Azerbaijan TECHNICAL University

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Report on Sustainable Development Goal 9

Industry, Innovation and Infrastructure

2025



Foreword

This report outlines Azerbaijan Technical University's (AzTU) continuing commitment to the United Nations Sustainable Development Goal 9 — Industry, Innovation, and Infrastructure. In 2025, AzTU strengthened its commitment to sustainable industrialization and innovation through research partnerships, industry engagement, and investment in innovation ecosystems. By modernizing laboratory infrastructure, fostering technology transfer, and engaging students in applied R&D, the University strengthened the link between academia and national industrial growth.

Introduction

SDG 9 emphasizes building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation.

In 2025, AzTU expanded its research capacity and digital infrastructure while deepening its strategic partnerships with local and international technology leaders. These initiatives enhanced applied engineering research, supported startups, and increased student participation in industrial innovation projects.

This report details AzTU's tangible actions across innovation, R&D, technology cooperation, and infrastructure modernization.

The Quality Assurance Department monitors all university activities under the SDG framework to ensure transparency, efficiency, and measurable outcomes.

References

National Information Portal on Sustainable Development Goals of the Republic of Azerbaijan AzTU Sustainability

AzTU SDG 9 Report / November 2023

Azerbaijan Technical University and Dithari Technologies Sign MoU on the Establishment of DISC Innovation and Sustainability Lab

Memorandum of Cooperation Signed Between AzTU and Baykar Technological Azerbaijan Company The Next Online Meeting of Partners within the Greentech Horizons Project

A Workshop on Artificial Intelligence in Precision Agriculture Project

Seminar on Artificial Intelligence and Digitalization in German Language Teaching

An Informative Seminar on ISO 21001:2018 Management System Standard for Educational Organizations A Digital Transformation Strategy Will Be Developed for AzTU

AzTU Team Leads the Shift from Wi-Fi to Li-Fi Innovation

AzTU Hosted the International Startup Competition "Finding Innovative and Creative Solutions" (FICS 2025)

CTF Competition Held at AzTU

Students of AzTU Won 2nd Place in the GreenTech II Startup and Green Technologies Competition

SDG 9 keywords - Industry, innovation and infrastructure			
Industry, Innovation and Infrastructure	Sustainable Industrial Development	Technological Innovation	Research and Development (R&D)
University–Industry Collaboration	Industrial Research Partnerships	Innovation Ecosystems	Technology Transfer
Research Commercialization	Digital Transformation	Digital Infrastructure	Smart Infrastructure
Infrastructure Modernization	Engineering Innovation	Applied Research	Innovation Laboratories
Sustainable Infrastructure	Renewable Energy Technologies	Solar Energy Infrastructure	Industrial Automation
Robotics and Industry 4.0	Artificial Intelligence Applications	AI in Precision Agriculture	Aerospace Technology
Unmanned Aerial Vehicle (UAV) Technologies	Defense Technology Innovation	Circular Economy	Green Technology Innovation
Clean Technologies	Sustainable Manufacturing	Waste Recycling Technologies	Bioethanol Production from Food Waste
Smart Mobility Solutions	Sustainable Urban Transport	Cybersecurity Innovation	Startup Development

SDG 9 Targets

- **Green Energy Project:** AzTU is developing an innovative energy solution by installing 6,500 square meters of solar panels on its campus, transforming its technology park into an energy producer capable of generating 1.2 MW of electricity. This initiative reflects AzTU's commitment to sustainable energy production, contributing to the broader goals of sustainable infrastructure development. The university will become the first model in Azerbaijan to operate as an independent energy producer, reducing its environmental footprint and setting an example for sustainable campus operations.
- **University-Industry Collaboration in Defense & Engineering:** AzTU focuses on fostering sustainable industrialization by aligning engineering education with industry needs. This is achieved through the development of modern educational programs that incorporate real-world industrial challenges, particularly in the defense sector. The university collaborates with leading industry players like Turkish Aerospace Industries (TUSAŞ) to provide practical, hands-on experience to students in aerospace and defense technology. Through collaborative projects such as TUSAŞ Lift Up and "AzTU-Turkish Aerospace, MGP 2023.1", students engage in solving industry-specific problems related to aerospace technologies, thus supporting sustainable industrial growth.
- **Commercialization of Research:** AzTU aims to facilitate the commercialization of its research outputs by directly involving industry in the discussions of research results and the commercialization process. Through collaboration with industry stakeholders, the university will help bridge the gap between academic research and its practical applications in small and medium-sized enterprises (SMEs), contributing to their growth and development.
- **Food Waste Recycling Project:** AzTU is undertaking a project to investigate the potential of bioethanol production from food waste in Baku. This project, which is being developed in collaboration with the Turkish company Ilginlar, aims to upgrade the infrastructure for waste management and recycling in Azerbaijan. It will contribute to sustainable practices in industries dealing with food production and waste management, creating new opportunities for sustainable energy generation from organic waste.
- **Intra-City Mobility Plan (ICMP):** AzTU supports sustainable urban development in Azerbaijan through the Institute of Logistics and Transport, which provides advisory services for Intra-City Mobility Plans. Since 2024, this advisory work has covered 25 cities and regions across Azerbaijan, including large cities such as Ganja and Sumgayit as well as smaller municipalities. By helping cities optimize their transport networks and improve mobility, AzTU contributes to the development of resilient infrastructure, thus aligning with SDG 9's targets for sustainable development.
- **"Innovative Solutions" Competition:** In 2024, AzTU launched the "Innovative Solutions" Competition for teachers, encouraging new approaches to teaching and problem-solving in areas like e-education, university asset management, and the reuse of university vehicles. These projects aim to generate innovative solutions to real-world challenges at AzTU and will contribute to the university's role in fostering domestic technological innovation.

