SDG 7 – Institutional Report: "Energy Saving and Renewable Energy Promotion" Seminar TIIAME National Research University

Between 19 and 21 September 2023, TIIAME conducted a three-day training seminar titled **"Electric energy saving and rational consumption, and expansion of renewable energy sources"**. The seminar targeted industry professionals from major enterprises and substations in the regions of Angren, Nurafshon and Ohangaron, with a total of 60 participants. (Tiiame)

The seminar program covered the following topics:

- Use of renewable energy sources in electricity consumption. (Tiiame)
- Problems of frequency control in power supply systems. (Tiiame)
- Improving operational efficiency of electrical equipment and eliminating existing deficiencies. (Tiiame)
- Reactive power compensation to reduce losses in electrical networks. (Tiiame)
- Integration of renewable energy sources into distribution power systems. (Tiiame)
- Challenges and solutions for using small hydropower installations in Uzbekistan. (Tiiame)
- Proper selection of cables and switching devices in low- and high-voltage networks. (Tiiame)

During the final day participants engaged in **field-based practical exercises** in Angren and Ohangaron, applying energy-saving methods and renewable-energy integration under real-world conditions. (Tiiame)

This educational and technical intervention supports **SDG 7** by:

- Enhancing energy-efficiency awareness and technical competence among local industry professionals.
- Promoting the adoption of renewable energy sources and modern energy-efficient practices in industrial and utility sectors.
- Demonstrating practical pathways to reduce electrical losses, increase supply reliability, and lower environmental impact through efficient energy management and renewable integration.

Reference: Seminar announcement and report, TIIAME News, 21 September 2023. https://tiiame.uz/news?id=7594

“Successful Startup” Webinar
TIIAME National Research University

On 19 December 2024, **TIIAME National Research University** hosted the educational-practical webinar “Muvaffaqiyatli startap” (“Successful Startup”), targeting emerging engineers, researchers, and young innovators. The official announcement can be accessed at: https://tiiame.uz/news?id=7810

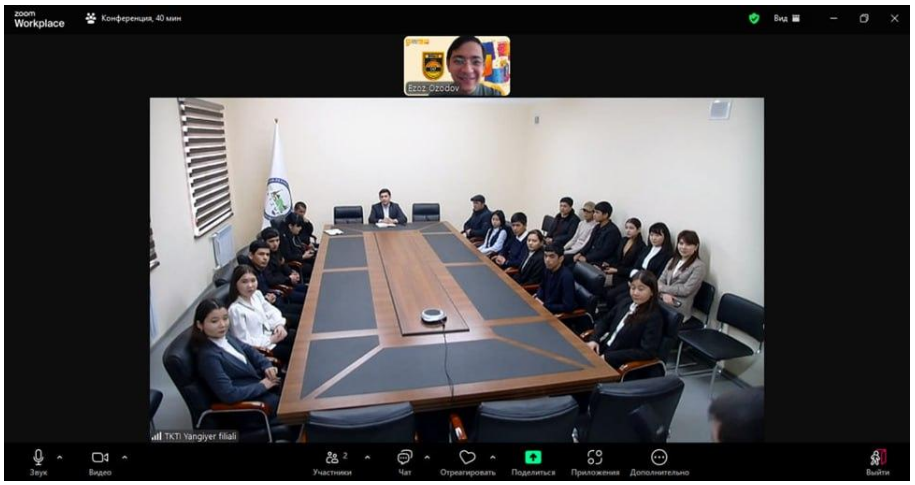
The event’s purpose was to cultivate competencies in innovation management, startup development, and technology commercialization. Participants received instruction in business modeling, resource mobilization, and strategic planning — skills essential for transforming engineering concepts into viable, scalable enterprises. Although not confined to a specific industrial domain, the training framework inherently supports the creation of projects focused on energy efficiency, clean-energy technologies, and sustainable industrial practices.

From the standpoint of **SDG 7**, this webinar contributes to the long-term enhancement of human capital necessary for driving energy-efficient and clean-energy innovations. By equipping young professionals with entrepreneurial and technical skills, the initiative builds the foundational capacity for future enterprises that may contribute to energy-efficient industrial machinery, renewable energy deployment, and overall decarbonization of industrial operations in Uzbekistan.

The strategic value of this initiative lies in its indirect but critical role in fostering a sustainable ecosystem for clean-energy technology development, technological entrepreneurship, and industry-wide energy-intensity reduction. Through raising the level of innovation literacy and business acumen among students and researchers, TIIAME strengthens its institutional role as a national hub for green technology education and industrial modernization.

Moreover, by promoting a culture of entrepreneurship and applied research, this capacity-building measure aligns with national priorities for green economic development, low-carbon transition, and sustainable industrial growth. At the global level, it enhances the university’s profile regarding SDG-aligned performance, contributing to metrics of energy-related research, innovation output, and human-resource development for sustainable energy.

Reference for further details: TIIAME National Research University. “Muvaffaqiyatli startap” webinar. 19 December 2024. https://tiiame.uz/news?id=7810



SDG 7 / Institutional Capacity-Building Report: Training Seminar for Civil Servants in Jizzakh – Clean-Energy & Governance Context
TIIAME National Research University

On 17 December 2024, TIIAME conducted a four-day training and practical seminar for local government officials, organizational staff leaders, and candidates for national personnel reserve in Jizzakh region, held at the regional Polytechnic Institute. (https://tiiame.uz/news?id=7790)

The seminar's main objective was to communicate and implement key national strategic directives related to environmental protection and the transition to a green economy, as announced by state leadership — particularly in the context of the designation of 2025 as the "Year of Environment Protection and Green Economy." (https://tiiame.uz/news?id=7790)

Although the event was not strictly a technical course on energy systems, it provided participants with awareness and understanding of priorities in environmental sustainability, regulatory requirements, and institutional responsibilities for green governance. This capacity-building initiative is therefore a foundational step to facilitate future adoption of clean-energy, energy-efficiency, and sustainable infrastructure practices across public administration and local governance — contributing indirectly but meaningfully to **SDG 7** goals.

