Slovak University of Technology in Bratislava

Sustainability Report 2024

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Content

Strategic commitments to SDGs: 3

SDG1: No Poverty: Ending poverty in all its forms everywhere. 4

SDG2: Zero Hunger: Ending hunger, achieving food security, and improving nutrition and promoting sustainable agriculture. 6

SDG 3 : Good Health and Well-being: Ensuring healthy lives and promoting well-being for all at all ages. 9

SDG4: Quality Education: Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. 12

SDG 5: Gender Equality: Achieving gender equality and empowering all women and girls. 17

SDG 6 : Clean Water and Sanitation: Ensuring availability and sustainable management of water and sanitation for all. 20

SDG 7 : Affordable and Clean Energy: Ensuring access to affordable, reliable, sustainable and modern energy for all. 27

SDG 8: Decent Work and Economic Growth: Promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. 35

SDG 9: Industry, Innovation and Infrastructure: Building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation. 39

SDG 10: Reduced Inequalities: Reducing inequality within and among countries. 44

SDG 11: Sustainable Cities and Communities: Making cities and human settlements inclusive, safe, resilient and sustainable. 48

SDG 12: Responsible Consumption and Production: Ensuring sustainable consumption and production patterns. 55

SDG 13: Climate Action: Taking urgent action to combat climate change and its impacts. 59

SDG 14: Life Below Water: Conserving and sustainably using the oceans, seas and marine resources for sustainable development. 64

SDG 15: Life on Land: Protecting, restoring and promoting sustainable use of terrestrial ecosystems, sustainably managing forests, combating desertification, and halting and reversing land degradation and halting biodiversity loss. 65

SDG 16: Peace, Justice and Strong Institutions: Promoting peaceful and inclusive societies for sustainable development, providing access to justice for all, and building effective, accountable and inclusive institutions at all levels. 68

SDG 17: Partnerships for the Goals: Strengthening the means of implementation and revitalizing the global partnership for sustainable development. 72

The Slovak university of Technology in Bratislava commits explicitly to the **2030 Agenda for Sustainable Development (SDGs)**, integrating these principles into its overall strategy, values, and research focus areas.

Strategic commitments to SDGs:

• **Values Integration:** The principles of **environmental sustainability** and **social responsibility** are formally anchored within the STU Statute.

• **Target Group:** A dedicated working group, **STUBA 2030(+): Emission-Free University**, was established to draft a **sustainable STU strategy** aimed at creating a low-carbon, energy-efficient, and socially responsible institution committed to the **SDGs,** aiming for increasing of sustainability awareness of staff and students.

• **Measurement:** One key performance indicator tracked by the university is the **number of scientific publications related to Sustainable Development Goals**

Although our main domains are the SDG 3,6,7,9,11 and 17, we contribute to other Sustainable Development Goals too as it is stated in Long Term Plan for 2025-2031 too.

SDG1: No Poverty: Ending poverty in all its forms everywhere.

STU's contribution to eliminating poverty is generally focusing on economic opportunity and social support:

• **Social and Financial Support to Students:**

In the academic year 2024/2025 (as of October 31, 2024), STU had a total of **1,883 students from Ukraine** — **1,779** in bachelor's programs, **87** in master's programs, and **17** in doctoral programs — representing an **increase of 558 Ukrainian students** compared to the academic year 2023/2024. STU provided support to students from Ukraine — who often experience poverty or displacement — including accommodation, meals, and intensive Slovak language courses.

In the academic year 2023/2024, STU awarded scholarships from its scholarship fund to students from Ukraine — in the form of motivation scholarships as well as extraordinary scholarships from STU's own resources — provided they met the conditions set out in the STU Scholarship Regulations. During the reporting period, STU granted scholarships to students from Ukraine in a total amount of **€146,838**. STU provided a series of measures, including **308 extraordinary scholarships**, totaling €68,970, to students from Ukraine affected by the military conflict.

In the 2023/2024 academic year, 5% of international students at the Slovak University of Technology (STU) studied under the Slovak Republic Government Scholarship Programme (official development assistance), representing a total of 94 students out of all international students enrolled at STU. In the 2023/2024 academic year, the total amount of scholarships awarded to these students was €524,494.

In the academic year 2023/2024, STU awarded **social scholarships to 159 students**, with a **total amount of €353,815**.

STU carries out social projects, such as the "Community Kitchen" project at the refugee facility in Gabčíkovo, which aimed to design and build a small pavilion focused on communal cooking and dining. This project helps refugees to settle and supports the local community.

- **Work-Life Balance for Employees:**

STU provides measures that support employees' financial stability, such as operating the **STUBAčik kindergarten** for employees' children and allowing options for **part-time work** (used by 427 individuals, including 180 women). It also grants unpaid leave during school holidays or mandated distance learning for parents with children.

- **STU cooperation with national bodies**

STU cooperates with state administration bodies in the implementation of national projects and strategies (including MIRRI, the Ministry of Education, Research, Development and Youth of the Slovak Republic, the Ministry of Labour, Social Affairs and Family, the Ministry of Transport, the Ministry of Defence, the Ministry of Culture, and others). **STU employees** carry out expert and consulting activities and serve in the regulatory and advisory institutions of the state, in particular within:

- the Nuclear Safety Council of the Nuclear Regulatory Authority of the Slovak Republic,
- sectoral councils (e.g., the Sectoral Council for Electrical Engineering),
- the working group of the Ministry of the Environment of the Slovak Republic for the Carpathian Convention,
- the MIRRI working group for the transformation of Upper Nitra,
- technical committees and working groups of the Slovak National Accreditation Service,
- technical committees of the Slovak Institute of Technical Standardization,
- technical committees of the Office for Standardization, Metrology and Testing,
- the Ministry of the Environment - Commission for Waste Recycling,
- the Ministry of Agriculture and Rural Development - Commission for Food Chain Safety,
- the Ministry of Culture - Commission for the Verification of Special Professional Competence in Monument Research, and others.
- the Ministry of Labour, social affairs and family – Commission for preparation of National strategy for protection and support of human rights in Slovakia – persons with disabilities; and others

In addition to cooperation with state and public authorities, **STU builds long-term partnerships** with domestic and international professional organizations and associations, Slovak and foreign universities, industry partners, and non-governmental organizations.

SDG2: Zero Hunger: Ending hunger, achieving food security, and improving nutrition and promoting sustainable agriculture.

Slovak University of Technology (STU), primarily through the Faculty of Chemical and Food Technology (FCHPT), conducts extensive research in food science, safety, biotechnology, and sustainable production. The table shows an overview (selection) of recent projects relevant to this topic.

Faculty (Abbreviation)	**Project Title / Description**	**Focus Area**
FCHPT + SjF	*Innovations in Plant Protein Processing: Design of Advanced Technologies and Equipment for Sustainable Production (IPT-PRO)*	Development of technologies and equipment for sustainable production and processing of plant proteins.
FCHPT + FIIT	*Optimization of Extraction Procedures for Contamination Control in Bee Products (ENVIGREEN)*	Food contamination control (bee products) and extraction processes.
SvF (GDPOO project)	*Experimental Study on Integrating Smart Metering and Distributed Data Technologies in Food Storage Constructions for Automating Organic Certifications*	Innovations in food storage and systems for automated organic certification.
FCHPT (VEGA)	*Use of Nanostructured Polymeric Materials for the Isolation of Health-Beneficial Substances from Small Berry Fruits and Their Application in Functional Foods*	Isolation of bioactive substances and their use in functional foods.
FCHPT (VEGA)	*Quantitative Predictive Food Microbiology – A Fundamental Tool for Enhancing Microbiological Quality, Safety, and Risk Assessment in the Food Industry*	Improving food safety and quality through advanced microbiology.
FCHPT (VEGA)	*Kinetics of Microorganism Devitalization in Mild Food Processing: Application of Mathematical Models*	Use of mathematical modeling to study microorganism devitalization during food processing.

Faculty (Abbreviation)	Project Title / Description	Focus Area
FCHPT (VEGA)	*The γ-Aminobutyric Acid (GABA) Shunt in Fungi: An Underestimated Metabolic Pathway*	Biochemistry and metabolism of compounds in fungi.
FCHPT (APVV)	*Fermentation of Legumes in Terms of Valorization and Acrylamide Content in Food Products*	Fermentation, food safety (acrylamide content), and valorization of legumes.
FCHPT (APVV)	*Preparation of Special Carbohydrates and Their Derivatives from Natural Raw Materials Using Biotechnological Methods*	Production of bioactive compounds from natural materials using biotechnology.
FCHPT (International GZ)	*Multifunctional High-Value Fungal Biomass from By-products of the Norwegian Agricultural Supply Chain*	Valorization of agro-industrial waste to obtain high-value fungal biomass.
FCHPT (APVV)	*Biotechnological Conversion of Waste and Agro-industrial Materials for Targeted Production of Unconventional and Industrially Attractive Lipophilic Metabolites*	Conversion of agricultural and industrial waste into valuable chemical compounds.
FCHPT (VEGA)	*Isolation and Modification of Lignin as a Substitute for Fossil Raw Materials*	Research on natural polymers that could replace petroleum-based products, including in packaging and production industries.

Other university departments also support food and agricultural innovation through related technologies:

• **Smart Storage:** The Faculty of Civil Engineering (SvF) is involved in an experimental study on integrating smart metering and distributed data technologies into **food storage constructions** to automate organic certifications.

• **Agricultural Fields:** The study field **"Agriculture and Landscape Engineering" (poľnohospodárstvo a krajinárstvo)** is noted as one of the study areas at STU.

• **Software Solutions:** The Faculty of Informatics and Information Technologies (FIIT) supports commercial applications relevant to food retail and consumption, such as **Rewardly** (a loyalty platform for restaurants and cafes) and **Grocerly** (an application for collecting promotional offers and leaflets from retail chains).

STU provides sustainable food choices for all on campus, including vegetarian and vegan food and also provides healthy and affordable food choices for all on campus.

Suppliers of goods and services are selected in accordance with Rector's Directive No. 10/2016, *Public Procurement at the Slovak University of Technology in Bratislava*. The procurement processes for goods and services are managed by STU's Public Procurement Unit.

After costs related to the reconstruction, renovation, and maintenance of premises, classrooms, and laboratories, the most frequently procured items include energy supplies, the purchase and management of information and telecommunications technologies, and related services.

When setting criteria for the supply of goods and services, STU, whenever possible, applies **green or social procurement practices** (for example, requiring certificates of environmental safety for products, considering energy efficiency, or the performance of the procured equipment, and similar factors).

SDG 3 : Good Health and Well-being: Ensuring healthy lives and promoting well-being for all at all ages.

STU supports the health and well-being of its community through counseling, infrastructure, and research:

• **Mental and Psychological Health: STU Counseling Center:** STU has established a **Counseling Center** that provides support to students in various areas. It offers **special education and psychological counseling**, as well as **psychotherapy**. It organized the **2nd Mental Health Festival** on the theme *"What We Can Do for Our Well-being"* from **November 13 to 15, 2023** across several faculties (FEI, FCHPT, FAD, and FIIT) and the 3rd festival took place 18-20th February 2025. The aim of the festival was to **raise student awareness about the importance of mental well-being** and to **provide tools for better understanding of personal mental health needs**.

• **Safety and Facilities:** Selected employees complete a **First Aid Course**. STU supports sports centers, playgrounds, gyms, and **3 swimming pools** for educational and recreational activities.

These activities include **community programs aimed at improving or promoting health and well-being** as well as **sharing of sports facilities**.

- The **STU University Art Ensemble Technik** and the **STU Academic Sports Center** are purpose-built university facilities.
- STU makes its **facilities and services available to the public**, including sports grounds, accommodation and dining facilities, libraries, study rooms, and more.
- At **FAD STU**, a **horizontal barrier-free connection** was created in the basement of the main building, and a previously unused space of approximately **350 m^2** was transformed into a **multifunctional exhibition and workshop area**.

• **Medical Research:** Research teams are involved in innovative projects, such as **UX in medicine** to enhance doctor efficiency, research focused on the **prevention and treatment of oncological diagnoses**, and the development of a **telemedicine system** to monitor potential COVID-19 spread.

Project / Acronym	Faculty / Unit	Focus / SDG 3 Contribution
CIH (Center for Innovative Healthcare)	FEI	Development of innovative healthcare solutions improving diagnostics and patient care.
AIpology – AI for Personalized Oncology	FIIT	Personalized cancer treatment using AI for better patient outcomes.
NAP-Hop On / twIN-ON-A-CHIP BRAINS FOR MONITORING INDIVIDUAL SLEEP HABITS – HOP ON	FEI, CEPSIT, MTF	Sleep monitoring innovations for health optimization and neurological well-being.

Project / Acronym	Faculty / Unit	Focus / SDG 3 Contribution
Advanced Methods for Modeling, Identification, and Control of Biosystems	FEI	Enhances understanding and control of biological systems, supporting health research.
Advancing Non-Invasive Glucose Detection and Measurement	FEI	Non-invasive glucose monitoring for diabetes management and improved quality of life.
Uncertainty-Aware AI for Brain and Eye Disease Detection	FIIT	AI tools for accurate, early detection of neurological and ocular diseases.
Efficient, TrustwortHy and rObuSt AI for Brain and Eyes	FIIT	Reliable AI for brain and eye health diagnostics.
Multisensory Stress Monitoring for Gastroenterology Patients	FEI	Monitoring stress in patients to improve care and treatment outcomes.
Bioinorganic Composites for Bone Tissue Substitutes	FCHPT	3D-printed bone substitutes enhancing patient recovery and surgical outcomes.
Detection of “Silent Killers” via Electrochemical & QCM Biosensors	FCHPT	Early detection of critical health threats for preventive care.
TalkBridge – Connecting Psychologists and Patients	FEI	Digital platform promoting mental health support and access to care.
Mixed-Reality Training for Phobia Management	FEI	Innovative therapy methods to improve mental well-being.
Stress Measurement in Urban Spaces	FAD	Assessing environmental impact on mental health for better urban planning.
Mental Health Festival	STU (University-wide)	Raising awareness and promoting mental well-being in the community.
Cyanobacteria & Micropollutants Removal	SvF	Ensuring safe water, directly impacting public health.
Graphene Nitride for Wastewater Treatment	FCHPT	Advanced materials for clean water, reducing health risks from pollution.
Extraction of Bioactive Compounds from Berry Fruits	FCHPT	Nutritional interventions supporting health through functional foods.

Project / Acronym	Faculty / Unit	Focus / SDG 3 Contribution
Direct Solid Analysis for Food & Pharma Safety	FCHPT	Ensuring quality and safety of food and pharmaceuticals.
ENVIGREEN – Bee Products Contamination Control	FCHPT, FIIT	Reduces risks in food products, protecting consumer health.
SENS4CORN – Nanocomposite Sensors for Corn	MTF	Monitoring nutrients in crops for safer, healthier food.
SMART COVID-19 Monitoring & Prevention	MTF	Crisis response to protect public health during the pandemic.
Nanoparticles to Reduce Flammability of Polymers	FEI	Safer construction materials, indirectly supporting health & safety.
Solid-Phase Track Detectors for Soil Radon	FEI	Radiation monitoring for environmental health protection.
Building Barrier Elimination (Decarbonisation Project)	STU	Removing architectural barriers promotes health and accessibility.

The university also collaborates with local, national, or global health institutions to improve health and well-being outcomes:

STU is member of the following global institutions where it collaborates on improving health and well-being:

- **European Network for Education and Training in Occupational Safety and Health** – directly relates to health, safety, and well-being in workplaces.
- **Research Institute of Engineers and Physicians** – combines engineering and medical expertise, likely supporting healthcare technology and innovations.
- **Federation of European Heating, Ventilation and Air-Conditioning Associations** – indirectly contributes to health and well-being through safe indoor environments and air quality.
- **International Institute of Noise Control Engineering** – contributes to public health by controlling noise pollution.
- **International Institute of Refrigeration** – indirectly supports health by safe food storage, medical cold chains, and environmental hygiene.

STU collaborates in the implementation of national projects and strategies (MIRRI, the Ministry of Education, Science, Research and Sport of the Slovak Republic, the Ministry of Labour, Social Affairs and Family, the Ministry of Transport, the Ministry of Defence, the Ministry of Culture, and others).

SDG4: Quality Education: Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all.

Providing quality education is STU's primary mission:

• **SDG Integration in Curricula:** The curriculum includes study programs such as **Environmental Protection Technologies** and subjects like **Socially Responsible Sustainable Business** and **Sustainable Land Use**.

• **Lifelong Learning:** STU offers vocational training and courses through the Institute of Lifelong Learning, and provides **interest-based education for seniors** through the University of the Third Age (UTV), which has provided education so far to **14,217 seniors** during its existence since 1998. These programs focus on areas such as architecture, creativity, lifestyle, engineering, and information and communication technologies (ICT) **leading to certificate or award.**

The **Institute of Lifelong Learning at STU (ICV)** provides both accredited and non-accredited educational programs, designed based on practical needs and requirements from industry. ICV also offers **language and professional training programs** for international applicants preparing to study in the Slovak language.

The **Rector's Office and various departments of STU** organize **public information events** such as Open Days, RoadShows, and fairs, and also participate in partner exhibitions and conferences. They host numerous **lectures and seminars** as well. For example, in **2024, the STU University Technology Incubator** organized a total of **28 events** for both the public and STU students.

STU promotes the principles of **open science** and **open education**. Its vision is to publish academic works and teaching materials primarily in **digital form under public licenses**, enabling **free access, use, adaptation, and redistribution**. In **2024**, STU also launched the Elvira Digital Library, which provides **online access to study materials and academic literature**.

STU focuses on **improving digital skills** and **actively engaging with potential students and the wider community** through outreach activities.

