

CARBON FOOTPRINT ASSESSMENT

REPORT *2025*



AURAK

الجامعة الأمريكية في رأس الخيمة
AMERICAN UNIVERSITY OF RAS AL KHAIMAH

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LIST OF ABBREVIATIONS

Abbreviation	Definition
AURAK	American University of Ras Al Khaimah
CO ₂	Carbon Dioxide
CH ₄	Methane
N ₂ O	Nitrous Oxide
HFCs	Hydrofluorocarbons
GHG	Greenhouse Gas
MTCO ₂ e	Metric Tonnes of Carbon Dioxide Equivalent
IPCC	Intergovernmental Panel on Climate Change
GWP	Global Warming Potential
GHG Protocol	Greenhouse Gas Protocol: Corporate Accounting and Reporting
Standard ISO 14064-1:2018	International Standard for Greenhouse Gas Accounting & Reporting
DEFRA	Department for Environment, Food and Rural Affairs
EPA	Environmental Protection Agency
UAE	United Arab Emirates
Net-Zero	Balance between greenhouse gas emissions produced and removed
Scope 1	Direct GHG emissions from owned or controlled sources
Scope 2	Indirect GHG emissions from purchased electricity
Scope 3	Other indirect GHG emissions from supply chain, waste, and transportation
PV	Photovoltaic (related to solar energy)
HVAC	Heating, Ventilation, and Air Conditioning
LEED	Leadership in Energy and Environmental Design (Green Building Certification)
Barjeel	Ras Al Khaimah Green Building Regulations
ECM	Energy Conservation Measures
GIA	Gross Internal Area
SDGs	Sustainable Development Goals
kWh	Kilowatt-hour (unit of electricity consumption)
tCO ₂ e/GJ	Tonnes of Carbon Dioxide Equivalent per Gigajoule



Message from the President

At the American University of Ras Al Khaimah, we are not merely responding to the global sustainability agenda. We are embracing our responsibility with clarity, purpose, and determination. This Carbon Footprint Assessment Report is therefore more than a technical exercise. It is a statement of intent and a reflection of our commitment to embed sustainability at the heart of our institutional journey.

The findings presented in this report offer a clear basis for action. They reflect meaningful progress in understanding and addressing our environmental impact, while also identifying the areas where greater focus, stronger discipline, and accelerated action are still required.

Sustainability is a central pillar of AURAK's Strategic Plan 2025–2028. It informs our priorities across campus operations, academic development, research, and community engagement. This alignment is important, because it ensures that sustainability is not treated as a standalone initiative, but as an integral part of our broader institutional transformation.

Our ambition is clear: we seek to advance decisively toward a lower-carbon campus in alignment with the UAE Net Zero 2050 vision. Achieving this ambitious goal will require more than good intentions. It will demand disciplined execution, innovation, and a genuine collective commitment across our university community. Sustainability must be visible not only in our facilities and systems, but also in our decisions, our practices, our partnerships, and our academic priorities.

As a university, our most enduring contribution lies in the people we educate. For this reason, we are equally committed to equipping our students with the knowledge, awareness, and sense of responsibility needed to lead sustainable transformation in their professions, their communities, and the wider world.

This is a moment for purposeful leadership. A moment to act with urgency, conviction, and responsibility. And a moment to ensure that AURAK continues to advance as an institution committed to meaningful and measurable progress in sustainability.

Prof. Bassam Alameddine

President – American University of Ras Al Khaimah



EXECUTIVE SUMMARY

The American University of Ras Al Khaimah (AURAK) is committed to advancing environmental sustainability through responsible campus operations, data-driven decision-making, and alignment with global best practices. As institutions of higher education play a pivotal role in shaping a sustainable future, AURAK continues to strengthen its environmental stewardship by systematically measuring and reducing its greenhouse gas (GHG) emissions.

This Carbon Footprint Assessment presents a comprehensive evaluation of AURAK's emissions for the period September 1, 2024, to August 31, 2025. The report has been prepared in accordance with internationally recognized standards, including the GHG Protocol, IPCC Guidelines, and ISO 14064-1:2018. It encompasses key greenhouse gases—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs)—reported in metric tonnes of carbon dioxide equivalent (MTCO₂e). Emission factors from IPCC and DEFRA (2022) were utilized to ensure accuracy, transparency, and global comparability.

Greenhouse Gas Emissions Profile

- Scope 1 Emissions (Direct Emissions): 493.65 MTCO₂e

Generated from diesel generators, university-owned vehicles, and refrigerants used in air-conditioning systems.

- Scope 2 Emissions (Indirect Energy Emissions): 3,981.10 MTCO₂e

Resulting from purchased electricity consumption across campus facilities.

- Scope 3 Emissions (Other Indirect Emissions): 283.65 MTCO₂e

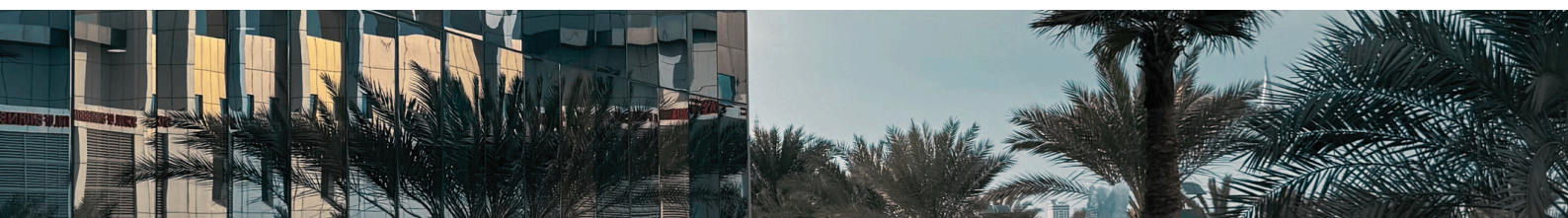
Derived from waste generation, water consumption, and wastewater treatment.

