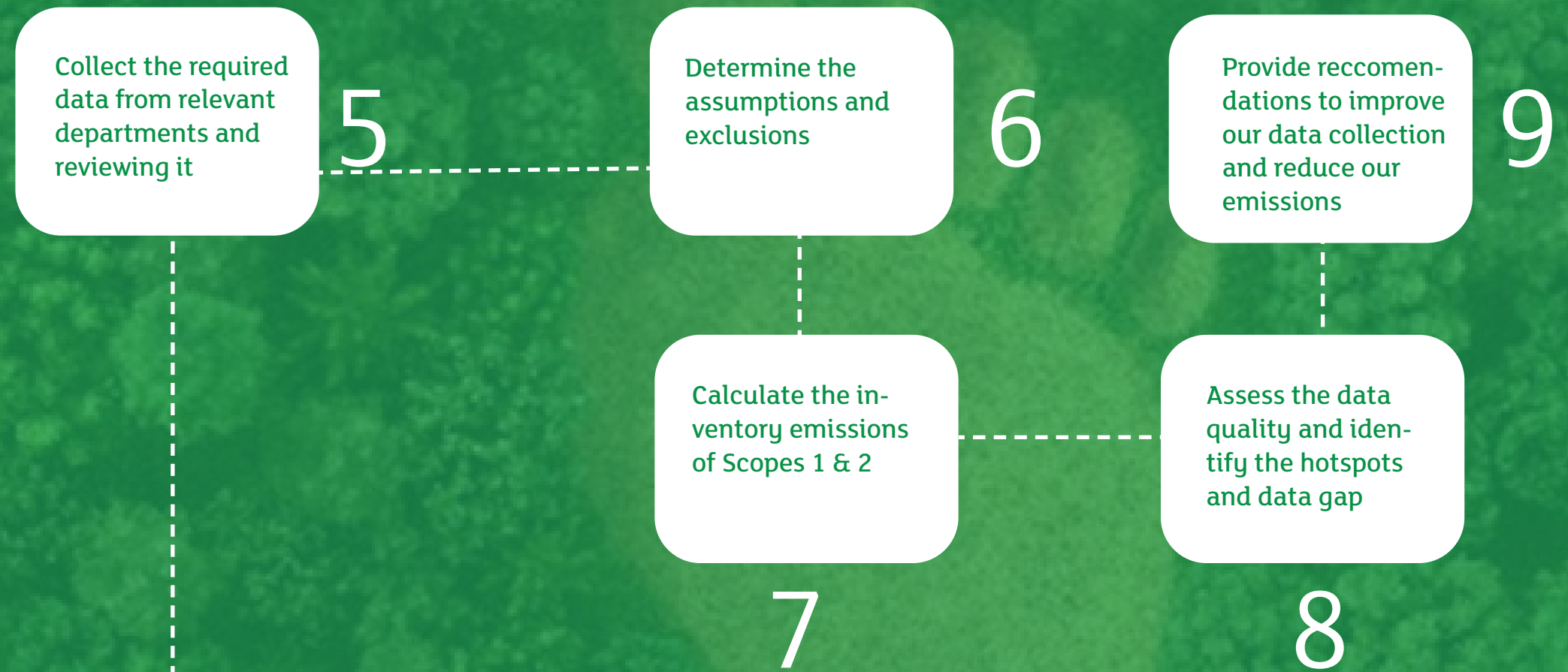


Figure 1. CF Assessment Approach



ADOPTED STANDARDS

This CF Report is developed according to three major guidelines and sources to ensure the uniformity and accuracy of the report as follows:

- The Greenhouse Gas Protocol Guidelines: Corporate Accounting and Reporting Standard
- ISO 14064-1:2019: Quantification and reporting of GHG emissions and removals at the organizational level
- Intergovernmental Panel on Climate Change (IPCC): Guidelines for Greenhouse Gas Inventories (with 2019 Refinements)

03

SCOPE OF THE INVENTORY

- REPORTING PERIOD
- ORGANIZATIONAL BOUNDARIES
- OPERATIONAL BOUNDARIES
- EXCLUSIONS



SCOPE OF THE INVENTORY

This section serves the purpose of precisely outlining the scope and parameters of the CF Report. Its primary aim is to provide clarity on the specific dimensions of our operations and activities considered in the assessment. By doing so, it establishes the essential boundaries for measuring GHG emissions, ensuring a comprehensive and well-defined approach to our environmental impact assessment.

REPORTING PERIOD

The assessment of CF involves analyzing KFH's activities from January 1, 2022, to December 31, 2022. This specific timeframe is chosen to ensure precise measurement and monitoring of emissions, allowing for meaningful comparisons and the observation of trends during the specified period.

ORGANIZATIONAL BOUNDARIES

In accordance with the guidelines outlined by the GHG Protocol, organizations have the flexibility to adopt one of three approaches—operational control, financial control, and equity share—to delineate their boundaries for GHG emissions. KFH has chosen the operational control approach to quantify its GHG emissions, signifying that the reported emissions are based on the activities and processes directly overseen by KFH within its operations.

This report specifically focuses on KFH banking branches and offices located in Kuwait. The emissions associated with these entities within Kuwait are meticulously considered, while emissions from branches and offices in other countries are deliberately excluded from the analysis. This meticulous approach ensures that the carbon emissions disclosed in this report provide an accurate portrayal of KFH's operational footprint within Kuwait, offering a targeted and nuanced assessment of its environmental impact.

The study's organizational boundaries encompass a total of 55 premises, consisting of four major offices, Head office, Baitak Tower, Dajeej Admin 18, and Shuwaikh showroom KFH Auto (Shuwaikh, 150), and 51 banking branches across Al Asimah, Hawalli, Farwaniya, Mubarak Al-Kabeer, Ahmadi, and Jahra governorates. Figure 2 visually represents the coverage of banking branches.



Figure 2. No. of KFH Branches and Offices per Each Governorate

OPERATIONAL BOUNDARIES

Once the organizational boundaries were set, the subsequent step involved identifying and categorizing emissions according to the designated operational boundaries for this report. This assessment systematically classified GHG emissions into two primary categories: Scope 1, which includes direct GHG emissions, and Scope 2, addressing indirect GHG emissions stemming from electricity use. Within each scope, emission sources were methodically categorized to streamline the processes of data collection, processing, and representation. Figure 3 provides a visual representation, outlining the specific emission categories under scrutiny in this study.



¹The study encompasses banking branches, which directly engage with clients and offer extensive banking services, as well as offices, which serve as the central operational infrastructure.



**CARBON FOOTPRINT
EMISSION SCOPES**

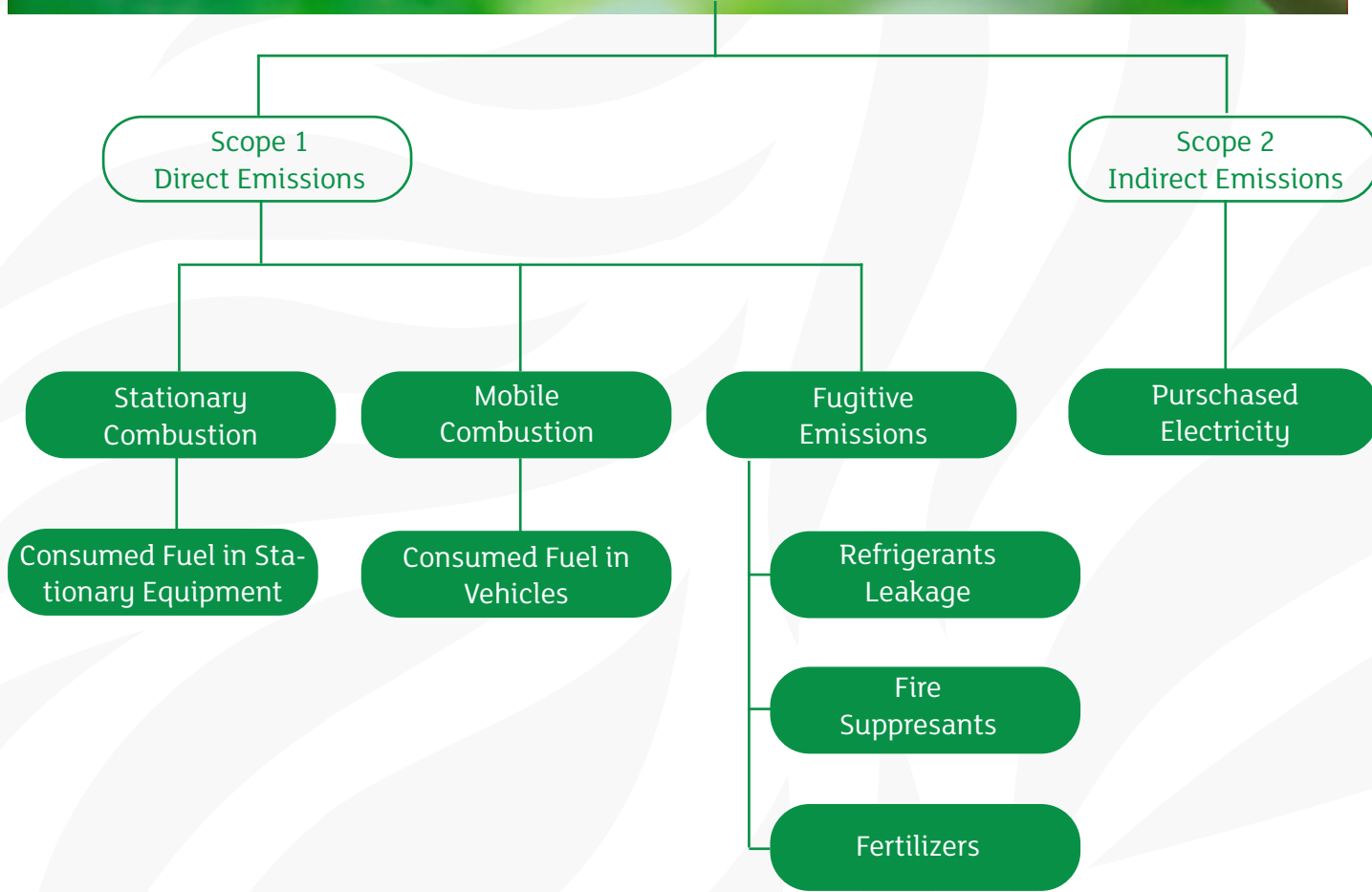


Figure 3. Operational Boundaries of KFH GHGs Assessment

EXCLUSIONS

Ensuring the precision and comprehensiveness of the inventory analysis involves recognizing and rectifying any exclusions present in the study. These exclusions can be categorized into two primary classes, as elucidated in Figure 4.



Figure 4. Exclusions of KFH GHGs Assessment

Turning to excluded sources of emissions, there are no omissions within Scope 1 for all covered branches and management offices; Head office, Baitak Tower, Dajeej Admin 18, and Shuwaikh showroom KFH Auto (Shuwaikh, 150), except for central refrigerators due to a lack of data for estimations. In Scope 2, no exclusions were made for any banking branches or offices, and even for branches lacking data, estimations have been made and will be clarified later in the assumptions section.

It is noteworthy that certain types of greenhouse gases, specifically Sulfur hexafluoride (SF₆) and Perfluorocarbons (PFCs), were excluded from the assessment due to their non-emissive nature in the operations of KFH.

While these exclusions do not significantly impact the overall findings of this inventory analysis, it is crucial to consider them when interpreting the results and assessing the thoroughness of the evaluation. Identifying and addressing these exclusions in future inventory analyses will empower KFH to enhance the accuracy and completeness of its carbon footprint assessments, ensuring the effectiveness and meaningful impact of its sustainability initiatives.

04

QUANTIFICATION OF GHGS INVENTORY

- CALCULATION METHODOLOGIES AND REQUIRED DATA
 - SCOPE 1: STATIONARY COMBUSTION EMISSIONS
 - SCOPE 1: MOBILE COMBUSTION EMISSIONS
 - SCOPE 1: FUGITIVE EMISSIONS
 - SCOPE 2: INDIRECT EMISSIONS
- ASSUMPTIONS



QUANTIFICATION OF GHGS INVENTORY

To quantify the GHG inventory of KFH, it is essential to first identify the calculation methodologies, along with the necessary data and corresponding assumptions, if any are required. This section presents the methodology and the required data for each emission category.

CALCULATION METHODOLOGIES AND REQUIRED DATA

SCOPE 1: STATIONARY COMBUSTION EMISSIONS

Stationary combustion emissions are linked to any emissions generated by on-site equipment using fuels. Considering the nature of KFH's operations, the primary contributors to these emissions were identified as the generator equipment at each branch and headquarters. These generators function as backup power sources during electricity outages or emergencies.

To collect pertinent data, each branch and office were assigned to report the status of their generators (whether in use or not) and the annual fuel consumption of these generators during the year 2022.

The calculation methodology involves multiplying the annual diesel consumption for each generator by the corresponding emissions factor for diesel, as outlined in the following equation.

$$\text{Stationary Fuel Combustion, GHG Emissions (tCO}_2\text{e/year)} = \text{Fuel Consumption (L/year)} \times \text{EF (tCO}_2\text{e/L)}$$

As depicted in Table 2, all branches and offices reported their generators' fuel consumption for the reporting period. The branches that did not provide fuel consumption data are either not operational or do not have generators.

Table 2. Branches and Offices Data Status in Stationary Combustion Emissions of KFH during 2022

Classification	Required Data	Data Status
KFH Bank Branches	<ul style="list-style-type: none"> Type of Emissions Source No. of Equipment Type of Fuel/Gas Fuel Grade² Monthly Fuel Volume 	Received with estimates ³
KFH Offices		Received with estimates

²Usually, this info is assumed.

³The received data is not exact but estimated by KFH.



SCOPE 1: MOBILE COMBUSTION EMISSIONS

In the context of GHG emission sources, a mobile source refers to emissions generated by vehicles and equipment that are not fixed to a specific location. This category encompasses automobiles, trucks, and various mobile machinery, each playing a role in GHG emissions through fuel combustion during their operational activities.

For KFH, the identified mobile sources of emissions specifically pertain to cars, micro-buses and ATM trucks dedicated to servicing the bank's branches and offices.

The adopted methodology to calculate mobile combustion emissions began by collecting data about these mobile vehicles, including the type of vehicles, the type of used fuel, and the quantity of that fuel. After collecting the data, the calculations for emissions entail multiplying the annual fuel consumption for each mobile source type by the corresponding emissions factor associated with the specific fuel used. The calculations of Mobile Fuel Combustion GHG Emissions (in tCO₂e/year) are derived from the equation:

$$\text{Mobile Fuel Combustion, GHG Emissions (tCO}_2\text{e/year)} = \text{Fuel Consumption (L/year)} \times \text{EF (tCO}_2\text{e/L)}$$

Table 3 presents the required data for calculating the mobile combustion emissions and the corresponding data status.

Table 3. Branches and Offices Data Status in Mobile Combustion Emissions of KFH during 2022

Classification	Required Data	Data Status
KFH Bank Branches	<ul style="list-style-type: none"> No. of Equipment/Vehicle Type of Fuel/Gas Fuel Grade Monthly Fuel Volume 	Data were received according to the specified criteria; however, information was provided collectively for KFH branches and offices.
KFH Offices		



SCOPE 1: FUGITIVE EMISSIONS REFRIGERANTS

Fugitive emissions stemming from refrigerant leakage, predominantly associated with air conditioning systems and refrigeration equipment, result in the unintended release of synthetic refrigerants into the atmosphere. Notably, refrigerants like hydrofluorocarbons (HFCs) or analogous compounds play a substantial role in contributing to GHGs emissions, thereby exacerbating the global warming impact. This leakage phenomenon is a consequence of the inherent characteristics of refrigeration systems and the gradual wear and tear of equipment over time.

Within the KFH context, air conditioners have been identified as the primary source of refrigerant emissions, and the emissions are calculated based on the below equation.

$$\text{Refrigerant Leakage, GHG Emissions (tCO}_2\text{e)} = \text{Refrigerant leakage (kg)} \times \text{EF (tCO}_2\text{e/kg)}$$

Table 4 presents the required data for calculating the refrigerants emissions and the corresponding data status.

