9-Does your university report its carbon emissions in line with the GHG Protocol Corporate Standard or another commonly used standard?

Bahria University is formalizing its approach to carbon emissions reporting through the development of a comprehensive policy. This policy reflects the University's commitment to aligning its environmental reporting practices with internationally recognized standards, including the Greenhouse Gas (GHG) Protocol Corporate Standard and other commonly accepted frameworks.

The policy provides structured guidelines for the measurement, monitoring, and reporting of carbon emissions, ensuring transparency, accountability, and consistency in environmental performance reporting. The policy document is attached below for reference.

BAHRIA UNIVERSITY CARBON EMISSIONS MANAGEMENT POLICY

Policy Code: BU-CEMP-2025 Version: 1.0

Bahria University

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1. PREAMBLE AND POLICY STATEMENT

1.1 Context and Rationale

Pakistan's third NDC (2025) commits to an economy-wide greenhouse gas reduction target of 50% by 2035 compared to business-as-usual, with an unconditional reduction of 17% . The Securities and Exchange Commission of Pakistan (SECP) has adopted IFRS Sustainability Disclosure Standards (IFRS S1 and S2), requiring listed and public interest companies to report greenhouse gas emissions across Scopes 1, 2, and 3, supported by scenario analyses . The Institute of Chartered Accountants of Pakistan (ICAP) is building capacity for GHG emissions calculation using the Greenhouse Gas Protocol Corporate Standard and ISO 14064 .

Bahria University recognizes that robust carbon emissions management is fundamental to achieving its climate action commitments and contributing to Pakistan's NDC targets. This policy establishes the framework for comprehensive greenhouse gas accounting, transparent reporting, and ambitious emissions reduction across all University operations and value chains.

1.2 Policy Statement

Bahria University commits to achieving net-zero greenhouse gas emissions across all scopes by 2050, with an interim target of 50% reduction in absolute emissions by 2040 (baseline: FY2024). The University shall maintain comprehensive, accurate, and transparent carbon accounting following the GHG Protocol Corporate Standard and ISO 14064-1, with annual third-party verification in accordance with ISO 14064-3. All emissions data shall be publicly reported and used to drive continuous improvement in climate performance.

1.3 Alignment with Standards and Regulations

This policy aligns with:

- GHG Protocol Corporate Standard (WRI/WBCSD) – Primary accounting methodology

- ISO 14064-1:2018 – Organizational level GHG quantification and reporting

- ISO 14064-3:2019 – Verification and validation

- IFRS S2 Climate-related Disclosures (as adopted by SECP)

- Science Based Targets initiative (SBTi) – Target setting methodology

- Pakistan's NDC 3.0 and National Climate Change Policy

2. DEFINITIONS AND METHODOLOGY

2.1 Greenhouse Gas Definitions

S.No	Term	Definition
1	GHG Protocol	The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, the world's most widely used framework for corporate GHG accounting
2	ISO 14064-1	International standard for quantification and reporting of GHG emissions and removals at the organizational level
3	Scope 1	Emissions Direct GHG emissions from sources owned or controlled by the University (stationary combustion, mobile combustion, fugitive emissions)
4	Scope 2	Emissions Indirect GHG emissions from purchased electricity, heat, steam, or cooling
5	Scope 3	Emissions All other indirect emissions occurring in the University's value chain (15 categories per GHG Protocol)
	Biogenic Emissions	CO2 emissions from combustion of biomass/biofuels (reported separately)
	Carbon Offset	Reduction or removal of emissions outside the University boundary used to compensate for emissions within the boundary
	Carbon Neutral	State of achieving net-zero emissions through reduction and offsetting
	Net Zero	State of balancing emissions with removals, prioritizing reduction over offsetting
	Science-Based Target	Emission reduction target aligned with climate science to limit warming to 1.5°C
	Activity Data	Quantitative measure of activity generating emissions (e.g., kWh electricity, liters fuel)

	Emission Factor	Coefficient converting activity data to GHG emissions (e.g., kg CO2e/kWh)
	Global Warming Potential (GWP)	Factor describing radiative forcing of GHG relative to CO2 over specific time horizon (100-year GWP per IPCC AR6)

