

Project outcomes of Eco4Smart

Project name	Ukraine-EU: Circular Economy solutions 4 Smart and Sustainable Cities
Project number	101127659
Project acronym:	Eco4Smart
Duration	01/09/2023-31/08/2026
Call:	ERASMUS-JMO-2023-HEI-TCH-RSCH
Type of action	ERASMUS-LS
Granting authority	Jean Monnet Actions in the field of Higher Education Teaching and Research
Participant	KHARKIV NATIONAL UNIVERSITY OF RADIO ELECTRONICS PIC Number 998091589



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1. Project Eco4Smart in figures

180 students were studied the course since 2023.

2 Papers in the Journals, indexed in Scopus were prepared

2 Conference papers in the proceedings, indexed in Scopus were prepared

1 hosted conference was organized. Proceedings of the conference was prepared.

1 Webinar 1 workshop were organized

2 new projects were launched with EU partners

2. TEACHING

1. The syllabus of **3 disciplines** D1.2. were developed as optional discipline for Bachelor, Master degree students

- Smart city governance
- Green deal and sustainable development of cities
- Smart cities and urban planning

The Certificates of Authorship were obtained for the developed courses.

- Smart city governance
- Green deal and sustainable development of cities
- Smart cities and urban planning

2. Due to the security situation and according to the Order of Kharkiv National University of Radio Electronics, teaching of 2 courses (**Smart city governance, Green deal and sustainable development of cities**) was provided online on the <https://dl.nure.ua>. The teaching of disciplines was organized on the Distance Learning Platform <https://dl.nure.ua>, where students had access to lecture materials and took interactive testing. Using the platform, lectures were held online, group work was carried out by creating groups and individual work in rooms. Group discussions of the results were carried out using online boards.

Besides, the course **Smart cities and urban planning** were implemented in O. M. Beketov National University of Urban Economy in Kharkiv. Due to the security situation and according to the Order teaching was provided online through the Google class room.

The appendix contains screenshots of examples of tools that used by lectures.

180 students were studied the course since 2023.

3. Besides, guest lecturers from European Universities were invited to give the selected lectures:

- László Vértesy, Dr. habil; PhD jur; PhD oec., Hungarian University of Agriculture and Natural Sciences, Hungary
- Jelena Kurilova-Palaisaitiene, PhD, Associate Professor/Docent, Linköping University, Sweden

3. Research

3.1. Papers in the Journals, indexed in Scopus

No	Title of the paper	Link	Indexing
1	Kolupaieva I. α Romashov Y. 2026. Electricity prices and the economic growth in the Euro area: mathematical modeling for shock's aftermath and for short-term predictions. <i>Computational Economics</i>	<i>The manuscript has been prepared and is currently undergoing a second round of peer review</i>	Forthcoming, will be indexed Scopus
2	Kolupaieva I. Nevludov I. α Romashov Y. 2026. An optimization-based numerical approach to develop energy-efficient automatic governors. <i>International Journal of Control</i>	<i>The manuscript has been prepared and is currently undergoing of peer review</i>	Forthcoming, will be indexed Scopus

3.2. Conference papers

No	Title of the paper	Date of conference presentation	Link
1	Kolupaieva, I., Nevliudov, I., Romashov, Y., Tiesheva, L., Vértesy, L. (2024). Intelligent Automated Control in Accordance with Resource Efficiency Criteria toward Circular Economy Transition. In: Kahraman, C., Cevik Onar, S., Cebi, S., Oztaysi, B., Tolga, A.C., Ucal Sari, I. (eds) Intelligent and Fuzzy Systems. INFUS 2024. Lecture Notes in Networks and Systems, vol 1089. Springer, Cham. https://doi.org/10.1007/978-3-031-67195-1_17	16-18 July, 2024 Canakkale, Türkiye Program https://infus.itu.edu.tr/docs/librariesprovide/r253/infus_2024_archive/%c4%b1nfus-2024-conference-a5-program.pdf?sfvrsn=4	https://doi.org/10.1007/978-3-031-67195-1_17
2	Kolupaieva I. α Romashov Y. 2026. Environment-Carbon-Energy Relationships to Justify Climate-Responsive Economic, Technical and Nature-Based Solutions. <i>ReShaping the Built Environment through Sustainability and Circularity</i> . L.Bragançaetal. (Eds.): ReSBE2026,	20-23 October, 2026 Thessaloniki, Greece	https://doi.org/10.1007/978-3-032-34930-9_130 (submitted to be indexed in Scopus) Conference page https://resbe2026.web.auth.gr/