Table 4. Branches and Offices Data Status in Refrigerants Emissions of KFH during 2022

Classification	Required Data	Data Status
KFH Bank Branches	<ul style="list-style-type: none"> Type of Equipment No. of Equipment 	Received with estimates.
KFH Offices	<ul style="list-style-type: none"> Type of Refrigerants Recharge Quantity 	

FERTILIZERS

Certain fertilizers can contribute to an increase in global warming potential due to the natural decomposition process, leading to the release of GHGs. To accurately quantify these emissions, data on the amounts, types and nitrogen percentage of the fertilizers used during the 2022 reporting period were collected. The emissions from fertilizers were then calculated using the following equation, incorporating external emission factors provided in Appendix I⁴.

$$\text{Fertilizers Emissions, GHG Emissions (tCO}_2\text{e)} = \text{Fertilizer Type Amount (kg)} \times \text{Nitrogen Composition} \times \text{Corresponding Emission Factor (tCO}_2\text{e/kg)}$$

Table 5 presents the required data for calculating the fertilizers emissions and the corresponding data status.

Table 5. Branches and Offices Data Status in Fertilizers Emissions of KFH during 2022

Classification	Required Data	Data Status
KFH Bank Branches	<ul style="list-style-type: none"> Type of Fertilizer Quantity of Fertilizer Nitrogen Percentage 	Received.
KFH Offices		

⁴Appendix I: Emission Factors (EFs)

FIRE SUPPRESSANTS

Fire suppressants give rise to fugitive emissions through both intentional releases during firefighting operations and unintentional releases attributed to factors such as equipment leaks, inadequate system maintenance, or unintentional discharges. The internal substances encompass a variety of materials, yet only specific materials are associated with greenhouse gas effects.

An initial investigation was conducted to gain insight into the nature of the fire suppressant systems within KFH branches and offices. Data pertinent to the bank's fire suppressants, including the number of equipment, type of internal substance, and any instances of suppressant usage during fire incidents, were requested. After receiving the relevant data, the fire suppressants' leakage was calculated by the following equation:

$$\text{Suppressant Leakage, GHG Emissions (tCO}_2\text{e)} = \text{Suppressant Annual Leakage Rate (kg)} \times \text{Conversion Factor (tCO}_2\text{e/kg)}$$

The annual leakage rate for suppressants was established at 3.5%, adopting the EPA assumption for leakage from portable equipment. Additionally, a conversion factor value of 1 was chosen, considering that all reported fire suppressants were of the pressurized carbon dioxide type. These selected parameters align with established standards and methodologies, ensuring a consistent and reliable basis for emissions calculations.

Table 6 presents the required data for calculating the fire suppressants emissions and the corresponding data status.

Table 6. Branches and Offices Data Status of Fire Suppressants Emissions of KFH during 2022

Classification	Required Data	Data Status
KFH Bank Branches	<ul style="list-style-type: none"> Type of Equipment No. of Equipment 	Received.
KFH Offices	<ul style="list-style-type: none"> Type of Fire Suppressant Capacity 	

SCOPE 2: INDIRECT EMISSIONS

When calculating the emissions resulting from purchased electricity, it is necessary to have the total electricity consumption and the country-specific EF. However, the electricity consumption data for 11 KFH branches was unavailable either due to their location in malls, which are beyond the bank's operational control, or due to data gaps. Therefore, two approaches were adopted for calculating the emissions from purchased electricity, depending on the availability of data, as explained below.

BRANCHES WITH AVAILABLE ELECTRICITY CONSUMPTION

For the 44 branches where actual electricity consumption data was available, the emissions resulting from purchased electricity were calculated directly using the following formula.

$$\text{GHG Emissions (tCO}_2\text{e/year)} = \text{Electricity Consumption (kWh/year)} \times \text{EF (tCO}_2\text{e/kWh)}^5$$

BRANCHES WITH LACK OF ELECTRICITY CONSUMPTION

Before calculating the emissions for the remaining 11 branches without electricity consumption data, an additional step was taken. The electricity consumption per square meter was needed to estimate their electricity usage. The provided electricity consumption data was divided by the area of each branch. This data was then assumed to follow a normal distribution, and the mean and standard deviation were calculated based on the available data. Then, we adopted a 95% confidence level in estimating the highest electricity consumption per meter square where the mean value in addition to the estimated error was calculated to ensure that we covered the worst-case scenario emissions till the accurate and relevant data are collected in the upcoming years. To estimate electricity consumption for the branches without data, this maximum kWh/m² value that ensures 95% confidence level was used. After obtaining the estimated electricity consumption, the resulting emissions were calculated using the provided formula.

$$\text{GHG Emissions (tCO}_2\text{e/year)} = \text{Estimated Electricity Consumption (kWh/year)} \times \text{EF (tCO}_2\text{e/kWh)}$$

⁵Kuwait Electricity EF is adopted from <https://unfccc.int/documents/43788>

ASSUMPTIONS

Table 7 provides an overview of the emission sources for each category in KFH's inventory, along with the corresponding assumptions used in the calculation model. It is essential to address these assumptions in future reports to improve data quality and ensure the accuracy of inventory results.

Table 7. Emission Sources and Assumptions of KFH during 2022 CF Assessment

Scope	Category	Identified Emission Sources	Activity Data Assumptions
Scope 1: Direct Emissions	Stationary Fuel Combustion	<ul style="list-style-type: none"> Emissions resulting from the consumption of diesel to operate generators at KFH offices and branches. 	<ul style="list-style-type: none"> Heating values of fuel were based on IPCC Guidelines. HQ banking branch and HQ office's diesel consumption were combined as they are located in the same building. Baitak Tower banking branch and Baitak Tower office's diesel consumptions were combined as they are located in the same building. The calculations model relied on yearly consumption data, as monthly consumption data contained embedded assumptions.
	Mobile Fuel Combustion	<ul style="list-style-type: none"> Emissions resulting from the consumption of gasoline for the operation of KFH fleet (cars). 	<ul style="list-style-type: none"> Heating values of fuel were based on IPCC Guidelines. The emissions resulting from the 17 cars were allocated only to the offices and distributed among them based on the headcount percentage of each.⁶
	Fugitive Emission Sources (Refrigerants)	<ul style="list-style-type: none"> Emissions associated with the consumed refrigerant in KFH offices and branches. 	<ul style="list-style-type: none"> HQ banking branch and HQ office's refrigerants recharges were combined as they are located in the same building. Baitak Tower banking branch and Baitak Tower office's refrigerants recharges were combined as they are located in the same building.

	Fugitive Emission Sources (Fire Suppressants)	<ul style="list-style-type: none"> Emissions resulting from the consumed fire suppressants in KFH offices and branches. 	<ul style="list-style-type: none"> No assumption made
	Fugitive Emission Sources (Fertilizers)	<ul style="list-style-type: none"> Emissions resulting from the consumed fertilizers in the indoor and outdoor planting basins associated with KFH offices and branches. 	<ul style="list-style-type: none"> Ahmadi and Ahmadi Gallery consumption were combined. HQ banking branch and HQ office's consumptions were combined as they are located in the same building. Baitak Tower banking branch and Baitak Tower office's consumptions were combined as they are located in the same building. Nitrogen Composition of organic fertilizers.⁷
Scope 2: Indirect Emissions	Purchased Electricity	<ul style="list-style-type: none"> Emissions associated with the purchased electricity in KFH offices and branches. 	<ul style="list-style-type: none"> Electricity consumption for 11 branches, that lack the consumption in kWh, was estimated.⁸ The assumption was built upon adopting the maximum electricity consumption per meter square of KFH branches (kWh/m²)⁹



⁶This assumption is due to the lack of data regarding the consumed amount of gasoline or allocated travelled distances per each branch or office.

⁷https://ucanr.edu/sites/Nutrient_Management_Solutions/files/212718.pdf.

⁸Most of these branches are situated in shopping malls, where KFH does not have control over their electricity bills as it is included in their contractual agreements.

⁹More details about this assumption are explained in the calculation methodologies section.

05

CARBON FOOTPRINT ANALYSIS

- SCOPE 1: DIRECT EMISSIONS
 - STATIONARY COMBUSTION EMISSIONS
 - MOBILE COMBUSTION EMISSIONS
 - FUGITIVE EMISSIONS
- SCOPE 2: INDIRECT EMISSIONS



CARBON FOOTPRINT ANALYSIS

The GHG Inventory assessment revealed that KFH reported emissions of 42,012.65 tCO₂e in 2022. The predominant contribution comes from Scope 2, constituting 80.45% or 33,797.53 tCO₂e, while Scope 1 contributes 19.55%, totaling 8,215.12 tCO₂e, as illustrated in Figure 5. The substantial contribution to Scope 2 is attributed to purchased electricity, reflecting the nature of banking sector activities, which primarily involve administrative work in buildings that heavily rely on electricity consumption as a primary source.

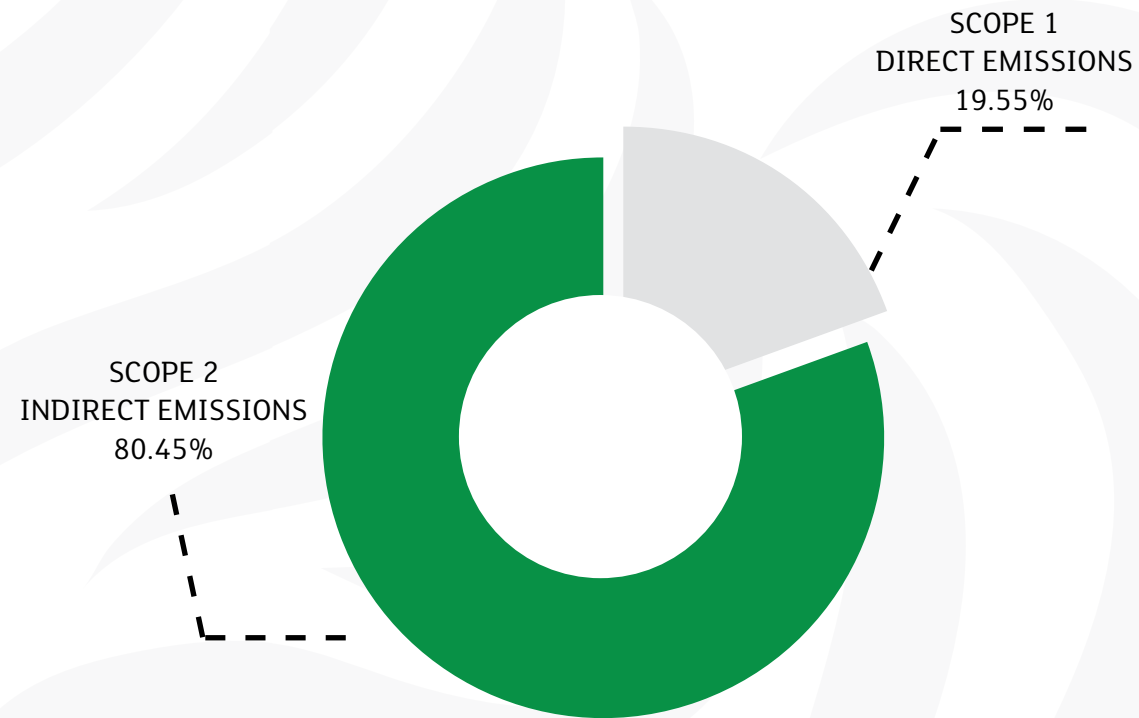


Figure 5. Breakdown of KFH GHGs Emissions per Scope

Figure 6 provides a more detailed breakdown of emission source categories to underscore that electricity emerges as the primary contributor to KFH's 2022 emissions. Following this, released emissions from refrigerants constitute 19.19% of the total emissions, amounting to 8,060.792 tCO₂e. The prominence of refrigerants as the second contributor is attributed to the nature of the banking sector, where a significant portion of activities involves administrative work in buildings, necessitating both electricity and refrigerants for air conditioning units (ACs).

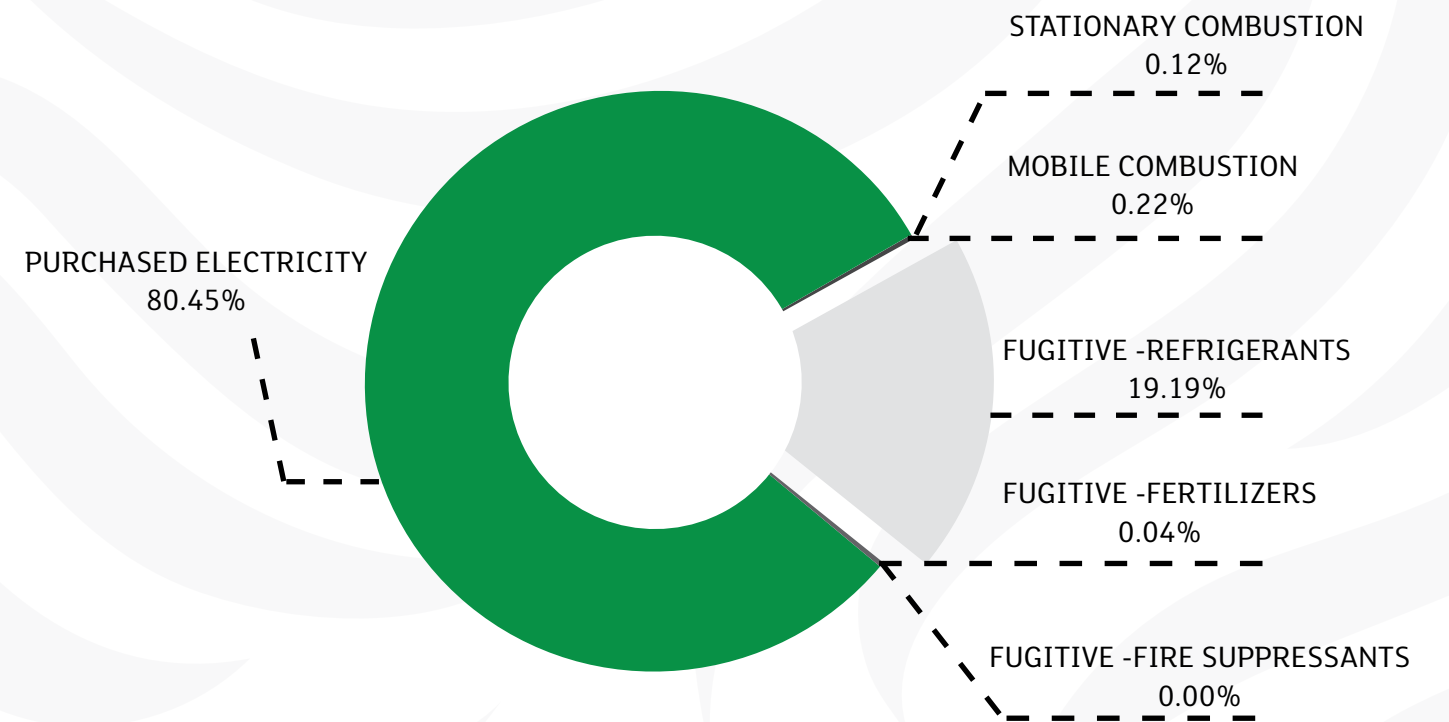


Figure 6. Breakdown of KFH GHGs Emissions per Emission Source

As previously discussed, KFH's organizational boundaries can be broadly classified into two main types: banking branches, which directly engage with clients and offer comprehensive banking services, and offices, constituting the fundamental operational infrastructure and headquarters. Noteworthy offices encompass the Head office, Baitak Tower, Dajeej Admin 18, and Shuwaikh showroom KFH Auto (Shuwaikh 150).

Figure 7 vividly illustrates that bank branches contribute 52.99% of the total emissions, totaling 22,260.61 tCO₂e, whereas the remaining four offices contribute 47.01%, amounting to 19,752.03 tCO₂e. Despite the small number of offices compared to the multitude of branches, their substantial contribution to emissions is attributed to their expansive areas and intensive operations, which surpass the scale of retail services in bank branches.