The combined Scope 1 and Scope 2 emissions total 4,474.75 MTCO₂e, reflecting a significant reduction from the baseline of 6,617.97 MTCO₂e in the 2023–2024 reporting year. This achievement demonstrates AURAK's commitment to energy efficiency, operational excellence, and sustainable resource management.

To ensure meaningful benchmarking and comparability, emissions were normalized using AURAK's Gross Internal Area (GIA) of 79,013 square meters. This standardized approach enables transparent reporting of environmental impact per unit area.

The integration of spatial data with operational metrics ensures robust analysis, allowing the University to track progress, identify efficiencies, and implement targeted carbon reduction strategies.

The GHG inventory was developed through data collection templates, collaboration with departments, Institutional records and utility data. This rigorous methodology ensures accuracy, completeness, and transparency, reinforcing AURAK's commitment to accountability and continuous improvement in environmental performance.



EXECUTIVE SUMMARY

Building upon its established baseline, AURAK has demonstrated measurable progress in reducing emissions across its operations. These achievements underscore the effectiveness of its sustainability initiatives and reflect a strategic, evidence-based approach to carbon management.

Aligned with the UAE Net Zero 2050 Strategic Initiative, this assessment strengthens AURAK's contribution to climate action and sustainable development. It also supports the University's participation in international rankings and reporting frameworks, enhancing institutional reputation and global competitiveness.

This report not only tracks AURAK's progress over time but also strengthens its foundation for future emission reduction strategies. Through transparent reporting, strategic initiatives, and continuous monitoring, AURAK reaffirms its dedication to environmental responsibility and sustainable campus development. This Carbon Footprint Assessment serves as a cornerstone for future emission reduction strategies and positions the University as a responsible and forward-thinking institution committed to a resilient, low-carbon future.



ABOUT AURAK

AURAK is a public, non-profit, and independent institution spanning a 1.3 million-square-foot campus, AURAK integrates sustainability into its institutional strategy, aligning its practices with globally recognized frameworks such as the United Nations Sustainable Development Goals (UNSDGs) and Environmental, Social, and Governance (ESG) principles. Demonstrating its commitment to climate responsibility, the University adopts a fossil fuel divestment approach, prioritizing investments in the local community and environmentally sustainable enterprises. With a diverse academic community representing more than 50 nationalities, AURAK fosters intercultural competencies that support inclusive growth and global citizenship. This Sustainability Report underscores the University's dedication to transparency, accountability, and continuous improvement, highlighting its contributions toward a resilient, low-carbon, and sustainable future.

Carbon Footprint Assessment Report | 2024

Accreditation and Rankings

AURAK is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Additionally, it has achieved international accreditation for eight engineering programs by ABET and is pursuing AACSB accreditation for its School of Business. Notably, AURAK has secured a position in the Top 500 Universities list in the 2025 QS World University Rankings, placing 485th globally and 6th among universities in the UAE.

Commitment to Sustainability

AURAK demonstrates a strong commitment to sustainability through its Office of Research and Sustainability, which spearheads initiatives aimed at promoting environmental stewardship and sustainable practices within the university and the broader community embedding targets in its sustainability action plan. Sustainability is a core component of [AURAK's strategic plan](#). The university promotes policies and procedures that align with the Sustainable Development Goals (SDGs), focusing on reducing its carbon footprint and embedding social and environmental sustainability principles across all university activities.



ABOUT AURAK

Green Initiatives at AURAK

Campus Retrofitting

In collaboration with Siemens, AURAK has undertaken a comprehensive retrofit of its campus facilities, transforming the way energy and resources are managed across 19 buildings. This initiative is expected to reduce electricity consumption by approximately 1.7 million kilowatt-hours annually, significantly enhancing operational efficiency. Complementing these efforts, the campus now generates 276,447 kilowatt-hours of clean, onsite renewable energy each year, reinforcing AURAK's transition toward low-carbon operations. These advancements are also reflected in resource optimization outcomes. Annual water consumption for this current year (2024-2025) stands at 47,633.94 cubic meters, aligning with ongoing efforts to improve water efficiency across campus. Together, these integrated measures contribute to an estimated reduction of 700 metric tons of carbon emissions, underscoring AURAK's commitment to a more sustainable and resilient future.

Green Building Standards

AURAK is committed to adhering to the "Barjeel" green building regulations set forth by the Ras Al Khaimah Municipality. These standards target a 30% reduction in energy consumption, a 20% decrease in water usage, and a 20% incorporation of renewable energy by 2040. The university has already implemented these regulations in three new campus buildings, with plans to ensure all future constructions comply with these sustainability benchmarks.

For more details, please visit [AURAK Sustainability Action Plan](#)



UAE SUSTAINABILITY EFFORTS

The United Arab Emirates (UAE) has implemented a series of comprehensive sustainability initiatives aimed at fostering environmental stewardship, economic diversification, and social well-being. The following sections detail key national-level efforts:

UAE GreenAgenda 2030

Launched to advance sustainable development, the UAE's Green Agenda 2030 focuses on transitioning the nation towards a more environmentally friendly economy. Objectives include increasing GDP by 4-5%, boosting exports by approximately AED 24-25 billion, and reducing emissions to below 100 kilowatt-hours.