- **Digital skills:** The **2023/2024 academic year** was declared the **Year of Digital Skills**, during which STU encouraged the development of digital competencies among mobility participants. The university actively participates in implementing the **National Digital Skills Strategy of the Slovak Republic**. As a member of the **Digital Coalition**, STU carries out numerous projects aimed at enhancing digital literacy both within and beyond campus.
- **Technological support for teaching:** STU provides full access to **Google Workspace for Education** and **Microsoft Office 365 Education**, improving teamwork quality and supporting remote learning.
- **Outreach to secondary school students:** STU collaborates with high schools to prepare graduates for technical studies. Examples of activities include:
    - STU Summer University for High School Students
    - Mini-Erasmus, which allows students to experience real university classes and motivates them to achieve better results

- The **Interactive Manufacturing @ Schools** project (using LEGO robots) to spark interest in **STEM disciplines** (science, technology, engineering, and mathematics)
- Organizing events such as the **ChemShow Chemistry Fair**

Shared facilities: STU provides its **spaces and services to the public**, including access to **libraries and study rooms**.

• **Inclusion:** The university provides comprehensive support for students with specific needs, including **individual schedules**, academic assistance, and specialized counseling.

• **International Collaboration:**

- STU participates in the **Ukrenergy** project. The goal of the project is to strengthen education and training in the field of energy sustainability of buildings in Ukraine and to develop a new master's degree program focused on this area.
- The **"Urban and Community Sustainability in Planning and Architecture"** project aims to **enhance the quality and relevance of education and professional training** in fields focused on **green innovations in urban and regional planning** and **assisted living technologies**. The project contributes to **strengthening the educational and employment potential of young people** and is carried out in collaboration with the **University of Stavanger**. It is part of a broader portfolio of **educational activities promoting sustainable development and innovation**.
- As a member of the **EULiST** consortium of ten European universities, STU has committed, under Task 1.4 "Quality Evaluation" and Work Package 1 "Management, Coordination and Strategy," to cooperate in the assessment and approval of study programs. Within the EULiST alliance, the goal is to create effective mechanisms for evaluating and approving academic programs. To enhance the quality of its study programs, STU particularly values the involvement of international experts in its evaluation committees. Additionally, STU aims to collaborate on the accreditation of micro-credentials and to implement the European Commission's recommendations outlined in the "European Approach to Micro-Credentials."

Area of Contribution to SDG 4	**Project Title / Acronym (Original Name, if applicable)**	**Implementing Unit**	**Key Contribution to SDG 4**
Sustainable and Innovative Curriculum	**Ukrenergy** (Innovative Master Courses Supporting the Improvement of the Energy and Carbon Footprint of the Ukrainian Building Stock)	SvF	Strengthening education and creating a **new master's program** in **energy sustainability of buildings**.

Area of Contribution to SDG 4	Project Title / Acronym (Original Name, if applicable)	Implementing Unit	Key Contribution to SDG 4
Sustainable and Innovative Curriculum	**Urban and Community Sustainability in Planning and Architecture**	FAD	Enhancing the **quality and relevance of education and training** in **green innovations** and **assisted living technologies**.
Sustainable and Innovative Curriculum	**Green Innovations in Students' Theses and Semester Projects (IRinGIFT)**	—	Promoting **green research** and innovative solutions in student projects.
Digital Skills and Cybersecurity	**Enhancing Education in Cybersecurity** (KEGA GD 004ŽU-4/2024)	FIIT	Improving teaching and developing **digital skills** with a focus on **cybersecurity**.
Digital Skills and Cybersecurity	**CYB-FUT – Cybersecurity for the Future** (Erasmus+)	FEI	Advancing **education in cybersecurity**.
Pedagogical Methods and Didactics	**Implementation of Innovative Didactic Tools in Quality and Industrial Engineering Programs** (KEGA GD 027STU-4/2024)	SjF	Introducing **innovative teaching tools** to improve education quality.
Pedagogical Methods and Didactics	**Laboratory Support for Inter- and Project-Oriented Teaching** (KEGA GD 038STU-4/2022)	SjF	Supporting **interdisciplinary and project-based learning**.
Education for Industry 4.0/5.0	**Support for Interdisciplinary Study of Industry 4.0 and 5.0** (KEGA GD 021STU-4/2024)	FEI	Promoting **interdisciplinary education** for the needs of Industry 4.0 and 5.0.
Education for Industry 4.0/5.0	**NEXT – Digital Transformations for Supporting Next-Generation Labour** (Erasmus+)	FEI	Focusing on **digital transformation** to support the **next-generation workforce**.
Education for Industry 4.0/5.0	**Advanced Research and Skills Development in AI for Industry and Education** (GD 1348)	MTF	Developing **AI research and skills** for both **industry and education**.

Area of Contribution to SDG 4	Project Title / Acronym (Original Name, if applicable)	Implementing Unit	Key Contribution to SDG 4
Education for Industry 4.0/5.0	**Development of the Real Estate Engineering Study Program** (KEGA GD 023STU-4/2023)	ÚM	Preparation and launch of a **new study program in Real Estate Engineering**.
VET and Green Transformation	**Decarbonisation: VET Students for Ecological Transformation** (Erasmus+)	FAD	Training **vocational students** for **ecological and green transition**.
Lifelong and Professional Education	**HRS4R – Human Resources Strategy for Researchers**	University-wide	Continuous improvement in **career development and lifelong learning** for researchers.
Lifelong and Professional Education	**Project Management for EU Urban Transformation (PM4U)** (Erasmus Jean Monnet)	ÚM	Education and research in **project management for urban transformation** related to climate and energy transitions.
Inclusivity and Accessibility	**CT.Uni: Creative Thinking – Taking an Innovative and STEAM Approach for a Transdisciplinary University**	FAD, University of Economics	Includes **Open Access content on Design for Equality, Diversity, and Inclusion** in higher education programs.
Inclusivity and Accessibility	**Open Access Contents on Design for Equality, Diversity, and Inclusion for HE Programmes**	FAD	Development of **open-access design resources promoting equality, diversity, and inclusion**.
Educational Tools Development	**SPEAK&GO (START Program)**	SvF	An **educational game for children**, scalable across subjects (Slovak, Math, English) and educational levels.
Open Science and Resources	**Elvira Digital Library**	University-wide	Launch of a **university-wide digital platform** providing **online study materials** for STU users.
Open Science and Resources	**STU Open Access Policy**	University-wide	Vision of publishing **digital open-access educational materials** for **free use,**

Area of Contribution to SDG 4	Project Title / Acronym (Original Name, if applicable)	Implementing Unit	Key Contribution to SDG 4
			adaptation, and redistribution.

SDG 5: Gender Equality: Achieving gender equality and empowering all women and girls.

STU enforces internal policies to ensure equality and diversity:

Institutional Commitment

Slovak University of Technology in Bratislava (STU) actively promotes **gender equality** through its strategies, governance, and daily operations. The university integrates equality, diversity, and inclusion principles into all areas of academic and institutional life — from recruitment and research to education and leadership.

1. Policies and Strategies Ensuring Equality

- STU Gender Equality Strategy – defines the university's long-term direction in promoting gender equality and equal treatment.
- **STU Gender Equality Action Plan 2023–2025** – builds on the results of an internal equality survey and sets measurable goals to improve gender balance, inclusion, and workplace culture.
- **Anti-Discrimination Policy (Article 5 of the STU Statute)** – guarantees protection against all forms of discrimination, harassment, or violence, ensuring equal opportunities for students and staff.
- STU Employee Code of Ethics – enforces equal treatment in hiring, promotion, evaluation, and remuneration.
- HRS4R Implementation (Human Resources Strategy for Researchers) – includes gender equality in research careers and earned STU the **"HR Excellence in Research"** award in 2022.

2. Support for Employees and Work–Life Balance

STU fosters a supportive and inclusive work environment, emphasizing family-friendly policies and work flexibility.

- **STUBAčik Kindergarten (since 2020)** – childcare facility for employees' children; a pioneering initiative among Slovak universities.
- **Flexible Work Arrangements** – parents of young children can work remotely; expanded options are under development.
- **Part-Time Employment** – available for all employees; in 2023, **427 staff members (180 women)** worked part-time.
- **Gender-Neutral Awards** – in 2023, *"Scientist of the Year"* was renamed to a gender-neutral title.
- **Support for Women Scientists** – STU nominates female researchers for national and international awards (e.g. *ESET Science Award*, *L'Oréal–UNESCO For Women in Science*).
- **Paternity Leave** – special leave granted to fathers after childbirth.

- **Financial Support** – grants for young employees (under 35) upon marriage or housing purchase.

3. Institutional Structures and Supporting Activities

To sustain long-term progress, STU has established internal structures and partnerships dedicated to gender equality.

- **Gender Equality Working Group** – advisory body to the Rector; conducts surveys, monitors equality indicators, and proposes measures to address gender-based discrimination.
- **Confidential Counsellor System** – safe and trusted mechanism for reporting discrimination, developed with the **STU Counselling Centre**.
- **Collaboration with NGOs** – cooperation with **Aj Ty v IT**, promoting women's participation in technology and engineering.
- **Podcasts & Seminars** – awareness programs on inclusion and workplace relations (e.g. *"Relationships at Work"*).
- **Addressing Menstrual Poverty** – pilot initiative launched at the **Faculty of Chemical and Food Technology (FCHPT)**.
- **International Collaboration** – active participation in the **EULiST Alliance** within the **Equality, Diversity & Inclusion (EDI)** working group.

4. Student Support and Engagement

- **Safe Reporting Channels** – all discrimination cases are reviewed by the **Ethical or Disciplinary Committees**.
- **Mentoring and Outreach** – the **Faculty of Informatics and Information Technologies (FIIT)** hosts an annual **"Girls' Day"** in partnership with *Aj Ty v IT*, encouraging girls to pursue STEM studies.
- **Inclusive Counselling** – the **STU Counselling Centre** offers **psychological and special educational support** to foster an inclusive, supportive study environment.

• **Strategic Framework:** STU adopted and implements the **STU Gender Equality Strategy** and developed the **Gender Equality Action Plan for 2023–2025**.

• **Institutional Measures:** Measures promoting work-life balance include establishing the **STUBAčik kindergarten** in 2020 and including the option of **occasional work from home** for parents with minor children in the internal regulations.

• **Remuneration and Equity:** Principles of equal treatment are enforced in all HR procedures. However, monitoring revealed that the average **remuneration for women is 14% lower** than for men overall, prompting STU to adopt measures to equalize differences.

The following table summarizes the **research and development projects** directly linked to SDG 5:

Area of Contribution to SDG 5	Project Title / Acronym	Project Type / Faculty	Key Contribution to SDG 5
Direct Research on Gender Equality in R&I	**CALIPER** (*Linking research and innovation for gender equality*)	Horizon 2020 / MTF	Aimed at strengthening **gender equality in research and innovation ecosystems** through institutional transformation.
Gender Equality in Informatics	**EUGAIN** (*European Network for Gender Balance in Informatics*, CA19122)	COST Action / FIIT	European network promoting **gender balance in computer science and informatics disciplines**.
Empowerment of Young Female Researchers	**Making Young Researchers' Voices Heard for Gender Equality** (CA20137)	COST Action / FIIT	Supports **young researchers' engagement and advocacy for gender equality** in academia and research.
Mentoring and Academic Development of Women	Participation in **International Mentoring Programme for Women in Academia**	International Cooperation / Not specified	Provides **mentorship and career development support** for women in academia (coordinated by ARL Hannover).
Gender-Responsive Research Support	**Support System for Researchers Applying for Grants**	STU / Gender Equality Working Group	Ensures **equal opportunities and gender-sensitive evaluation** in project proposal preparation and submission.
Inclusion in Educational Resources	**Open Access Contents on Design for Equality, Diversity, and Inclusion**	Erasmus+ / FAD	Develops **open-access teaching materials** promoting equality, diversity, and inclusion in higher education programs.
Inclusive Education	**CT.Uni** (*Creative Thinking – Taking an Innovative and STEAM Approach for a Transdisciplinary University*)	Erasmus+ / FAD	Focused on **creative and transdisciplinary STEAM approaches**, including **open access materials on equality, diversity, and inclusion**.

SDG 6 : Clean Water and Sanitation: Ensuring availability and sustainable management of water and sanitation for all.

The **Slovak University of Technology in Bratislava (STU)** contributes to the achievement of **Sustainable Development Goal 6 (SDG 6): Clean Water and Sanitation** through **research**, **implementation of water-saving measures**, and **pollution reduction initiatives** within its facilities and infrastructure.

SDG 6 focuses on ensuring **availability and sustainable management of water and sanitation for all**. For universities, this includes research related to water systems, monitoring and minimizing water consumption on campus, and protecting natural water sources.

1. Research on Clean Water and Sanitation

STU is actively engaged in **scientific research addressing clean water, wastewater treatment, and environmental protection** related to water systems.

Research Focus:

STU's research activities address both national and global challenges of the green transition, including **environmental and water-related issues** that are critical to sustainable development.

- **Project – Faculty of Civil Engineering (SvF):** Research on the **occurrence of cyanobacteria and micropollutants in surface waters** and the **methods for their removal**, contributing to water quality improvement.
- **Project – Faculty of Chemical and Food Technology (FCHPT):** Research on **graphitic carbon nitride (g-C_3N_4)** as an **advanced nanomaterial for wastewater treatment**, enhancing purification efficiency and sustainability.

Contribution Category to SDG 6	**Project Title / Acronym**	**Type / Faculty**	**Key Contribution (Water Management, Quality, Pollution)**
Water Balance Management (International Collaboration)	**Danube Water Balance** (Development of a harmonized water balance modelling system for the Danube River Basin)	EU Interreg DRP 0200156 / SvF	Development of a **harmonized water balance modelling system** for the Danube River Basin.
Wastewater Treatment and Innovations	**Graphitic Carbon Nitride – Advanced Nanomaterials for Wastewater Purification**	APVV SASPRO 2 / FCHPT	Research on **advanced nanomaterials for wastewater treatment**.

Contribution Category to SDG 6	Project Title / Acronym	Type / Faculty	Key Contribution (Water Management, Quality, Pollution)
Wastewater Monitoring & Disinfection Innovations	**SMART Online Wastewater Monitoring** (Early warning system for hazardous pathogens and innovative disinfection technologies)	VEGA GD 1/0576/24 / FCHPT	**Online wastewater monitoring** as an early-warning system and **innovative disinfection technologies**.
Advanced Water Treatment Processes	**Energy-Efficient Water Treatment** (Oxidation processes using boron-doped diamond electrodes)	APVV GD A PVV-23-0367 / FEI	**Energy-efficient water treatment** via advanced oxidation processes.
Water Quality Interactions	**Research on Surface Runoff and Groundwater Quality Interactions in Urban Areas**	VEGA GD 1/0682/23 / SvF	Study of **surface runoff–groundwater interactions** in urbanized areas.
Aquatic Ecosystem Quality	**Quality of Aquatic Ecosystems** (Mountain streams and linkage with green infrastructure)	VEGA GD 1/0067/23 / SvF	Focus on **aquatic ecosystem quality** and integration with **green infrastructure**.
Infrastructure Impact on Water Quality	**MOZEKOV** (Impact of Blue-Green Infrastructure on Stormwater Discharge Quality)	Young Researchers Grant / SvF + FCHPT	Study of **blue-green infrastructure effects** on stormwater quality.
Water Systems Modelling	**AI Methods in Multi-Purpose Water Management Systems**	VEGA GD 1/0161/24 / SvF	Use of **artificial intelligence** to manage **water systems**.
Chemical Remediation	**Removal of Hazardous Waste Containing Polychlorinated Biphenyls (PCBs) at Chemko Strážske**	Ministry of Interior / SvF	**Removal of hazardous chemical waste** to protect soil and groundwater.
Groundwater Management	**Analysis and Forecast of Construction Impact on Groundwater in Urban Areas**	VEGA GD 1/0728/21 / SvF	**Analysis and prediction of groundwater impacts** from construction.
Groundwater Flow Modelling	**Groundwater Flow Model in the Hornád Area**	Contract Research / SvF	**Groundwater flow modeling** and prediction without impermeable barriers.

Contribution Category to SDG 6	Project Title / Acronym	Type / Faculty	Key Contribution (Water Management, Quality, Pollution)
Runoff & Retention Spaces	**Multi-dimensional and Multi-model Analysis of Runoff Changes in Slovakia**	VEGA GD 1/0782/21 / SvF	Analysis of **runoff regime changes** (water management).
Runoff & Retention Spaces	**Study of Retention Space Design**	Contract Research for SVP / SvF	Study of **retention space design** for water management.
Flood Control & Climate Change	**Impact of Climate Change on Stability of Danube Dykes**	APVV / SvF	Examining **flood protection structure stability** under climate change.
Stormwater Discharge Analysis	**Analysis of Rainwater Discharge Status**	Contract Research for Jaguar Land Rover / SvF	Assessment of **stormwater discharge** from industrial sites.
Filtration Material Production	**Production of Filter Powder Analogous to Diatomaceous Earth**	START/UP Program / SvF	Development of **highly porous synthetic powder** for filtration of **water, wine, beer, and oils**.
Drinking Water Supply & Monitoring	**Water Network Modelling and Simulation**	Contract Research / SvF	Modeling and simulation of **drinking water supply networks** for improved service.
Drinking Water Quality	**New Approaches to Ensure Drinking Water Quality**	Ministry of Education / SvF	Research on **drinking water quality** in accordance with new EU directives.
Urban Stream Restoration	**Restoring Urban Streams** (Promoting biodiversity, climate adaptation, and quality of life)	EU Interreg / SvF	Restoration of urban streams to enhance **biodiversity and urban quality of life**.

Water Management Projects and cooperation:

- STU staff provide expertise and consultancy for national institutions such as the **Slovak Water Management Enterprise**, working on projects like *Indicator Measurements of Filtration Rates* and *Design Studies for Retention Spaces*.