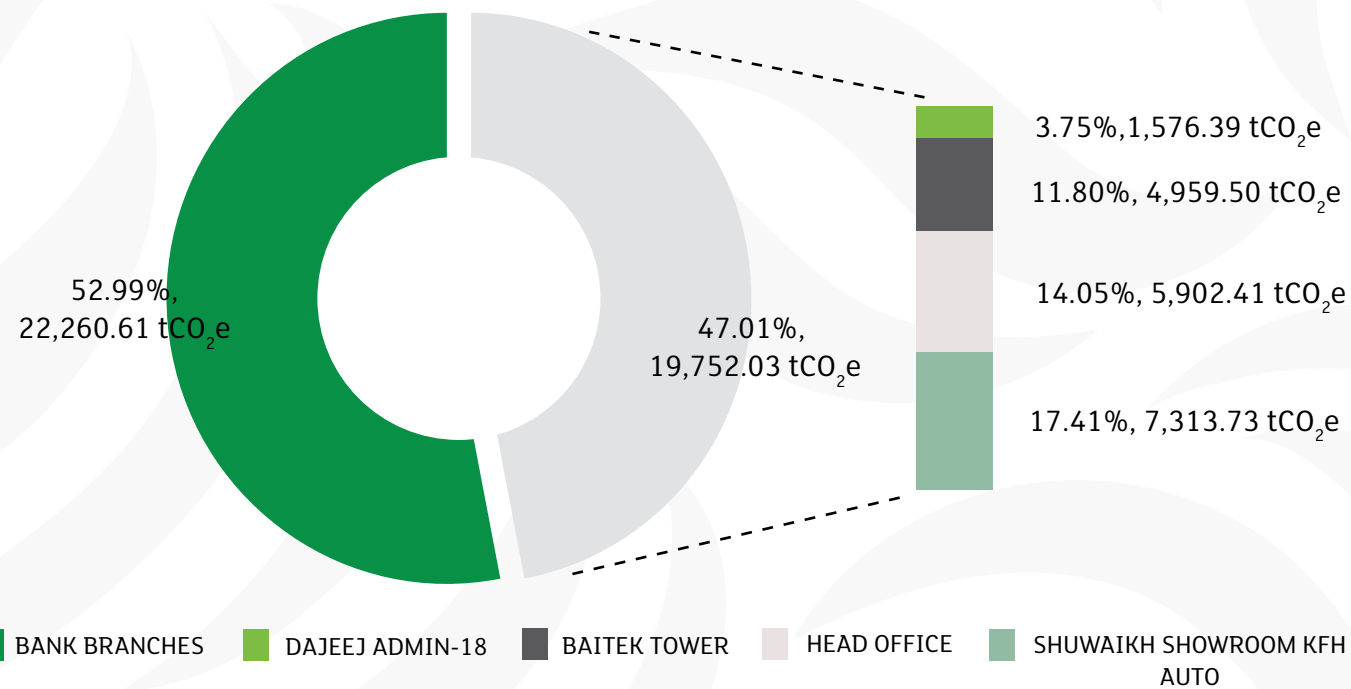


Figure 7. GHG Emissions Classified per KFH Boundary Type

As KFH branches and offices are strategically distributed across Kuwait governorates, Figure 8 further elucidates the distribution of KFH emissions in 2022 across governorates based on the locations of branches and offices. Notably, Al Asimah Governorate contributes 60.64% of the total emissions, totaling 25,477.695 tCO₂e, followed by Farwanyia Governorate with a contribution of 19.22%, amounting to 8,073.852 tCO₂e. This pronounced contribution is attributed to the presence of offices and headquarters in these two governorates. Al Asimah includes three offices, and Farwanyia encompasses the fourth office, in addition to the significant number of bank branches it accommodates.

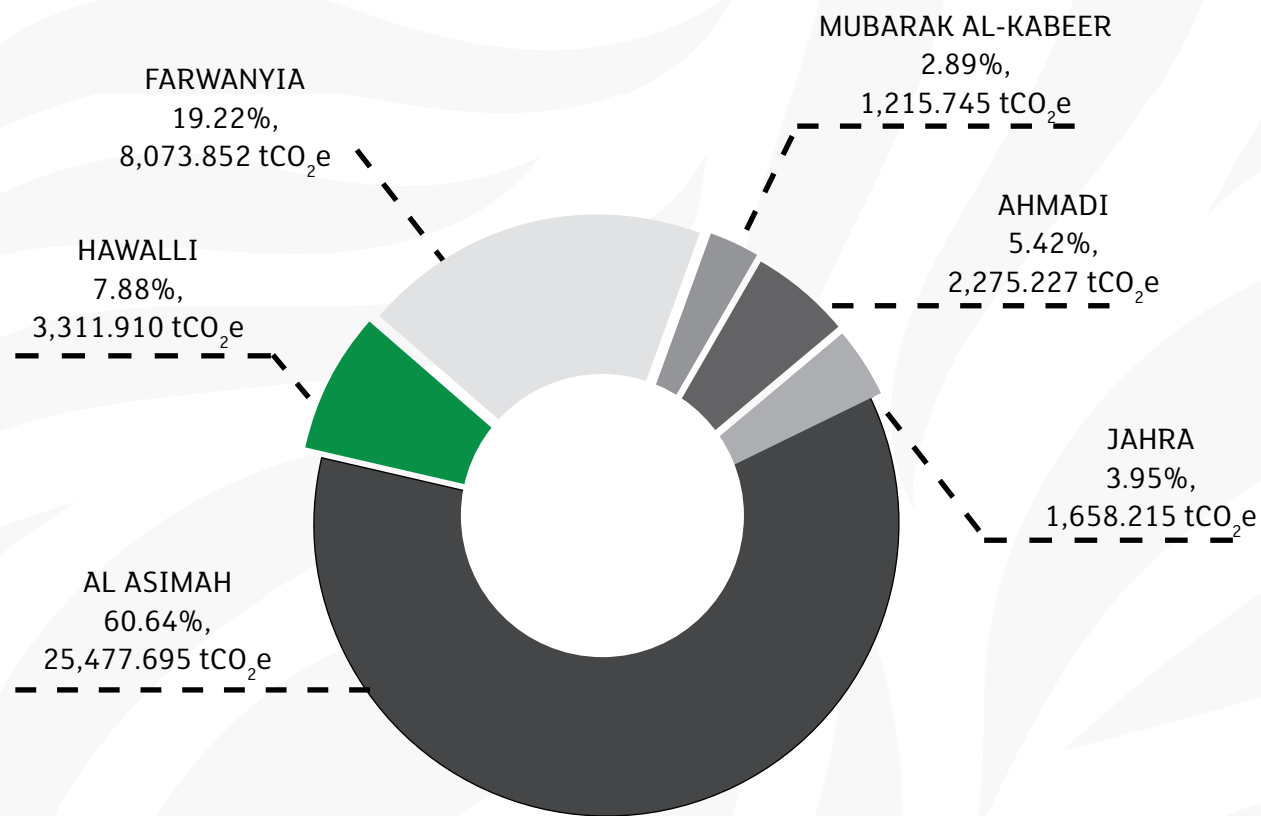


Figure 8. GHG Emissions of KFH Classified per Governorate

SCOPE 1: DIRECT EMISSIONS

To identify and address the critical areas that require attention, a detailed breakdown of emissions is essential. KFH's Scope 1 emissions amount to 8,215.119 tCO₂e, and their distribution among offices and bank branches is illustrated in Figure 9. Offices contribute 6.80%, totaling 558.813 tCO₂e, while bank branches account for the remaining 93.20%, amounting to 7,656.306 tCO₂e. The breakdown of these emissions into their source categories is detailed in Figure 9, underscoring that fugitive emissions stand out as the major contributor in Scope 1 emissions, even within branches or offices.

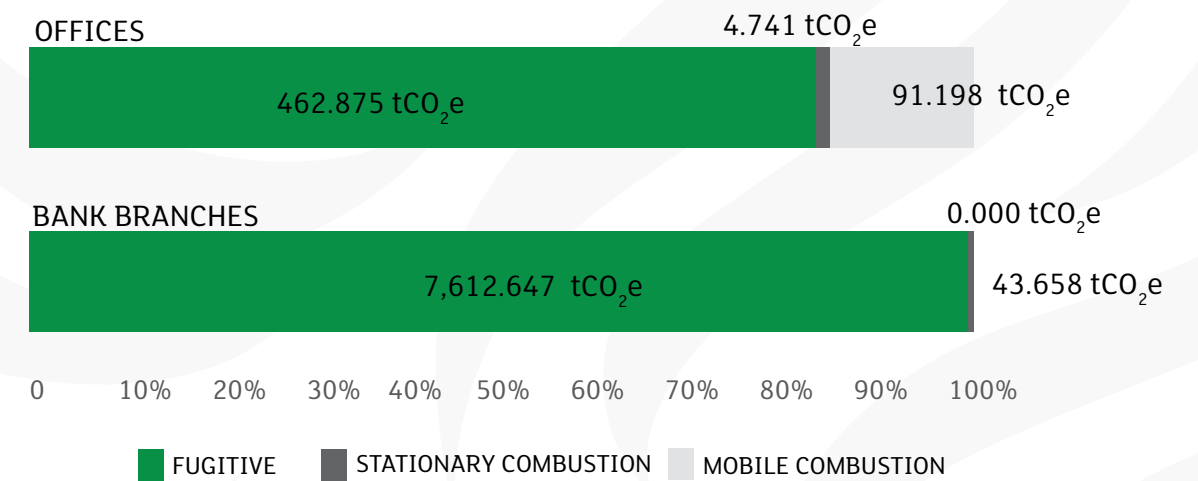


Figure 9. Scope 1 Emissions of KFH Classified per Boundary Type

In terms of emissions distribution across governorates, Al Asimah took the lead in Scope 1 emissions, followed by Farwanyia as clarified in Figure 10. This ranking is attributed to the presence of offices and the substantial number of branches located in these two governorates, as previously explained.

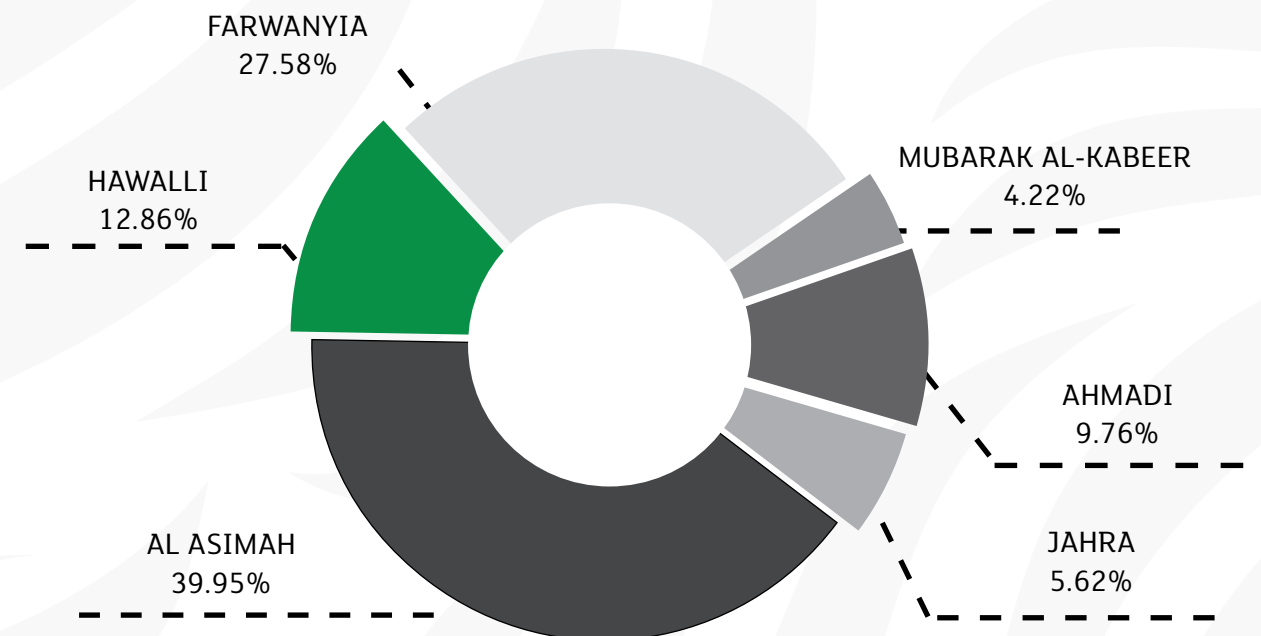


Figure 10. Scope 1 Emissions of KFH Classified per Governorate

STATIONARY COMBUSTION EMISSIONS

Stationary combustion emissions refer to the emissions released from the combustion of stationary equipment, such as generators. In 2022, the 46 generators across all KFH branches and offices consumed approximately 18,274 liters of diesel, resulting in the release of around 48.40 tCO₂e. Bank branches contribute the most to these emissions, accounting for 90.20% (43.66 tCO₂e), while offices contribute 9.80% (4.74 tCO₂e). It's essential to note that the bank branches' higher contribution is primarily due to their larger number, and the individual contribution of each branch remains relatively low, with none exceeding 2.44 tCO₂e, given the uncommon occurrence of electricity shortages in Kuwait.

Among the offices, the Shuwaikh Showroom KFH Auto stands out with the largest contribution, as clarified in Figure 11, contributing 5.04% (2.44 tCO₂e).

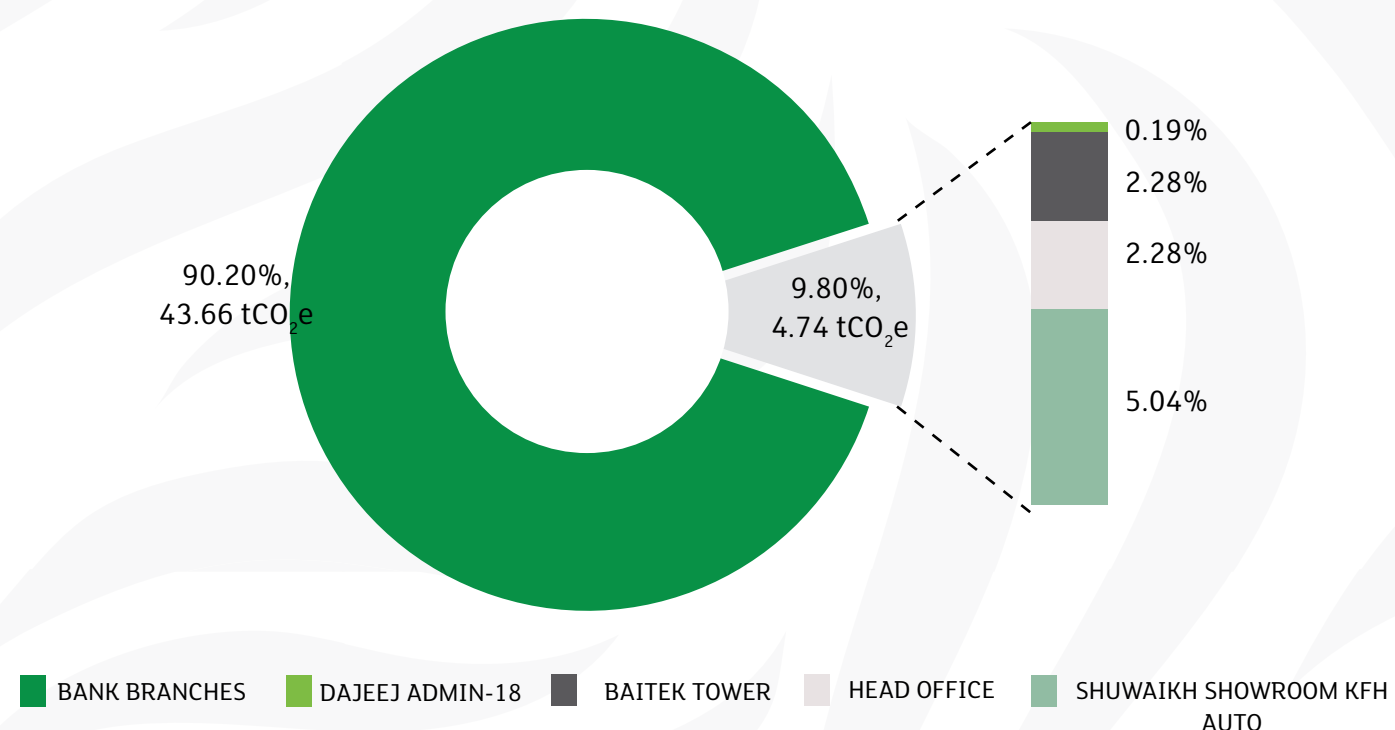


Figure 11. Stationary Combustion Emissions of KFH Classified per Boundary Type

On the governorate scale, it is worth noting that Al Asimah governorate claimed the top spot, contributing 38.02% of the total stationary emissions, followed by Hawalli governorate and then Farwanya governorate, as clarified in Figure 12. Al Asimah and Farwanya consistently emerge as major contributors due to the significant number of branches within them, in addition to their inclusion of offices with large areas and, consequently, substantial consumption. Hawalli also encompasses a high number of branches with non-negligible areas and consumption.