4. DISSEMINATION

4.1. Events

No Event	Title of the Event	Date of the Event	Description/Link/Other Information
E1.1	Info Days	07 September 2023	Presentation of the project for students, teachers, researchers Preparing D1.1 Leaflet of the project
E1.2	Workshop “Interdisciplinary networking for a sustainable and circular economy: EU experience”	28 May, 2025	The poster of the workshop is presented in the https://www.facebook.com/groups/136587649481574/permalink/498355199971482/
E1.3	Winter school “Circular Economy solutions 4 Smart cities”	January 2025	The poster of the Winter school is presented in the 24 participants were attended the school.
E1.4	International Conference “Sustainable smart cities and communities: business and innovation solutions”	21 April, 2025	D1.3. Proceedings of the conference Матеріали конференції: Сталі розумні міста та спільноти: бізнес та інноваційні рішення 2025: матеріали І-ої Міжнародної конференції, Харків, 21 квітня 2025.: тези доповідей / [редкол. І.ІІІ. Невлюдов (відповідальний редактор)].-Харків: [електронний друк], 2025. – 68 с. https://nure.ua/wp-content/uploads/2025/zbirnik_sccc2025_compressed.pdf Program of the conference is presented in https://nure.ua/wp-content/uploads/2025/anons_zymova-shkola_eco4smart-2025.pdf
E1.5	Webinar “Business models 4 smart city in the digital era: challenges and opportunities”	26 February. 2026	D1.4 Agenda of the Webinar https://www.facebook.com/groups/136587649481574/permalink/694648307008836/
E1.6	Presentation project outcomes at Kharkiv National University of Radio Electronics and partners University	August, 2026 August, 2026 September 2026	Kharkiv National University of Radio Electronics O. M. Beketov National University of Urban Economy in Kharkiv Hungarian University of Agriculture and Natural Sciences, Hungary

4.2. Websites, Social Networking

The main sources about the project

- **NURE website**
<https://nure.ua/en/university/international-activity/international-programs-and-academic-mobility/erasmus/about-erasmus/jean-monnet-programme/eco4smart>
- **Department of computer-integrated technologies, automation, robotics and safety engineering of NURE website**
<https://nure.ua/en/university/international-activity/international-programs-and-academic-mobility/erasmus/about-erasmus/jean-monnet-programme/eco4smart>
- **Facebook group**
<https://www.facebook.com/groups/136587649481574/>

5. Benefits/Proposals for further collaboration with European partners

Members of the team expand the collaboration with partners. They have been involved to other projects

No	Title of the project/Lectures	Period	Comment
1	ERASMUS-EDU-2024-CBHE PubCirEco The critical role of PUBLIC employees in CIRcular ECOnomy implementation: Embedding circular economy thinking in HEIs	Since November, 2024	https://nure.ua/en/university/international-activity/international-programs-and-academic-mobility/erasmus/about-erasmus/ka2-cooperation-for-innovation-and-good-practices/cbhe-pubcireco
2	KA220-HED-E3E95518 (2025-1-IT02-KA220-HED000353612) ENGAGE 5.0 - Enhancing Human-Centric Engineering Skills in Learning Factories for Industry 5.0	Since October 2025	https://tapr.nure.ua/aspiranti/mizhnarodna-dijalnist/uchast-u-mizhnarodnih-proektah/proiekt-erazmus-engage-5-0