- **Water Balance Modelling:** The **Faculty of Civil Engineering (SvF)** leads the international *Danube Water Balance* project (Interreg Danube Region), developing a **harmonized water balance modelling system** for the Danube basin. Outputs support **basin management planning** and **sustainable development**.
- The Faculty of Civil Engineering (SvF) participates in the ReBioClim project (Interreg Central Europe), which focuses on Iproving the ecological and functional quality of rivers and streams within settlements, developing strategies for the restoration of urban watercourses to support climate change adaptation and is integrating measures that enhance urban biodiversity while addressing the impacts of climate change.
- The **Faculty of Civil Engineering (SvF)** is a partner in a project funded by the **Norwegian Financial Mechanisms**, which aims to **improve the condition of the Klátovské Rameno Nature Reserve wetland**.
- **Urban Climate Adaptation:** Projects like *CICA DA 4CE* focus on **climate change adaptation in Central European cities** by integrating **ecosystem services** and **smart social approaches**.
- STU collaborates with the Ministry of the Interior of the Slovak Republic (MV SR) on managing emergency situations and environmental hazards. STU staff provide expertise and consultancy and participate in regulatory and advisory bodies of the state. For example, they serve on commissions of the Ministry of the Environment of the Slovak Republic (MŽP SR) focused on waste recycling, contributing to policy development and environmental governance.
- A dedicated working group, STUBA 2030(+): Carbon-Neutral University, has been established, with the aim to develop a sustainable strategy for STU as a low-carbon, innovative, environmentally friendly, energy-efficient, sustainable, ethical, and socially responsible institution.

Research on Water Purity and Reuse:

- **Pollution Removal:** At the **Faculty of Chemical and Food Technology (FCHPT)**, an APVV project investigates the occurrence of **microplastics and selected micropollutants** in surface and drinking water in Slovakia and their effective removal through **advanced treatment processes**.
- **Drinking Water Protection:** The SvF conducts research analyzing the **impact of wastewater effluent quality** from treatment plants on local drinking water sources.
- **Water Reuse:** FCHPT develops projects focused on the **reuse of treated wastewater** and **quaternary polishing of wastewater** to make it suitable for **recycling and sustainable use**.

Educational Programs:

STU offers degree programs and courses directly related to this field, such as **Environmental Protection Technologies** and **Environmental Engineering**, integrating theory with applied environmental practice.

The **Faculty of Civil Engineering (SvF)** offers professional courses for the public and specialists focused on **water management and environmental protection**. An example is the *Training for certification of inspection technicians* for assessing the condition and functionality of **small wastewater treatment plants** (up to 50 population equivalents).

The **Institute of Lifelong Learning (ICV STU)** offers preparatory modules, primarily for prospective students but also open to the public. One such module, **ENVIRONMENTAL ENGINEERING (24 hours)**, includes topics related to **water management**.

As part of the event *Science-enterTainment-yoU!* (May 2024), aimed at high school students, the **Faculty of Civil Engineering (SvF)** presented interactive demonstrations titled *How to Tame Water*.

Secondary school students participating in the *Summer University for High School Students* visited the **Hydrotechnical Laboratory**, where they learned about *Water Flow Modelling*.

STU regularly organises **public lectures and seminars**, including sessions on *Decarbonisation of the Environment*, to promote science communication and raise environmental awareness.

2. Water Consumption and Resource Management

STU implements **monitoring systems and conservation measures** to ensure efficient water use and the protection of water resources.

- **Water Consumption Monitoring (6.2):**

  STU regularly tracks key performance indicators related to **total water consumption** from both municipal sources.

	Water consumption in m^3	
University buildings	**2023**	**2024**
FAD	1 500	1 507
FEI	19 825	20 882
FCHPT	20 655	19 306
FIIT	1 652	1 778
MTF	35 548	37 877
Rectorate	4 753	4 447
SjF	5 756	4 852
SvF	11 973	13 527
Student dormitories and canteens	162 500	171 400
Total	**264 162**	**275 576**

  The university has 6 water wells on university grounds where it utilizes sustainable water extraction technologies.

- **Green Procurement and Energy Standards (6.3.4):**

  Renovations and building modernizations prioritize **energy and water efficiency** through the use of **eco-efficient building standards** and **smart infrastructure** that reduce water

demand. In procurement processes, STU applies **green purchasing principles**, prioritizing **environmentally friendly materials and technologies** wherever feasible.

3. Access, Hygiene, and Community Engagement

STU contributes to **community well-being** and **basic services access**, closely linked to SDG 6's targets on hygiene, sanitation, and public health.

- **Barrier-Free Design:**
  The **Research and Training Centre on Universal Design (CEDA)** develops projects promoting **universal accessibility**, indirectly supporting **basic sanitation and hygiene access** for all users, including persons with disabilities.
- **Public Services and Facilities:**
  STU offers its facilities and services — including **libraries, dormitories, and dining spaces** — to the public, ensuring inclusivity and accessibility.
- **Health and Safety Education:**
  The university ensures **occupational safety and health protection** for staff and students. For instance, **First Aid Training** for over 50 FCHPT employees contributes to a **safe and healthy learning environment** (interlinked with SDG 3 and SDG 6).
- **Community Projects:**
  Through social responsibility initiatives, such as the **Community Kitchen project** at the refugee center in Gabčíkovo, STU designed a **shared cooking and dining pavilion**— supporting access to **basic services** like food preparation, water, and sanitation (linked to SDG 1, 2, and 6).

4. Strategic Management and Collaboration

- **Cooperation with the Ministry of Environment of the Slovak Republic (MŽP SR):** STU experts participate in **national advisory and regulatory bodies**, including the **Working Group for the Carpathian Convention** and the **Commission for Waste Recycling**, contributing to **policy-making in water management, pollution control, and circular economy** (relevant to SDG 6 and SDG 13).

At STU, we respect water as a resource to be protected, cleaned, and refined. We recover raw materials from wastewater and create new solutions for water treatment.

- We are a leading community for expert training and research in water treatment and separation technology.

- The wastewater from STU is discharged into the municipal sewer system and then treated at a modern wastewater treatment plant in the city where the university is located.

- The university's sewer network (including individual faculties) is equipped with grease and oil traps, which capture undesirable substances, e.g., from canteens, etc. The **Faculty of Chemical and Food Technology (FCHPT)**, which generates specific laboratory waste, has an established process for the disposal of hazardous chemical waste. In **2024**, FCHPT carried out the **collection of hazardous waste** (laboratory chemical waste). The **disposal of hazardous chemical substances**, including laboratory chemicals (waste code

160506), was conducted by the specialized company **DETOX, s.r.o., Banská Bystrica**. During the disposal process, **fire safety patrols** were established, and **compliance with safe handling procedures** for chemical substances was strictly monitored. All procedures were carried out **in accordance with the Waste Management Act**.

- • **Health and Safety Training and Monitoring:** STU ensures the safety and health protection of its students and employees in accordance with applicable regulations, including preventive measures and the provision of necessary protective equipment. Employees and students complete regular **Occupational Health and Safety (OHS)** and **Fire Protection (FP)** training through **e-learning modules**. At the faculty level (e.g., FCHPT), **committees responsible for damage assessment, disposal, and safety** are actively operating — such as the **Disposal Committee** and the **Damage Committee**.
- Drinking tap water is freely available in the entire university and it is regularly monitored by the authority in accordance with drinking water requirements.
- All buildings of the university are designed and operated in accordance with technical standards (STN) to minimise water use – flush and dosing toilets, urinals, faucet aerators, sensor faucets, etc. **Water Supply Systems at FAD:** The FAD renovation plan includes the **reconstruction of the campus sewage system, water connection, and internal water distribution network** within the FAD building. These measures are essential to **prevent leaks** and **ensure efficient and sustainable operation**.
- A **green roof** was installed above the **Slovak Chemical Library**. Green roofs help **retain rainwater** and **mitigate the urban heat island effect**, contributing to improved environmental sustainability. Another green roof is planned to be built on the FAD building.

SDG 7 : Affordable and Clean Energy: Ensuring access to affordable, reliable, sustainable and modern energy for all.

The university promotes low-emission solutions and energy efficiency both internally and externally:

The Slovak University of Technology in Bratislava (STU) has established a **strategic framework and specific measures** for carbon management and the reduction of CO_2 emissions.
These processes are integrated into the university's strategic documents and reflect its commitment to **social responsibility and sustainability principles**.

Strategic Commitments: STU joined:

> The **"Green University"** initiative aligns with sustainable campus operations, renewable energy deployment, and climate action.
>
> The **"Race to Zero"** initiative. a global campaign aimed at achieving **net-zero emissions by 2050 (or earlier)**. While the initiative does not explicitly mandate 100% renewable energy, reaching **climate neutrality and zero emissions inherently requires a large-scale transition to renewable energy sources.**
>
> The working group **STUBA 2030(+): Emission-Free University** was established to prepare a sustainable strategy to make STU a **low-carbon, innovative, environmentally responsible, and energy-efficient university**.

• **Research and Innovation:** Research includes a project focused on assessing the **solar energy potential** of urban areas (Smart City concept) and the presentation of a **hydrogen midibus**.

1. Campus Management and Energy Efficiency

STU actively implements measures to reduce energy consumption and transition to low-carbon operations:

- **Building Energy Efficiency-** The Slovak University of Technology in Bratislava has implemented a series of energy efficiency and carbon reduction projects across its faculties and student facilities. These initiatives are part of the university's long-term commitment to sustainability and climate responsibility.
    - At the **Faculty of Civil Engineering**, the replacement of the heat transfer station (OST) technology resulted in a **reduction of total thermal output by 1,060 kW**.
    - The FEI building underwent **revitalization** **to meet energy efficiency standards**, including the **refurbishment of the building façade (block cladding)** and **renovation of the Aula**. These upgrades significantly reduced the building's overall energy consumption.
    - The FAD carried out **window and glazing replacement** to address excessive heat transfer that had been causing inefficient energy performance. Additionally, the **heat transfer station (OST)** was fully **modernized** to improve thermal efficiency.

- The Mladá Garda **student residence** underwent an energy assessment identifying a potential **34% reduction in energy consumption**, while the **Nikolaos Belojanis dormitory** is preparing a **facade renovation** with measures expected to reduce energy use by **approximately 50%**. **Dobrovičova Student Residence:** A **planned façade renovation with insulation** is projected to **reduce energy consumption by approximately 40%**.

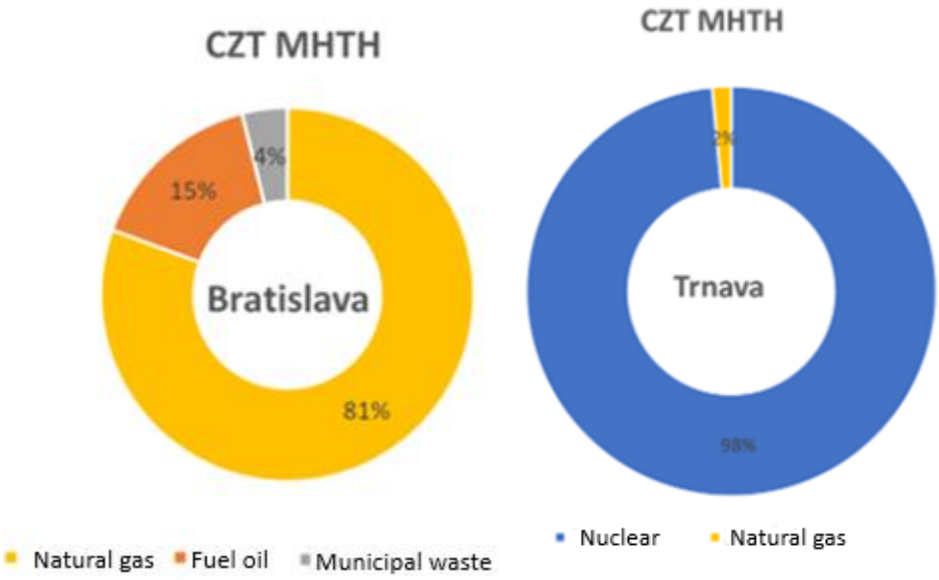
- **CO_2 Emissions Reduction:** The **ACCORD project** targets reducing emissions through energy efficiency improvements in selected buildings.
- **Photovoltaic Installations:** STU installs **solar panels on multiple faculty rooftops** (FAD, SjF, SvF, FCHPT) to generate renewable energy.
- **Green Procurement:** Procurement policies consider **energy efficiency and sustainability** when acquiring goods and services.
- **Waste Minimization:** Policies reducing single-use plastics and other waste contribute to **responsible consumption (SDG 12)** and indirectly support **energy and climate goals (SDG 7.3 & 13.2).**
- **Monitoring and Planning:** The university monitors its energy consumption and environmental impact, including the management of electronic waste, to minimize the socio-economic and environmental effects of ICT operations.

Heating in kWh				Natural gas consumption in kWh	
Total 2023	**Total 2024**	**Trnava 2024**	**Low Carbon Heating 2024**	**2023**	**2024**
29 444 958	29 271 226	12 648 250	12 395 285	2378450	2213016

Total Electricity consumption kWh		Low carbon Electricity consumption	
2023	**2024**	**2023**	**2024**
16 515 914	17 826 956		10 869 095

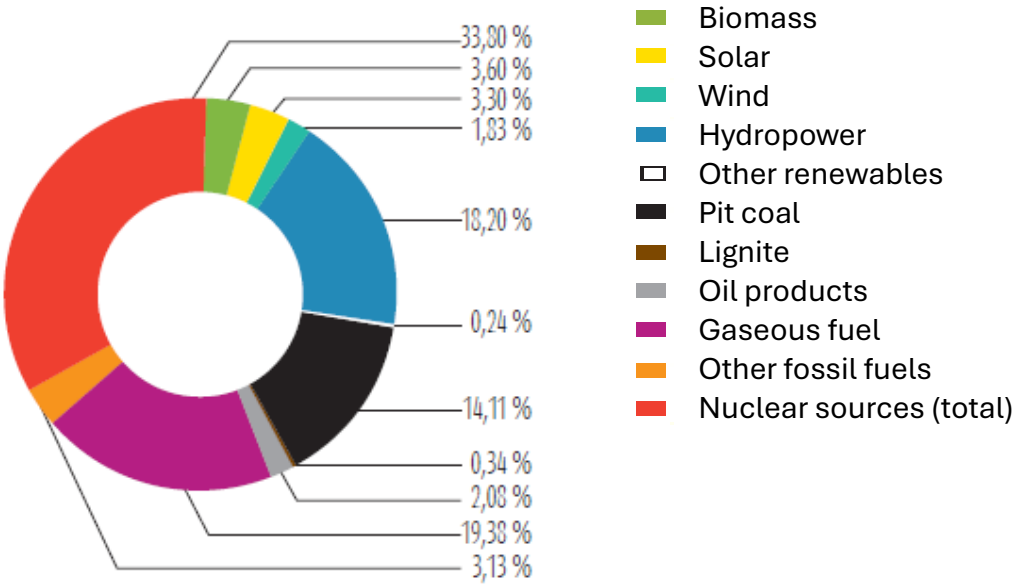
Total energy used in 2023			Total energy used in 2024	
kWh	GJ		kWh	GJ
48 339 322	**174 022**		49 311 198	177 520
		Low-carbon energy	23 264 380	**83 752**

Heating sources in 2024:



Source: https://mhth.sk/sluzby/teplo

Electricity sources in 2024:



Source: https://www.zse.sk/dokumenty/zse-energy-mix-en-version.pdf

2. Research in Clean Energy

STU conducts research projects to advance energy sustainability and renewable technologies:

Area / Focus	Project / Acronym	Faculty / Type	Key Contribution to SDG 7	Source / Funding
Building Energy Efficiency & CO_2 Reduction	**Low2HighDH** (Integration of low-grade energy into high-temperature district heating)	SvF / LIFE-2022-CET	Methodologies for **low-grade energy integration into high-temperature district heating networks**.	LIFE Program
	ActaReBuild (Acoustic & Thermal Retrofit of Office Building Stock)	SvF / HORIZON-MSCA	**Acoustic and thermal retrofitting** of office buildings to reduce energy demand.	HORIZON-MSCA
	SHERLOCK (Supporting Energy Transition of Building Stock)	SvF / Erasmus-EDU-PI-ALL	Supports **energy transition in building stock**.	Erasmus+
	Ukrenergy	SvF / Erasmus-EDU-CBHE	Develops **master's program** on **energy sustainability of Ukrainian buildings**.	Erasmus+ / CBHE
	SEETHE SKILLS	SvF / H2020	Promotes **sustainable energy skills in construction**.	H2020
Renewable Energy & Energy Transition	**BOOSTER** (Organic Solar Technology)	FEI / H2020	Focus on **organic solar technology** for renewable energy generation.	H2020
	ECS4DRES (Distributed Renewable Energy Systems)	FEI / HORIZON-KDT-JU	Develops **components and systems for flexible, resilient distributed renewable energy**.	Horizon / KDT-JU
	Education to Spread Renewable Energy	FAD / Grant	Educational project promoting **renewable energy awareness**.	National Grant
Sustainable Enterprise & Low-Carbon Economy	**STAGE** (Sustainable Transition to Agile and Green Enterprise)	MTF / HORIZON Europe	Supports **sustainable transition to green and agile enterprise operations**.	HORIZON Europe