Figure 12. Stationary Combustion Emissions of KFH Classified per Governorate

MOBILE COMBUSTION EMISSIONS

In the realm of GHG emission sources, mobile sources encompass emissions generated by vehicles and equipment not fixed to a specific location, including automobiles, trucks, and various mobile machinery. These elements contribute significantly to GHG emissions through fuel combustion during their operational activities.

Within KFH, mobile sources are specifically categorized into cars, microbuses, and ATM trucks, all powered by gasoline. Despite constituting only 0.22% of KFH's total emissions, the aggregate mobile emissions amount to 91.20 tCO₂e. Of notable significance is the substantial contribution from employees' transportation cars¹⁰, representing 53.33%, as elucidated in Figure 13. Further insights into this aspect are available in Table 8, providing a breakdown of the number of cars used in each category and their corresponding fuel consumption.

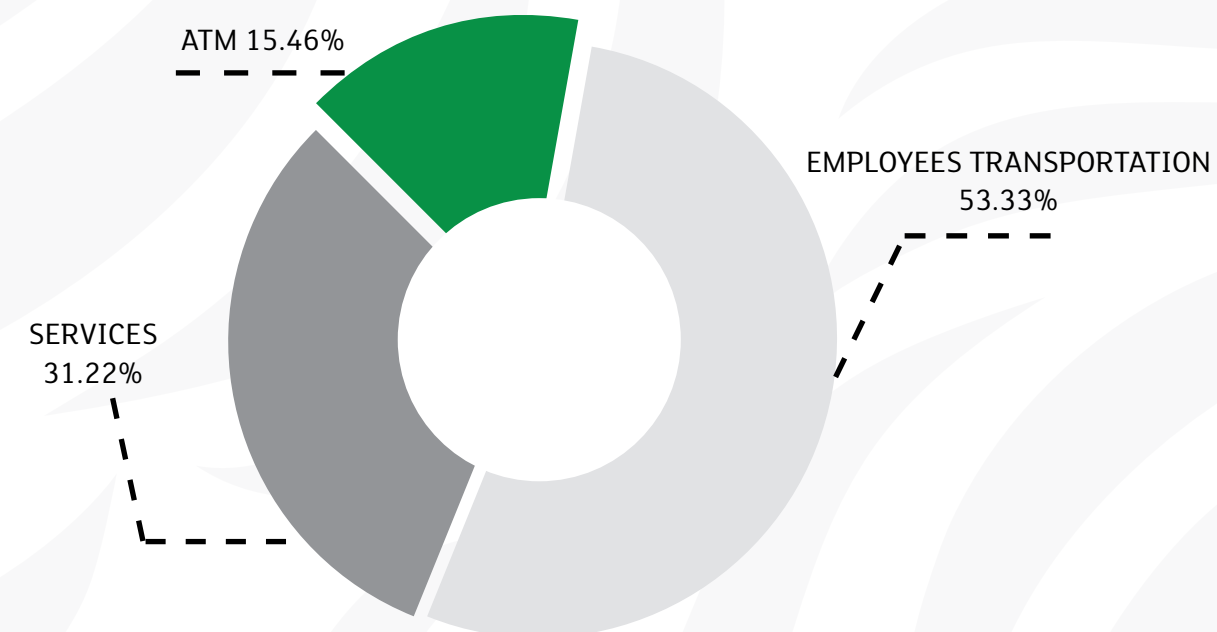


Figure 13. Mobile Combustion Emissions of KFH Classified per Type of Use

¹⁰Top management transportation.

Table 8. Breakdown of GHGs Mobile Emissions of KFH in 2022

Use	No. of Cars	GHGs Emissions (tCO ₂ e)	Gasoline Consumption (L)
Employees Transportation "Top Management"	8	48.63	20780.99
Services ¹¹	3	28.47	12166.19
ATM	6	14.09	6022.93
Total		91.20	38970.11

In KFH, mobile vehicles serve all branches and offices uniformly, and as a result, emissions are not specifically allocated to individual branches or offices. However, to enhance quantification and consolidation, mobile emissions were allocated to the major offices – namely, the Head Office, Baitak Tower, Dajeej Admin-18, and Shuwaikh Showroom KFH Auto. This allocation was based on the percentage of headcount within each office, considering them as the major offices with high mobility and a significant presence of top management.

The outcomes of this allocation are elucidated in Figure 14. While this process proves useful in summing up total emissions for each office and branch, enhancing the precision of overall comparisons, it's important to note its primary utility lies in achieving more accurate totals for comprehensive assessments.

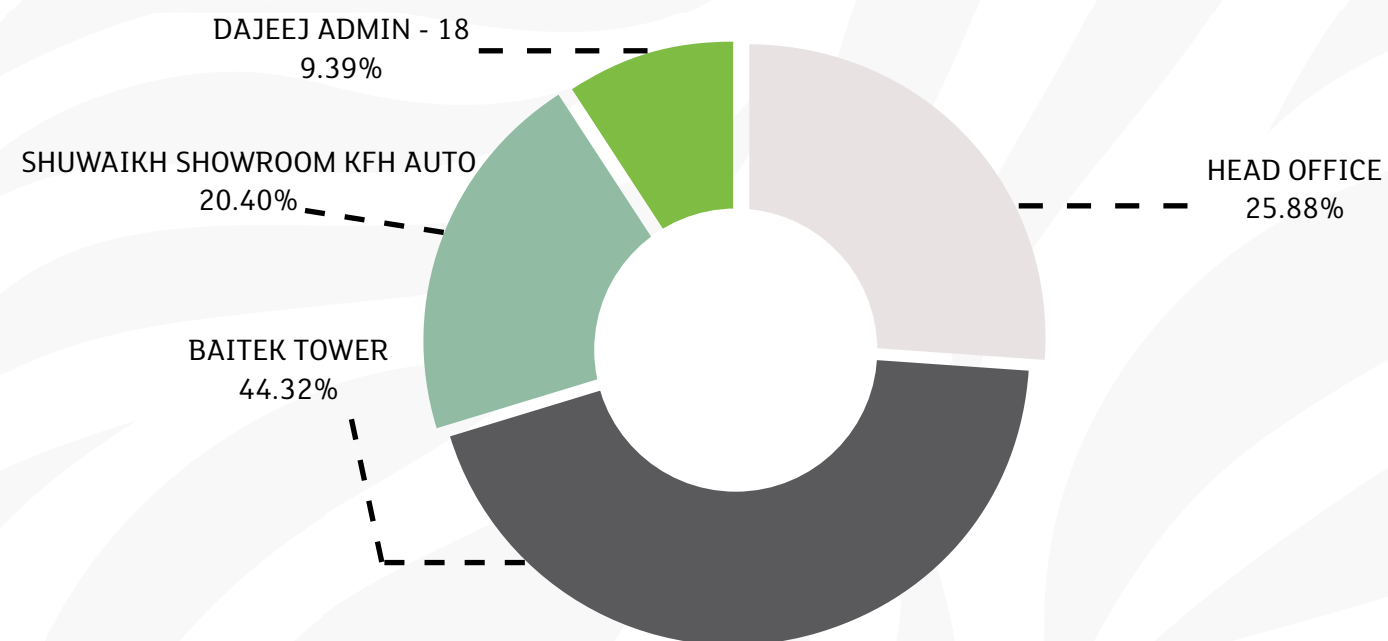


Figure 14. Allocated GHGs Mobile Emissions per Offices

¹¹ Services such as distributing stationery on a daily basis to all branches.

FUGITIVE EMISSIONS

Fugitive emissions stemming from refrigerant leakage, primarily linked to air conditioning systems and refrigeration equipment, involve the unintended release of synthetic refrigerants into the atmosphere. Additionally, certain fertilizer emissions are classified as fugitive due to their decomposition, releasing GHGs emissions into the atmosphere. Notably, refrigerants such as hydrofluorocarbons (HFCs) or similar compounds play a significant role in GHGs emissions, exacerbating the impact of global warming. This leakage phenomenon results from the inherent characteristics of refrigeration systems and the gradual wear and tear of equipment over time. Furthermore, some fire suppressants also leak GHGs emissions into the atmosphere and are considered fugitive emissions.

In KFH, these three sources of fugitive emissions collectively amount to 8,075.52 tCO₂e, constituting 19.22% of the total emissions, as mentioned earlier. Among these emissions, the predominant contribution comes from refrigerants leaked from the ACs, accounting for 99.82% of the total fugitive emissions, as clarified in Figure 15.

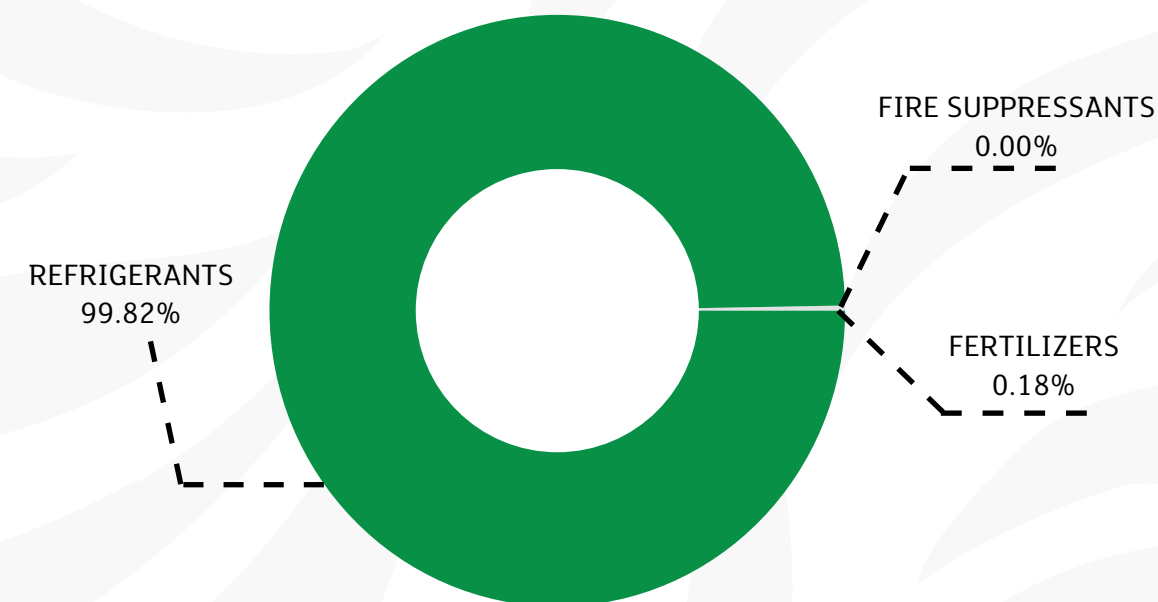


Figure 15. Breakdown of KFH Fugitive Emissions

In the categorization of bank branches and offices, it's essential to highlight that bank branches contribute significantly, accounting for 94.27% of the fugitive emissions, totaling 7,612.65 tCO₂e, as elucidated in Figure 16. In contrast, the four major offices contributed a modest 5.73%, amounting to 462.87 tCO₂e. This distribution is primarily attributed to the dominant source of fugitive emissions—refrigerants—stemming from the operational ACs required for the administrative work conducted in banking sector buildings. The higher contribution from branches, owing to their greater number, is a direct result of this operational necessity.

However, it's noteworthy that the substantial contribution of 5.73% from only four offices is notable. This is primarily due to the extensive areas of these buildings. The offices exhibit almost equal contributions, a result of the estimation in the received data from KFH, as will be elaborated upon later.

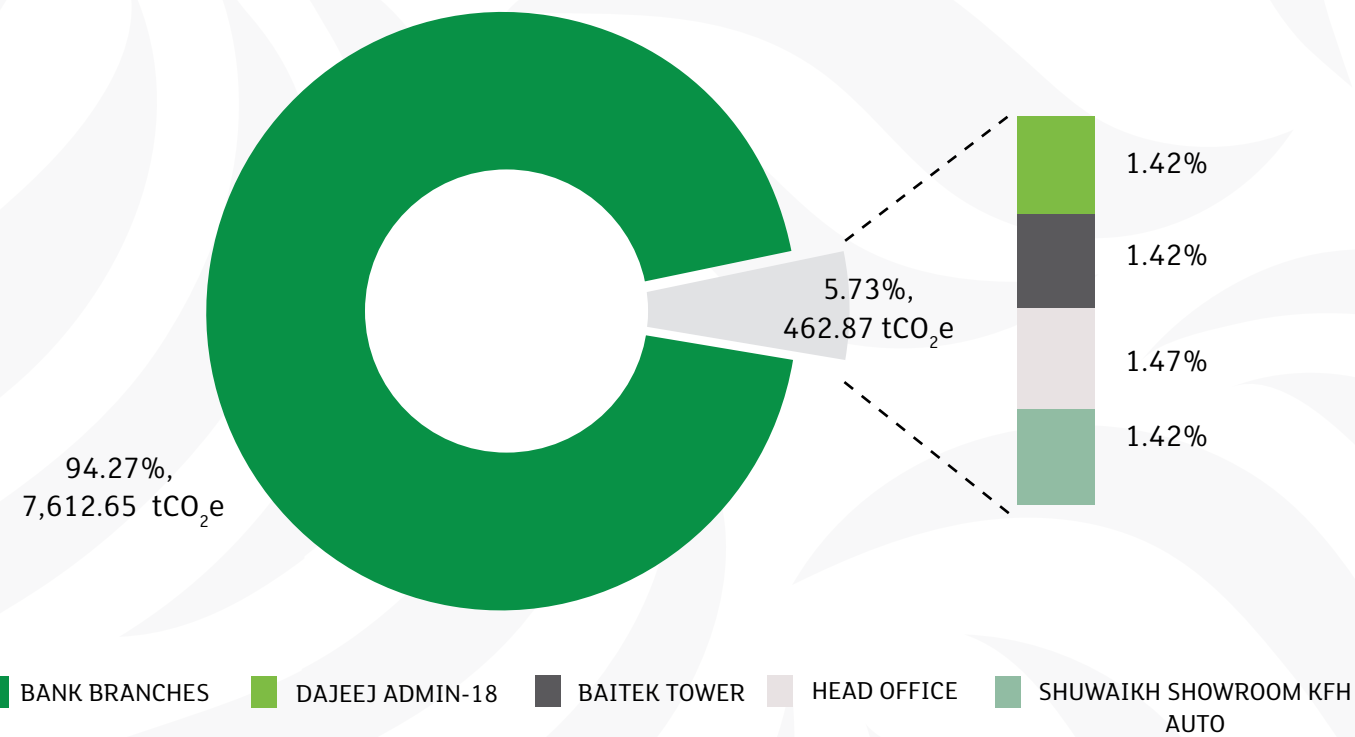


Figure 16. Fugitive Emissions of KFH Classified per Boundary Type

On a governorate scale, Al Asimah governorate takes the lead with a contribution of 39.39% to fugitive emissions, totaling 3,180.701 tCO₂e, while Farwanyia follows closely in the second position with 27.86%, amounting to 2,249.896 tCO₂e, as illustrated in Figure 17. Once again, this prominence is a direct result of the substantial number of branches within these governorates, coupled with their inclusion in the major four offices. Further details on the breakdown of fugitive emissions are provided in the subsequent sections.



Figure 17. Fugitive Emissions of KFH Classified per Governorate

Refrigerants

To pinpoint the major hotspots in fugitive emissions, it is crucial to delve deeper into the breakdown, with a focus on refrigerants as the primary source due to the operational activities inherent in administrative work within the banking sector. Refrigerants contribute significantly, amounting to 8,060.792 tCO₂e, constituting 19.19% of KFH's total emissions in 2022. Figure 18 elucidates the distribution of these emissions among bank branches and offices. Notably, the percentages closely align with the reported ones in Figure 16, underscoring the substantial contribution of refrigerants to fugitive emissions. This pattern is likely to be reflected on a governorate scale due to the distribution of branches.

It's important to highlight that the estimates for refrigerant emissions are majorly approximations. This is attributed to the lack of precise data, as the received information from KFH encompasses approximate values across all branches and offices.

