

SDG 12

RESPONSIBLE CONSUMPTION AND PRODUCTION



ANNUAL REPORT 2024-25

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



Brainware University

398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata,
West Bengal 700125



Email: info@brainwareuniversity.ac.in

Website: <https://www.brainwareuniversity.ac.in/>

Sustainable Development Goal 12 — Responsible Consumption and Production

Sustainable Development Goal 12 focuses on ensuring sustainable consumption and production patterns — a challenge that lies at the heart of environmental protection, resource efficiency, and long-term economic growth. For an academic institution like **Brainware University**, this goal extends beyond curriculum or compliance. It translates into a complete rethinking of how the university community consumes, conserves, recycles, and innovates.

Located in a semi-urban corridor of North 24 Parganas, Brainware University is uniquely positioned to influence both rural and urban consumption behaviours. Its campus serves as a living laboratory for sustainability — from **solar-powered buildings and solid waste segregation systems** to **biodegradable packaging research, renewable-energy innovation, and eco-literacy programmes**.

During 2024–25, the University significantly expanded its sustainability footprint through energy conservation, waste-to-resource initiatives, sustainable procurement practices, and research-driven green innovation.

Institutional Vision and Alignment with SDG 12

The University's **Strategic Plan 2023–28** prioritizes sustainability as a transversal theme across teaching, research, operations, and outreach. SDG 12 specifically aligns with institutional objectives to:

- Promote **resource-efficient infrastructure** and energy self-sufficiency.
- Foster **research and innovation** in renewable energy, biodegradable materials, and waste valorization.
- Integrate **sustainability education** into all academic disciplines.
- Build **responsible behavioural patterns** among students, staff, and local communities through awareness and engagement.

The University's initiatives are directly aligned with the SDG 12 targets, particularly **12.2 (efficient resource use)**, **12.4 (environmentally sound waste management)**, **12.5 (reduce waste generation)**, and **12.8 (information and awareness for sustainable lifestyles)**.

Sustainable Campus Practices

Energy Efficiency and Renewable Integration

In 2024–25, Brainware University strengthened its energy transition with two large-scale solar projects:

1. **150.15 kWp Solar Power Plant** (ECE Department) – ₹47.84 lakh project generating ~210 MWh annually, covering a significant portion of campus electricity needs.
2. **100.10 kWp Grid-Connected PV System** (EE Department) – ₹36.45 lakh installation optimizing rooftop energy usage.

Together, these initiatives offset around **190 tonnes of CO₂ annually**. Lighting systems across academic blocks have been converted to **LED**, and motion sensors have been installed in hallways and labs to cut power wastage.

Green Procurement and Resource Optimization

Procurement policies now emphasize:

- Preference for **local and eco-certified vendors**.
- Digitization of administrative workflows (reducing paper consumption by 80%).
- Reuse and refurbishment of IT equipment.
- Adoption of recyclable packaging in lab and cafeteria supplies.

The University's Finance and Administration offices monitor resource utilization through monthly sustainability audits.

Research and Development on Sustainable Production

Research at Brainware University plays a transformative role in advancing responsible production systems — from waste conversion to renewable alternatives and low-cost green technologies.

Innovation, Patents, and Technology Transfer

The year 2024–25 witnessed a surge of patent activity supporting the ethos of responsible production.

Selected Patents and Designs:

- *Method and System for Producing Bioplastics from Used Cigarette Butts* — Biotechnology.
- *System and Method for Producing Bioplastics from Elephant Foot Yam Waste* — Biotechnology.
- *AI-Driven Framework for Environmental Sustainability through Cloud and IoT* — CSE-AI.
- *Device for Measuring Water Pollutants* — CSE.
- *AI-Based Food Safety Prediction Tool* — Hospital Management.

Together, these patents illustrate Brainware's focus on **recycling, bio-based production, and eco-intelligent technologies**, providing scalable models for sustainable manufacturing and consumption.

Academic and Student Engagement

Brainware University considers its students as ambassadors of sustainable behaviour. Throughout 2024–25, academic programmes and extracurricular activities integrated SDG 12 themes.

Curriculum and Classroom Integration

Courses in Environmental Science, Biotechnology, Management, and Engineering included case studies on waste reduction, life-cycle assessment, and sustainable manufacturing.

Publications and Knowledge Dissemination

Faculty across disciplines published extensively on sustainability-related themes, linking responsible production to environmental and social well-being.

Representative Publications:

- *“Solid Waste Management in Educational Institutions: A Scalable Model for India’s Semi-Urban Sector.”*
- *“Bioplastics from Agricultural Waste: Economic and Environmental Assessment.”*
- *“Sustainable Food Packaging Innovation Using Bio-Polymers.”*
- *“Renewable Energy and Institutional Carbon Footprint Reduction.”*
- *“Student Attitudes Toward Sustainable Campus Behaviour.”*

These works collectively enhance academic understanding and policy advocacy on SDG 12 implementation.

Brainware University’s journey under SDG 12 during 2024–25 demonstrates that responsible consumption and production are achievable through integrated institutional planning.

From renewable energy systems to waste management, from biodegradable packaging research to sustainability education, every domain of university life has begun to mirror the principles of efficiency, ethics, and environmental responsibility.

The University’s actions exemplify how higher education institutions can drive the shift toward a **circular economy**—one where waste becomes resource, consumption becomes conscious, and progress remains sustainable.

By embedding sustainability in its DNA, **Brainware University** is shaping not only responsible professionals but also responsible citizens capable of leading India toward a greener, cleaner, and more sustainable tomorrow.