Area / Focus	Project / Acronym	Faculty / Type	Key Contribution to SDG 7	Source / Funding
	MAKING-CITY	ÚM / H2020	Implements **energy-efficient strategies for urban transformation**.	H2020
	PM4U (Project Management for EU Urban Transformation)	ÚM / Erasmus Jean-Monnet	Supports **project management in climate-smart and energy-transition urban projects**.	Erasmus+
	ESG (Eco-friendly 3D Printing Filament)	FAD / POO	Develops **optimal ecological filament** for 3D printing in mild climate zones.	Internal / FAD
	Solar Potential in Urban Areas (Smart City VaHiTo)	Neuvedené	Evaluates **solar energy potential of roofs and facades** in urban areas.	Internal / Concept
Energy & Transport Transformation	**FreeTwinEV**	FEI, MTF, CEPSIT / Twinning	**Digital twins for sustainable and safe electric vehicles**.	Twinning Project
	MOBILITIES FOREU	ÚM / HORIZON Europe	**New mobility solutions for climate neutrality** in EU cities.	HORIZON Europe
Nuclear Energy / Clean Energy	**EURAD / EURAD-2**	FEI / H2020 EURATOM	**Management of radioactive waste**.	H2020 EURATOM
	ESFR-SIMPLE / SafeG / FRACTESUS / STRUMAT-LTO / ECC-SMART	FEI / H2020 EURATOM	Projects on **reactor safety, long-term operation, and materials** for nuclear energy.	H2020 EURATOM
	ECS (High-efficiency electric drivetrains)	FEI / H2020 ECSEL	Develops **high-efficiency, reliable electric drivetrains** with modular power electronics.	H2020 ECSEL
Campus Energy Measurement & Efficiency	**Energy Evaluation Measurement**	SjF / START/UP	Measures **energy consumption in campus buildings** to optimize efficiency.	Program START/UP

3. Policy Engagement and Community Activities

STU has established **official mechanisms for influencing national policies and regulations**, particularly in areas related to **energy efficiency, renewable energy, and sustainable development**. STU contributes to SDG 7 nationally and internationally:

- **Government Collaboration:** STU representatives are regularly invited to participate in **interministerial consultations** and **commenting procedures** for draft legislation across various policy areas. The university also contributes to the **development of national strategic documents**. Engages with the **Ministry of Economy of SR** and the **Regulatory Office for Network Industries** on technical and legislative issues, the **Ministry of Transport**, contributing to **legislation on the technical inspection of electric vehicles**, the **Ministry of Investment, Regional Development and Informatization (MIRRI SR)**, collaborating on the **Action Plan for Digital Transformation** and the **Vision and Strategy for Slovakia 2050**.
- **Support for Low-Carbon Innovation:** STU's **technology incubator (UTI STU)** and **STU Scientific spin-offs** foster innovations with **low-carbon or environmental impact**, supporting both SDG 7 and SDG 9. The STU startup **DAITABLE**, which focuses on **smart energy management,** became the **overall winner of the Slovak University Startup Cup 2023** and represented Slovakia at the **University Startup World Cup 2023 in Copenhagen** and in 2024 gained 2 sizeable investments. DAITABLE helps companies **see where and how much electricity they are consuming in real time**, and using **artificial intelligence**, we can **predict future consumption levels** and identify **potential negative impacts** that may result. This allows **managers of manufacturing companies** to make **better, more informed decisions before issues arise**.

- **Public Outreach:** STU's engagement in this area is part of its long-term vision to be **a model of sustainable development and green transformation**, actively collaborating with local communities, public institutions, and organizations to address environmental and climate challenges. The **Slovak University of Technology in Bratislava (STU)**, as an institution and through its individual faculties, implements a wide range of **programs and activities aimed at the local community and the general public**. These initiatives promote awareness of the importance of **energy efficiency and clean (green) energy**.

  a. Lifelong Learning Focused on Clean Energy and Efficiency

  STU offers accredited lifelong learning courses and training programs that support knowledge transfer and workforce upskilling in clean energy and sustainability fields.

  - **FEI** provides accredited courses directly related to renewable and clean energy, including:
    - *Installation of Photovoltaic and Solar Thermal Systems* (completed by **43 participants in 2024**).
    - *Installation of Biomass Boilers and Furnaces*.

- **FAD** in cooperation with the Slovak National Heritage Institute implemented the project *"Education to Save Renewable Energy Sources"*, focused on expanding awareness and use of renewable energy technologies.
- **SvF** offers professional training courses for engineers and specialists and participates in international projects promoting energy-efficient building renovation.
    - Example: The *SHERLOCK* project (*Supporting the Energy Transition of the Building Stock*) focuses on **lifelong learning and workforce qualification** for the **mass energy modernization of buildings**.

b. Public Lectures and Discussions on Energy and Climate

STU organizes numerous lectures, seminars, and public discussions addressing energy efficiency, sustainability, and climate action:

- Examples of STU-organized events include:
    - *Seminar on Decarbonization of the Environment and Its Impact on the Agri-Food Sector*.
    - *Panel Discussion: "When Will the Era of Electric Cars Really Begin?"* (focused on the transition from combustion engines).
    - *Conference: Green Innovations in Student Final Theses (IRinGIFT)*.
- **FEI** has hosted public lectures such as *"New Knowledge and Trends in Modern Electric Lighting".*

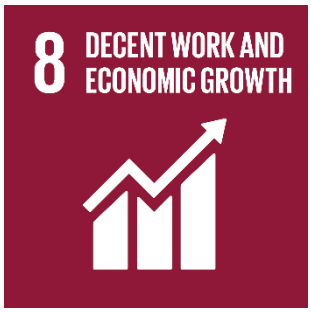
c. Community and Outreach Activities

STU organizes or co-organizes **more than 25 regular outreach and popularization events** for the general public each year, aiming to raise awareness about sustainable technologies and responsible energy use. For example, through the **Department of Building Services Engineering (SvF)**, STU developed **model designs of family houses connected to the gas distribution network** for **SPP (Slovak Gas Industry)**. These projects were widely featured in media, helping to inform and educate the public on energy-efficient solutions.

STU offers **expert and consulting services** aimed at optimizing energy use:

- **Energy audits and concepts:**
    - **SjF STU** conducted an *Energy Audit of Centralized Heating Systems* for **ENGIE Services a.s.**, focused on transitioning to efficient district heating. For **Fortischem, a.s.**, the faculty prepared an *Energy Concept and Analysis* for the "Carbide Production" plant.
    - The **Department of Building Services Engineering** at the **Faculty of Civil Engineering (SvF)** works on projects involving **digitalized processes for autonomous calibration and heating system management** in large buildings, in cooperation with **Amicus SK, s.r.o.**

- **SjF STU** is implementing APVV-funded projects on *Efficient Energy Recovery of Alternative Fuels from Waste in Cogeneration Units* and on the *Application of Synthetic Gases from Municipal Waste in Combustion Engines* for combined heat and power generation.
  SjF STU) provides **industry-specific training**, such as **turbine and compressor training for Kia Slovakia s.r.o.** and **battery basics and safety training for Hollen CZ**.
- **FEI** carried out an **APVV project** with **SFERA, a.s.** and **T-Industry, s.r.o.**, focused on the *Efficient Integration of Urban Energy Systems Using Advanced Open Technologies*. The project produced several **industrial utility models**.



SDG 8: Decent Work and Economic Growth: Promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

STU excels in ensuring high graduate employability and fostering innovation:

• **Graduate Success:** STU consistently reports the **lowest percentage of registered unemployed graduates** among Slovak public universities (5.1% in 2022). Graduates of STU are among the most sought-after employees and receive the **highest salary evaluations**.

• **Innovation Ecosystem:** STU supports entrepreneurship through its University Technology Incubator (START and INQB programs) and has established **10 spin-off companies** (e.g., MicroPoll s.r.o.).

• **HR Standards:** STU holds the **HR Excellence in Research Award**, confirming its implementation of fair and transparent human resources procedures (HRS4R).

Here's a fully integrated **SDG 8 report section** for STU, combining your narrative and project table into a polished format suitable for **THE Impact Rankings or UN SDSN reporting standards**:

SDG 8: Decent Work and Economic Growth

STU (Slovak University of Technology in Bratislava) contributes to **Sustainable Development Goal 8 (SDG 8): Decent Work and Economic Growth** through multiple strategic areas. These include ensuring good working conditions for staff, fostering innovation and entrepreneurship that drive economic growth, and preparing a workforce aligned with the evolving needs of **Industry 4.0 and 5.0**.

SDG 8 promotes sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.

Key Contributions of STU to SDG 8

1. Ensuring Decent Work and Fair Employment Practices

STU prioritizes transparent and fair employment practices, in alignment with SDG 8.5 and 8.8.

- **Equal treatment and non-discrimination:** Principles of **equal treatment** are applied across recruitment, career development, performance evaluation, and remuneration. These principles are embedded in the **Employee Ethical Code** (Appendix 6 of the Work Regulations). STU also enforces protection against **any form of discrimination**.
- **Strategic human resources management:** Implementation of the **Human Resources Strategy for Researchers (HRS4R)**, including the **HR Excellence in Research** award (2022), ensures compliance with the **European Charter for Researchers and Code of Conduct for Recruitment**, supporting equal career progression in research, teaching, and administration.
- **Complaint and discrimination handling:** STU provides **safe channels to report incidents** of unequal treatment or discrimination, reviewed by the **Ethics Committee**.

- **Gender equality and remuneration (SDG 5/8 link):** The **STU Gender Equality Strategy** is implemented, including renaming the "Scientist of the Year" award to a **gender-neutral title**, promoting inclusive perception of career advancement.
- **Work-life balance:** Measures to support employees (SDG 5.6, 8.5) include:
    - Establishing the **STUBAčik daycare** for employees' children (pilot project)
    - Opportunities for **occasional remote work** for parents with minor children
    - Enabling **part-time work** (427 employees currently, 180 of whom are women)
    - Providing **family recreational activities**
- **Support for early-career researchers:** Through the **Young Researchers Support Program**, 90 projects were funded in 2022, with **40 led by women and 50 by men**.

2. Economic Growth and Innovation

STU is a key driver of regional economic development and innovation (SDG 8.1, 8.4).

- **Impact on economic development:** STU ranked **highest among Slovak universities** in the QS World University Rankings: Europe 2024 for **employer reputation**, reflecting the quality of its graduates and contribution to the economy.
- **Technology transfer and spin-offs:** STU supports the commercialization of research via **STU Scientific, s.r.o.**, leading to **10 spin-off companies** (e.g., MicroPoll s.r.o., Neural medical s.r.o., STUVITAL, s.r.o.).
    - The **STU Technology Incubator (UTI STU)** accepted 30 projects in 2022
    - Successful innovations include a **zero-waste production line** for multi-component fertilizers
- **Expert advisory services:** STU staff contribute to **regulatory and advisory bodies** (e.g., Ministry of Agriculture Commission on Food Chain Safety, Sector Council for Electrical Engineering).
- **Partnerships with industry:** Employer and alumni representatives participate in university governance (e.g., STU Board of Trustees, faculty industrial boards), ensuring alignment of education with labor market needs.

3. Engagement in Digital and Green Transformation

STU actively supports national and global **green and digital transitions**, which underpin sustainable economic growth (SDG 8.2, 8.4).

- **Digital skills and industry collaboration:** Multiple initiatives enhance **digital competencies**, and STU participates in the CEDEG digitalization network.
- **Support for PhD students in innovation:** Through the **EIT Manufacturing Doctoral School**, PhD candidates transform research results into **commercializable solutions**, fostering the **industrial PhD role**.

- **Industry 4.0 projects:** Mobility programs (CE EPUS, MTF) develop mechanical engineering, design, production, and SME logistics skills, supporting industrial transformation.
- **STAGE Project (Sustainable Transition to Agile and Green Enterprise):** A Horizon Europe project at MTF focusing on the **transition to agile, green enterprises**, directly supporting sustainable economic growth (SDG 8.2).

4. Supporting Students' Transition to the Labor Market

- **Career counseling:** The STU Career Center provides **guidance and support** for students.
- **Scholarships:** STU offers **diverse scholarships** (social, maternity, talent-based, corporate, university-funded). Scholarships for **socially disadvantaged talent (SDG 1)** indirectly support SDG 8 by enabling equitable access to education and decent work.
- **Internships and mobility:** Student and staff internships are implemented in collaboration with **partner universities and companies**, bridging education and employment.

Even though quantitative metrics for SDG 8 (e.g., proportion of employees earning a living wage – 8.2.1, or student internship participation – 8.4.1) are not fully reported, STU's strategic goals, policies, and implemented projects demonstrate a strong commitment to **decent work, economic growth, and skills development**.

STU R&D Projects Directly Supporting SDG 8

SDG 8 Contribution Area	**Project Name / Acronym**	**Project Type / Faculty**	**Key Contribution (Economic Growth, Innovation, Decent Work)**
Sustainable Economic Transformation	**STAGE**	HORIZON-CL4 / MTF	Supports **sustainable transition to agile and green enterprises**, fostering economic growth and innovation (SDG 8.2).
Urban Economic Transformation	**MAKINGCITY**	H2020 / ÚM	Energy-efficient urban transformation generating **economic and employment opportunities**.
Project Management for Energy Transition	**PM4U**	Erasmus Jean-Monnet / ÚM	Education and research in **urban transformation and energy transition**, enhancing workforce skills.
Industry 4.0/5.0 Skills Development	**NEXT – Digital Transformations for Next-Gen Labour**	Erasmus+ / FEI	**Digital skills development** for the next-generation workforce.

SDG 8 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Economic Growth, Innovation, Decent Work)
Industry 4.0/5.0 Skills Development	**I.FAST**	INFRAINNOV / FEI	Technology development in industrial sectors requiring **highly skilled labor**.
Industry 4.0/5.0 Skills Development	**AI Skills Development for Industry and Education**	Young Researchers Program / MTF	AI skills development to enhance **productivity and decent work**.
Logistics and Industry 4.0	**SME Logistics and Mechanical Engineering**	CEEPUS / MTF	Prepares programs for **SME logistics within Industry 4.0** context.
Start-ups and Innovation	**SPEAK&GO, Experiana, Meltflex, TalkBridge**	UP Program / Various Faculties	Supports **start-ups and sustainable entrepreneurship**.
Digital Skills Enhancement	**Cybersecurity Education Improvement**	KEGA / FIIT	Prepares students for **digital labor market demands**.
Career Development Support	**IAB3 – Career Counseling Integration**	STU–EUBA Consortium / STU Career Center	Strengthens **career guidance and professional growth**.
Industry 4.0 Education	**Innovative Education for Industry 4.0 in V4**	Visegrad Fund / ÚM	Education aligned with **Industry 4.0 principles**.
Circular Economy and Material Innovation	**ECO-RESIN (PET Waste Valorization)**	Young Researchers Grant / FCHPT + FEI	**Circular economy and sustainable production** stimulating economic growth.
Infrastructure Development	**Modern Construction Technologies and National Infrastructure**	Smartinvest / SvF	Infrastructure supporting **economic growth** (SDG 8.1, 9).

SDG 9: Industry, Innovation and Infrastructure: Building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation.

STU (Slovak University of Technology in Bratislava) contributes to Sustainable Development Goal 9 (SDG 9): **Industry, Innovation, and Infrastructure** through intensive research and development, the establishment of innovative companies (spin-offs), modernization of its infrastructure, and strong links with industry and international innovation networks.

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

Key Contributions of STU to SDG 9:

1. Innovation and Technology Transfer (University Spin-offs – SDG 9.3)

STU actively generates innovations and ensures their transfer to practice, which is essential for industrialization and economic growth.

- **Spin-off Companies:** Innovation activities at STU are strongly supported by **STU Scientific, s.r.o.** In accordance with the university's spin-off guidelines, **10 spin-off companies** have been established. Examples include MicroPoll s.r.o., Neural medical s.r.o., STUVITAL s.r.o., among others. These companies facilitate the **transfer of technology** from academia to societal and economic applications.
- **University Technology Incubator (UTI STU):** STU supports start-ups through UTI STU and incubation programs. In 2022, **30 projects** were accepted into the ŠTART program. Projects such as **Experiana** (eco-friendly experiences) and **Meltflex** exemplify innovations with commercial potential.
- **Support for Doctoral Innovation:** STU participates in the **EIT Manufacturing Doctoral School**, helping PhD students transform research results or patents into commercializable solutions. These initiatives promote innovation in manufacturing and entrepreneurship and often create "industrial PhD" positions in collaboration with industry.
- **Patents:** Although sources do not list the exact number of patents directly citing STU research (SDG 9.2.1), the university has received several national awards, indicating a high level of creative output.

2. Research for Industry and Digitalization

STU conducts extensive projects in digital and green transformation that directly impact industrial and infrastructure sectors (SDG 9.1).

- **Industry Funding (SDG 9.4):** STU successfully secures funding from international research programs and ranks among the **most successful Slovak institutions** in Horizon 2020 and Horizon Europe projects. Revenue from **commercial activities and contract research** is also growing significantly.

- **Industry 4.0/5.0 Projects:** Multiple projects and international mobility programs (CEEPUS) at the Faculty of Mechanical Engineering focus on **Industry 4.0**, supporting mechanical engineering, SME logistics, and **digital integration**.
- **Green and Digital Transformation:** STU addresses nationally and globally significant issues of green and digital transformation. Relevant projects include:
    - **STAGE** – Horizon Europe project promoting a **sustainable transition to agile and green enterprises**.
    - **FreeTwinEV** – Twinning project focused on **Digital Twin technology for safe and sustainable electric vehicles**.
    - **ECS4DRES** – Project developing components and systems for flexible and resilient **distributed renewable energy systems**, crucial for SDG 7 and 9 infrastructure.
    - **BPOSCMF** – Blockchain-based framework for **verification and management of construction material and work supply chains**.

3. Infrastructure Development and Partnerships

STU modernizes its infrastructure while actively engaging with international innovation institutions.