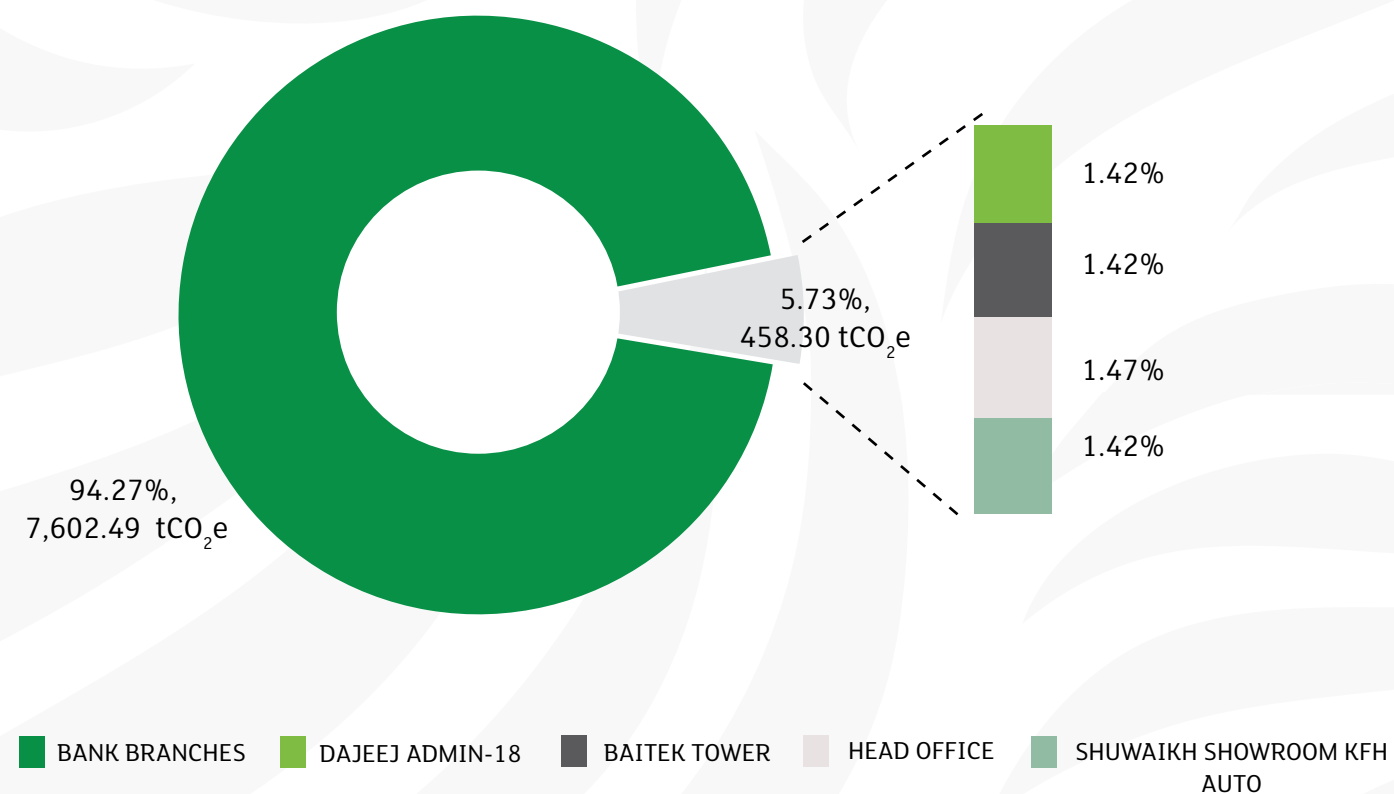


Figure 18. Refrigerants Emissions of KFH Classified per Boundary Type

FERTILIZERS

KFH primarily utilized three types of fertilizers in 2022: NPK, urea, and organic fertilizers. Throughout the year, the employed fertilizers collectively released 14.71 tCO₂e. However, organic fertilizers stand out as the major contributor, accounting for 96.36% of the total fertilizer emissions, totaling 14.177 tCO₂e. In contrast, the impact of the other types is nearly negligible, as clarified in Figure 19.

The substantial contribution of organic fertilizers is attributed to the significant quantities utilized by KFH in 2022—approximately 10,718.68 kg. In comparison, only 102 kg each of NPK and urea were used. It's essential to note that quantities alone are not the sole determining factor; emission factors also play a pivotal role in assessing the overall environmental impact.

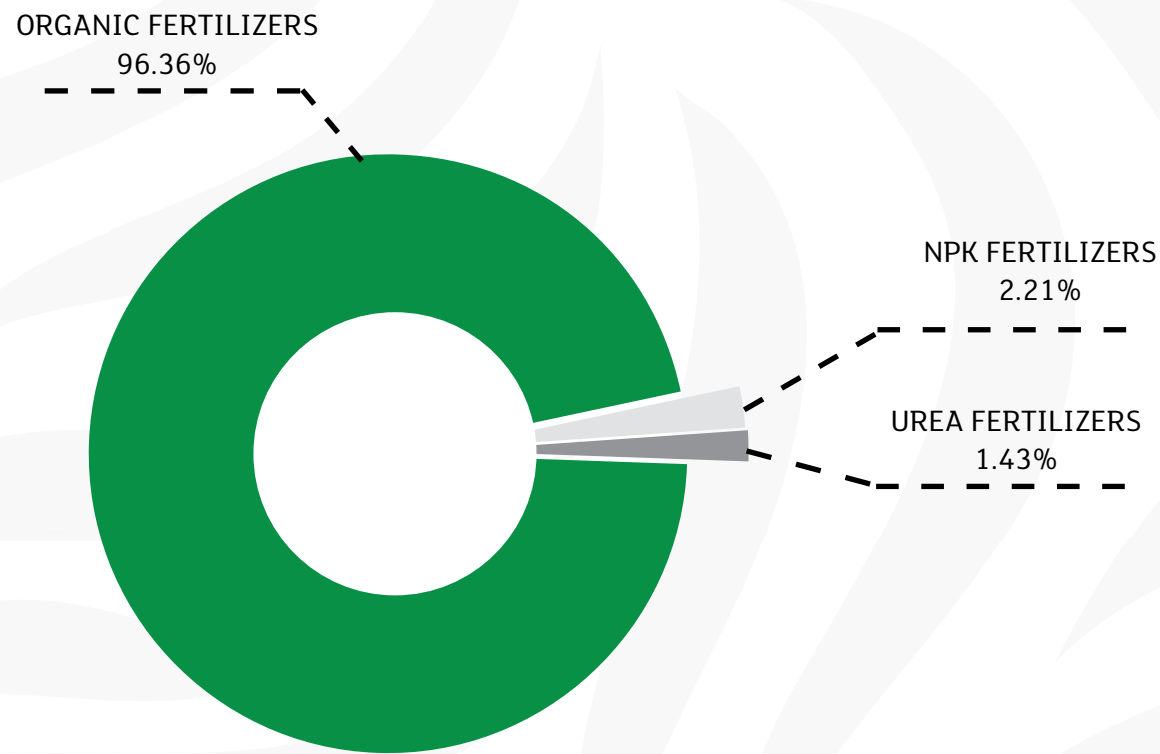


Figure 19. Breakdown of KFH Fertilizers Emissions

The primary use of fertilizers at KFH is for artificial basins for plants, given the absence of extensive landscapes. Consequently, the quantities of fertilizers used, and the corresponding emissions remain relatively low. However, the noteworthy aspect is the significant contribution from bank branches, as highlighted in Figure 20. In contrast, the four offices collectively contribute only 5.69% to the total fertilizer emissions. Notably, the contribution from offices is nearly uniform, reflecting the use of very similar quantities for each of them.

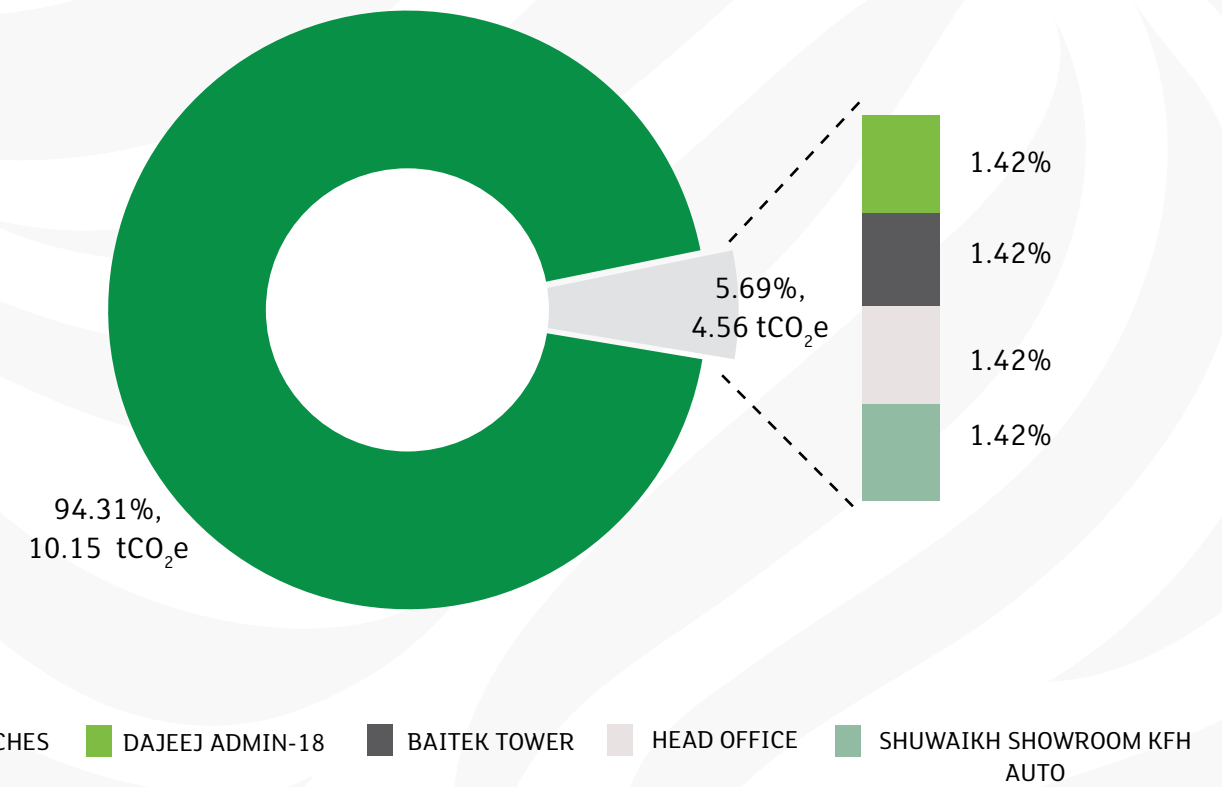


Figure 20. Fertilizers Emissions of KFH Classified per Boundary Type



FIRE SUPPRESSANTS

Various types of fire suppressants are available, with KFH utilizing CO₂ and powder fire suppressants. Notably, in 2022, no accidents necessitated the use of fire suppressants. Consequently, the assessment revealed that emissions resulted solely from natural unintentional leaks of equipment.

According to the assessment, the emissions released from CO₂ fire suppressants are minimal, totaling only 0.02 tCO₂e, making them negligible. However, the four offices play a significant role, contributing 33.40% to the overall emissions in this category. The major contributors are the head office and Dajeej-Admin 18, as clarified in Figure 21. This prominence is attributed to their expansive areas, leading to the frequent use of portable fire suppressant equipment. It's important to note that although Baitak Tower has a large area, relevant data was not provided, and therefore, it is not considered in the emissions from fire suppressants.

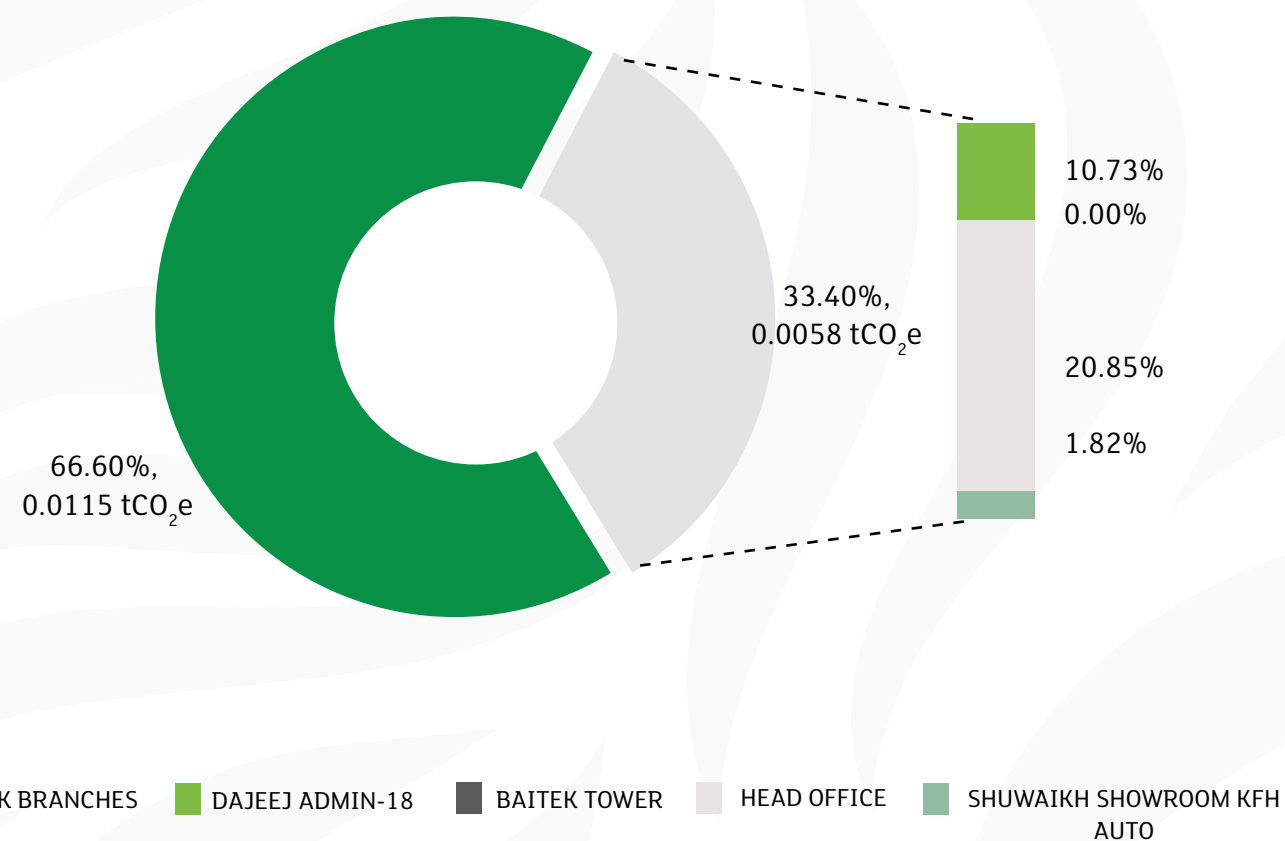


Figure 21. Fire Suppressants Emissions of KFH Classified per Boundary Type

SCOPE 2: INDIRECT EMISSIONS

The nature of KFH activities highlights that Scope 2 is the primary contributor to emissions in 2022, accounting for 80.45% of the total emissions, totaling 33,797.525 tCO₂e. These emissions are distributed among bank branches and the four major offices. The significant areas of these four offices, serving as headquarters and core operational administrative offices, necessitate substantial electricity consumption. The assessment reveals that these four offices collectively contribute 56.79% to the total Scope 2 emissions, amounting to 19,193.22 tCO₂e, as clarified in Figure 22.

Among the offices, Shuwaikh Showroom KFH Auto takes the lead, followed by the head office in the second position. However, it's important to note that there are estimates for the electricity consumption of these offices. The bills for the head office and Shuwaikh Showroom KFH Auto cover 10 and 6 months, respectively, and the remaining months were estimated based on the average monthly consumption for each office.