UAE Net Zero 2050 Strategic Initiative

Zero by 2050 Strategic Initiative, becoming the first nation in the Middle East and North Africa (MENA) region to commit to achieving net-zero greenhouse gas emissions by 2050. This ambitious plan aligns with the Paris Agreement's goals to limit global temperature rise to 1.5°C above pre-industrial levels.

National Framework for Sustainable Development

This framework aims to enhance quality of life, promote economic diversification, and preserve the UAE's ecosystems. It supports achieving the Sustainable Development Goals (SDGs) by focusing on sustaining ecological resources and services.

UAE Energy Strategy 2050

Targeting an optimal energy mix, this strategy combines renewable, nuclear, and clean energy sources to meet economic and environmental goals:

- 44% Clean Energy
- 12% Clean Coal
- 38% Gas
- 6% Nuclear



Commitment to Emission Reductions

In November 2024, the UAE pledged to reduce greenhouse gas emissions by 47% by 2035 compared to 2019 levels. This commitment involves transitioning from fossil fuels to alternatives like civil nuclear energy, solar power, and waste-to-energy technologies.

UAE SUSTAINABILITY EFFORTS

Year of Sustainability 2024

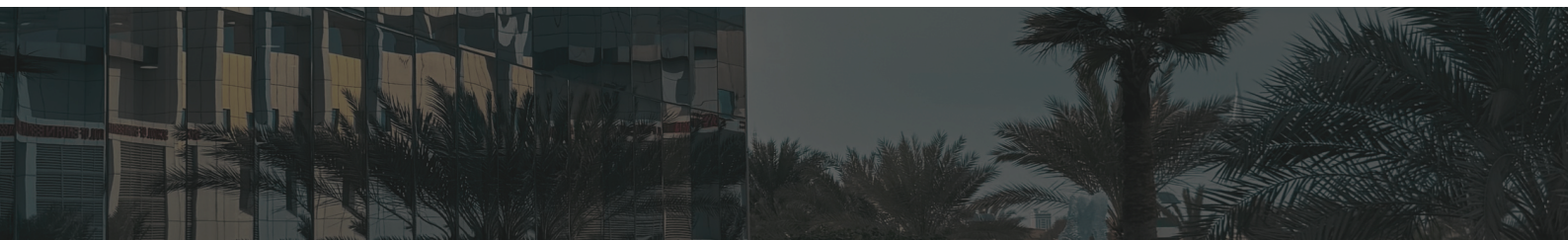
Under the "Plan to Action" tagline, this campaign focuses on responsible consumption, green transportation, water and energy reduction, and afforestation. It aims to raise environmental awareness and encourage community participation in sustainable practices.

Renewable Energy Investments

The UAE is rapidly becoming a significant player in the renewable energy market. Recent plans include constructing a \$6 billion, 5-gigawatt solar plant with 19GWh of battery storage, aiming to deliver a constant 1GW power output. These initiatives demonstrate the UAE's dedication to expanding renewable energy infrastructure.

Sustainable Urban Developments

Commitment to sustainable urban planning. This Projects like Sharjah Sustainable City exemplify the UAE's development features energy-efficient housing, renewable energy utilization, and comprehensive waste recycling, setting a benchmark for future sustainable communities.



SCOPE OF THE GREENHOUSE GAS (GHG) INVENTORY

This section delineates the parameters and objectives of the American University of Ras Al Khaimah's (AURAK) inaugural GHG inventory, encompassing the reporting period, organizational boundary, operational boundary, and the report's objectives.

Reporting Period

Establishing a base year is essential for tracking and evaluating changes in greenhouse gas (GHG) emissions over time. As this represents AURAK's first GHG inventory, the academic year 2023–2024 has been designated as the baseline year. The current inventory reflects emissions for the reporting period from September 1, 2024, to August 31, 2025, enabling a year-on-year comparison against the baseline and providing a comprehensive overview of emissions performance and progress.

Organizational Boundary

Defining the organizational boundary is a critical step in corporate GHG accounting, as it determines which operations are included in the inventory and how emissions are consolidated. According to the GHG Protocol, organizations can establish boundaries using either the equity share approach or the control approach, which includes financial or operational control. For this report, AURAK has adopted the operational control approach, accounting for 100% of emissions from operations over which it has control. This means AURAK includes all emissions from operations where it has the full authority to introduce and implement operating policies.

Operational Boundary

The operational boundaries for this inventory encompass all AURAK-owned buildings, including associated stationery and mobile equipment, vehicles, and the surrounding landscape. This delineation ensures that all relevant emission sources directly controlled by AURAK are accounted for in the GHG inventory.

Report Objectives

While calculating an organization's carbon footprint is voluntary, conducting such an assessment yields significant environmental, economic, and reputational benefits. The primary objectives of this GHG inventory report are:

- **Quantify Energy Consumption and GHG Emissions:** Measure the energy consumption and associated GHG emissions resulting from on-site fuel use, electricity consumption, and other operational activities.
- **Identify Reduction Opportunities:** Pinpoint AURAK's activities with the greatest potential for reducing GHG emissions and establish specific targets to achieve these reductions.
- **Advance Toward Net-Zero Targets:** Facilitate progress toward net-zero emissions by implementing the Strategic Action Plan, aligning AURAK's sustainability efforts with broader environmental goals.

METHODOLOGY : GHG INVENTORY DEVELOPMENT STEPS

The development of AURAK's Greenhouse Gas (GHG) inventory follows a systematic approach that ensures accurate and comprehensive reporting of emissions. This process helps identify areas of improvement, assess carbon footprints, and guides the university in its journey toward sustainability. Below are the key steps to develop the GHG inventory:



Select Standards & Calculation Methodologies

Adoption of internationally recognized standards for GHG reporting, including IPCC Guidelines, GHG Protocol, and ISO 14064- 1:2018.