- **International Innovation Networks:** STU is a **founding member of the European Institute of Innovation and Technology (EIT)** and actively participates in the **EIT Manufacturing** and **EIT Digital** communities. It is an affiliated partner of **EIT Raw Materials**.
- **National Innovation Centers:** STU hosts the **Slovak Centre for Artificial Intelligence** and the **National Robotics Centre**. The university is also a member of **CEDEG** (for digitalization and advanced environmental technologies) and **Intelligent Mobility Slovakia**.
- **Infrastructure Investments (ACCORD):** The **ACCORD** project (Advancing University Capacity and Competence in Research, Development, and Innovation), funded with €55.3 million, focuses on **upgrading research infrastructure and equipment** and **modernizing IT infrastructure**.
- **Lifelong Learning:** STU offers lifelong learning courses for companies and clusters with **innovation potential** in the mechanical and automotive industries (Interreg project).

4. Policy Engagement

STU representatives are actively involved in shaping national strategies and infrastructure policies (SDG 9.A, 9.B).

- **Strategy Development:** STU participates in inter-ministerial consultations for key strategies, including the **Slovak Space Strategy** (ESA membership) and the **Slovak Digital Transformation Strategy 2030**.
- **Collaboration with Ministries:** STU works with the Ministry of Transport (e.g., preparing legislation for **technical inspection of electric vehicles**) and the Ministry of Investment,

Regional Development, and Informatization (MIRRI) on **digital transformation action plans** and the **Slovak Vision and Development Strategy 2050**.

- **Expertise and Advisory Roles:** STU staff serve in national regulatory and advisory bodies, such as the **Sectoral Council for Electrical Engineering**.

SDG 9 Contribution Area	**Project Name / Acronym**	**Project Type / Faculty**	**Key Contribution (Innovation, Industry, Infrastructure)**
Industry and Green Transformation	**STAGE** (Sustainable Transition to the Agile and Green Enterprise)	HORIZON Europe / MTF	Supports the **sustainable transition to agile and green enterprises**.
Energy and Urban Infrastructure	**MAKINGCITY** (Energy Efficient Pathway for City Transformation)	H2020 / ÚM	Focused on energy-efficient pathways for **urban transformation** (urban infrastructure and industry).
Digital Transition and Transport Infrastructure	**FreeTwinEV** (Fostering Research Excellence of STU in Digital Twinning for Sustainable and Safe Electric Vehicles)	Twinning / FEI, CEPSIT, MTF	Development of **Digital Twin technology** for **safe and sustainable electric vehicles**.
Industry 4.0 Digitalization	**Industry 4.0 Collaborative Incubator using the Digital Twin Factory Framework**	POO / FEI	Research incubator focused on **Industry 4.0** and **Digital Twin technology**.
Industry 4.0 Digitalization	**Design, Implementation, and Use of Joint Programs** (e.g., CEEPUS mobility)	CEEPUS / MTF	Focused on **Industry 4.0** in **SME logistics and production management**.
Digitalization / Cybersecurity	**Enhancing Education in Cybersecurity**	KEGA / FIIT	Supports **digital skills** essential for modern infrastructure and industry.
Advanced Materials and Renewable Energy (RE)	**BOOSTER** (Boost Of Organic Solar Technology for European Radiance)	H2020 / FEI	Research and development of **organic solar technology**.
Advanced Materials and RE	**ALL2GaN** (Affordable Smart GaN IC Solutions as	HORIZON-KDT-JU / FEI	Development of **affordable smart GaN**

SDG 9 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Innovation, Industry, Infrastructure)
	Enabler of Greener Applications)		**IC solutions** for **green applications**.
Green and Circular Economy	**PET Waste Transformation: Sustainable Production of Polyalkyd Resins...** (ECO-RESIN)	Young Researchers Grant / FCHPT + FEI	Research on **material recycling** and valorization of polymeric materials.
Green and Circular Economy	**BPOSCMF** (Blockchain-Based Framework for Verification and Supply Chain Management of Construction Materials)	Young Researchers Grant / FIIT + MTF	Innovative **supply chain management**, digital integration, and infrastructure.
Construction and 3D Printing Innovations	**ESG** (Optimal Ecological Filament Research for Construction 3D Printing)	POO / FAD	Research on **eco-friendly filament for construction 3D printing** in temperate climates.
Construction and 3D Printing Innovations	**MeltFlex**	UTI Start-up / FIIT	Project expanding **3D printing capabilities** via an innovative robotic arm.
Construction and 3D Printing Innovations	**Development of Granulation Equipment** for composite particulate materials for **3D printing**	VEGA / SjF	R&D for **3D printing technologies**.
Infrastructure Monitoring	**Smartstruct Analytix**	UTI Start-up / SvF	System for infrastructure managers to obtain **real-time structural condition data** (IoT, Smart Cities).
Infrastructure Development	**Smartinvest Company** (Development of tools and measures for modern technologies in construction and infrastructure)	UTI Start-up / SvF	Supports **tools and measures development for modern construction technologies** and infrastructure.

SDG 9 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Innovation, Industry, Infrastructure)
Nuclear Infrastructure	**EURAD** (European Joint Programme on Radioactive Waste Management)	H2020 / FEI	European program for **radioactive waste management** (infrastructure solutions).
Nuclear Infrastructure	**INNUMAT** (Innovative Structural Materials for Fission and Fusion)	HORIZON-EURATOM / FEI, MTF	Development of **innovative structural materials** for fission and fusion reactors.
Nuclear Infrastructure	**STRUMAT-LTO** (Structural Materials Research for Safe Long Term Operation of LWR NPPs)	H2020 / FEI, MTF	Research on **structural materials** for safe long-term operation of nuclear power plants.
Pollution / Soil Remediation (Infrastructure)	**Hazardous Waste Removal** (MV SR project to remove PCB-containing hazardous waste)	MV SR / SvF	Remediation of contaminated sites (Chemko Strážske), crucial for **environmental infrastructure**.
Telecommunications Infrastructure	**European Network on Future Generation Optical Wireless Communication Technologies (NEWFOCUS)**	COST Action / FEI	Research in **optical wireless communication technologies**.
Research Infrastructure Development	**ACCORD** (Advancing University Capacity and Competence in Research, Development and Innovation)	POO / Entire STU	**Upgrading research infrastructure and equipment** and **modernizing IT infrastructure**.

SDG 10: Reduced Inequalities: Reducing inequality within and among countries.

STU focuses on increasing accessibility and promoting diversity within the organization:

Key Contributions of STU to SDG 10:

1. Inclusion and Support for Students with Disabilities (SDG 10.4)

STU actively supports students and staff with disabilities and ensures an accessible environment. This directly contributes to SDG 10's aim of reducing inequalities based on health status.

- **Barrier-free university and disability accommodations:** Students and staff with specific needs receive support to **compensate for disabilities**.
- **Specific support services include:**
    - **Individualized study schedules** tailored to student needs.
    - **One-on-one consultations**.
    - **Academic assistance** (note-taking, scanning, copying) and **sign language interpretation**.
    - **Accessible housing** and fully barrier-free access across campus.
    - **Rest areas** at FAD, MTF, and FCHPT faculties.
    - **Special pedagogical, psychological, and social counseling**, including psychotherapy.
- **CEDA Expert Centre:** The **Research and Training Centre for Barrier-Free Design (CEDA)** provides **advisory services on universal accessibility** for higher education buildings in Slovakia, conducting accessibility audits.
- **Infrastructure improvements:** STU actively contributes to **"debarriering" higher education institutions**.

2. Gender Equality and Anti-Discrimination Measures (SDG 10.6)

While gender equality is primarily SDG 5, STU addresses broader inclusion and non-discrimination under SDG 10.

- **Anti-discrimination policies:** Principles of **sustainability, safety, gender equality, and protection against all forms of discrimination** are embedded in the STU Statute and applied in all relevant procedures (admissions, career development, evaluation, and remuneration).
- **Safe reporting of discrimination:** STU has established **safe reporting channels** for incidents of unequal treatment or discrimination, which are promptly reviewed by the **Ethics Committee or Disciplinary Committee**.
- **Gender equality action plan:** The STU Gender Equality Action Plan 2023–2025 has been implemented.

- **Institutional support:** STU has a dedicated **Gender Equality Working Group**, advising the rector and overseeing the integration of equality principles in research, teaching, and career advancement. The group also implements measures against **gender-motivated attacks** and manages the **confidential advisor system**.

3. Reducing Socio-Economic Inequalities (SDG 10.2)

Although quantitative data on first-generation or low-income students are limited, STU provides financial and social support.

- **Scholarships:** STU implements a **social policy** and offers various scholarships to help mitigate economic barriers.
- **Education programs promoting inclusion:** STU projects aim to enhance educational quality and professional training in sustainability-related fields. For example, the **"Urban and Community Sustainability in Planning and Architecture"** project collaborates with the University of Stavanger to **increase the educational and employment potential of young people**.

4. Addressing International Inequalities and Partnerships (SDG 10.3 & 10.A)

STU contributes to reducing international inequalities through collaboration and open-access initiatives.

- **International education:** STU's **Internationalization Strategy** promotes global collaboration and mobility.
- **International research cooperation:** STU participates in H2020 projects addressing inclusive societies, such as **rurALLURE**, which promotes rural museums and heritage along European pilgrimage routes, benefiting disadvantaged rural areas.
- **Open Access policy:** STU has adopted an **Open Access policy**, ensuring **free access to knowledge** for institutions and individuals in less-developed countries. STU publishes **five open-access scientific journals**.
- **Inclusive education project:** FAD leads the **"Open Access Contents on Design for Equality, Diversity, and Inclusion"** project, developing **open educational content promoting equality, diversity, and inclusion** in higher education curricula.

SDG 10 Contribution Area	**Project Name / Acronym**	**Project Type / Faculty**	**Key Contribution (Inclusion, Access, Diversity)**
Accessibility and Barrier-Free Infrastructure	**Eliminating Architectural, Information, and Wayfinding Barriers at STU**	Ministry of Education SR / STU (FAD, FCHPT, SvF, FEI, ŠDJH)	**Removal of vertical circulation barriers and elevator replacement** in STU buildings to ensure barrier-free access.
Accessibility and Barrier-Free	**Research and Training Centre for Barrier-Free Design (CEDA)**	Unit / SvF	Implements socially significant projects on **universal design** and provides **advisory services**

SDG 10 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Inclusion, Access, Diversity)
Institutional Support			**on barrier-free accessibility** for higher education architecture.
Gender Equality (Core SDG 10)	**CALIPER** (Linking Research and Innovation for Gender Equality)	H2020 / MTF	Focused on **linking research and innovation to promote gender equality**.
Gender Equality (Core SDG 10)	**EUGAIN** (European Network for Gender Balance in Informatics)	COST Action / FIIT	European network promoting **gender balance in informatics**, where women are underrepresented.
Gender Equality (Core SDG 10)	**Making Young Researchers' Voices Heard for Gender Equality**	COST Action / FIIT	Aimed at **amplifying the voices of young researchers to advance gender equality**.
Inclusive Educational Resources	**Open Access Contents on Design for Equality, Diversity, and Inclusion** for HE Programmes	Erasmus+ / FAD	Development of **open educational content promoting equality, diversity, and inclusion**.
Inclusive STEAM Education	**CT.Uni** (Creative Thinking – Taking an Innovative and STEAM Approach for a Transdisciplinary University)	Erasmus+ / FAD, University of Economics	Includes **Open Access content on design for equality, diversity, and inclusion**.
Support for Rural and Disadvantaged Areas	**rurALLURE** (Promotion of Rural Museums and Heritage Sites near European Pilgrimage Routes)	H2020 (Inclusive Societies) / FIIT	Promotes **rural museums and heritage sites**, supporting regional development and reducing inequalities between urban and rural areas.
Education and Workforce Development	**Urban and Community Sustainability in Planning and Architecture**	Not specified	Aims to **enhance the educational and professional potential of young people**.
International Development Projects	**INTERREG** (Cross-Border Cooperation)	Various faculties	Focuses on **joint solutions in health, environment, research, education, and sustainable energy**, directly

SDG 10 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Inclusion, Access, Diversity)
			addressing regional inequalities.

SDG 11: Sustainable Cities and Communities: Making cities and human settlements inclusive, safe, resilient and sustainable.

STU (Slovak University of Technology in Bratislava) contributes to Sustainable Development Goal 11 (SDG 11): **Sustainable Cities and Communities** through active research in urban planning, infrastructure development, and smart solutions, while also serving as a cultural and social hub for the local community.

STU's contributions to SDG 11 focus on:

1. Research for Sustainable Urban Planning and Infrastructure

STU, particularly through the Faculty of Civil Engineering (SvF), the Faculty of Architecture and Design (FAD), and the Institute of Management (ÚM), undertakes projects that directly advance sustainable urban development (SDG 11.1, 11.A).

- **Green Innovations in Urbanism:** The project *"Urban and Community Sustainability in Planning and Architecture"* aims to enhance education and professional training in **green urban planning and regional development**, as well as **assisted-living technologies**, increasing the educational and employment potential of young professionals.
- **Climate Change Adaptation in Cities:** The ÚM-led project *CICA DA 4CE* focuses on improving **climate change adaptation management** by integrating ecosystem services and smart social approaches in Central European cities.
- **Urban Energy Transformation:** STU participates in the *MAKINGCITY* project, which promotes **energy-efficient urban transformation**, while the *MOBILITIES FOREU* project explores **new mobility solutions for climate-neutral European cities**, directly supporting sustainable urban transport (SDG 11.2).
- **Building Revitalization and Infrastructure:** STU is involved in projects such as the renovation of the historic SvF and Faculty of Mechanical Engineering (SjF) campuses, aiming to improve indoor environments and reduce **building energy consumption**.
- **Assisted-Living Technologies:** Research into **assisted-living technologies** supports the development of sustainable, inclusive communities for all age groups (SDG 11.1).

2. Cultural Heritage Preservation and Access (SDG 11.4)

The **Slovak University of Technology in Bratislava (STU)** provides access to buildings and assets of **cultural significance**, including heritage-listed properties, and actively contributes to the **research, protection, and promotion of cultural and natural heritage** for the wider public.

Access to Immovable Cultural Heritage

STU owns or manages several properties officially listed in the **Central List of Cultural Monuments (ÚZPF)**:

- **Škola vysoká (FAD STU):** The main Faculty of Architecture and Design (FAD) building in Bratislava is a **National Cultural Monument** (ÚZPF 829/0) located in the central heritage zone. The building hosts public outreach activities, including **Architecture and Design**

Night, showcasing student and faculty creative, scientific, and artistic work to both professional and general audiences.

- **Townhouse in Banská Štiavnica:** Managed by STU as a **detached FAD workplace**, this historic building (ÚZPF 2533/1-1) hosts international educational and outreach events, such as the **14th International Multidisciplinary Workshop – Autumn University of Architecture 2024**.
- **Taber Mansion and Grounds:** STU manages this property in Kočovce (ÚZPF 1234/1–1234/6) for educational and recreational purposes.

3. Public Access and Community Engagement (SDG 11.7)

Access to **artistic and architectural outputs** and **exhibition spaces** at the Slovak University of Technology in Bratislava (STU) is primarily provided through the **Faculty of Architecture and Design (FAD)** and the newly established **STU University Centre**.

- **FAD Multifunctional Exhibition Space:** Located in a **National Cultural Monument**, the FAD building features a **horizontal barrier-free connection** in the former coal and boiler rooms, creating a **350 m^2 multifunctional space** for exhibitions and workshops.
- **FAD Foyer:** The foyer is regularly used as a gallery for **student projects, doctoral research, and international art initiatives**, including:
    - **Professor Lacka Award 2023**, recognising outstanding architecture theses.
    - **FIGURAMA**, an international project focused on figurative art.
    - **Architecture and Design Night**, during which the entire FAD building is open to both professional and general audiences. The admission is free of charge.
- **STU University Centre:** Opened in September 2024, the first two floors feature a **science café with an atrium**, an open space accessible to the public and used for exhibiting **student works and projects**.

STU participates in and initiates exhibitions in public spaces and galleries, such as:

- **Biela Noc 2024**, featuring intermedia works *Liberté* and *Transplantatio*.
- Public installations including *Mlčanie nás neochráni* during the Pohoda Festival.
- International events such as **Milan Design Week (UNFOLD, DESIGN × SCIENCE)** and **Designblok Prague**.
- Exhibitions in regional galleries, including **Oravská Gallery (Dolný Kubín)** and **DKC Veritas (Košice)**.
- *Floating Arboretum* (Venice Biennale)
- *Odporne húževnatá bužírka* (Žilina Light Festival)

STU's sports facilities page lists the publicly bookable green/open facilities (football pitch, tennis courts, beach-volleyball, athletics) at Mladá Garda. STU's Mladá Garda sports complex (green pitches/athletics etc.) is open to external users on a fee schedule (official price list).

Public Access and Promotion of Cultural and Natural Heritage

- **Shared Facilities:** STU opens libraries, study rooms, and lecture halls to the public and civic institutions:
    - STU operates a comprehensive network of academic libraries on each faculty that are accessible not only to students and staff but also to the general public and external users (e.g. The FAD Library registered 64 external users (non-STU members) in 2024, reflecting the university's ongoing commitment to community access to academic resources).
    - In **2024**, the **Elvira Digital Library** was launched as a **university-wide digital platform** providing **online access to study materials and academic literature** for all STU users. The system integrates resources across individual faculty portals, ensuring **open access within the university network** — with **no user restrictions** between faculties.
- **Research and Outreach:**
    - FAD and SvF lead projects on **heritage conservation and restoration**, such as the **UNESCO Chair for the Restoration of Architectural Heritage** – interdisciplinary platform at STU focused on conservation/restoration of architectural heritage (UNITWIN/UNESCO) linking academia, civil society, and public administration.
    - Exhibitions and publications highlight architectural heritage, including:
        - **RAIL4V4+V2023** traveling exhibition on railway heritage.
        - **In a Healthy Body, a Healthy Mind** on modernist health architecture.
        - **Virtual reconstruction of the Roman fort in Iža**, a UNESCO World Heritage site.
    - **SPEKTRUM STU** publishes popular-science monographs on significant buildings, monuments, and Czech-Slovak history.
- **Collaboration with NGOs:** STU works with organisations dedicated to **heritage protection and 20th-century architectural documentation**, such as the **Jaromír Krejcar Society**.
- In **2024**, the **VUS Technik ensemble** contributed significantly to the local arts scene through a total of **25 public performances**, comprising (**Choir:** 8 performances, **Folk Ensemble:** 14 performances, **Chamber Orchestra:** 3 performances)

Preservation and Digitalisation of Endangered Knowledge, Traditions and Local Folklore
STU undertakes targeted research projects focused on **digitally recording, preserving, and reconstructing cultural knowledge** **and "vanishing heritage"**:

- **Digital Restoration of Endangered Heritage:** The KEGA project *"Interior Design – Vanishing Heritage and its Digital Restoration"* documents heritage at risk of disappearing, employing digital tools to capture and preserve it.