2.2 Organizational Boundaries

Consolidation Approach: Operational Control

- Include 100% of emissions from operations where Bahria University has operational control

- Applies to all campuses: Islamabad, Karachi, Lahore, and future locations

- Includes all facilities, vehicles, and equipment under University management

Reporting Boundaries:

- Scope 1: All direct emissions from owned/controlled sources

- Scope 2: All indirect emissions from purchased energy (location-based and market-based)

- Scope 3: All relevant indirect emissions from value chain (mandatory categories 1-8, optional 9-15 based on significance)

3. POLICY OBJECTIVES AND TARGETS

3.1 Long-Term Vision

2040: Net-Zero University

- Achieve net-zero GHG emissions across all scopes (1, 2, and 3)

- Maximum reduction achieved through decarbonization, residual emissions neutralized through high-quality removals

3.2 Interim Targets

Third-party verified GHG inventory

S.No	Target	Deadline	Metric
1	Baseline Establishment	FY2024	Complete GHG inventory for FY2024
2	First Verified Inventory	FY2025	25% Reduction FY2027 25% reduction in Scope 1+2 vs baseline
3	50% Reduction	FY2030	50% reduction in absolute emissions (all scopes)
4	75% Reduction	FY2035	75% reduction in absolute emissions
	Net Zero	FY2040	Net-zero emissions (residual neutralized)

3.3 Scope-Specific Targets

Scope 1 (Direct Emissions):

- 60% reduction by 2030 (phase out diesel generators, fleet electrification)

- 90% reduction by 2035

- 100% elimination by 2040 (except emergency backup)

Scope 2 (Energy Indirect):

- 100% renewable electricity by 2030

- Net-zero Scope 2 by 2032

Scope 3 (Value Chain):

- 40% reduction by 2030 (business travel, commuting, procurement)

- 70% reduction by 2035

- 90% reduction by 2040

4. GOVERNANCE AND RESPONSIBILITIES

4.1 Carbon Management Structure

University Sustainability Council (USC):

- Approve carbon strategy, targets, and budgets
- Review annual GHG inventory and verification reports
- Oversee climate risk management
- Report to Board of Governors on climate performance

Head / Manager CORE CF:

- Overall responsibility for carbon management program
- Sign-off on GHG inventory before external verification
- Coordination with CORE-CF on carbon finance and markets
- External representation on climate issues

Carbon Accounting Team (CAT):

- Day-to-day management of GHG inventory
- Data collection, calculation, and quality control
- Coordination with data providers across campuses
- Preparation of inventory documentation
- Interface with external verifiers

Campus Sustainability Officer / Manager:

- Data collection at campus level

- Implementation of emissions reduction initiatives

- Local stakeholder engagement

- Monthly reporting to CAT

4.2 Roles and Responsibilities Matrix

S.No	Function	Responsibility	Key Activities
1	Facilities Management	Scope 1 stationary, Scope 2	Energy data, generator logs, refrigerant records
2	Transport Office	Scope 1 mobile	Fleet fuel consumption, vehicle logs
3	Procurement	Scope 3	purchased goods Supplier data, procurement volumes
4	HR/Admin	Scope 3	commuting, business travel Employee surveys, travel records
5	Finance	Scope 3	investments Investment portfolio data
6	IT Services	Scope 3	cloud computing Data center energy, cloud service usage
7	Waste Management	Scope 3 waste	Waste quantities, disposal methods
8	All Departments	Data provision	Timely, accurate data submission

5. EMISSIONS ACCOUNTING FRAMEWORK

5.1 Scope 1: Direct Emissions

5.1.1 Stationary Combustion

- Sources: Diesel generators, gas boilers, kitchen equipment
- Activity Data: Fuel purchase records, tank dip measurements
- Emission Factors: IPCC 2006 Guidelines, national energy data
- Calculation: Fuel volume × NCV × EF × GWP

5.1.2 Mobile Combustion

- Sources: University-owned vehicles (cars, vans, buses, motorcycles)
- Activity Data: Fuel cards, purchase invoices, odometer readings
- Emission Factors: National vehicle emission factors, manufacturer data
- Calculation: Distance-based or fuel-based method