Determine Operational & Organizational Boundaries

Defining which operations are included in the GHG inventory based on the control approach, identifying the scope of emissions.

Identify Emission Source Activities

Identifying all potential sources of GHG emissions within AURAK's operations.

Calculate GHG Inventory (Scope 1, 2 & 3)

Quantifying direct and indirect emissions from sources such as fuel use, electricity consumption, and other operational activities.

Collect Data from Departments

Collaborating with departments to collect relevant emissions data using customized data collection sheets and interviews.

Identify Data Gaps & Hotspots

Identifying any gaps in data and emission hotspots that require further analysis and action.

Issue the GHG Inventory Report

Finalizing the carbon footprint assessment and issuing the GHG inventory report to communicate results and recommendation

IDENTIFICATION OF EMISSION SOURCES

Scope 1 (Direct Emissions)

The GHG Protocol classifies emissions into three distinct scopes: These are direct emissions from sources owned or controlled by AURAK. Emission sources within this scope can be subdivided into:

- **Stationary Combustion Sources:** Emissions from the burning of fuels in stationary equipment, such as heating systems and generators.
- **Mobile Sources:** Emissions from vehicles and other mobile equipment owned by AURAK used on campus.
- **A/C & Other Refrigerant Emissions:** Unintentional emissions from systems such as refrigeration units or air conditioning.

Scope 2 (Indirect Emissions from Purchased Electricity)

These are emissions resulting from the consumption of purchased electricity that is generated off-site. AURAK accounts for all electricity used within its facilities.

Scope 3 (Other Indirect Emissions)

These emissions occur as a result of activities outside AURAK's direct operations. For example, emissions from waste management, water usage, and wastewater disposed.

GHG Emissions Calculation

To quantify greenhouse gas (GHG) emissions, the following standard formula was used:

$$\text{GHG EMISSIONS (MTCO}_2\text{e)} = \text{ACTIVITY DATA} \times \text{CONVERSION FACTOR} \times \text{EMISSION FACTOR}$$

Activity Data (unit of activity): Represents energy consumption, electricity usage, fuel combustion, or other consumable resources used within AURAK's operations. The data was collected through customized data collection sheets.

Emission Factor (tCO₂e/GJ or equivalent): A representative value that expresses the amount of GHG emissions per unit of activity. Emission factors were sourced from:

- **Scope 2 (Electricity):** The national grid emission factor was used. The grid emission factor for Ras Al Khaimah = (0.41 kgCO₂eq/kWh)
- **All Other Sources:** Emission factors were primarily adapted from the IPCC (Intergovernmental Panel on Climate Change) database, with supplementary references from the Department for Environment, Food and Rural Affairs (DEFRA) 2022 and U.S. EPA (Environmental Protection Agency) database where necessary.

This methodology ensures that AURAK's GHG inventory follows internationally recognized best practices, allowing accurate tracking of emissions and facilitating informed decision-making toward sustainability and carbon reduction strategies.

AURAK GHG INVENTORY RESULTS

Based on the methodology section, the following Table 1 summarizes the activity of data collected during the reporting period of 2024–2025

Scope	Emission Source	Data	Quantity	Units
Scope 1	Generator	Diesel Oil	5,560.58	Litres
	University Owned Vehicles	Petrol / Gasoline	23,722	
	A/C & Other Refrigerants	R22-13.8KG 95 CYLINDER	234.6 (17 Cylinders)	kg
Scope 2	Electricity	Electricity Purchased	9710000	kwh
		Electricity Generation from Renewable Resources	276447	
Scope 3	Water	Water Consumed	47633.94	m3
	Waste	General Waste	355	tonnes
		Green Waste	204	

AURAK is committed to measuring, managing, and mitigating its carbon footprint as part of its sustainability strategy. By systematically assessing greenhouse gas (GHG) emissions across all operations, the university aims to enhance energy efficiency, reduce environmental impact, and contribute to the UAE's Net Zero by 2050 initiative. This Carbon Footprint Assessment provides a data-driven foundation for implementing sustainable solutions and optimizing resource consumption within the AURAK community

Emission Factors:

