



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100+
YEARS
1921 - 2021



SDG 9: Industry Innovation and Infrastructure

(Building Resilient Infrastructure, Promoting Inclusive & Sustainable Industrialization, and Fostering Innovation)

1. Introduction

Harcourt Butler Technical University (HBTU), Kanpur, has embraced Sustainable Development Goal 9 (SDG 9) as a strategic driver to strengthen infrastructure, promote sustainable industrialization, and stimulate innovation. Through its investments in smart infrastructure, promotion of research and development, and creation of a dynamic innovation ecosystem, the University continues to advance national and global objectives under SDG 9.

This report outlines HBTU's current initiatives, policy frameworks, and forward-looking strategies that align with specific SDG 9 targets and indicators. It also suggests new opportunities for growth and improvement at the institutional level.

2. Alignment of University Actions with SDG 9 Targets and Indicators

Target 1: Develop quality, reliable, sustainable and resilient infrastructure

University Actions

- Construction of green buildings in compliance with IGBC guidelines.
- Installation of rainwater harvesting systems and wastewater treatment units.
- Development of smart classrooms and digitally enabled laboratories.

Indicators Addressed

- Proportion of population with access to sustainable and resilient infrastructure.
- Institutional transport and campus logistics indicators (adapted at campus level).

Target 2: Promote inclusive and sustainable industrialization

University Actions

- Establishment of Centres of Excellence in AI, IoT, renewable energy, cleantech, and automation.
- Integration of industry-led training programs and industrial visits.



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100+
YEARS
1921 - 2021



- Implementation of industry-academic R&D collaborations for product development.

Indicators Addressed

- Value added through technology and innovation at institutional level.
- Proportion of technical graduates employed in manufacturing/industrial sectors.

Target 4: Upgrade infrastructure and retrofit industries for sustainability

University Actions

- Campus-wide transition to LED lighting and energy-efficient devices.
- Deployment of solar panels and motion sensors to reduce energy intensity.
- Smart grid and utility monitoring systems under development.

Indicators Addressed

- Reduction in carbon footprint per unit of building area or utility consumption.

Target 5: Enhance scientific research and upgrade technological capabilities

University Actions

- Internal research funding and publication incentives.
- Filing of patents and promotion of interdisciplinary innovation.
- Participation in national research schemes such as SERB, AICTE, and DST.

Indicators Addressed

- Proportion of total university budget allocated to R&D.
- Number of researchers, patents filed, and publications per faculty member.

Target 6: Support domestic technology development and value addition

University Actions

- Innovation and Incubation Centre hosting more than 13 startups.
- Seed grants, prototype support, and IP protection services.



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100+ YEARS
1921 - 2021



- Startup exposure through industry mentors and accelerator programs.

Indicators Addressed

- Proportion of technology-based startups incubated and supported.

3. Policy Framework and Operational Guidelines

HBTU has adopted the following structured policies to institutionalize innovation and infrastructure excellence:

- **Green Infrastructure Policy:** Integration of IGBC/GRIHA norms in all new construction, resource-efficient designs, and waste minimization.
- **R&D and Innovation Policy:** Allocation of research grants, support for patent filing, and recognition for publication in high-impact journals.
- **Industry-Academic Collaboration Policy:** Framework for joint research, curriculum design, industrial training, and tech transfer.
- **Startup Incubation Policy:** Governs pre-incubation, mentoring, seed funding, market linkages, and exit strategy.
- **Smart Campus Governance:** Encourages sensor-based monitoring, e-governance systems, and digital infrastructure scaling.

4. Proposed University-Level Initiatives to Accelerate SDG 9

Initiative	Potential Indicator
Establishment of R&D Dashboard across departments	Number of publications, patents, grants, and citations per year
IoT-Based Utility Management Systems	Per capita water and electricity consumption
Campus Green Mobility (EV Charging + Smart Bikes)	% modal shift from fossil-fuel to sustainable mobility
Student Research Incubation Program	Number of student projects transitioning to startup/incubation phase
Industry-Focused Tech Transfer Cell	Number of technologies licensed to industries



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100+ YEARS
1921 - 2021



AI & Automation Bootcamps for Faculty and Staff	Faculty participation rate and post-training research collaborations
Annual Innovation Ranking for Departments	Rankings based on measurable innovation output and research application
Smart Classroom Expansion Plan	Number of digitally enabled teaching-learning spaces

5. Monitoring and Evaluation Framework

A robust, indicator-based M&E framework will help measure the effectiveness and long-term impact of HBTU's SDG 9 initiatives:

- **Innovation Performance Index**
 - Total R&D expenditure as % of annual budget.
 - Number of funded research projects, patents, and interdisciplinary collaborations.
- **Green Infrastructure Metrics**
 - Number of buildings certified under green construction standards.
 - Energy savings (kWh), water savings (litres), and GHG emissions avoided.
- **Technology Transfer & Commercialization**
 - Number of tech solutions transferred to industry.
 - Licensing revenue generated from intellectual property.
- **Entrepreneurship Development Metrics**
 - Number of active startups, jobs created, survival rates after incubation.
 - Funding attracted (angel/VC/government schemes).
- **Skill Development & Training Effectiveness**
 - Participation rates in industry-focused bootcamps, certifications, and FDPs.
 - Post-training employment rate and competency improvement.
- **Digital Infrastructure Utilization**
 - Utilization metrics of smart classrooms, online platforms, and IT tools.



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : vc@hbtu.ac.in

100+
YEARS
1921 - 2021



- Feedback mechanisms for technology-assisted learning and administration.
- **Annual SDG 9 Impact Report**
 - A comprehensive report published annually showcasing all SDG 9 progress indicators, with comparative benchmarking and qualitative narratives.

6. Summary

HBTU Kanpur is strategically aligned with SDG 9 through integrated actions focused on building resilient infrastructure, fostering sustainable industrial partnerships, and cultivating innovation. Its forward-thinking approach, rooted in smart systems, research excellence, and entrepreneurial support, reinforces its role as a leading contributor to inclusive industrial and technological advancement.

Ongoing and future initiatives, if scaled effectively and supported by a rigorous monitoring framework, will ensure that HBTU continues to be a pioneer in realizing the national and global vision for innovation-driven development.