5.1.3 Fugitive Emissions

- Sources: Refrigeration and air conditioning (RAC), fire suppression, gas leaks
- Activity Data: Equipment inventory, refrigerant purchase/recharge records
- Emission Factors: GWP values for specific gases (R-410A, R-134a, etc.)
- Calculation: Mass of refrigerant × GWP (using simplified mass balance or screening method)

5.1.4 Biogenic Emissions

- Sources: Combustion of biofuels, biomass
- Treatment: Reported separately from scopes (CO_2 only, not CH_4/N_2O)

5.2 Scope 2: Indirect Emissions from Energy

5.2.1 Purchased Electricity

- Location-Based Method: Grid average emission factors (NEPRA/NTDC data)

- Market-Based Method: Supplier-specific emission factors, renewable energy certificates

- Activity Data: Utility bills, meter readings

- Dual Reporting: Both methods reported separately

5.2.2 Purchased Heat, Steam, Cooling

- Activity Data: Purchase records, meter readings

- Emission Factors: Supplier-specific or default factors

- Calculation: Energy units × emission factor

5.3 Scope 3: Value Chain Emissions

Category 1: Purchased Goods and Services

- Method: Spend-based or activity-based

- Data: Procurement records, supplier-specific data where available

- Emission Factors: EEIO (Environmentally Extended Input-Output) data, supplier data

Category 2: Capital Goods

- Method: LCA-based or spend-based

- Data: Construction records, equipment purchases

- Treatment: Full lifecycle emissions of capital projects

Category 3: Fuel and Energy-Related Activities (not in Scope 1-2)

- Upstream emissions: Fuel extraction, processing, transport

- Transmission and distribution losses: Electricity T&D losses

- Generation: Emissions from purchased electricity that is sold to end users

Category 4: Upstream Transportation and Distribution

- Method: Distance-based or spend-based

- Data: Shipping records, logistics data

- Emission Factors: Transport mode-specific factors

Category 5: Waste Generated in Operations

- Method: Waste-type specific

- Data: Waste audit data, disposal records

- Emission Factors: IPCC waste model, landfill gas recovery data

Category 6: Business Travel

- Air Travel: Distance-based (short-haul/long-haul) or fuel-based

- Rail: Distance-based emission factors

- Road: Distance-based or fuel-based for rental vehicles

- Accommodation: Nights spent × emission factor per night

Category 7: Employee Commuting

- Method: Distance-based or average-data

- Data: Employee surveys, transport mode split, average distances

- Frequency: Annual survey with representative sample

Category 8: Upstream Leased Assets

- Method: Asset-specific or building-specific

- Data: Lease agreements, energy bills for leased spaces

Category 9: Downstream Transportation and Distribution

- Applicable to: University products/services with transport component

Category 10: Processing of Sold Products

- Applicable to: Research outputs, technology transfer

Category 11: Use of Sold Products

- Applicable to: Products developed by University research

Category 12: End-of-Life Treatment of Sold Products

- Applicable to: Products sold/distributed by University

Category 13: Downstream Leased Assets

- Applicable to: Assets leased to others by University

Category 14: Franchises

- Not applicable (University does not franchise)

Category 15: Investments

- Applicable to: University endowment and investment portfolio
- Method: Investment-specific emissions (financed emissions)

5.4 Base Year and Recalculation

Base Year: Fiscal Year 2025 (July 2024 - June 2025)

Recalculation Policy:

- Recalculate base year emissions for structural changes (mergers, acquisitions, divestments)

- Recalculate for changes in calculation methodology or emission factors
- Recalculate for discovery of significant errors (>5% impact)
- Maintain transparency in reporting recalculations

6. EMISSIONS REDUCTION STRATEGY

6.1 Decarbonization Hierarchy

Priority 1: Avoid and Reduce

- Eliminate unnecessary activities and consumption
- Improve energy efficiency across all operations
- Transition to renewable energy sources
- Optimize business travel and promote virtual meetings
- Reduce commuting through flexible work arrangements

Priority 2: Substitute and Improve

- Replace fossil fuels with renewable alternatives
- Electrify fleet and equipment
- Switch to lower-carbon suppliers
- Optimize logistics and transport modes

Priority 3: Remove and Neutralize

- Invest in carbon removal projects only after maximum reduction
- Prioritize nature-based solutions and direct air capture
- Ensure high-quality offsets with permanence and additionality