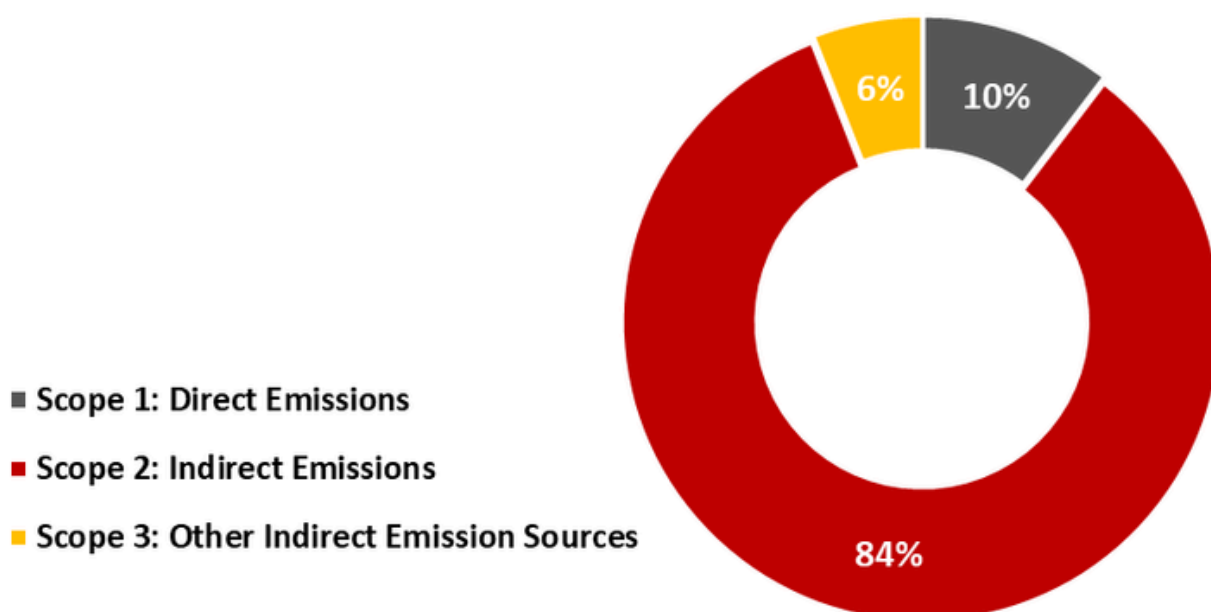
- Ras Al Khaimah Grid emission factor used = 0.41 kgCO₂eq/kWh
- Diesel = 2.6 Kg CO₂/L
- Petrol = 2.3 Kg CO₂/L
- LPG = 1.47 Kg CO₂/Unit
- General Waste = 446.24 Kg CO₂/Tonne
- Green Waste = 579.1 kgCO₂e/Tonne
- Water Consumption = 0.149 kgCO₂e/m³
- AC Refrigerant = 1810 Kg CO₂/kg (Global Warming Potential (GWP) 1kg of refrigerant is equivalent to the below kg of CO₂)

Table 2. Summary Emission Sources at AURAK

CARBON FOOTPRINT AT AURAK

Emission Source Type	Source at AURAK	MTCO2e/year
Stationery Combustion Sources	Diesel Generator	14.46
Mobile Sources	University Owned Vehicles	54.56
Others	A/C & Refrigerants	424.63
Scope 1 - Direct Emissions Total		493.65
Indirect Sources	Electricity Consumption (from purchased source)	3981.1
Scope 2 - Indirect Emissions Total		3981.1
Other Indirect Sources	Water Consumed	7.1
Other Indirect sources	General Waste	158.42
	Green Waste	118.14
Scope 3 – Other Indirect Emissions Total		283.65
Total GHG Emissions		4758.4

As seen in Table 2, scope 1 directemissions represent 10%, Scope 2 indirectemissions represent 84% and Scope 3 other indirect emissions represent 6% of the total GHG emissions.



GHG EMISSIONS KEY PERFORMANCE INDICATORS (KPIs) FOR AURAK

To effectively monitor and evaluate AURAK's greenhouse gas (GHG) emissions, following key performance indicators (KPIs) were used to measure emissions intensity and efficiency across campus operations. These KPIs serve as a benchmark for tracking improvements in energy performance, optimizing resource use, and implementing sustainable resource consumption, and building management practices. Also, these indicators provide valuable insights into carbon footprint trends, enabling data-driven decision-making to enhance sustainability efforts.

Total Emissions = 4758.4 MTCO_{2e}

Total campus building footprint = 79,013 sqm

Total Faculty = 93

Total Students = 1474

Building Space Share of Total GHG Emissions

Emissions Intensity: 0.06 MTCO_{2e}/m²

This KPI represents the carbon emissions per square meter of building space, reflecting the university's energy consumption efficiency and its impact on overall emissions.

Employee Share of Total GHG Emissions

Emissions Intensity: 51.16 MTCO_{2e}/employee

This KPI represents the carbon emissions per employee, reflecting contributions to AURAK's total emissions.

Student Share of Total GHG Emissions

Emissions Intensity: 3.23 MTCO_{2e}/student

This KPI represents the carbon emissions per student, reflecting student contributions to AURAK's total emissions.

KEY FINDINGS

Scope 1 – Direct Emissions:

Scope 1 emissions represent direct greenhouse gas (GHG) emissions from sources that are owned or controlled by AURAK. These emissions are generated from stationary combustion sources such as diesel generators, fuel combustion from university owned vehicles, and emissions from air conditioning and refrigerants. In total, Scope 1 emissions at AURAK were estimated to be 493.65 MTCO₂e/y which is a significant drop compared to last year (2,465.60 MTCO₂e/y).