Statistics and their indicators

Indicator	2023	2024	2025	Source
Innovation labs operational on campus	4	6	8 (incl. DISC Lab)	AzTU News, 2025
MoUs signed with tech companies	7	10	13	AzTU SDG-9 (2024) + 2025 updates
R&D projects with industry partners	9	12	15	AzTU Research Office data 2025
International collaborative research projects	5	7	9	Greentech Horizons, 2025
Startup initiatives supported	8	11	15	AzTU FICS 2025
AI-related academic events	3	5	7	AzTU News 2025
Major infrastructure upgrades (digital/energy)	2	3	5	AzTU Digital Transformation Strategy, 2025

SDG 9's Positive Impact on other SDGs

SDG 1 No Poverty: SDG 9 supports poverty reduction by fostering industrial development and creating employment opportunities. Improved infrastructure expands access to markets, services, and economic resources, helping individuals and communities increase their income and improve their living standards.

SDG 2 Zero Hunger: Through innovations in agricultural technologies and supply chains, SDG 9 enhances food production and distribution. Better infrastructure reduces post-harvest losses and improves access to nutritious food, contributing to food security.

SDG 3 Good Health and Well-Being: Strong infrastructure under SDG 9 ensures reliable healthcare facilities, transportation networks, and medical technologies. These developments provide communities with better access to healthcare services and emergency medical support.

SDG 8 Decent Work and Economic Growth: SDG 9 drives economic growth by promoting industrialization, entrepreneurship, and technological advancement. These activities create employment and enhance productivity within economies.

SDG 11 Sustainable Cities and Communities: Infrastructure development contributes to efficient transportation systems, modern urban planning, and smart city solutions. These improvements help cities become more resilient and sustainable.

SDG 12 Responsible Consumption and Production: Technological innovation under SDG 9 encourages cleaner production methods, reduces resource waste, and supports environmentally responsible manufacturing and consumption practices.

SDG 13 Climate Action: SDG 9 promotes the development of low-carbon technologies and eco-friendly industrial systems. These innovations help reduce greenhouse gas emissions and combat climate change.

SDG 17 Partnerships for the Goals: SDG 9 encourages global cooperation in research, innovation, and knowledge-sharing. International partnerships accelerate progress toward sustainable development across all SDGs.

Current Situation

1. **Establishment of Innovation & Research Ecosystems**

- **DISC Innovation and Sustainability Lab** was launched in partnership with *Dithari Technologies*, focusing on research in circular economy, sustainability, and digital innovation. The lab provides students with direct exposure to industrial-grade software and innovation tools. Source
- **Baykar Technological Azerbaijan Collaboration** — A Memorandum of Cooperation was signed to promote applied aerospace research, UAV technologies, and training programs in defense tech innovation. Source
- **Greentech Horizons Project Participation** — AzTU continued its involvement in this EU-supported consortium project focused on green technology research and innovation ecosystems. Source

2. **Advancing Applied Research and Technology Transfer**

- **Artificial Intelligence in Precision Agriculture Workshop** — AzTU hosted a national workshop showcasing the use of AI-driven monitoring and automation in agriculture, reinforcing interdisciplinary innovation. Source
- **Seminar on AI and Digitalization in Language Teaching —** Promoted digital transformation in education through AI-enabled pedagogical tools. Source
- **ISO 21001:2018 Implementation Workshop —** Conducted to improve management standards in educational institutions, supporting quality infrastructure for sustainable industrialization. Source

3. **Infrastructure Development**

- **Digital Transformation Strategy** — AzTU officially announced the start of a comprehensive digital transformation strategy to modernize academic, administrative, and research infrastructure. Source
- **Laboratory Modernization** — The University expanded its engineering labs with new energy-efficiency and automation systems, supporting both student research and industry-linked projects.
- **Smart Infrastructure Upgrades** — Campus-wide fiber connectivity and Li-Fi experimentation projects were continued under the “Wi-Fi to Li-Fi” transition initiative. Source

4. **Promoting Innovation Culture Among Students**

- **International Startup Competition – FICS 2025** hosted by AzTU brought together 60 teams from 21 local and 2 international universities, fostering creativity and cross-border cooperation. Source
- **GreenTech II Startup Competition** — AzTU students won 2nd place in the Green Transport category with the “City Mobility” micromobility project. Source
- **CTF Cybersecurity Competition** — Organized at AzTU to strengthen national cybersecurity competencies and inspire innovation among young developers. Source

Future Goals

1. **Expand Industry 4.0 Capabilities** — Develop a dedicated *Industrial Automation and Robotics Innovation Center* within the existing DISC Lab network.
2. **Increase Applied Research Funding** — Establish an AzTU Innovation Fund to co-finance university–industry joint R&D projects.
3. **Launch Technology Transfer Office (TTO)** — To commercialize patents, prototypes, and start-up products generated within AzTU.
4. **Enhance Digital Infrastructure** — Complete implementation of the Digital Transformation Strategy by 2026, including cloud-based research management systems.
5. **Boost International Research Collaboration** — Increase participation in EU Horizon and Erasmus+ Capacity Building projects focusing on smart infrastructure and clean technologies.

Conclusion

In 2025, AzTU demonstrated a strategic and measurable advancement in implementing SDG 9 through innovative partnerships, infrastructure upgrades, and applied research programs. The creation of the DISC Innovation Lab, participation in Greentech Horizons, and cooperation with Baykar Technological Azerbaijan highlight AzTU's commitment to innovation-driven development.

The University's forward-looking digital transformation strategy and investment in research capacity ensure continued alignment with national industrial priorities and global sustainability goals.