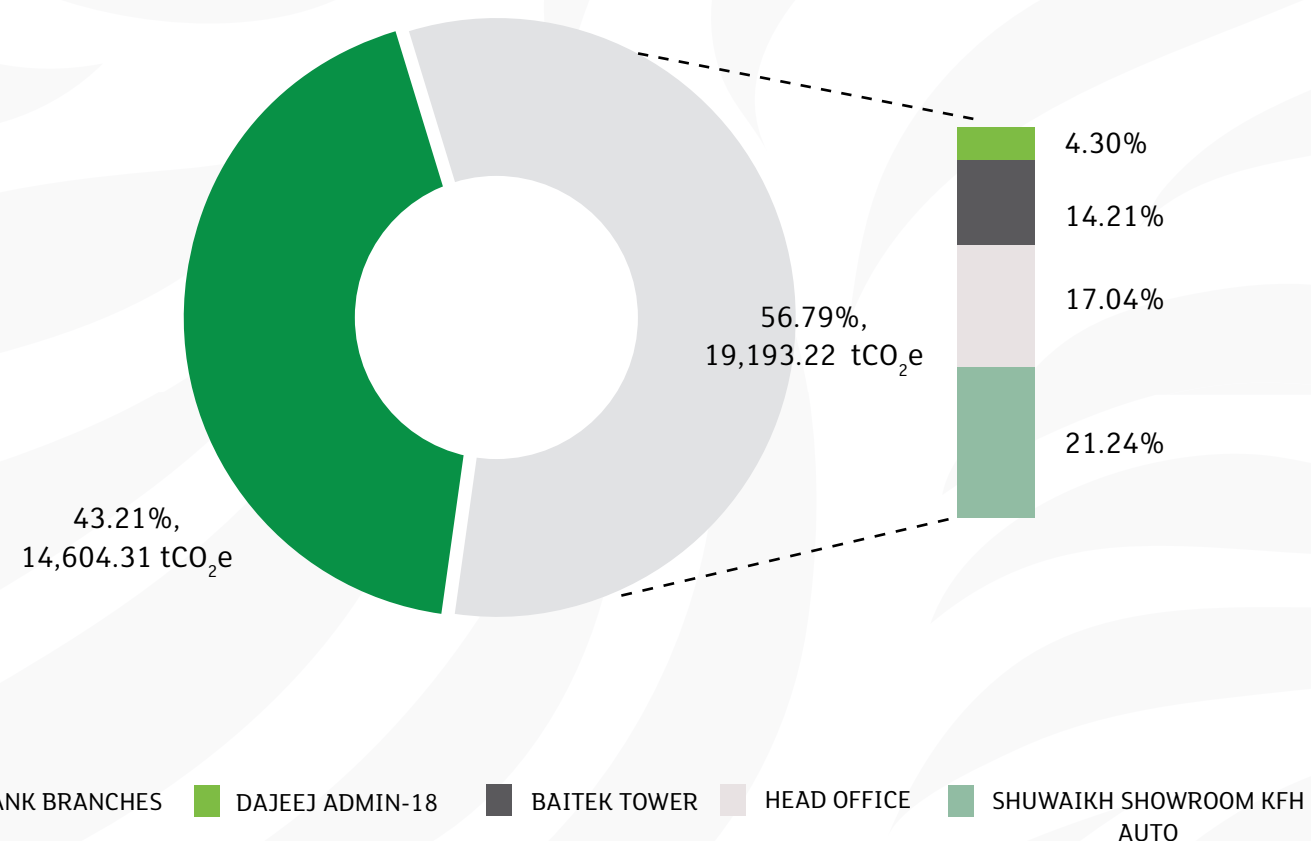


Figure 22. Scope 2 Emissions of KFH Classified per Boundary Type

Table 9 presents a further breakdown of the electricity consumption and corresponding emissions of the offices.

Table 9. Breakdown of Scope 2 Emissions per Offices

Office Name	Electricity Consumption (kWh)	Corresponding Emissions (tCO ₂ e)	Data Status
Dajeej Admin - 18	2,152,740	1,453.10	Electricity consumption for 8 months is provided, and the remaining months are estimated
Baitek Tower	7,115,520	4,802.98	All months data are provided
Head Office	8,532,000	5,759.10	Electricity consumption for 10 months is provided, and the remaining months are estimated
Shuwaikh Showroom KFH Auto	10,634,140	7,178.04	Electricity consumption for 6 months is provided, and the remaining months are estimated

On a governorate scale, Figure 23 reveals that Al Asimah takes the lead with 65.67% of Scope 2 emissions, followed by Farwanya governorate with 17.18%. This prominence is attributed to the inclusion of major offices, which contribute to more than half of the electricity emissions. However, this should not be the sole determining factor, as there are branches for which we estimated electricity consumption based on the worst-case scenario, assuming maximum electricity intensity (kWh/m²), as mentioned in the methodology section. The breakdown of the number of branches with actual or estimated electricity consumption is provided in Table 10.

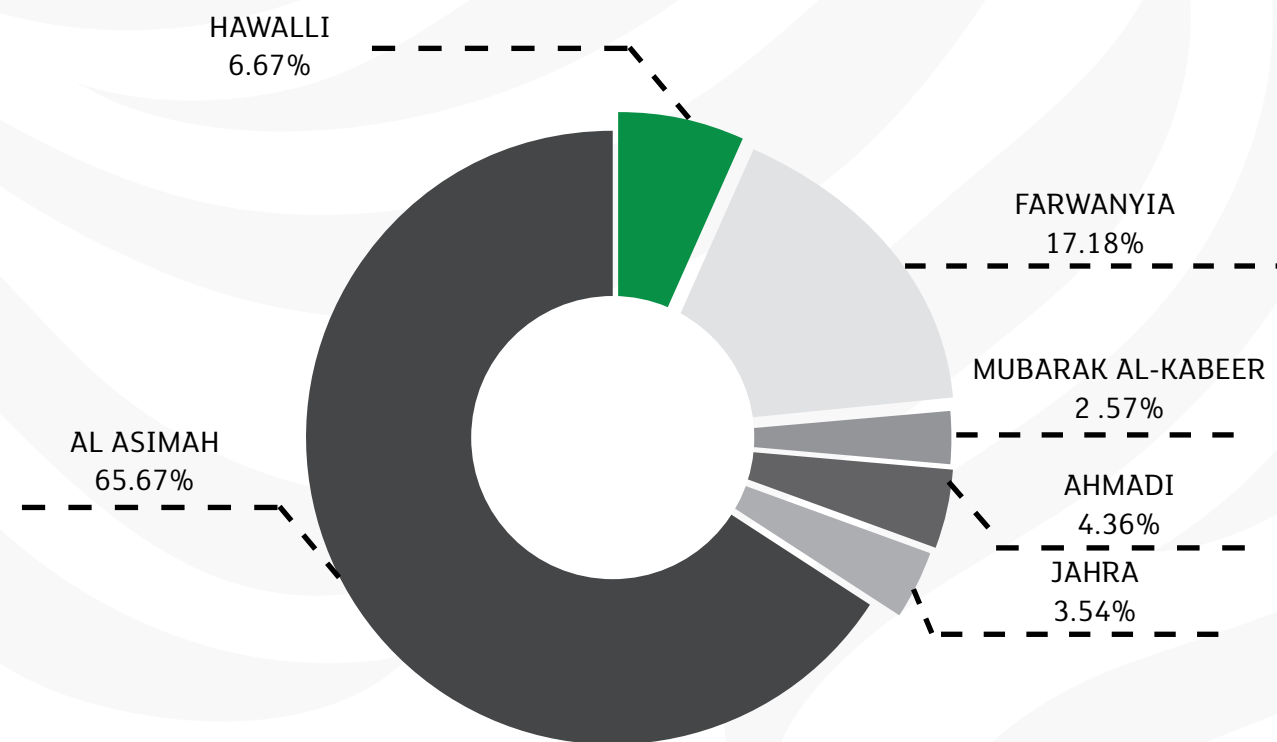


Figure 23. Scope 2 Emissions of KFH Classified per Governorate

While Table 10 demonstrates an improvement in electricity emissions in 2022 compared to the 2021 emissions, there are still 11 branches with 2,870.47 tCO₂e that could be further improved with the receipt of precise data.

Table 10. Data Status of KFH Electricity Consumption

Classification	No. of branches and offices	Electricity Consumption (kWh)	Corresponding Emissions (tCO ₂ e)
Branches and offices with actual provided electricity consumption	44	45,817,861.00	30,927.06
Branches and offices with fully estimated electricity consumption ¹²	11	4,252,546.87	2,870.47
Total	55	50,070,407.87	33,797.53

¹²Minor estimations for specific months is not considered in this category.

06

DATA GAPS AND DATA QUALITY COMPARISON OF KFH GHGS INVENTORY





Assessing data quality is crucial in GHG reporting to ensure accurate and reliable information aligned with reporting principles. Inaccurate data can lead to incorrect decisions regarding emissions reduction. As this report is the second GHGs Inventory for KFH, not the first, the adopted approach in this section is to compare data gaps in the 2021 GHGs inventory with those in the 2022 GHGs inventory to identify resolved issues and those that remain, facilitating better decision-making.

In 2021, major data gaps were classified into four categories, as clarified below and in Figure 24:

THE FIRST CATEGORY

is related to inconsistencies in branch naming across the received data files. This resulted in confusion that could lead to double counting and inappropriate and incomplete coverage within the selected study boundaries.

THE THIRD CATEGORY

involves inconsistencies in receiving institutional data, such as areas and the number of employees. Contradictions in this type of data can lead to misleading benchmarking.

THE SECOND CATEGORY

is related to data repetition across branches, indicating a lack of filed data. For instance, the received data for stationary combustion, refrigerants, and sometimes fertilizers remained constant across months and multiple branches. Without addressing this issue, the carbon footprint's meaningfulness is compromised, as the primary objective of measuring these emissions is to identify hotspots for mitigation and reduction.

THE FOURTH CATEGORY

is related to the absence of electricity consumption data for several branches; 25 out of 58 branches lack electricity consumption data and require estimation for representative calculations. Given the nature of banking activities, this issue is critical because electricity consumption is a major contributor to emissions for administrative buildings. Without accurately recording the required values, the GHGs inventory will lack representation and meaning, making reductions challenging and invaluable.

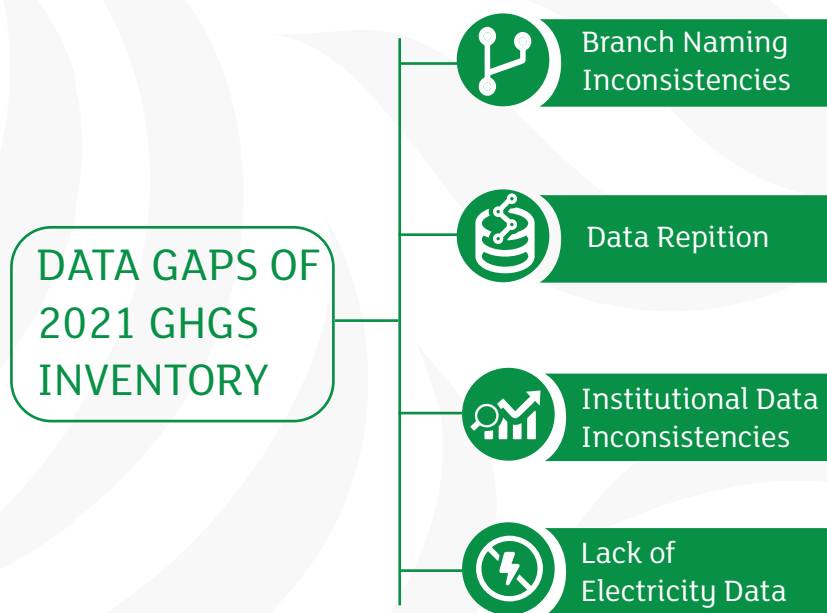


Figure 24. Data Gaps of KFH CF Assessment for 2021

While conducting the CF assessment of KFH for the reporting year of 2022, the primary focus was on addressing the previous data gaps identified in the 2021 data. In the 2022 assessment, the first and third issues, namely branch naming inconsistencies and institutional data inconsistencies, were largely resolved through effective management of data collection files followed by illustrative meetings.

On the other hand, the second-category issue of data repetition remains unresolved. The received data still contains multiple instances of repeated data across months and branches or offices, primarily in the stationary combustion and refrigerants categories, due to weak filing and data management practices.

Regarding the fourth category, the lack of electricity data, there has been partial resolution. KFH provided actual data for 14 out of the 25 branches that were fully estimated in the 2021 GHGs inventory. This leaves 11 branches to be estimated in terms of consumption instead of the initial 25 branches.

To further elaborate on these findings, Table 11 compares the quality and gaps of the received data for 2021 with respect to the 2022 GHGs inventory in more detail.

Table 11. Data Gaps and Data Quality Comparison of GHGs Inventory of KFH

Scope	Emission Category	Source	Data Quality (2021)	Received Data Gaps (2021)	Data Quality (2022)	Received Data Gaps (2022)	Recommendations
Scope 1	Stationary Fuel Combustion	Diesel Oil		<ul style="list-style-type: none"> The received data of diesel consumption was on a yearly basis and estimated to be evenly distributed across months. The received data of consumption was estimated from KFH side along most of the offices. Lack of consistency in office names and, consequently, their consumption patterns. 		<ul style="list-style-type: none"> Same as the gaps observed in 2021, except for the issue of inconsistency in branch naming. 	<ul style="list-style-type: none"> To ensure completeness and accuracy, diesel consumption should be recorded monthly per each generator without laying on assumptions. To ensure consistency, data should be automatically recorded through a data management system or collected according to standardized procedures, while also ensuring consistent naming of branches to prevent any confusion.
	Mobile Sources	Motor Gasoline Consumption		<ul style="list-style-type: none"> The received data for gasoline consumption was on a monthly basis but without recording the travelled distances or consumed fuel allocated per each office. Lack of consistency in office names and, consequently, their consumption patterns. 		<ul style="list-style-type: none"> Same as the gaps observed in 2021, except for the issue of inconsistency in branch naming. 	<ul style="list-style-type: none"> To ensure completeness and accuracy, consumed gasoline per each trip allocated to each branch is required. To ensure consistency, data should be recorded automatically through a data management system or by following standardized collection procedures.

Scope	Emission Category	Source	Data Quality (2021)	Received Data Gaps (2021)	Data Quality (2022)	Received Data Gaps (2022)	Recommendations
Scope 1	Fugitive Emissions	Refrigerants (R- 22, R410A)		<ul style="list-style-type: none"> The received data of refrigerants consumption was on a yearly basis and estimated from KFH side to be evenly distributed across months. The received data of consumption was estimated from KFH side along most of offices. Lack of consistency in office names and, consequently, their consumption patterns. 		<ul style="list-style-type: none"> Same as the gaps observed in 2021, except for the issue of inconsistency in branch naming. 	<ul style="list-style-type: none"> To ensure completeness, transparency, and accuracy, refrigerants recharge should be recorded exactly per each recharging time without estimates.¹³ Additionally, the no. of equipment and the recharge per each equipment is required. To ensure consistency, data should be automatically recorded through a data management system or collected according to standardized procedures, while also ensuring consistent naming of branches to prevent any confusion.
		Mineral Fertilizers (NPK)		<ul style="list-style-type: none"> Lack of consistency in office names and, consequently, their consumption patterns. 		<ul style="list-style-type: none"> No data gaps 	<ul style="list-style-type: none"> To ensure consistency, data should be automatically recorded through a data management system or collected according to standardized procedures, while also ensuring consistent naming of branches to prevent any confusion.
		Mineral Fertilizers (Urea)		<ul style="list-style-type: none"> Lack of consistency in office names and, consequently, their consumption patterns. 			
		Organic Fertilizers		<ul style="list-style-type: none"> The received data of organic fertilizers lack the type of fertilizers and their nitrogen composition. 		<ul style="list-style-type: none"> Same as the gaps observed in 2021, except for the issue of inconsistency in branch naming. 	<ul style="list-style-type: none"> To ensure completeness, the type of organic fertilizers and nitrogen composition should be recorded.