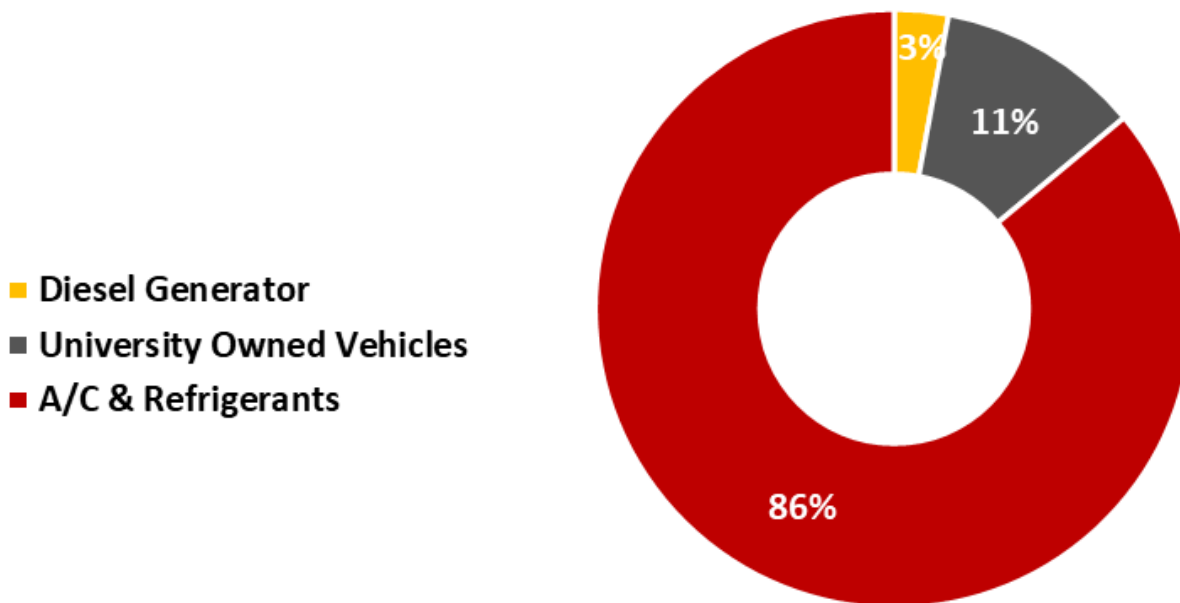


Figure: B Breakdown of the different emission sources within Scope 1 at AURAK

A/C & Refrigerants:

This category constitutes the largest share of Scope 1 emissions, with total emissions amounting to 424.63 MTCO₂e per year – significantly lower than the previous year's 2,372.9 MTCO₂e. It accounts for 86% of AURAK's Scope 1 emissions and underscores the substantial impact of refrigerants and cooling systems on the university's overall carbon footprint. The notable reduction reflects AURAK's commitment to sustainability, achieved through enhanced maintenance practices and the adoption of low-emission refrigerants. These efforts have contributed to a measurable and meaningful decrease in AURAK direct greenhouse gas emissions.

University Owned Vehicles:

Emissions from mobile sources – primarily fuel combustion in university-owned vehicles – amount to 54.56 MTCO₂e, representing a significant reduction compared to last year's 92.40 MTCO₂e. These emissions account for 11% of AURAK's Scope 1 footprint. Continued progress can be achieved by transitioning to electric or hybrid vehicles, implementing efficient fuel management strategies, and optimizing transportation routes to further minimize environmental impact.

Diesel Generators:

This category represents the smallest portion of Scope 1 emissions, totaling 14.46 MTCO₂e per year and accounting for just 3% of the overall Scope 1 footprint. These emissions originate from fuel consumption in on-site equipment and backup generators. Although relatively minimal, further reductions can be achieved through enhanced energy efficiency measures and the adoption of cleaner fuel alternatives.

KEY FINDINGS

As AURAK continues to advance its efforts to reduce Scope 1 emissions, it will focus on the following key priority areas:

Refrigerant Management

Transitioning to low-GWP refrigerants and enhancing leak detection in HVAC systems to reduce fugitive emissions.

Fleet Electrification

Shifting university-owned vehicles to hybrid or electric alternatives while promoting sustainable commuting options

Optimized Fuel Use

Minimizing fuel consumption by optimizing generator use and adopting energy-efficient campus operations.

Scope 2 – Indirect Energy Emissions

Scope 2 emissions refer to indirect greenhouse gas (GHG) emissions from the consumption of purchased electricity, which is generated off-site but used within AURAK's facilities. These emissions are a critical component of the university's carbon footprint, as they directly correlate with energy demand and efficiency measures within campus operations. During the reporting period from September 1, 2024, to August 31, 2025, AURAK's total electricity consumption was 9,710,000 kWh, resulting in 3981.1 MTCO₂e which is lower compared with last year (4,152.37 MTCO₂e) of indirect emissions. This accounts for 84% of the university's total GHG emissions, making electricity use the largest single contributor to AURAK's overall carbon footprint. Reducing Scope 2 emissions is a key focus area for AURAK's sustainability strategy. Efforts to lower these emissions will involve:

Enhancing Energy Efficiency

Implementing smart energy management systems, optimizing HVAC operations, and upgrading to energy efficient lighting and equipment

Renewable Energy Expansion

Expanding solar photovoltaic (PV) installations and other renewable energy sources to reduce dependency on grid electricity.

Behavioral and Policy Changes

Promoting energy conservation awareness among students, faculty, and staff, and adopting policies that encourage responsible energy consumption.

Scope 1+2 – Emissions

Scope 1 and Scope 2 emissions combined were estimated at 4,474.75 MTCO₂e, compared to 6,617.97 MTCO₂e in the previous year, reflecting a significant reduction and a strong contribution of AURAK toward environmental sustainability (ES).

KEY FINDINGS

Scope 3 – Other Indirect Emissions

Scope 3 emissions encompass indirect greenhouse gas (GHG) emissions from sources not owned or directly controlled by AURAK but that result from its operations. These emissions include waste management and water consumption, which play a significant role in the university's environmental impact. For the reporting period September 1, 2024, to August 31, 2025, AURAK's total Scope 3 emissions amounted to 283.65 MTCO₂e, significantly lower than the previous year (729.26 MTCO₂e) representing 6% of the university's total GHG emissions. These emissions are primarily driven by waste disposal and water use, as detailed below:

1. Waste Management Emissions

The total waste-related emissions at AURAK reached 276.56 MTCO₂e (previous year 714.49 MTCO₂e), accounting for 98% of Scope 3 emissions. The breakdown is as follows: General Waste: 158.42 MTCO₂e – Generated from campus activities, student housing, and administrative operations. Green Waste: 118.14 MTCO₂e – Originating from landscaping and organic waste disposal.

2. Water Consumption

Water Consumption at AURAK contributed 7.10 MTCO₂e and this Emission is linked to the energy required for water supply and purification, and disposal processes.