6.2 Sectoral Reduction Roadmaps

Energy and Buildings:

- Deep energy retrofits achieving 40% efficiency improvement
- 100% renewable electricity procurement by 2030
- On-site solar generation (30% of demand by 2028)
- Smart building management systems
- Phase out diesel generators by 2030

Transportation:

- 100% electric fleet by 2032
- 60% reduction in business travel emissions
- Active transportation infrastructure (cycling, walking)
- Virtual meeting as default for external meetings

Procurement:

- 50% reduction in supply chain emissions by 2030
- Sustainable procurement policy implementation
- Supplier engagement and development programs
- Local sourcing to reduce transport emissions

Waste:

- Zero waste to landfill by 2035
- 90% waste diversion reducing methane emissions
- Organic waste composting on campus
- Circular economy principles in procurement

6.3 Carbon Budgeting

Annual Carbon Budgets:

- Allocate carbon budgets to each campus and department
- Integrate carbon considerations into financial budgeting
- Monitor actual vs. budgeted emissions quarterly
- Adjust budgets based on performance and targets

Project Carbon Assessment:

- Carbon impact assessment for all capital projects >PKR 10 million
- Carbon payback analysis for efficiency investments
- Shadow carbon pricing for project evaluation (PKR 5,000/tCO2e)

7. OFFSETTING AND NEUTRALIZATION

7.1 Offsetting Principles

Hierarchy:

1. Prioritize internal reductions over offsetting
2. Use offsetting only for residual emissions after 2030
3. Prioritize removal offsets over avoidance offsets
4. Ensure high-quality, verified offsets

Quality Criteria:

- Additionality: Project would not occur without offset revenue

- Permanence: Emissions reductions/removals are irreversible

- Verification: Third-party verified (Gold Standard, VCS, CAR)

- No Double Counting: Unique claim to emission reduction

- Co-benefits: Positive social and environmental impacts

- Local Preference: Prioritize Pakistan-based projects where feasible

7.2 Offset Portfolio Strategy

2025-2030: No offsetting (focus on reduction)

2030-2035: Limited offsetting for unavoidable emissions (<20% of total)

2035-2040: Transition to removal-based offsets only

2040 onwards: Net-zero with 100% removal offsets for residual emissions

Offset Types:

- Nature-based: Afforestation, reforestation, soil carbon, mangrove restoration

- Technology-based: Direct air capture, bioenergy with CCS

- Community-based: Cookstoves, renewable energy in underserved communities

7.3 Carbon Market Engagement

Through CORE-CF:

- Research on carbon market mechanisms and Article 6 implementation

- Development of carbon offset projects for Pakistan

- Capacity building for carbon accounting and verification

- Advisory services for carbon pricing and trading

University Participation:

- Purchase high-quality offsets for unavoidable emissions
- Develop campus-based carbon removal projects
- Engage in voluntary carbon markets
- Support compliance market development in Pakistan

8. DATA MANAGEMENT AND QUALITY

8.1 Data Collection Protocols

Primary Data (Preferred):

- Meter readings, utility bills, fuel purchase records
- Actual distances traveled, actual waste quantities
- Supplier-specific emission factors

Secondary Data (Acceptable where primary unavailable):

- Estimated based on building floor area, occupancy
- Industry average emission factors
- Proxy data from similar activities

Data Quality Rating:

- High: Measured data, verified invoices, supplier-specific factors
- Medium: Estimated based on robust models, regional factors
- Low: Extrapolated data, global averages, significant assumptions

8.2 Data Management System

Carbon Management Software:

- Implement centralized carbon accounting platform
- Automated data feeds where possible (utility APIs, fleet telematics)
- Manual data entry portals for distributed sources
- Audit trail and version control
- Data validation and error checking protocols

Documentation Requirements:

- Retain all source data for minimum 7 years
- Document all calculation methodologies and assumptions
- Maintain change logs for methodology updates
- Archive verification reports and corrective actions

8.3 Uncertainty Assessment

Quantification:

- Assess uncertainty for each emission source (±%)
- Combine uncertainties using error propagation
- Report overall inventory uncertainty range
- Prioritize improvement of high-uncertainty, high-impact sources

Improvement Plan:

- Target high-uncertainty sources for data quality improvement
- Invest in metering and monitoring infrastructure

- Engage suppliers for better data

- Train data providers on accuracy requirements

9. VERIFICATION AND REPORTING

9.1 Third-Party Verification

Standard: ISO 14064-3:2019

Level of Assurance: Reasonable assurance (high confidence)

Verifier Qualifications: Accredited verification body with GHG expertise

Verification Process:

1. Planning: Define scope, criteria, and timeline

2. Data Review: Assess methodologies, calculations, and supporting evidence

3. Site Visits: Inspect data sources and management systems

4. Interviews: Discuss with data providers and management

5. Findings: Identify non-conformities and areas for improvement

6. Statement: Issue independent verification statement

Frequency: Annual verification for full inventory

9.2 Internal Quality Control

Quarterly Reviews:

- Data completeness checks

- Trend analysis and variance investigation

- Calculation verification

- Documentation review

Annual Internal Audit:

- Process audit of carbon management system

- Data trail verification

- Corrective action follow-up

- Management review

9.3 Public Reporting

Annual Carbon Report:

- Executive summary and key highlights

- Emissions inventory by scope and source

- Performance against targets

- Reduction initiatives and outcomes

- Offsetting activities (if any)

- Verification statement

- Future plans and commitments

Reporting Frameworks:

- GRI Standards (GRI 305: Emissions)

- CDP Climate Change questionnaire

- IFRS S2 Climate-related Disclosures

- Times Higher Education Impact Rankings

- HEC sustainability reporting

Disclosure Platforms:

- University website (dedicated sustainability portal)
- Annual Sustainability Report
- CDP submission
- External rankings and assessments

10. STAKEHOLDER ENGAGEMENT

10.1 Internal Engagement

Faculty and Staff:

- Carbon literacy training programs
- Departmental carbon budgets and targets
- Green office certification
- Recognition and incentive programs

Students:

- Curriculum integration (carbon accounting courses)
- Student research projects on emissions reduction
- Campus carbon footprint competitions
- Sustainability ambassador programs

10.2 External Engagement

Government:

- Report to Ministry of Climate Change
- Support national GHG inventory development
- Participate in climate policy consultations
- Align with Pakistan's NDC implementation

Industry and Business:

- Share best practices through CORE-CF
- Support supplier carbon reduction
- Collaborate on sectoral decarbonization
- Advocate for carbon pricing and policy

International Community:

- UNFCCC COP participation (through CORE-CF)
- International university climate networks
- Research collaboration on carbon management
- Knowledge sharing and capacity building

11. POLICY REVIEW AND CONTINUOUS IMPROVEMENT

11.1 Review Cycle

Annual Review:

- Performance against targets
- Methodology updates (GHG Protocol, ISO 14064 revisions)
- Emission factor updates (IPCC, national data)
- Stakeholder feedback incorporation

Comprehensive Review (Every 3 Years):

- Target ambition assessment (SBTi alignment)
- Technology and market development assessment
- Policy and regulatory alignment
- Best practice benchmarking

11.2 Continuous Improvement

Innovation and Research:

- Pilot emerging carbon reduction technologies
- Research on carbon removal and offsetting
- Development of Pakistan-specific emission factors
- Integration of AI/ML for carbon management

Capacity Building:

- Professional certifications for carbon management staff
- Training programs for wider University community
- Workshops on carbon accounting and reporting
- Student internships in carbon management

Knowledge Sharing:

- Publish case studies and best practices
- Present at national and international conferences
- Contribute to policy development
- Support other Pakistani universities in carbon management

IMPLEMENTATION ROADMAP

S.No	Phase	Timeline	Key Activities
1	Phase 1:	Foundation 2025	Policy approval, governance establishment, baseline inventory, team training
2	Phase 2:	Integration 2026-2027	System implementation, supplier engagement, curriculum integration, first verified inventory
3	Phase 3:	Acceleration 2028-2030	Major capital projects (solar, efficiency), 50% reduction achievement, carbon neutrality for Scope 2
4	Phase 4:	Transformation 2031-2035	Supply chain transformation, 75% reduction, nature-based solutions
5	Phase 5:	Net Zero 2036-2040	Residual emission elimination, carbon removal, net-zero achievement

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