Scope	Emission Category	Source	Data Quality (2021)	Received Data Gaps (2021)	Data Quality (2022)	Received Data Gaps (2022)	Recommendations
Scope 1	Fugitive Emissions			<ul style="list-style-type: none"> Lack of consistency in office names and, consequently, their consumption patterns. 			<ul style="list-style-type: none"> To ensure consistency, data should be automatically recorded through a data management system or collected according to standardized procedures, while also ensuring consistent naming of branches to prevent any confusion.
		Fire Suppressants		<ul style="list-style-type: none"> No data gaps 		<ul style="list-style-type: none"> No data gaps 	<ul style="list-style-type: none"> If there is central firefighting system in any branch or office, it is recommended to be considered.
Scope 2	Electricity	Purchased Electricity		<ul style="list-style-type: none"> The received data was on a yearly basis. The received data lack the electricity consumption of 24 branches and one major office. Lack of consistency in office names and, consequently, their consumption patterns. 		<ul style="list-style-type: none"> The received data was on a yearly basis. The received data lack the electricity consumption of 11 branches. 	<ul style="list-style-type: none"> To ensure completeness and accuracy, it is necessary to install electricity meters in all branches, particularly the offices, for the monthly recording of electricity consumption. To ensure consistency and transparency, data should be automatically recorded through a data management system or collected according to standardized procedures, while also ensuring consistent naming of branches to prevent any confusion.

LEGEND

GOOD	SATISFACTORY	PARTIALLY SATISFACTORY	POOR
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¹³The received data contained estimated yearly recharge, which remained relatively constant across branches and included embedded assumptions by the KFH team.

To elevate data quality within the framework of KFH, it is advisable to resolve the aforementioned points outlined in the data quality matrix comparison. This involves refining data collection and management processes within KFH, organizing routine training sessions for staff members on CF assessment, and setting forth explicit guidelines for data reporting and validation. Furthermore, KFH should consider incorporating digital solutions, such as automated data management systems and analysis tools, to streamline the process, ensuring the accuracy and consistency of data across the organization. Through the implementation of these measures, KFH can enhance the reliability and integrity of its CF data, thereby facilitating more well-informed decision-making and bolstering the effectiveness of sustainability initiatives.



After calculating 2022 carbon footprint and enhancing the data quality for multiple missing branches and data points especially electricity consumption, 2021 carbon footprint was revisited to enhance the estimation approach adopted to deal with the lack of data. We fed the calculation sheet with the collected data and enhanced the statistical factors extracted from the data to estimate the missing data points, assuming that data follows normal distribution curve.

The results showed noticeable reduction in Scope 2 emissions (electricity consumption) due to getting more accurate data, near the real case, and reducing the CO₂e emissions for scope 2 by nearly 61%. So, the updated scope 2 value for 2021 carbon footprint will be 34,916.006 tCO₂e/year compared with 90,226.75 tCO₂e/year, previously.

After revisiting the calculations of 2021, the updated GHG emissions values for all the inventory are reflected in the following Table 12 showing a reduction in the emission estimation by 57% in total emissions, from 97,585.74 tCO₂e/year to 42,275.00 tCO₂e/year in 2021. Additionally, the data improvements made in 2022 resulted in a decrease in the GHG inventory from 42,275 tCO₂e in 2021 to 42,012.65 tCO₂e in 2022, which will be further enhanced in upcoming years.

Table 12. GHG emissions summary for revised 2021 and 2022

Scope	GHG Emission Sources	GHG Emissions (tCO ₂ e/year), 2021	GHG Emissions (tCO ₂ e/year), 2022	Contribution to Total GHG Emissions, 2021	Contribution to Total GHG Emissions, 2022
Scope 1	Stationary Combustion Sources	60.1	48.399	0.14%	0.12%
	Mobile Sources	73.89	91.198	0.17%	0.22%
	ACs and Refrigerants	7,209.68	8,060.79	17.05%	19.19%
	Fertilizers	15.32	14.713	0.03%	0.04%
	Fire Suppressants	-	0.017	-	0.00%
Scope 2	Purchased Electricity	34,916.01	33,797.53	82.59%	80.45%
Total GHG Emissions		42,275.00	42,012.65	100%	100%

07

FORWARD APPROACH



FORWARD APPROACH

The primary objective of quantifying GHGs inventory is to pinpoint hotspots, the major contributors to GHG emissions, and subsequently implement reduction and mitigation strategies. To achieve this, establishing the base year is essential, along with completing the GHG inventory.

In the realm of GHG accounting and reporting, the “base year” signifies a specific reference year chosen by an organization as the starting point for measuring and assessing its GHGs emissions performance. This base year serves as a crucial benchmark against which subsequent emissions data are compared to evaluate progress in emissions reduction or sustainability goals.

To establish a correct base year, the data must be both complete and accurate to enable effective benchmarking. In the case of KFH, the 2021 GHGs inventory cannot be considered a base year due to the data gaps mentioned earlier. Therefore, resolving these data gaps is a prerequisite to establishing a base year and subsequently developing meaningful mitigation and reduction strategies for the GHGs inventory.

A common underlying cause for the previously mentioned data gaps is the absence of a GHGs Information Management System (IMS). Consequently, the most prioritized recommendation for KFH is to establish this system, which comprises four major phases, as elucidated in Figure 25.

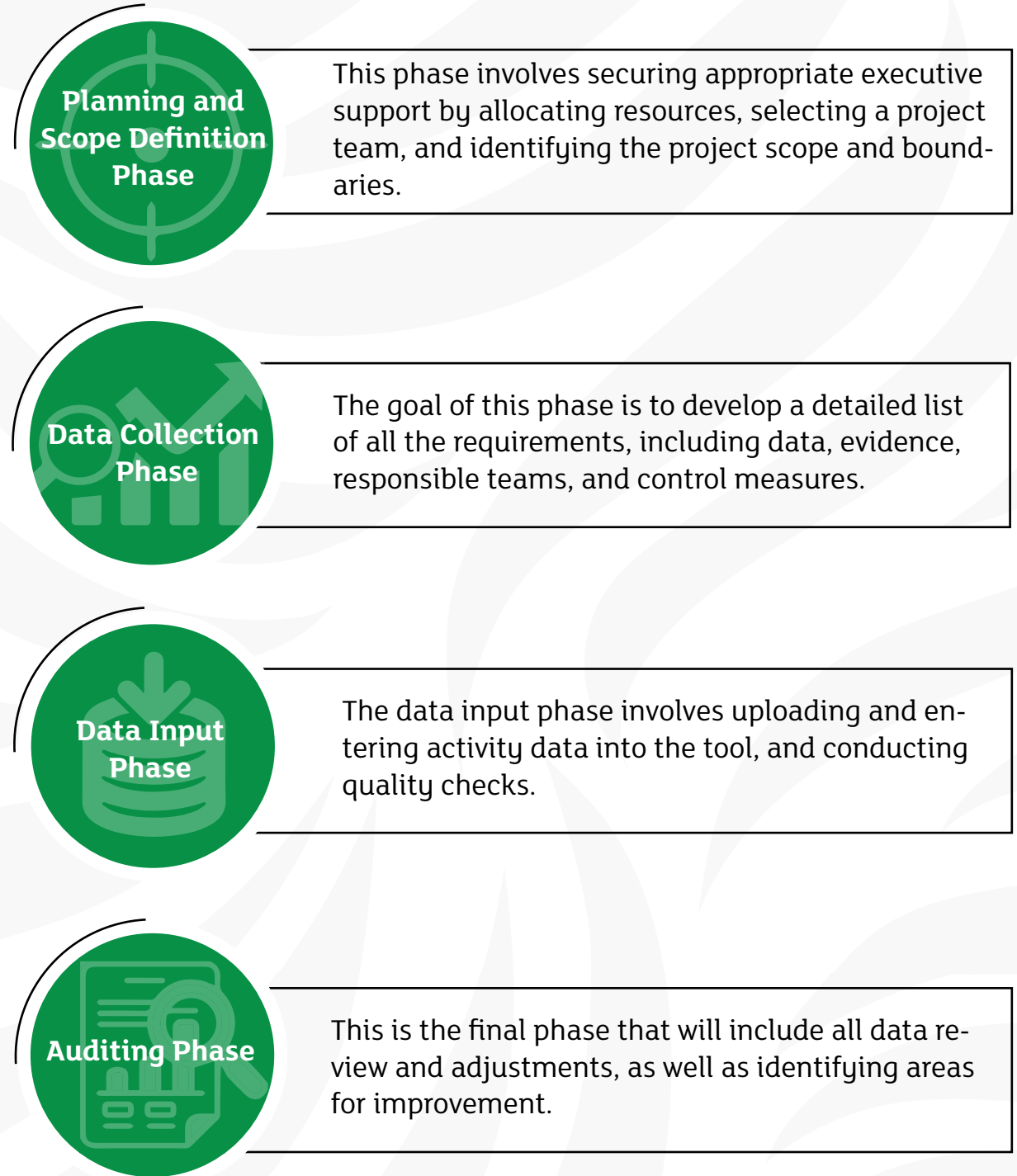
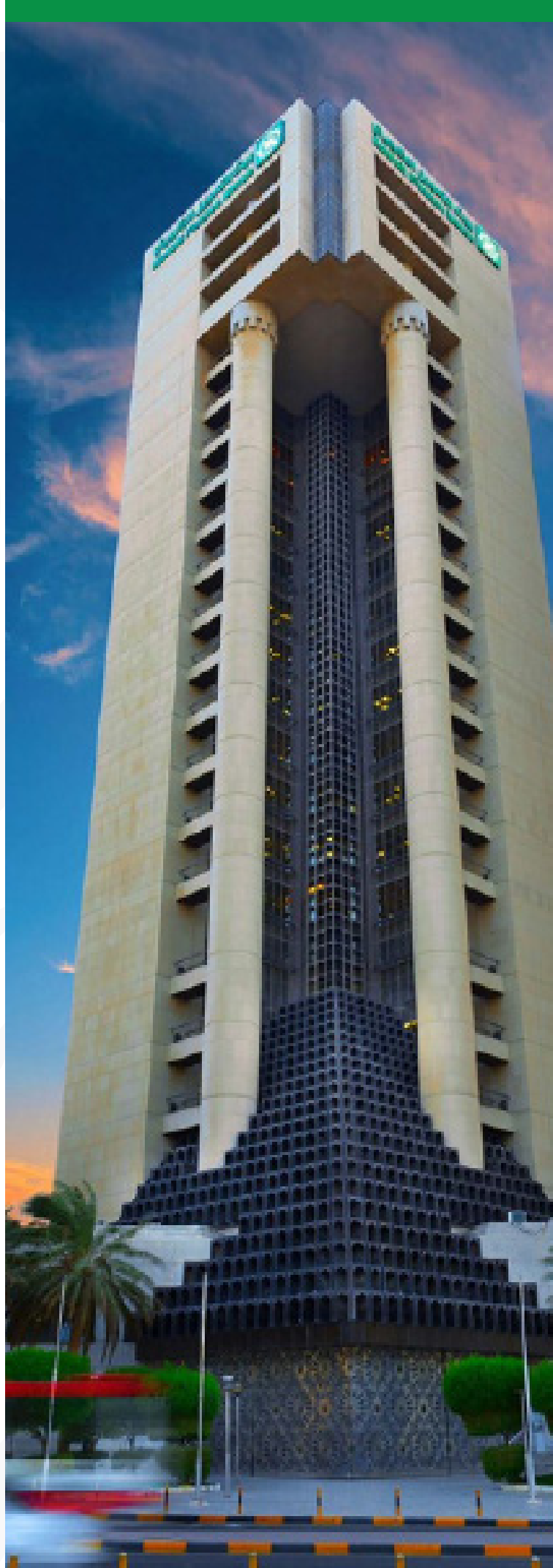


Figure 25. Phases of GHGs Information Management System (IMS)

After implementing the IMS, the second prioritized recommendation is to broaden the scope and encompass Scope 3 emissions. This expansion is crucial for creating a more representative GHGs inventory, laying the foundation for the development of robust reduction methodologies. Without the establishment of the IMS, any other reduction recommendations may lack the necessary foundation for effective implementation. An overview of the GHGs IMS scheme is provided in Figure 26 and Figure 27.

INFORMATION MANAGEMENT SYSTEM (IMS) DEFINITION

A GHG Information Management System is a structured and organized framework designed to collect, store, process, and manage data related to an organization's GHG emissions.

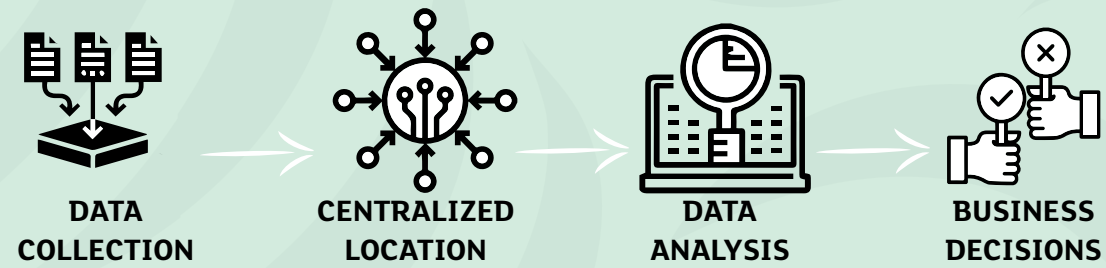


Figure 26. Overview about the recommended GHGs IMS

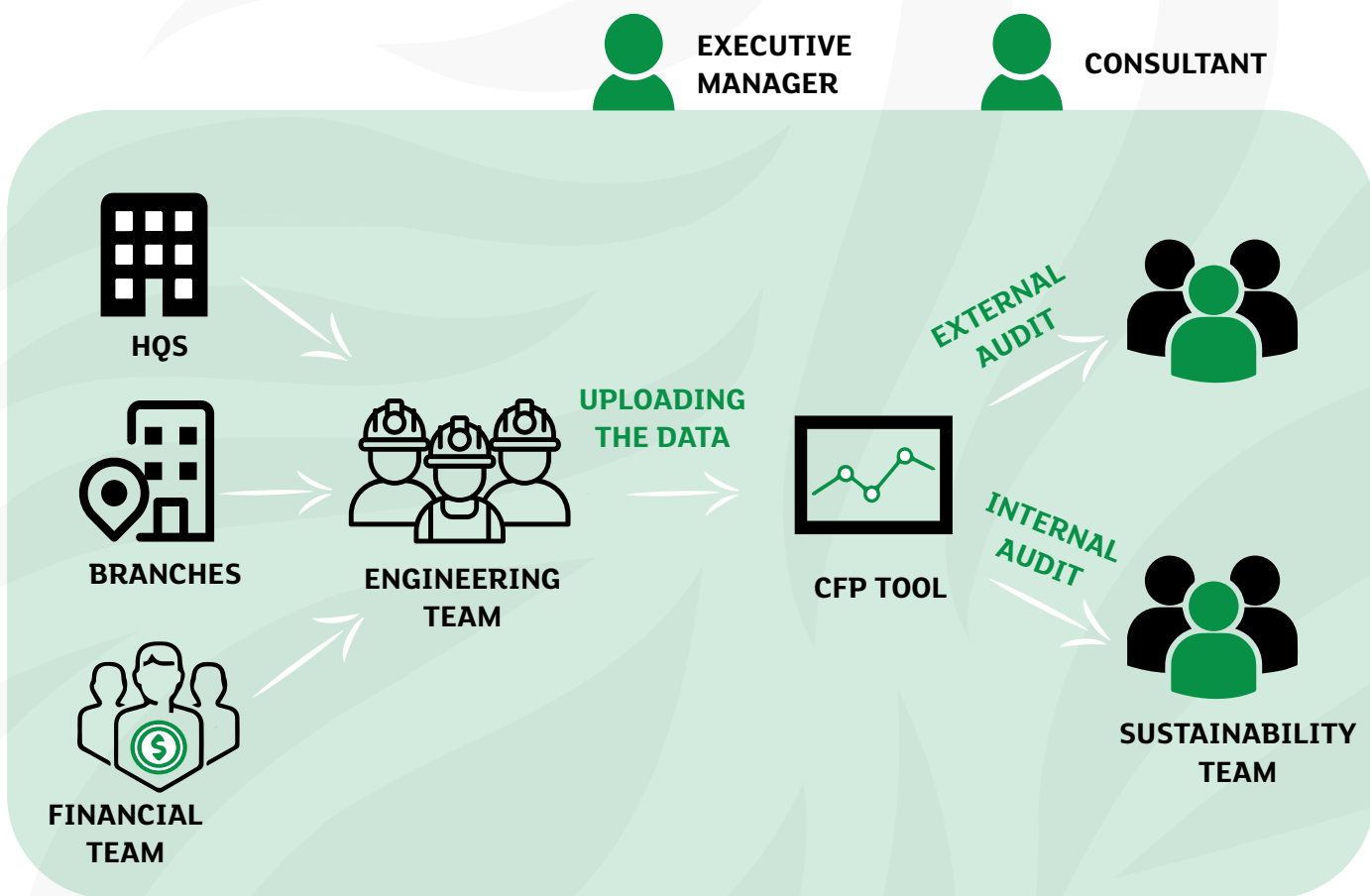


Figure 27. GHGs IMS scheme



08

CONCLUSION



CONCLUSION

In its comprehensive CF report, KFH, a leading Islamic financial institution, reaffirms its steadfast commitment to environmental conservation. This assessment not only underscores KFH's dedication to SD but also yields valuable insights guiding future efforts in emission reduction. Additionally, the report provides a nuanced understanding of the organization's environmental impact, enhancing its reputation among stakeholders. KFH can leverage this analysis to benchmark its performance against peers, fostering competition and pinpointing areas for improvement in sustainability practices.