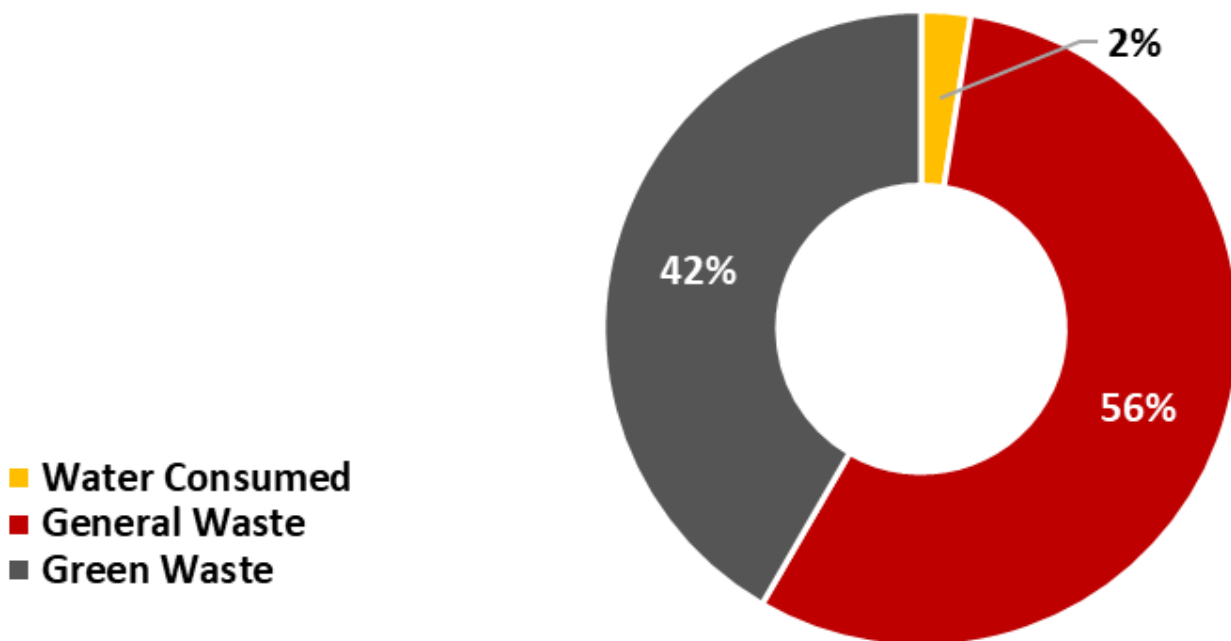


Figure: C Breakdown of the different emission sources within Scope 3 at AURAK

Addressing Scope 3 emissions is essential for AURAK's sustainability strategy. The university aims to implement:

KEY FINDINGS

Addressing Scope 3 emissions is essential for AURAK's sustainability strategy. The university aims to implement:

Sustainable Waste Management Practices

Implementing smart energy management systems, optimizing HVAC operations, and upgrading to energyefficient lighting and equipment

Water Conservation Programs

Expanding solar photovoltaic (PV) installations and other renewable energy sources to reduce dependency on grid electricity.

Engagement and Awareness Campaigns

Promoting energy conservation awareness among students, faculty, and staff, and adopting policies that encourage responsible energy consumption.



AURAK'S CARBON NEUTRALITY ROADMAP: ALIGNING SUSTAINABILITY ACTION PLAN WITH CARBON ASSESSMENT REPORT

The American University of Ras Al Khaimah (AURAK) has established a strategic commitment to achieving Net-Zero emissions by 2050, aligning with global climate action efforts and the UAE's Net-Zero 2050 initiative. The Carbon Assessment Report serves as a critical foundation for this commitment, providing a data-driven baseline of the university's Scope 1, Scope 2, and Scope 3 emissions. By integrating carbon reduction strategies with sustainability-focused infrastructure improvements, AURAK is set to decarbonize campus operations while fostering a sustainable academic and research environment.

To ensure a structured and measurable pathway toward carbon neutrality, AURAK has set progressive decarbonization milestones:

Scope 1 Emission Reduction Target: Achieving a 20% reduction in Scope 1 emissions by 2030 through the optimization of fuel consumption, enhanced refrigerant management, and the gradual electrification of the university's vehicle fleet.

Scope 2 Emission Reduction Target: Reducing electricity-related emissions by 20% by 2030 through energy efficiency measures and the integration of renewable energy solutions.

Scope 3 Value Chain Understanding: Developing a comprehensive Scope 3 emissions inventory by 2030, assessing supply chain impacts, travel emissions, and waste management strategies.

These targets reflect AURAK's commitment to environmental stewardship, operational excellence, and alignment with national and international sustainability frameworks, positioning the university as a leader in climate responsibility within the higher education sector.

STRATEGIC RECOMMENDATIONS FOR ADVANCING AURAK'S NET- ZERO COMMITMENT

With significant reductions achieved across all emission scopes, AURAK is well-equipped to accelerate its transition toward carbon neutrality in alignment with the UAE's Net-Zero 2050 initiative. To sustain this positive trajectory, the following strategic and actionable recommendations are proposed. These initiatives integrate operational excellence, technological innovation, and stakeholder engagement to further enhance AURAK's sustainability performance.

1. Energy Efficiency and Renewable Energy Transition

- 1.1. Conduct Comprehensive Energy Audits:

Undertake periodic audits to identify inefficiencies and optimize HVAC systems, lighting, and overall energy consumption.

- 1.2. Implement Energy Conservation Measures (ECMs):

Upgrade to LED lighting, high-efficiency appliances, and smart building management systems across campus.