- **Digital Recording of Endangered Cultural Assets:** The project *"Interdisciplinary Approach to the Digitalisation of Critically Endangered Cultural Heritage Objects in Banská Štiavnica"* records not only the physical objects but also **knowledge about their condition, construction, and historical significance**.
- **Use of Traditional Construction Knowledge:** Research develops **technological schemas for information modelling of historic buildings** and identifies historical measurement units for heritage restoration, capturing and applying often intangible technical knowledge.
- **Regional Architectural Culture:** The KEGA project *"Building Culture and its Continuity in Architectural Practice in Slovak Microregions"* maps and preserves local building traditions.
- **Material Culture and Ethnology:** FAD contributed to publications on **intangible heritage**, including *Etnológia v regiónoch 2: Nehmotné kultúrne dedičstvo v živote a tvorbe osobností* and *Podpoľanie – Regional Material Culture*.
- In **2024**, its folklore group **VUS Technik ensemble** actively performed both new and traditional repertoire from **Veľká Maňa and Vajnory**, promoting **regional cultural continuity** and community engagement with heritage.

Sustainable practices

- STU adopted its new Long-term Plan 2025–2031 on 16 Oct 2024, with explicit measures like "reducing STU's carbon footprint" and "sustainable development of infrastructure".
- All full time STU students are entitled for ISIC card, which gives them 50% discount on transit passes.
- Some of the university buildings provide electric vehicle recharging stations.
- The university employees enjoy a benefit of daily entry to gyms, swimming pools, training clases and bicycle sharing programme via Multisport cards. Creation of bike racks, safe bike parking spaces in Trnava dormitories. Newsletter 09/2024 highlights European Mobility Week (16–22 Sep 2024) and directs municipalities to register activities—evidence of institutional promotion of sustainable mobility in 2024. Members of the university staff participate regularly at the "Do práce na bicykli" month of sustainable commuting on bike.
- Telecommuting/remote working:

  • **Standard limit:** The maximum allowance for home office work is 4 days per calendar month.

  • **Flexibility and exceptions:** In justified cases, the scope of remote work may exceed this limit with the approval of the Rector, Dean, or an authorized supervisor.
  • **Home office for parents:** STU provides the option for women or men who have permanent care of a child under 8 years of age to work from home to the extent requested by the employee, provided there are no serious operational constraints.

- **Accommodation for employees and guests:** The STU Student Housing and Dining Facilities (ŠDaJ STU) operates 7 student dormitories. In 2024, a total of 194 beds within the Bratislava dormitories were allocated for accommodation of STU employees and guests. Employees residing more than 40 km from Bratislava may apply for accommodation in STU housing facilities located in Bratislava.

- **Affordable housing for Students:** STU operates 6 student dormitories (ŠD) in Bratislava and 1 in Trnava (ŠDaJ Miloš Uher). The total accommodation capacity of the Bratislava dormitories in 2024 was 5,257 beds (from January 1 to August 31, 2024), with a slight increase to 5,294 beds from September 2024. The accommodation capacity of the Trnava dormitory (ŠDaJ) is 1,260 beds.
- STU focuses on research and projects that actively promote walking and urban mobility, which is also reflected in the management of its own campuses:
    - **DUT Project and the 15-Minute City:** The Faculty of Civil Engineering (SvF) is engaged in the DUT – *Driving Urban Transitions* (HORIZON) project, which includes thematic areas aimed at transforming cities into climate-neutral, inclusive, and sustainable communities, including the *15-Minute City* (15minC) concept. This concept fundamentally prioritizes pedestrian mobility.

  • The Faculty of Architecture and Design (FAD STU) is actively engaged in spatial planning and addressing specific development challenges for towns and municipalities:

    - FAD staff have prepared or contributed to updates and amendments of municipal master plans for the municipalities of Šintava, Častá, and Pata. FAD conducted applied research focused on transforming suburban satellite settlements into fully functional towns, for example, for the municipality of Hviezdoslavov. STU has also developed projects for various cities, such as Nitra (Planning and development of blue-green infrastructure, Extension of the pedestrian zone), Púchov (Study for a multifunctional parking facility), and Trnava (Reconstruction of the former "Old Post Office" building). FAD signed a Memorandum of Cooperation with the Bratislava–Jarovce city district, formalizing long-term collaboration in architecture, urbanism, and spatial planning. STU also cooperates with the Capital City of Bratislava on specific projects, such as monitoring and evaluating barrier-free accessibility of municipal facilities.
- **New buildings and CO_2 reduction**: STU University Centre (opened in 2024) was constructed as part of the ACCORD investment project, whose main activities include a CO_2 emission reduction program aimed at improving the energy efficiency of selected university buildings.
- **Technological innovations:** STU is focusing on the implementation of renewable energy technologies (RES). A project is currently being prepared for the construction of the STU Photovoltaic Power Plant, which will involve the installation of solar panels on the rooftops of the FAD, SjF, SvF, and FCHPT faculties.
- **Renovation of university buildings:** The renovation of the central campus of the Faculty of Civil Engineering (SvF) and the Faculty of Mechanical Engineering (SjF) was carried out with the goal of reducing the energy consumption of the buildings. The Student Zone "Dynamik" at the Faculty of Civil Engineering (SvF) was created by redesigning the existing study room and expanding it to include a previously unused technical room beneath the Aula Bellu stage. The renovation of the historic building of the Faculty of Chemical and Food Technology (FCHPT) was completed as part of the ACCORD investment project. The Faculty of Architecture and Design (FAD STU), a listed National Cultural Monument, is undergoing restoration works, including window replacement and heating station reconstruction. In the basement of the FAD main building, an unused area (former coal storage and boiler room, approx. 350 m^2) that had been vacant for nearly 30 years was converted into a barrier-free horizontal connection and a multifunctional exhibition and workshop space. The Faculty of Electrical Engineering and Information Technology (FEI)

implemented a building revitalization project (facade reconstruction) to ensure compliance with modern energy efficiency standards.

4. Strategic and Legislative Engagement

STU representatives are involved in shaping national policies affecting urban and regional infrastructure planning.

- **Government Collaboration:** STU works with the Ministry of Investments, Regional Development, and Informatization (MIRRI) on implementing the digital transformation action plan and developing the **Slovak Republic's Vision and Development Strategy to 2050**.
- **Support for Renovation Projects:** STU contributes to architectural studies supporting the Ministry of Labour, Social Affairs and Family (MPSVR SR) within the **Recovery and Resilience Plan**, influencing long-term infrastructure planning.
- **Expertise and Consultancy:** STU staff act as experts and consultants for institutions managing the country's technical infrastructure.

Area of Contribution to SDG 11	**Project Name / Acronym**	**Project Type / Faculty**	**Key Contribution (Urban Planning, Infrastructure, Resilience)**
Climate Change Adaptation in Cities	**CICA DA 4CE** (Efficiency of the Climate Change Adaptation Management...)	EU / ÚM	Focused on improving **climate change adaptation management** through integration of ecosystem services and smart social approaches in Central European cities.
Climate Change Adaptation in Cities	**BE READY** (Urban Heat Islands Resilience and Mitigation Strategies)	EU / ÚM	Addresses **resilience of urban heat islands** and mitigation strategies in cities.
Energy-Efficient and Smart City Transformation	**MAKINGCITY** (Energy Efficient Pathway for City Transformation)	H2020 / ÚM	Promotes **energy-efficient pathways for urban transformation**.
Sustainable Urban Mobility	**MOBILITIES FOREU** (New Mobility Solutions for Climate-Neutral Cities in the EU)	HORIZON Europe / ÚM	Research on **new mobility solutions to achieve climate neutrality in EU cities**.
Monitoring and Smart City Infrastructure	**Smartstruct Analytix**	UTI Start-up / SvF	System for **real-time monitoring of infrastructure**, implementable in **IoT-based Smart City systems**.

Area of Contribution to SDG 11	Project Name / Acronym	Project Type / Faculty	Key Contribution (Urban Planning, Infrastructure, Resilience)
Infrastructure and Construction Technologies	**Smartinvest Company**	UTI Start-up / SvF	Development of **tools and measures for modern construction technologies** and national infrastructure development.
Urban Waterway Restoration	**Restoring Urban Streams**	EU Interreg / SvF	Restoration of urban watercourses to **promote biodiversity, climate adaptation, and improve urban quality of life**.
Cultural Heritage Preservation	**rurALLURE** (Promotion of Rural Museums and Heritage Sites near European Pilgrimage Routes)	H2020 / FIIT	**Promotion of rural museums and heritage sites** to support cultural inclusion and regional development.
Architectural Heritage Preservation	**UNESCO Chair in Restoration of Architectural Heritage**	UNESCO / SvF	Focused on **restoration and preservation of architectural heritage**.
Regional Resilience and Heritage Valorization	**DANurB+** (Building Regional and Local Resilience through Danube Cultural Heritage Valorization)	Interreg / Not Specified	Cross-border project focused on **cultural heritage valorization and local resilience building**.
Barrier-Free Access Monitoring	**Monitoring and Assessment of Barrier-Free Accessibility of Urban Buildings**	Contract Research / City of Bratislava	Evaluation of **barrier-free accessibility in urban buildings**.
Barrier-Free Infrastructure	**Elimination of Architectural, Informational, and Wayfinding Barriers at STU**	Project by Ministry of Education, Science, Research and Sport / Multiple Faculties	Debarrierization of university infrastructure serving the public and improving **building accessibility**.

SDG 12: Responsible Consumption and Production: Ensuring sustainable consumption and production patterns.

The Slovak University of Technology in Bratislava (STU) contributes to SDG 12: **Responsible Consumption and Production** through strategic sustainability commitments, research in circular economy, and the implementation of environmentally responsible operational practices. STU actively promotes responsible resource use and aims to minimize environmental impact.

1. Operational Measures and Resource Management (Campus Management)

STU implements efficient resource management and sustainable procurement across its operations.

- **Green Procurement:** STU applies **green and socially responsible procurement criteria** whenever possible, considering **product environmental safety** and the **energy efficiency or performance** of purchased equipment.
- **Waste and Plastics Minimization:** Policies are in place to **reduce the use of plastics and single-use items**.
- **Hazardous Waste Management:** STU has established **procedures and policies for safe disposal of hazardous materials**. STU staff also participate in regulatory and advisory bodies, including the **Slovak Ministry of Environment's Waste Recycling Commission**, contributing to national policy development.
- **Lifecycle Management of Equipment:** STU is in the process of **integrating lifecycle policies** into its facilities and building management systems.
- **Energy Efficiency:** Campus renovations, such as those at the Faculty of Civil Engineering and the Faculty of Mechanical Engineering, are carried out to **reduce energy consumption** and improve indoor environmental quality, achieving more efficient use of resources.

2. Research and Innovation for the Circular Economy

STU actively develops solutions for circular economy, recycling, and sustainable production.

- **PET Waste Valorization:** The project **"Transforming PET Waste: Sustainable Pathway to Polyalkyd Resin Production and Plastic Valorization (ECO-RESIN)"** (PI: Ing. Alexandra Tulipánová, FCHPT + FEI) focuses on **material recycling and valorization of polymeric materials**.
- **Sustainable Production and Green Enterprise:** The **STAGE** project (HORIZON Europe, MTF) supports the **transition to agile and green enterprises**.
- **Green Manufacturing and Competencies:** Within the Young Researchers Program, MTF leads projects on:
    - **Analysis of green production methodologies in Slovak industrial enterprises** (GD 1347, PI: Ing. Lukáš Juráček).

- **Specification of employee competencies for applying green manufacturing principles** (GD 1349, PI: Ing. Adriána Lehutová).

- **Waste Reuse in Design:** CEEPUS mobility projects at MTF include **reuse of industrial waste in furniture production**.
- **Green Innovation in Education:** The **IRinGIFT** project promotes **green research and innovation in student theses and semester projects**.

3. Knowledge Sharing and Transparency (Open Access and Education)

STU ensures the dissemination of scientific knowledge to promote responsible consumption and production at a broader level (SDG 12.A).

- **Open Science (Open Access):** STU has adopted an **Open Access policy**, providing publications and teaching materials in **digital form with public licenses**, enabling free access, reuse, adaptation, and redistribution.
- **Digital Resources:** STU publishes **five open-access scientific journals**. In 2024, the **Elvira Digital Library** was launched, providing online study materials and reducing reliance on printed resources.
- **Educational Activities:** STU organizes public lectures and expert discussions on responsible consumption and environmental topics, e.g., **Plastics and the Environment: Past, Present, and Future**.
- **Environmental Curriculum:** Programs and courses include **Environmental Protection Technologies**, **Socially Responsible Sustainable Business**, and **Ecological and Social Aspects of Design**.

SDG 12 Contribution Area	**Project Name / Acronym**	**Project Type / Faculty**	**Key Contribution (Circular Economy, Waste, Green Manufacturing)**
Sustainable Production and Green Enterprise	**STAGE** (Sustainable Transition to the Agile and Green Enterprise)	HORIZON Europe / MTF	Supports the **transition to agile and green enterprises**.
PET Waste Valorization	**ECO-RESIN** (Transforming PET Waste: Sustainable Pathway to Polyalkyd Resin Production and Plastic Valorization)	Young Researchers Program / FCHPT + FEI	Research on **material recycling** and **valorization of polymeric materials**.
Green Manufacturing Practices	**Analysis of Implementation of Green Manufacturing Assessment Methods in Slovak Industrial Enterprises** (GD 1347)	Young Researchers Program / MTF	**Analysis and evaluation of green production** in industrial enterprises.

SDG 12 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Circular Economy, Waste, Green Manufacturing)
Green Manufacturing Competencies	**Specification of Employee Competencies in Applying Green Manufacturing Principles** (GD 1349)	Young Researchers Program / MTF	Focus on **employee competencies for implementing green production principles**.
Resource Use Innovations	**Material Recycling of Environmentally Friendly Polymers from Renewable Sources**	APVV / Not specified	Project focused on **material recycling**.
Waste Reuse in Construction	**Nonlinear Finite Element Analysis of Punching Shear Behaviour of Flat Slabs Cast from Coarse Recycled Aggregate Concrete**	POO / SvF	Analysis of reinforced concrete slabs made from **recycled concrete aggregate**.
Waste Reuse in Construction	**Durability Analysis of Existing Concrete Structures Using Particle Simulations and Recycled Aggregate Concretes**	POO / SvF	Evaluation of the durability of concretes made from **recycled aggregates**.
Eco-Friendly Construction Materials	**ESG – Research on Optimal Ecological Filament for Construction 3D Printing**	POO / FAD	Research on **eco-friendly filaments** for 3D construction printing.
Reuse of Industrial Waste in Design	**Reusing Industrial Waste in Furniture Production**	Artistic Activity / FAD	Artistic project promoting **reuse of industrial waste in furniture manufacturing**.
Advanced Materials and Water Purification	**Photochemical Versatile Materials for Water Purification**	APVV / MTF	Project on **photochemical materials** for clean water, reducing pollution.
Hazardous Waste Remediation	**Project for Safe Removal of Hazardous Waste Containing PCBs**	MV SR / STU	Project focused on **removal of hazardous waste** (Chemko Strážske).

SDG 12 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Circular Economy, Waste, Green Manufacturing)
Sustainable Supply Chains	**BPOSCMF** (Blockchain-Based Framework for Verifying Origin and Managing Construction Material Supply Chains)	Young Researchers Program / FIIT + MTF	Digital innovation for **responsible supply chain management** and material traceability.
Supporting Green Research	**Green Innovations in Student Theses and Semester Projects (IRinGIFT)**	STU Project	Supports students in **green research and innovation**.
Education for Sustainable Energy	**Ukrenergy** (Innovative Master Courses Supporting the Improvement of the Energy and Carbon Footprint of the Ukrainian Building Stock)	Erasmus+ / SvF	Strengthens education in **building energy sustainability**.
Education for Decarbonization	**Decarbonisation: VET Students for Ecological Transition in Companies**	Erasmus+ / FAD	Educates VET students for **ecological transformation in companies**.
Smart Consumption Solutions	**Experimental Study on Integrating Smart Metering and Distributed Data Technologies in Food Storage Constructions**	POO / SvF	Experimental study integrating **smart metering** solutions.
Sustainability-Focused Start-Ups	**Experiana**	UTI Start-up / SvF	Travel application promoting **eco-friendly experiences in Europe**.

SDG 13: Climate Action: Taking urgent action to combat climate change and its impacts.

STU (Slovak University of Technology in Bratislava) contributes to SDG 13: **Climate Action** through strategic commitments to reduce its carbon footprint, extensive research on climate change adaptation, and the development of low-carbon and energy-efficient technologies.

STU's contribution to SDG 13 is embedded in both its strategic objectives and its research activities.

1. Governance and Low-Carbon Campus Initiatives

STU has adopted formal commitments and established structures aimed at achieving low-carbon operations and energy efficiency.