Within this extensive assessment, KFH has exemplified transparency and accountability by incorporating all Kuwaiti branches, and data from January 1st to December 31st, 2022. The operational control approach ensures a comprehensive understanding of KFH's CF. The results reveal that total inventory emissions from all Kuwaiti premises amount to 42,012.65 tCO₂e, with Scope 1 (direct emissions) constituting 19.55% and Scope 2 (indirect emissions) making up 80.45%.

The analysis highlights electricity consumption as the primary contributor to emissions, followed by emissions from air conditioners and refrigerant leaks. This underscores the importance of addressing energy consumption and implementing sustainable practices to mitigate KFH's environmental impact.

A granular analysis of emissions from each branch and office identifies Baitek Tower, Shuwaikh Showroom KFH Auto, and the



Head office as primary contributors to GHG emissions within KFH. These facilities warrant focused attention and dedicated efforts for effective environmental footprint reduction. Conversely, emissions from Jahra governorate facilities have a negligible impact on KFH's overall emissions profile. However, this study is limited to Scopes 1 and 2 emissions; a comprehensive understanding would necessitate accounting for emissions across all three Scopes.

KFH acknowledges the significance of addressing emissions and remains committed to implementing sustainable practices across its operations, exemplifying its dedication to environmental stewardship. A comparison of data gaps between the 2021 and 2022 GHG inventories reveals some improvements. However, major gaps

persist, necessitating the immediate development of a GHGs Information Management System (IMS) for a meaningful GHG inventory to drive mitigation and reduction strategies.

In the pursuit of environmental responsibility, KFH recognizes the importance of enhancing its data collection process and GHG inventory reporting. These improvements are pivotal for better understanding KFH's CF and identifying specific areas where environmental impact can be reduced. By implementing the recommended enhancements, KFH aims to gather comprehensive and reliable data, empowering them to set targets for emission reduction and track progress towards environmental sustainability goals.

In conclusion, the CF Report equips KFH, a dedicated financial institution, with valuable information to unlock insights and shape tailored mitigation plans for future years, leading to GHG reduction. These plans serve as a roadmap to comprehensively quantify the GHG inventory, reducing carbon emissions and advancing sustainable development. Through these efforts, KFH actively limits its environmental impact, aligning with global initiatives to combat climate change and demonstrating its unwavering commitment to environmental stewardship as a responsible financial institution.

09

APPENDICES



APPENDIX I: UNITS AND EMISSION FACTORS

These are quantitative measures of data on the activity level that generates greenhouse emissions. For KFH, some data were primary, such as fuel consumption and electricity, while others were secondary. This section describes the level or resolution at which the data was collected during the base year. It is highly recommended that the data be primary and collected monthly to help identify any anomalies and hotspots.

Scope	Emission Source	Unit	Resolution
Scope 1	Diesel	L	Yearly: Wholesome for each premises
	Motor Gasoline Diesel	L	Monthly: By vehicle/mobile equipment
	Refrigerant Charge	kg	Yearly: Assumed based on refrigerant equipment technical specifications
	Fertilizer	kg	Yearly: By fertilizer type
Scope 2	Purchased Electricity	kWh	Monthly & Yearly: Wholesome for each premises

EMISSION FACTORS (EFs)

EFs are coefficients that specify the quantity of greenhouse gases emitted or sequestered per unit of greenhouse gas-producing activity. The following table represents the EFs used in the base year. It is highly recommended to revisit the EFs in the upcoming years in case there are any changes in the databases or if the activity data has changed.

Emission Source	Value	Unit	Reference
Diesel in Generators	2.71	kg CO ₂ e/l	IPPC Guidelines
Motor Gasoline	2.57	kg CO ₂ e/l	IPPC Guidelines
Refrigerant Charge (R-22)	1760	kg CO ₂ e/kg R22	IPCC Sixth Assessment Report
Refrigerant Charge (R-410a)	1923.5	kg CO ₂ e/kg R410a	IPCC Sixth Assessment Report
Purchased Electricity	0.3676	Kg CO ₂ e/ kWh	Annual Report 2021 of Egyptian Electricity Holding Company
NPK Fertilizer	4.164	kg CO ₂ e/kg	IPPC Guidelines
Urea Fertilizer	0.733	kg CO ₂ e/kg	IPPC Guidelines

APPENDIX II: INSTITUTIONAL DATA

Governorate	Branch Name	Headcount	Area (m ²)
Al Asimah	Head Office	529	19059
	Rawdah	15	300
	Shamiya	14	300
	Shuwaikh (Branch and Data Center)	11	444
	Shuwaikh Showroom KFH Auto	417	40100
	Sulaibkhat	17	400
	Adailiyah	9	300
	Faiha	21	600
	Qadesiya	14	300
	Qairawan	14	837
	Nuzha	14	300
	Yarmouk	8	408
	Baitek Tower	906	71625
	Sharq	11	270
	Abdullah Al Salem	7	300
	Ghernata	8	300
	Qurtoba	16	453
	Kaifan	15	555
	Muthana	8	338
Hawalli	Ministries Complex	7	89.06
	Zahra	9	300
	Salwa	18	400
	Salmiya	17	300
	Wataniya Complex	13	365
	Hateen	19	400
	Hawally - Bahar Complex	9	170
	Hawally - Beruit Complex	21	580
	Shaab	8	248
	Mubarak Al Abdullah	17	766

Governorate	Branch Name	Headcount	Area (m ²)
Farwanyia	Avenues	20	91
	Andalus	21	400
	Rehab	18	300
	Dajeej Admin - 17	9	8233.4
	Dajeej Admin - 18	192	10735
	Ardiya	20	300
	Airport	26	51.82
	Jileeb AlShuyoukh	8	482
	Khaitan	13	300
	Sabah Al Naser	19	400
Mubarak Al-Kabeer	Abdullah Al Mubarak	16	400
	Farwanya	25	640
	Sabah Al Salem	21	300
Ahmadi	Sabhan	16	325
	Mubarak Al Kabeer	25	400
	Ahmadi	15	400
	Subahiya	23	400
	Daher	15	300
	Aqailah	15	307
	Fintas	18	563
	Manshar	10	310
Jahra	Fahad Al Ahmad	22	300
	Jahra Commercial (Makhyal)	23	417.54
	Sulaibiya	4	73.2
	Qassar	22	1734
	Saad Al Abdullah	20	870
TOTAL		2828	169,840

APPENDIX III: GHGS INVENTORY

Governorate	Branch Name	SCOPE 1		SCOPE 2		TOTALS	
		Stationary Combustion Emissions (tCO ₂ e)	Mobile Combustion Emissions (tCO ₂ e)	Fugitive Emissions (tCO ₂ e)	Electricity Emissions (tCO ₂ e)	Total Emissions (tCO ₂ e/yr)	Percentage of Total Emissions
Al Asimah	Head Office	1.11	23.60	118.59	5759.10	5902.41	14.05%
	Rawdah	0.81	0.00	550.53	264.76	816.10	1.94%
	Shamiya	0.98	0.00	114.58	202.18	317.73	0.76%
	Shuwaikh (Branch and Data Center)	2.44	0.00	114.58	960.00	1077.02	2.56%
	Shuwaikh Showroom KFH Auto	2.44	18.61	114.64	7178.04	7313.73	17.41%
	Sulaibkhat	1.11	0.00	114.58	305.93	421.61	1.00%
	Adailiyah	1.11	0.00	550.93	228.91	780.95	1.86%
	Faiha	0.98	0.00	114.65	328.15	443.77	1.06%
	Qadesiya	1.11	0.00	115.38	203.86	320.35	0.76%
	Qairawan	0.00	0.00	114.58	287.27	401.84	0.96%
	Nuzha	1.11	0.00	114.58	52.98	168.66	0.40%
	Yarmouk	0.81	0.00	114.58	184.15	299.54	0.71%
	Baitek Tower	1.11	40.42	115.02	4802.98	4959.50	11.80%
	Sharq	0.00	0.00	114.58	202.67	317.25	0.76%
	Abdullah Al Salem	1.11	0.00	114.98	55.30	171.38	0.41%
	Ghernata	1.11	0.00	114.58	252.92	368.60	0.88%
	Qurtoba	0.00	0.00	114.58	340.04	454.61	1.08%
	Kaifan	1.11	0.00	114.98	266.19	382.27	0.91%
	Muthana	0.00	0.00	114.58	253.71	368.29	0.88%
	Ministries Complex	0.00	0.00	125.22	66.85	192.07	0.46%
Hawalli	Zahra	1.11	0.00	115.38	274.10	390.59	0.93%
	Salwa	2.44	0.00	114.98	189.64	307.06	0.73%
	Salmiya	1.11	0.00	114.58	309.20	424.89	1.01%
	Wataniya Complex	0.00	0.00	114.58	195.75	310.33	0.74%
	Hateen	1.04	0.00	115.38	259.54	375.96	0.89%

Governorate	Branch Name	Stationary Combustion Emissions (tCO ₂ e)	Mobile Combustion Emissions (tCO ₂ e)	Fugitive Emissions (tCO ₂ e)	Electricity Emissions (tCO ₂ e)	Total Emissions (tCO ₂ e/yr)	Percentage of Total Emissions
Hawalli	Hawally - Bahar Complex	0.00	0.00	114.58	72.90	187.48	0.45%
	Hawally - Beruit Complex	1.11	0.00	125.22	435.37	561.69	1.34%
	Shaab	2.44	0.00	114.75	223.86	341.04	0.81%
	Mubarak Al Abdullah	2.44	0.00	115.38	295.06	412.87	0.98%
				2828			
Farwanyaia	Avenues	0.00	0.00	114.98	117.71	232.69	0.55%
	Andalus	0.98	0.00	114.58	278.59	394.14	0.94%
	Rehab	1.11	0.00	551.33	240.98	793.41	1.89%
	Dajeej Admin - 17	1.11	0.00	114.61	1859.08	1974.79	4.70%
	Dajeej Admin - 18	0.09	8.57	114.62	1453.10	1576.39	3.75%
	Ardiya	1.11	0.00	114.59	338.92	454.61	1.08%
	Airport	0.00	0.00	114.58	38.90	153.47	0.37%
	Jileeb AlShuyoukh	0.00	0.00	114.58	361.80	476.38	1.13%
	Khaitan	0.98	0.00	114.98	372.13	488.09	1.16%
	Sabah Al Naser	1.11	0.00	114.58	390.85	506.53	1.21%
	Abdullah Al Mubarak	1.11	0.00	551.73	102.75	655.59	1.56%
	Farwanya	0.00	0.00	114.75	253.00	367.75	0.88%
	Mubarak Al-Kabeer	Sabah Al Salem	1.11	0.00	114.58	296.77	412.45
Sabhan		1.11	0.00	114.58	313.54	429.23	1.02%
Mubarak Al Kabeer		1.11	0.00	114.58	258.38	374.07	0.89%
Ahmadi	Ahmadi	1.11	0.00	109.39	223.20	333.70	0.79%
	Subahiya	1.11	0.00	115.38	320.22	436.70	1.04%
	Daher	0.00	0.00	114.58	95.26	209.83	0.50%
	Aqailah	0.00	0.00	114.58	230.44	345.02	0.82%
	Fintas	1.11	0.00	114.58	95.71	211.40	0.50%
	Manshar	0.00	0.00	114.58	232.70	347.27	0.83%

Governorate	Branch Name	Stationary Combustion Emissions (tCO ₂ e)	Mobile Combustion Emissions (tCO ₂ e)	Fugitive Emissions (tCO ₂ e)	Electricity Emissions (tCO ₂ e)	Total Emissions (tCO ₂ e/yr)	Percentage of Total Emissions
Ahmadi	Fahad Al Ahmad	1.11	0.00	114.59	275.62	391.31	0.93%
Jahra	Jahra Commercial (Makhyal)	1.11	0.00	114.58	152.62	268.30	0.64%
	Sulaibiya	0.00	0.00	114.58	54.95	169.52	0.40%
	Qassar	0.81	0.00	114.98	335.87	451.66	1.08%
	Saad Al Abdullah	1.11	0.00	114.58	653.05	768.73	1.83%
TOTAL		48		8,076	33,798	42,013	100%



10

LIMITED ASSURANCE STATEMENT



LIMITED ASSURANCE STATEMENT

DCarbon is a leading sustainability, environmental, and climate change consultancy based in Egypt and registered under Egyptian law no—159 for the year 1981 and its executive regulation. DCarbon assists public and private organizations in understanding and addressing their economic, environmental, and social impact. DCarbon services cover a wide range of activities covering consultations, training, capacity building, reporting, digital solutions, communication, and assurance services to public and private corporations, international and local organizations, governmental authorities, and civil society organizations in the MENA, GCC, EU, and the USA. DCarbon is working with numerous international partners, a GRI-certified training partner in Egypt, MENA, and the Arab States, TCFD, SASB, and EPD supporter.

DCarbon was engaged by Kuwait Finance House (KFH) to perform a Carbon Footprint study for all its operations covering the mandatory scopes (Scope 1, direct emissions generated from the onsite GHG generating activities; and Scope 2, indirect emissions arising from electricity purchase) appertaining to the bank’s operational activities in all its entities all over Kuwait during the reporting period from January 1, 2022, to December 31, 2022.

As KFH’s consultant, we were asked to assist the bank in estimating its GHG emissions from all its direct and indirect activities based on World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD), GHG Protocol Corporate Accounting and Reporting Standard (Scope 1 and 2), and in accordance with ISO Standard 14064-1:2006: “Greenhouse Gases. Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals”.

The following procedure describes the steps undertaken to complete the estimations of KFH’s carbon footprint emissions successfully:

- Choose Reporting period, Operational, and Organizational boundaries.
- Identified all projects and activities that took place during reporting periods.
- Prepared customized data collection sheets and collected relevant data from departments.
- Defined all assumptions and exclusions.
- Calculated GHG emissions under Scope 1 and 2.
- Assessed the data quality and identified hotspots; and
- Provided recommendations to improve the data collection process and reduce GHG emissions.

The quality assurance and quality control activities of provided data have been looped through multiple processes to ensure its integrity and accuracy as the following:

- All provided data by KFH’s team was reviewed, analyzed, and edited by our technical team;
- In the case of data discrepancies and outliers, direct calls and virtual meetings were convened to discuss the veracity of the data, and updated data was supplied upon request;
- Whenever the provided data was unclear, several requests were made for clarification and official receipts and
- Assumptions, data gaps, and exclusions were declared and justified.

The inventory was conducted by a multidisciplinary independent team, including researchers, for auditing environmental information and abiding by our values of integrity, confidentiality, professional competence, objectivity, and due attention.

- **Dr. Nasser Ayoub: Professor, Life Cycle Assessment Expert, and Senior Environmental Consultant Certified LCAP, GSAS-CGP;**
- **Asmaa El Maghraby: Environmental & Lifecycle Assessment Researcher.**

In conclusion, after thorough review, there is no evidence to suggest that the GHG emissions statement provided is inaccurate or does not fairly represent the GHG emissions data. It has been prepared in accordance with the WRI/WBCSD GHG Protocol Corporate Accounting and Reporting Standard (Scope 1 and 2) for the specified period and boundaries.

Nasser Ayoub, Ph.D.
Environmental & Lifecycle Assessment Expert,
Board Member Advisory & Report Auditor



Ehab Shalaby, Ph.D.
Chairman &CEO



This verification statement, including the opinion expressed herein, is provided to KFH and is solely for the benefit of KFH in accordance with the terms of our agreement.

**Keep it
green**