- 1.3. Expand Renewable Energy Deployment:

Assess and install solar photovoltaic (PV) systems on rooftops and parking structures to reduce reliance on grid electricity and lower Scope 2 emissions.

- 1.4. Adopt Green Building Standards:

Building on the success of its Green Building and Green Mosque, AURAK will expand the adoption of internationally recognized green building standards across all new developments and retrofits. This initiative will enhance energy efficiency, reduce carbon emissions, and reinforce the university's commitment to sustainable campus development.

2. Scope 1 Emission Reduction Strategies

- 2.1. Strengthen Refrigerant Management:

Transition to low-Global Warming Potential (GWP) refrigerants and implement advanced leak detection and preventive maintenance programs.

- 2.2. Fleet Electrification:

Gradually replace conventional vehicles with electric or hybrid alternatives and introduce EV charging infrastructure on campus.

- 2.3. Optimize Fuel Consumption:

Enhance fuel efficiency through route optimization, driver awareness programs, and preventive maintenance of generators and equipment.

- 2.4. Modernize Backup Power Systems:

Explore cleaner fuel alternatives and energy-efficient technologies for standby generators.

3. Sustainable Procurement and Scope 3 Optimization

- 3.1. Develop a Green Procurement Policy:

Prioritize environmentally responsible suppliers and low-carbon products.

- 3.2. Engage Suppliers and Contractors:

Encourage vendors to disclose and reduce their carbon footprints through sustainability criteria in contracts.

STRATEGIC RECOMMENDATIONS FOR ADVANCING AURAK'S NET- ZERO COMMITMENT

- 3.3. Promote Digital Transformation:

Reduce paper consumption through digital workflows and cloud-based systems.

- 3.4. Encourage Sustainable Mobility:

Support carpooling, remote collaboration, and virtual meetings to minimize travel-related emissions.

4. Waste Reduction and Circular Economy Integration

- 4.1. Implement a Zero-Waste Strategy:

Expand recycling infrastructure and introduce campus-wide waste segregation programs.

- 4.2. Introducing Composting and Organic Waste Management:

Convert green and food waste into compost for landscaping purposes.

- 4.3. Minimize Landfill Dependency:

Partner with certified recycling and waste recovery providers.

- 4.4. Promote Circular Resource Use:

Encourage reuse, refurbishment, and responsible disposal of materials and equipment.

5. Water Conservation and Sustainable Resource Management

- 5.1. Reduce Water Consumption:

Install low-flow fixtures, smart irrigation systems, and water-efficient landscaping.

- 5.2. Adopt Greywater Recycling:

Reuse treated wastewater for irrigation and non-potable applications.

- 5.3. Optimize Wastewater Management:

Explore on-site treatment solutions to reduce environmental impact and operational costs.

- 5.4. Implement Smart Monitoring:

Deploy digital meters to track and manage water usage efficiently.

6. Carbon Accounting, Governance, and Performance Monitoring

- 6.1. Establish a Comprehensive Carbon Management Plan:

Define clear targets, timelines, and responsibilities aligned with Net-Zero 2050.

- 6.2. Implement a Digital GHG Data Management System:

Enable real-time monitoring of emissions from energy, fuel, water, and waste.

- 6.3. Strengthen ESG Reporting and Transparency:

Align disclosures with international frameworks such as the GHG Protocol and Global Reporting Initiative (GRI).

- 6.4. Create an Institutional Sustainability Governance Structure:

Establish a Sustainability Committee to oversee implementation and ensure accountability.

- 6.5. Pursue External Certifications and Rankings:

Enhance global recognition through sustainability rankings and certifications.

STRATEGIC RECOMMENDATIONS FOR ADVANCING AURAK'S NET- ZERO COMMITMENT

7. Awareness, Training, and Stakeholder Engagement

- 7.1. Deliver Sustainability Training Programs:

Educate faculty, staff, and students on energy conservation and climate action.

- 7.2. Promote a Green Campus Culture:

Encourage carpooling, cycling, and environmentally responsible behaviors.

- 7.3. Support Student-Led Innovation and Research:

Foster interdisciplinary projects focused on climate solutions and sustainable technologies.

- 7.4. Integrate Sustainability into the Curriculum:

Embed environmental responsibility into academic programs and institutional values.

- 7.5. Strengthening Community and Industry Partnerships:

Collaborate with government entities and industry leaders to advance sustainability initiatives.

CONCLUSION

The findings of this report reaffirm AURAK's unwavering commitment to sustainability and its strategic direction toward achieving Net-Zero emissions by 2050. The comprehensive assessment of Scope 1, Scope 2, and Scope 3 emissions provides a robust, data-driven baseline that enables informed decision-making and targeted climate action. The demonstrated reductions across all emission scopes reflect the effectiveness of AURAK's ongoing initiatives and highlight the University's proactive approach to environmental stewardship. Building on this progress, AURAK is well-positioned to accelerate the implementation of decarbonization strategies through enhanced energy efficiency, renewable energy integration, responsible resource management, and the advancement of sustainable behaviors across the campus community. Moving forward, sustainability will remain embedded within AURAK's institutional priorities, guiding infrastructure development, operational practices, and academic engagement. Through sustained commitment, innovation, and collaboration, AURAK will not only contribute meaningfully to the UAE's national climate agenda but also strengthen its position as a regional leader in sustainability within the higher education sector.

“SUSTAINABILITY IS WHO WE ARE!”

Visit <https://aurak.ac.ae/research-community-service/sustainability> for information regarding activities, projects, initiatives, campus engagements and programs on Sustainability



AURAK

الجامعة الأمريكية في رأس الخيمة
AMERICAN UNIVERSITY OF RAS AL KHAIMAH