- **Carbon-Neutral University Strategy:** STU has established a dedicated working group, **STUBA 2030(+): Carbon-Neutral University**, tasked with developing a sustainable strategy for STU as a **low-carbon, innovative, ecological, energy-efficient, and sustainable institution** aligned with the SDGs.
- **Global Initiatives:** STU participates in the **Green University initiative** and the global **Race to Zero campaign**, both aimed at achieving carbon neutrality and addressing the climate crisis.
- **CO_2 Reduction and Energy Efficiency:**
    - The **ACCORD** project (Advancing university Capacity and Competence in Research, Development and Innovation) includes activities targeting **CO_2 emission reduction** and improvements in **energy efficiency** for selected campus buildings.
    - Renovations of the Old Town campus buildings for the **Faculty of Civil Engineering (SvF)** and the **Faculty of Mechanical Engineering (SjF)** aim to **reduce energy consumption** and improve indoor environmental quality.
    - Installation of a **photovoltaic power plant** on the roofs of FAD, SjF, SvF, and FCHPT faculties is planned as part of the STU Energy Centre.
- **Green Procurement:** STU applies **green and socially responsible procurement** practices for goods and services, including energy and technology, considering both **environmental safety** and **energy performance**.

2. Research on Climate Change Adaptation and Mitigation

STU engages in extensive international and national research projects focused on adapting infrastructure and ecosystems to changing climatic conditions (SDG 13.1, 13.3).

- **Urban Climate Adaptation:** The **Institute of Management (ÚM)** leads projects on **climate change adaptation management** in Central European cities:
    - **CICA DA 4CE** – improving climate adaptation efficiency through ecosystem services and smart social approaches.

- **BE READY** – enhancing urban heat island resilience and risk mitigation strategies.

- **Energy Transition and Decarbonization:**
  - **STAGE** (Sustainable Transition to the Agile and Green Enterprise, HORIZON Europe) supports the **transition to agile and green enterprises**.
  - **Decarbonisation: VET Students for Ecological Transition in Companies** – an educational project for ecological transformation in enterprises.
  - **Ukrenergy** – strengthens education on **energy sustainability in buildings**.
- **Sustainable Mobility and Emissions:**
  - **MOBILITIES FOREU** – develops **new mobility solutions for climate neutrality** in EU cities.
  - **FreeTwinEV** – implements a **Digital Twin platform** for sustainable and safe electric vehicles.
- **Water Resources and Climate:** The SvF conducts **modeling of climate and environmental impacts on water runoff** to evaluate uncertainties in water resource systems.
- **Use of Recycled Materials:** Projects promote **recycled materials for concrete production** to reduce environmental impact.

3. Education and Community Engagement

STU raises awareness and builds capacity for climate change mitigation and adaptation (SDG 13.3).

- **Public Discussions:** STU organizes events for the general public, such as a discussion with SFPA and the SME newspaper on **"When Will the Era of Electric Vehicles Truly Begin?"**, addressing the EU ban on combustion engine production.
- **Decarbonization Seminars:** Seminars such as **"Decarbonization of the Environment and Impacts on the Agri-Food Sector"** are held to engage stakeholders.
- **Supporting Green Research:** The **IRinGIFT** project encourages students to undertake **green research** in theses and semester projects.
- **Expert Advisory Activities:** STU staff participate in advisory bodies such as the **MŽP SR Carpathian Convention Working Group**.
- **Climate Impact Research:** SvF conducts research using **R programming for climate change analysis and assessment of its impacts on urban areas**.

SDG 13 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Adaptation, Decarbonization, Energy Efficiency)
Energy Transformation and Emissions	**STAGE** (Sustainable Transition to the Agile and Green Enterprise)	HORIZON Europe (No. 101058693, 101061201) / MTF	Supports the **sustainable transition to agile and green enterprises**, contributing to decarbonization.
Urban Climate Adaptation	**CICA DA 4CE** (Efficiency of the Climate Change AD Aptation management…)	EU / ÚM	Enhances **climate change adaptation management** through integration of ecosystem services and smart social approaches in Central European cities.
Urban Heat Island Resilience	**BE READY** (UrBanh Eat islands RE silience, prePAre Dne ss and mitigation strateg Y)	EU / ÚM	Research on **urban heat island resilience** and risk mitigation strategies.
Sustainable Urban Mobility	**MOBILITIES FOREU** (New MOBility solutions for clImate neutraLity in EU cITIES)	HORIZON Europe (No. 101139666) / ÚM	Develops **new mobility solutions for climate-neutral cities** in the EU.
Building Energy Efficiency / Retrofits	**ActaReBuild** (Acoustic and Thermal Retrofit of Office Building Stock in EU)	HORIZON-MSCA (No. 101060008) / SvF	Focused on **acoustic and thermal retrofitting** of office buildings, reducing energy demand.
Building Energy Efficiency / Retrofits	**SHERLOCK** (SUPPORTING THE ENERGY TRANSITION OF THE BUILDING STOCK)	Erasmus+ / SvF	Supports **energy-efficient transformation of the building stock**.
Building Energy Transformation and Education	**Ukrenergy** (Innovative Master Courses Supporting the Improvement of the Energy and Carbon Footprint of the Ukrainian Building Stock)	Erasmus+ / SvF	Strengthens education on **building energy sustainability** and develops a master's program.
Integration of Low-Carbon Energy Sources	**Low2HighDH** (Developing methodologies for the integration of low-grade energy sources into high-	LIFE-2022-CET / SvF	Develops methodologies for **integrating low-grade energy sources** into high-

SDG 13 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Adaptation, Decarbonization, Energy Efficiency)
	temperature district heating networks)		temperature district heating networks.
Sustainable Vehicles / Digitalization	**FreeTwinEV** (Fostering Research Excellence of STU in Digital Twinning for Sustainable and Safe Electric Vehicles)	Twinning / FEI, MTF	Focuses on **Digital Twin technologies for sustainable and safe electric vehicles**.
Climate Impact on Water Resources	**Modeling impacts of climate and environmental change on runoff for evaluating uncertainties in water resource systems**	POO / SvF	Models the impact of **climate and environmental change on water runoff**, assessing uncertainties in water resource systems.
Climate and Architectural Heritage	**Harmonic Adaptation of Vernacular Architecture: Climatic, Cultural-Historical...**	POO / SvF	Focuses on the adaptation of vernacular architecture considering **climatic and cultural aspects**.
Climate Impact on Urban Areas	**Use of R Programming for Climate Change Analysis and Assessment of Impacts on Urbanized Areas** (GD 1626)	Young Researchers Grant / SvF	Utilizes **R programming for climate change analysis** and its impacts on urban areas.
Green-Blue Infrastructure and Climate Adaptation	**Restoring Urban Streams**	EU Interreg / SvF	Restores urban watercourses to enhance **biodiversity and climate adaptation**.
Solar Potential and Smart City Applications	**Solar Potential of Urban Areas and its Application in the Smart City VaHiTo Concept**	Not specified	Evaluates the **solar energy potential of building surfaces** (roofs and facades).
Decarbonization Education	**Decarbonisation: VET Students for Ecological Transition in Companies**	Erasmus+ / FAD	Educates students for **ecological transformation and decarbonization** in companies.

SDG 13 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Adaptation, Decarbonization, Energy Efficiency)
Supporting Green Research	**IRinGIFT – Green Innovations in Student Theses and Semester Projects**	Not specified	Supports students in **green research and innovation**.

SDG 14: Life Below Water: Conserving and sustainably using the oceans, seas and marine resources for sustainable development.

Slovakia being a landlocked country and STU being a technical university, its contribution to **SDG 14: Life Below Water** is not explicitly mentioned and does not directly relate to marine ecosystems.

SDG 15: Life on Land: Protecting, restoring and promoting sustainable use of terrestrial ecosystems, sustainably managing forests, combating desertification, and halting and reversing land degradation and halting biodiversity loss.

STU's contributions are organized as follows:

1. Biodiversity Management and Campus Infrastructure (SDG 15.9)

STU actively manages its campus areas to support local biodiversity and environmental sustainability:

- **Green infrastructure and botanical gardens:** Initiatives include the **reopening of the Botanical Garden at MTF** with the creation of an educational trail and the installation of a **green roof over the Slovak Chemical Library**.
- **Wildlife protection:** Bat boxes have been installed on the roofs of the old FCHPT building.
- **Ecosystem restoration:** The **Norwegian Financial Mechanism project on Klátovské rameno wetland** contributed to habitat restoration.
- **Strategic commitment:** STU participates in initiatives such as **"Green University"** and **"Race to Zero"**. The **STUBA 2030(+)** working group develops strategies for STU to function as an **ecological and resource-efficient institution** aligned with the SDGs.

2. Research for Ecosystem Protection and Sustainable Land Use (SDG 15.1, 15.3)

STU conducts research addressing soil degradation, pollution, and ecosystem protection:

- **Soil remediation and waste valorization (linking SDG 12 and 15):** The project **"Removal of hazardous waste containing polychlorinated biphenyls"** at the former Chemko Strážske site is central to **contaminated land remediation**.
- **Ecological connectivity and landscape planning:** The Institute of Management leads projects on **updating methodological approaches to support ecological connectivity**.
- **Urbanization and biodiversity:** Certain SDG 11 projects overlap with SDG 15, e.g.,
    - **Restoring urban streams** supports **biodiversity** and climate adaptation.
    - **Quality of aquatic ecosystems in mountain streams and their connection with green infrastructure**.
- **Environmental technologies:** Education programs such as **Environmental Protection Technologies** and courses on **Modeling Environmental Processes** and **Sustainable Land Use** contribute directly to SDG 15.
- **Innovation in construction materials:** Research on **new functional aluminosilicate-based geopolymers** supports **environmental protection applications**.

3. Policy Engagement and Regulatory Support

STU staff actively participate in shaping national and international policies related to terrestrial ecosystems and biodiversity:

- **Expert advisory roles:** Staff contribute to institutions such as the **MŽP SR Carpathian Convention Working Group**.
- **National strategy development:** STU representatives are involved in creating strategic policy documents supporting sustainable land and biodiversity management.

SDG 15 Contribution Area	**Project Name / Acronym**	**Project Type / Faculty**	**Key Contribution (Soil, Biodiversity, Ecosystems)**
Biodiversity Protection and Ecosystem Restoration	**Restoring Urban Streams** (to promote **Biodiversity**, Climate Adaptation, and Improve Urban Life)	EU Interreg CE (No. 0200754) / SvF	Focused on restoring urban waterways to support **biodiversity** and climate adaptation in terrestrial and freshwater ecosystems.
Ecosystem Planning	**Update of Methodological Procedures to Support Ecological Connectivity of the Landscape** (GD AMEK)	Young Researchers Program / ÚM	Enhances methodological approaches for **ecological connectivity**, crucial for the health of terrestrial ecosystems.
Soil Remediation and Hazardous Waste Management	**Project for the Removal of Hazardous Waste Containing Polychlorinated Biphenyls (PCBs) at the Former Chemko Strážske Site**	Contracted Project / MV SR / Unspecified	Removal of toxic waste essential for **remediating contaminated land** and preventing soil degradation (SDG 15.3).
Green and Blue Infrastructure	**Impact of Green-Blue Infrastructure on Stormwater Quality** (MOZEKOV)	Young Researchers Program / SvF + FCHPT	Investigates how **green infrastructure** affects water quality, directly supporting terrestrial ecosystem health in urban areas.
Sustainable Materials and	**Development and Testing of Natural Thermal Insulation Material Based on**	Young Researchers Program (GD 1636) / SvF	Research on **natural materials** that promote sustainable

SDG 15 Contribution Area	Project Name / Acronym	Project Type / Faculty	Key Contribution (Soil, Biodiversity, Ecosystems)
Green Innovation	**Fungal Mycelium and Sunflower**		use of renewable terrestrial resources.
Environmental Material Applications	**Novel Functional Geopolymers Based on Aluminosilicates: Applicability in Civil Engineering and Environmental Protection**	POO / SvF	Research on geopolymers with potential use in **environmental protection**, including soil stabilization and remediation.
Pollution Reduction (Indirect Contribution)	**Photo-Chemical Multifunctional Materials for Water Purification**	APVV (No. APVV-21-0039) / MTF	Reducing water pollution prevents soil contamination and supports terrestrial ecosystems, indirectly contributing to SDG 15.1.
Sustainable Urban and Community Planning	**Urban and Community Sustainability in Planning and Architecture**	Educational/Development Project	Focused on **green innovation in urban and regional planning**, influencing sustainable land use.

SDG 16: Peace, Justice and Strong Institutions: Promoting peaceful and inclusive societies for sustainable development, providing access to justice for all, and building effective, accountable and inclusive institutions at all levels.

Key areas of STU's contribution to SDG 16 include:

1. Accountability and Transparency

STU supports transparent governance and open access to information:

- **Leadership Commitments and Values:** STU's governance aligns with European public sector principles, including **integrity, transparency, social responsibility, inclusion, and sustainability**. These principles are clearly embedded in the university's **vision and mission statements**.
- **Open Access to Knowledge:** STU has implemented an **Open Access Policy**, aiming for all publications and educational materials to be available digitally under public licenses that allow **free access, use, adaptation, and redistribution**. Currently, STU publishes **five open-access scientific journals**.
- **Information Disclosure:** The university and its departments publish, through its website, Academic Information System (AIS), and public registers, all relevant information except internal and confidential documents. This includes **long-term institutional strategies, annual reports, financial statements, and minutes from all academic decision-making bodies**.

2. Integrity, Ethics, and Anti-Discrimination

STU enforces strong internal mechanisms to ensure justice and ethical behavior:

- **Ethical Codes and Zero Tolerance:** Principles of **equal treatment** and protection against **any form of discrimination** are included in the STU Statute preamble and reflected in both the **Employee Code of Ethics** and the **Student Code of Ethics**.
- **Complaint Resolution:** STU provides **safe channels for reporting incidents of unequal treatment or discrimination**, which are promptly reviewed by the **Ethics Committee** or the **Disciplinary Committee**.
- **HRS4R and Research Integrity:** STU holds the **HR Excellence in Research** label, demonstrating adherence to high standards of research integrity in line with the **European Charter for Researchers** and a commitment to **continuous improvement in research ethics**.

3. Inclusive and Participatory Decision-Making

STU ensures that all key stakeholders are involved in governance and decision-making (SDG 16.7):

- **Stakeholder Involvement:** Staff, students, alumni, and employer representatives are **equitably represented** in all structures involved in policy-making, program evaluation,

and approval (e.g., STU Academic Senate, STU Scientific Board, Faculty Industrial Councils).

- **Platforms for Input:** Students can submit feedback through the **Black Box system**. STU also financially supports **12 student organizations**, providing a platform for students to propose and implement initiatives.
- **Gender Equality Action Plan:** STU has developed a **Gender Equality Action Plan for 2023–2025** and maintains a dedicated **Gender Equality Working Group**.

4. Strong Institutional Partnerships and Security

STU collaborates closely with public and regulatory bodies to support policy development and institutional stability (SDG 16.A):

- **Collaboration with Public Authorities:** STU representatives actively participate in higher education bodies and cooperate with ministries and regulatory agencies on national legislation and strategic initiatives. Examples include:
    - Collaboration with **MIRRI** on the national **Digital Transformation Action Plan**
    - Collaboration with the **Ministry of Transport** on legislation for **electric vehicle technical inspections**
    - Cooperation with the **Ministry of Defense** on **cybersecurity initiatives**
- **Cybersecurity:** STU established the **CSIRT STU** (Computer Security Incident Response Team). Personal data protection (GDPR) is managed under **Rector's Directive 6/2019**.
- **Crisis Response and Peace Support:** STU promotes **zero tolerance for intolerance**. Its crisis management team implemented measures to support **students affected by the military conflict in Ukraine**, including granting **308 extraordinary scholarships**. Internationally, STU participates in projects addressing common challenges in **healthcare, environment, research, and education** (Interreg projects).
- **Shared Infrastructure:** STU provides public access to its **facilities (sports areas, libraries, study rooms, STU University Centre) and services** to public institutions and civil society, thereby enhancing the **public value** of the university.

Area of Contribution to SDG 16	**Project Name / Acronym**	**Project Type / Faculty**	**Key Contribution (Governance, Justice, Inclusion, Cybersecurity)**
Institutional Governance and Accountability	**HR Excellence in Research (HRS4R) Development**	Development Projects / MŠVVaM SR	Strengthening research ethics and institutional governance; maintaining HRS4R recognition to ensure continuous improvement in research integrity.
Career Advisory and Professional Development	**IAB3 – Harmonization and Integration of Career Guidance**	Consortium STU–EUBA /	Enhances professional development support for academic and research staff;

Area of Contribution to SDG 16	Project Name / Acronym	Project Type / Faculty	Key Contribution (Governance, Justice, Inclusion, Cybersecurity)
		Career Advisory Centre	strengthens internal institutional capacity.
Territorial Governance	**Territorial Governance of Non-Standard Geographies (TGNG)**	ÚM	Research on governance approaches in non-standard territorial contexts; supports effective institutional management and policy design.
Supply Chain Transparency	**Blockchain-based Framework for Verification and Management of Construction Supply Chains (BPOSCMF)**	FIIT & MTF	Increases transparency and integrity in construction supply chains; contributes to accountable governance and ethical practices.
Cybersecurity Education	**KEGA – Improving Cybersecurity Education**	FIIT	Strengthening digital security competencies and institutional cyber resilience.
Cybersecurity Research	**CYB-FUT – Cybersecurity for the Future**	FEI / Erasmus+	Enhances institutional cybersecurity frameworks and preparedness for digital threats.
Data Trustworthiness	**PANDORA**	FEI / International Project	Framework for delivery of **trustworthy datasets** supporting AIoT operations; ensures reliability and integrity of data.
Digital Inclusion	**IMS – Digitalization of Processes for Safe and Sustainable Inclusion**	UTI / FIIT	Digital solutions to promote inclusive access and participatory institutional processes.
Gender Equality in Research	**CALIPER – Linking Research and Innovation for Gender Equality**	MTF / H2020	Promotes gender equality and inclusive research practices.
Gender Equality in Informatics	**Making Young Researchers' Voices**	FIIT	Supports inclusivity and gender equity in academic research environments.