Key contributions of the seminar to SDG 7 relevance:

- It prepares governmental and administrative personnel for decision-making and oversight related to green-economy policies, energy-efficiency regulations, and environmental standards.
- It raises institutional awareness about sustainable development, which is a prerequisite for large-scale transition toward low-carbon energy infrastructures and efficient energy use in public sector operations.
- It helps embed sustainability and clean-energy consciousness into public administration, which can accelerate the adoption of renewable energy projects, energy-efficient public services, and regulatory support for green investments.

At the national level, the initiative aligns with Uzbekistan's broader policy objectives on environmental preservation and green economic transformation. At the institutional level, TIIAME demonstrates its commitment not only to technical education and research — but also to shaping the human-resource and governance environment necessary for sustainable energy transition and clean-energy implementation across sectors.

For more details, see the official announcement: "Jizzakhda davlat xizmatchilari uchun o'quv-amaliy seminar boshlandi", TIIAME News, 17 December 2024. (https://tiiame.uz/news?id=7790)

SDG 7 / Energy-Efficiency & Industry Collaboration Report — "Energo Max Group" Partnership
TIIAME National Research University

On 5 December 2024, **TIIAME National Research University** announced a formal cooperation agreement with **Energo Max Group** aimed at strengthening practical training and applied engineering education in the fields of electrotechnics, mechatronics, and technical expertise. Official details are available at: https://tiiame.uz/news?id=7651

Under this partnership, the university's **"Electrotechnics and Mechatronics"** department integrates industrial-level practical lessons into academic curricula. For the degree programmes in Mechatronics and Robotics (code 60711500) and Technical Expertise and Marketing of Engineering & Technologies (code 60722900), a structured "3 + 3" training model has been implemented: three years of theoretical instruction at the university, followed by three years of applied, on-site practice at Energo Max Group's facilities. This hands-on industrial exposure ensures that future engineers graduate with real-world experience in managing, maintaining, and implementing modern electrotechnical systems.

This collaboration directly contributes to **SDG 7** goals by enabling the development of a skilled workforce capable of designing, deploying, and managing energy-efficient electrotechnical and mechatronic systems in industry and infrastructure. Through early and continuous exposure to modern industrial technology, students acquire competencies necessary for improving energy efficiency in manufacturing, automation, and technical expertise sectors — a foundational step for large-scale clean-energy adoption and energy-intensity reduction in national industry.

Moreover, the initiative strengthens the link between academic education and industrial requirements, promoting technology transfer, innovation uptake, and sustainable workforce development. Recognition of the company's contribution — expressed through a formal letter of thanks to the company's deputy director for commitment to student training — underscores the success of this cooperative model and the institutional commitment to quality engineering education.

At the national level, the partnership supports Uzbekistan's broader strategy of industrial modernization, energy-efficiency advancement, and green economy development. At the institutional level, it enhances TIIAME's role as a leading center for producing industry-ready engineers trained in contemporary, energy-efficient technologies. The collaboration thus represents a measurable and strategic contribution to SDG 7, by fostering human capital and enabling practical deployment of energy-efficient systems across industry.

SDG 7 / Scientific & Educational Contribution Report — Participation in National "Quantum Week" Events
TIIAME National Research University

On 13 December 2024, **TIIAME National Research University** participated in the first national "Quantum Week" (I Kvant haftaligi) — a large-scale international conference on quantum technologies and scientific innovation. The event was held under the auspices of the Academy of Sciences of Uzbekistan and brought together leading domestic and foreign scientists and researchers in the fields of quantum physics, nanotechnology, photonics, and optoelectronics. Official information about the event is available at: https://tiiame.uz/news?id=7762 (tiiame.uz)

Representatives from TIIAME — including staff and doctoral students from the departments of "Information Technologies" and "Digital Technologies and Artificial Intelligence," as well as researchers from the university's "Quantum Technologies Center" — took part in this conference. Their participation underlines the university's commitment to advanced scientific research and integration into global innovation networks. (tiiame.uz)

From the perspective of **SDG 7**, involvement in quantum technologies and cutting-edge scientific dialogues constitutes a strategic institutional investment in future clean-energy and energy-efficient solutions. Quantum science and associated fields (nanophotonics, optoelectronics, quantum computing and sensing) have high potential to influence energy systems — for instance, by improving energy efficiency in computation, enabling new materials for energy conversion or storage, and supporting high-precision sensing and control systems for smart grids. By engaging in such international-level scientific collaboration, TIIAME positions itself as a hub for long-term research and innovation that may yield breakthrough technologies relevant for sustainable energy.

Moreover, inclusion of quantum-technologies research within the university's academic portfolio enhances human capital, fosters interdisciplinary expertise (engineering, ICT, physics), and strengthens the institutional research infrastructure. This reinforces TIIAME's role not only in education and agricultural mechanization but also in high-tech innovation, broadening its capacity to contribute to green energy transitions, energy efficiency, and sustainable development.

At the institutional and national levels, participation in "Quantum Week" supports the creation of a research-oriented community capable of exploring advanced energy-related solutions, contributing to modernization of the energy sector in Uzbekistan, and aligning the university's scientific agenda with global clean-energy and sustainability priorities under SDG 7.

Reference for further details: "O'zbekistonda I Kvant haftaligi davom etmoqda!" — TIIAME News, 13 December 2024. https://tiiame.uz/news?id=7762