Area of Contribution to SDG 16	Project Name / Acronym	Project Type / Faculty	Key Contribution (Governance, Justice, Inclusion, Cybersecurity)
	Heard for Gender Equality (COST Action)		
Gender Balance in Informatics	**European Network for Gender Balance in Informatics (EUGAIN, COST Action)**	FIIT	Enhances participation of underrepresented groups and institutional diversity.
Inclusive Curriculum Design	**Open Access Contents on Design for Equality, Diversity, and Inclusion for Higher Education Programmes**	FAD / Erasmus+	Develops inclusive curricula and materials supporting SDG 16.7 (inclusive decision-making).
Support for Disadvantaged Students	**Project for Assessment and Support of Key Competences in Students**	SjF	Provides targeted support to ensure equitable access to educational opportunities.
Psychological Support	**TalkBridge App**	UTI / FEI	Connects students and staff with psychologists; promotes wellbeing and access to justice and support.
Support for Conflict-Affected Researchers	**Support for Researchers Affected by Conflict in Ukraine**	MŠVVaŠ SR / Development Project	Provides assistance to researchers affected by military conflict; promotes resilience of academic institutions.
Education for Development and Reconstruction	**DREAMER – Development and Reconstruction Empowerment through Advanced Project Management Education and Research**	ÚM	Advanced training in project management for post-crisis reconstruction; strengthens institutional capacity and governance.
Regional Stability and Heritage Promotion	**rurALLURE – Promotion of Rural Museums and Heritage Sites**	FIIT / H2020	Enhances inclusion of rural communities, access to cultural heritage, and regional stability.

SDG 17: Partnerships for the Goals: Strengthening the means of implementation and revitalizing the global partnership for sustainable development.

STU Contribution to National Policies and Legislation (Developing Policies and Strategies)

STU actively contributes to the **development and implementation of national strategic documents and legislation**, directly influencing public policies related to the Sustainable Development Goals (SDGs).

- **National Strategies:**
- Representatives of STU participate in the preparation and implementation of national strategic frameworks, including:
    - Collaboration with the **Ministry of Investment, Regional Development and Informatization (MIRRI SR)** on the **Action Plan for Digital Transformation**.
    - Contribution to the development of **"Vision and Strategy for the Development of the Slovak Republic until 2050."**
- **Legislative Input:**
  STU experts are regularly invited to participate in **inter-ministerial consultations** on legislation and strategic documents, such as the **Slovak Space Strategy** and the **Code of Scientific Integrity and Ethics in Slovakia**.
- **Specialized Legislation:**
    - Collaboration with the **Ministry of Transport of the Slovak Republic** in preparing legislation related to **technical inspection of electric vehicles**.
    - Partnership with the **Ministry of Defence** and the **National Security Authority** on **cybersecurity regulations** and legislative frameworks.

2. Expert and Advisory Activities (Identifying Problems and Challenges)

STU staff contribute to **expert and advisory activities** and are members of **national regulatory and consultative bodies**.

- **Environmental and Circular Economy (SDG 12):**

  STU representatives serve on the **Ministry of Environment's Commission for Waste Recycling**.
- **Climate and Regional Policies (SDG 13, SDG 15):**
- STU experts participate in the **Carpathian Convention Working Group** (Ministry of Environment) and the **Working Group for the Transformation of Upper Nitra** (MIRRI SR).
- **Technical and Safety Standards:**

- University experts serve on technical committees of the **Slovak Office of Standards, Metrology and Testing** and the **Slovak Institute for Technical Standardization**.

3. Modelling and Monitoring for Policy Support (Modelling and Monitoring)

STU leverages its **research capacity and internal monitoring systems** to support **evidence-based decision-making**.

- **Climate Change Modelling:**

  STU research teams conduct projects focused on modelling complex systems to inform policy decisions. Examples include:

  - Regional **detection, attribution, and projection** of climate variability impacts.
  - **Simulation and design of hydroecological systems** under changing environmental conditions.
  - Research on **R-based climate data analysis** to evaluate the effects of climate change on urban areas (Faculty of Civil Engineering).

- **Monitoring and Reporting:**
- STU monitors performance indicators across education and research — including **international student participation**. A **Power BI-based monitoring system** was implemented and first used in 2022 to evaluate and enhance study programmes.

4. Engagement with NGOs and Regional Partners (NGOs and Regional Cooperation)

STU maintains active cooperation with **regional and non-governmental stakeholders** to address regional challenges and strengthen capacity.

- **Professional Associations:**
  - The **Faculty of Chemical and Food Technology (FCHPT)** collaborates with the **Association of Industrial Ecology** to enhance teaching and research quality.
  - STU also partners with the **Slovak Chamber of Civil Engineers**, the **Slovak Chamber of Architects**, and the **Association for Urbanism and Spatial Planning** in Slovakia.
- **Cross-Border Partnerships (SDG 17):**

  STU regularly participates in **INTERREG cross-border cooperation projects** focused on shared regional challenges such as environment, research, education, transport, and sustainable energy.

  - Notable examples include projects addressing **water management in the Danube basin** and **river and sediment management under climate change conditions** in the Slovak–Austrian cross-border area (*ClimSed*).
- **Capacity Building in Public Administration:**

  The **ESGCA Project** (*Connecting Environmental Interests, Societal Needs, and Good Governance in the Central Asian Education and Employment Sectors*), coordinated by **Rzeszów University of Technology**, aims to train professionals in **environmental and**

social governance (ESG) and integrate ESG principles into **universities, enterprises, and public administration**

Global and Regional Research and Education Partnerships (SDG 17.6, 17.16)

STU actively builds extensive international alliances and networks that are critical for achieving the SDGs:

- **European Alliances and Memberships:**
    - Founding member of the **European Institute of Innovation and Technology (EIT)**, actively engaged in **EIT Manufacturing** and **EIT Digital**, and an associate partner in **EIT Raw Materials**.
    - Institutional member of **CESAER**, a European non-profit association of science and technology universities since 2022.
    - Member of the **EULiST consortium** of ten European universities under the "European Universities" initiative, fostering academic mobility and collaborative capacity building.
- **International Mobility and Agreements:**
    - STU has **489 active Erasmus+ agreements** and **28 additional memoranda of cooperation**.
    - Maintains **82 university-level framework agreements** and **78 faculty-level agreements**.
    - In Erasmus+ KA171 – International Credit Mobility, STU implemented a project in 2024 involving **39 partner countries outside Europe**.

Financial Partnerships and Resource Efficiency (SDG 17.3)

STU demonstrates strong financial partnerships through successful acquisition of extrabudgetary and international funding:

- **EU Grant Success:**
    - STU is among Slovakia's leading institutions in Horizon 2020 and Horizon Europe projects by number and funding volume.
    - In 2022, STU managed **27 Horizon 2020 projects** and **10 Horizon Europe projects**, with a total of **870 research projects**.
    - Holds a **16% share of international research grants** among Slovak universities (3rd place).
    - In 2024, STU secured **Twinning coordination** and its **first EIC Pathfinder project**.
- **Private Sector Partnerships:**
    - STU captured **30% of non-EU research funding from other entities** (2nd place among Slovak universities) and managed **384 industry-linked projects** in 2022.

Technology Transfer and Industry Collaboration (SDG 17.17)

STU actively translates research outcomes into practice, fostering innovation partnerships:

- **Spin-offs:** STU Scientific, s.r.o. supports technology transfer; **10 spin-offs** have been established.
- **Incubation and Start-up Support:** The **University Technology Incubator (UTI)** organized **33 events** in 2022, including **15 public and student-oriented educational activities**.
- **Industry Collaboration:** STU maintains **37 cooperation agreements** at the university and faculty levels and works with **over 200 companies, research institutes, and professional associations**.
- **Industrial Advisory Boards:** Faculty-level boards evaluate study programs and provide feedback on graduate competencies to ensure alignment with industry needs.

Systemic Partnerships and Transparency (SDG 17.14, 17.18)

STU collaborates closely with public institutions, contributing to national strategies and promoting knowledge transparency:

- **Collaboration with Public Authorities:**
    - MIRRI – input on **digital transformation action plan** and **Slovak Republic development strategy to 2050**.
    - Ministry of Transport – development of legislation for **EV technical inspection**.
    - Ministry of Defense – participation in **Locked Shields cybersecurity exercises**.
    - Staff participate in advisory and regulatory bodies, e.g., **Ministry of Environment Waste Recycling Commission** and **Nuclear Safety Council**.
- **Open Access and Knowledge Transparency:**
    - STU has adopted an **Open Access policy**, providing digital publications and teaching materials under public licenses for **free access, use, adaptation, and redistribution**.
    - Publishes **five open-access scientific journals**.
- **Infrastructure Sharing:**
    - STU makes its facilities – including **sports, accommodation, dining, libraries, and University Centre** – available to the public and institutions, increasing societal value.

Selected International Collaboration Projects

STU participates in extensive international projects addressing cross-border challenges and capacity building:

- **INTERREG Cross-border Cooperation Projects:** Focused on solutions in **healthcare, environment, research, education, transport, and sustainable energy**.

- **Educational Partnerships:** The **Ukrenergy project** strengthens teaching and learning in **energy-efficient building technologies in Ukraine**.
- **SASPRO 2 (H2020):** Enhances research institutions by attracting international researchers, promotes collaboration between scientific and applied sectors, and supports **multidisciplinary approaches**.
- COST Hydropower sustainability working group / Training School (May 7–11, 2024) – SvF participation in an international working group focused on sustainable hydropower (SDG 7, SDG 13), which includes joint data and methods across countries.
- STU participated in EULiST GA (May 2024) to co-develop joint education & research best practices aligned to sustainability priorities. EULiST Alliance – General Assembly (22–24 May 2024) – STU (Rector-led delegation) worked in EULiST work-package groups on joint education, research and cooperation with practice, which EULiST frames around sustainability themes. Use this as "collaboration developing SDG best practice" across partner universities.
- AIESEC / IAESTE student NGO collaborations (standing, used in 2024) – Faculty page profiles AIESEC as an international, non-governmental, non-profit organisation linked to UN bodies; these programmes deliver volunteering and global skills with SDG impact (SDG 4, 8, 10, 17).

STU is involved in the following research projects contributing to SDG17:

SDG 17 Area	Project / Acronym	Fund / Faculty	Key Contribution (Type of Partnership)
EU Framework & Global Research Partnerships	**FreeTwinEV**	Twinning/HORIZON / FEI, MTF, CEPSIT	Consortium coordination under Twinning; digital twins for sustainable EVs
	twIN-on-a-chip bRains	EIC Pathfinder/HORIZON / FEI, CEPSIT, MTF	First EIC Pathfinder for STU; strengthens international research excellence
	STAGE	HORIZON Europe / MTF	International partnership for sustainable transition to agile & green enterprises
	PANDORA	HORIZON / FEI	Improves data trustworthiness for AIoT operations (SDG 17.18)
	EURAD / EURAD-2	H2020 / EURATOM / FEI	Long-term international collaboration in radioactive waste management
	SASPRO 2	H2020 (MSCA) / Multiple Faculties	Strengthens STU with top international researchers; fosters multi-sector &

SDG 17 Area	Project / Acronym	Fund / Faculty	Key Contribution (Type of Partnership)
			multidisciplinary collaboration
	CALIPER	H2020 / MTF	Links research and innovation to advance gender equality
	MAKING-CITY	H2020 / ÚM	Energy-efficient urban transformation; international collaboration
	rurALLURE	H2020 / FIIT	Inclusion of rural communities; promotion of heritage & museums
	ALL2GaN	HORIZON-KDT-JU / FEI	Development of cost-effective GaN IC solutions for green applications
	ACCORD	MŠVVaŠ SR / FEI, CEVES, FIIT	Capacity-building project: strengthening research & innovation competencies
	HRS4R Development Projects	MŠVVaM SR / STU	Maintains HR Excellence in Research; attracts international researchers
Regional & Cross-Border Partnerships	**Restoring Urban Streams**	Interreg Central Europe / SvF	Cross-border collaboration; urban ecosystem restoration & climate adaptation
	Danube Water Balance	Interreg DRP / SvF	Harmonized water balance modeling; cross-border knowledge sharing
	Satellite Monitoring for Adaptation	Interreg VI-A SK-CZ / MTF	Supports public administration in climate adaptation strategies
	Ukrenergy	Erasmus+ / SvF	Innovative master's courses; energy & carbon footprint improvement in Ukraine
	DREAMER	Erasmus+ / ÚM	Advanced project management education for

SDG 17 Area	Project / Acronym	Fund / Faculty	Key Contribution (Type of Partnership)
			development & reconstruction
	CEEPUS Mobility Projects	CEEPUS / MTF	Joint programs & Industry 4.0 research; regional academic collaboration
Technology Transfer & Industry Collaboration	**UTI Start-ups: MeltFlex, Smartstruct Analytix, Smartinvest**	UTI / FIIT, SvF	Knowledge transfer to practice; industry partnerships
	Matching Grants (POO)	POO / STU	Links private sector resources with STU research projects
	Contract Research Agreements	University-wide / Multiple faculties	82 framework agreements + faculty-level contracts; promotes industry collaboration
	Student Start-ups: Rewardly	FIIT	Encourages entrepreneurship and practical innovation
Open Access & Knowledge Sharing	**Open Access & Open Science Policy**	STU	Publishes research outputs and teaching materials under open license; global knowledge sharing
	Elvira Digital Library	STU	Improves online access to study literature
	Researcher Identifiers (ORCID, Scopus ID)	STU	Supports international collaboration and researcher visibility
	Doctoral School Workshops	DŠ STU	Seminars on scientific communication, Open Access, Open Science, and research data management

Several faculties at the **Slovak University of Technology in Bratislava (STU)** offer accredited degree programmes explicitly focused on **environmental sustainability, environmental protection, and sustainable planning**:

Faculty	**Level**	**Programme Name (or Field)**	**Relevant SDGs**
Faculty of Chemical and Food Technology (FCHPT)	Master's (Ing.)	Environmental Protection Technologies (I-TOZPxA/I-TOZP)	SDG 6, 12, 13
FCHPT	PhD	Chemistry and Environmental Technology (D-CHZPR)	SDG 6, 12, 13
Faculty of Civil Engineering (SvF)	Bachelor & Master	Landscape Architecture and Planning (KKP)	SDG 11, 15
SvF	PhD	Landscape Architecture	SDG 11, 15
SvF	Bachelor	Hydraulic Structures and Water Management (VSVH)	SDG 6
Faculty of Mechanical Engineering (SjF)	Bachelor	Environmental Protection Engineering	SDG 12, 13
SjF	Bachelor	Environmental Production Technology	SDG 9, 12
Institute of Management (ÚM STU)	Bachelor, Master, PhD	Spatial Planning	SDG 11

New Master's Programmes with International Collaboration

Faculties are actively developing new master's programmes through international projects addressing sustainability, including:

- **THE BRIDGE (ERASMUS+)** – Focused on creating a master's programme to support green jobs, energy efficiency, and sustainable buildings and communities (SDG 7, 10, 11).
- **UKRENERGY (ERASMUS+)** – Developing master's courses on energy efficiency, building modernisation, and energy planning (SDG 7, 13).
- **ESGCA (ERASMUS+)** – Aimed at training professionals in Central Asia to manage environmental and social aspects effectively and implement ESG principles in universities, businesses, and public administration.

The **Slovak University of Technology in Bratislava (STU)** implements extensive educational and outreach activities for the broader community, including **seniors, alumni, local residents, and displaced persons**. These initiatives, delivered through lifelong learning programmes,

specialised clubs, and social projects, reflect STU's commitment to the university's **"third mission"** — contributing to societal well-being.

1. Lifelong Learning for Seniors and Local Residents

- **University of the Third Age (UTV):** Since 1998, STU has offered structured educational programmes for seniors, covering **architecture and creativity, lifestyle and technology, and information and communication technologies**. Faculties actively involved include:
    - **FCHPT** – delivering courses in science and technology.
    - **Faculty of Architecture and Design (FAD)** – offering civic and interest-based lifelong learning activities.
    - In **2023/2024**, 848 participants enrolled in UTV courses.
- **Continuing Education (CŽV):** Through the **Institute of Lifelong Learning** and individual faculties, STU provides accredited and non-accredited courses for the public and professionals.
    - In **2024**, FCHPT delivered **54 non-accredited courses** with nearly 2,000 participants, including high school and university students.
    - Special events, such as the **ChemShow**, engaged over 800 participants from the general public.

2. Alumni Engagement

- **Alumni Club STU:** Organises monthly lectures ("Conversations with Science") featuring prominent and emerging researchers.
- **Faculty Alumni Events:** FEI's Alumni and Friends Association hosted a series of six lectures for alumni, academic staff, and the wider community, with video recordings available online.
- **Retired Staff Clubs:** FCHPT maintains an Emeritus Club, and SvF hosts meetings with retired faculty employees, keeping former staff informed and engaged.
- **Feedback and Communication:** Alumni contribute to curriculum development and provide feedback to enhance academic programmes.

3. Support for Displaced Persons

- **Language Support:** Intensive Slovak language courses are offered to international students, including those from Ukraine, with a focus on professional terminology.
- **Academic and Social Support:** STU provides social and psychological counselling and tutoring for students affected by conflict.
- **Integration Projects:** The **THE BRIDGE** project supports curriculum development aligned with labour market needs, facilitating integration of graduates, adults, and displaced persons into sectors such as construction. FAD also addresses post-conflict reconstruction in Ukraine through professional discussions.