



ENGINEERS 4 EUROPE

E4E

Engineers for Europe

September 1, 2022 - August 31, 2025

Project Ref. Nr.: 101054872 — E4E — ERASMUS-EDU-2021-PI-ALL-INNO

E4E: Engineering the Future Engineer 9Apr25 and 11Apr25, Prague, Czech Republic

E.6.4. Report

PROJECT E4E

E4E: Engineering the Future Engineer

AECEF will present and debate the conclusions of project E4E – Engineers for Europe (www.engineers4europe.eu). It will happen in Prague, Czech Republic on **11 April 2025**.
The event is co-hosted by the Czech Technical University. The project objectives and outputs to be presented are:

- European Engineering Professional Skills Council Strategy
- New Trends in Engineering Education
- Free Online Training for Engineering

The session consists of three round tables addressing these three topics. The format will consist on Socratic debates with three speakers in each one. It will be completed by participation from the audience. Organisations invited are Engineers Europe, EUCETT, IACES, BEST, AECEF, ECCE. Event will be hybrid.

Reserve the date and consult AECEF website (www.aecet.net) and (<https://doi.org/10.26434/chemrxiv-2025-1g-1p200>) for more information.
Registration **MANDATORY** at <https://forms.gle/2HCv2bWFr0Hf008QyTf>

Contact:

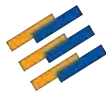
Athalia Sotiriou
athalia@ecce.eu

Organization:



Co-funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EACEA. Neither the European Union nor the granting authority can be held responsible for them.



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1st prize: 25,000 CZK

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International competition for Doctoral Degree students

COMPETITION IN THE CATEGORY OF ON-SITE MADE MODELS

Deadline for registrations: 17th March 2025 12 a.m.

Competition date: 9th April 2025

MORE INFO HERE:

The payment of prizes is regulated by tax laws of the Czech Republic.

Organized by:
FACULTY OF CIVIL ENGINEERING
CTU IN PRAGUE

Competition's General Partner:



Competition's Main Partners:



Professional guarantor:
DEPARTMENT OF ARCHITECTURAL ENGINEERING

The competition is held under the patronage of:
Faculty Dean prof. Ing. Jiří Máca CSc.,
and THE CZECH CHAMBER OF CHARTERED ENGINEERS
AND TECHNICIANS



Competition's Media Partners:



More information:
halarokuadvanced.fsv.cvut.cz/en



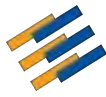
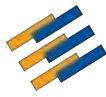


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I. Introduction

AECEF (www.aecef.net) presented and debated the conclusions of project E4E – Engineers for Europe (www.engineers4europe.eu). It happened in Prague, Czech Republic on 9 and 11 April 2025. The event was co-hosted by the Czech Technical University.

The project objectives and outputs presented were:

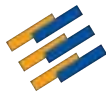
- European Engineering Professional Skills Council Strategy
- Free Online Training for Engineering

The session consisted of two round tables addressing these topics. The format consisted of Socratic debates with three speakers and three moderators (Socratic mode) in each one. It was completed by participation from the audience. Moderation was made in each topic by five members of AECEF and one from EUCEET. Organisations invited were EUCEET, IACES, BEST and ECCE. Event was hybrid with transmission online. More details can be found at <https://e4e2025.fe.up.pt/>.

Complementing the event AECEF co-organized the Hall of the Year 2025 student competition on 9Apr25. There were several money prizes for students and contests. A specific session for the presentation of the E4E project results was done. The audience included international PhD students, their supervisors, researchers, and representatives of sponsoring organizations (construction companies and professional associations). More details are available at <https://halarokuadvanced.fsv.cvut.cz/en/>.

Participants attending the events on 9 and 11Apr25 have lists in the annex 1. The lists presented, with a total of 146, are related to those that were present and signed. The online registered participants list is not included.





II. Agenda

11 April 2025 – E4E: Engineering the Future Engineer

9h – Opening

Prof. Radek Zigler, *Czech Technical University*

Prof. Nikolaos Theodossiou, *Aristotle University of Thessaloniki and AECEF President*

9:15h – First Round Table

E4E – Skills Strategy Draft – Analysis and debate

Moderators: Profs. Nikolaos Theodossiou, Cédric D’Mello, *City University*, and Alfredo Soeiro, *AECEF Secretary General*

Speakers:

Eur Ing Daniel Hanus, *CSVTS* (instead of Eur. Ing. Platonas Stylianou, *ECCE President*)

Eng. Richard Hlaváč, *Projekty-hlavac*

Ms. Lara Jovanovic, *University Belgrade, IACES Vice President*

Rapporteur: Prof. Michaela Gkantou, *Liverpool John Moores University*

10:30h – Coffee break

11h – Second Round Table

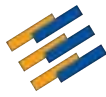
E4E – Courses online

Moderators: Mr. Thibaut Skrzypek, *École des Ponts and Secretary General EUCEET*, Prof. Ivica Završki, *University Zagreb* and Prof. Roode Liias, *Tallinn Technological University*

Speakers:

Ms. Katrijn Vandenborne, *Ghent University and BEST President*





ENGINEERS 4 EUROPE

Prof. Antonín Lupíšek, *Czech Technical University*

Prof. Sarunas Skuodis, *Vilnius Tech and EUCEET President*

Rapporteur: Prof. Michaela Gkantou, *Liverpool John Moores University*

12:15h – Closing session

Prof. Nikolaos Theodossiou, *Aristotle University of Thessaloniki and AECEF President*

Prof. Radek Zigler, *Czech Technical University*

12:30h – Lunch break

9 April 2025 - HALL OF THE YEAR ADVANCED COMPETITION

Venue:

[Faculty of Civil Engineering in Prague](#), Thákurova 7/2077, 166 29 Praha 6 – Dejvice. [map](#)

Schedule:

7:30 - Reception opening

8:00 – 9:00 - Team registration

9:30 - Brunch (for participants)

10:00 - Welcoming and rules briefing

10:30 - AECEF E4E Presentation

11:00 – 18:00 - Model construction

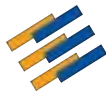
18:00 - Presentation of E4E project

18:15 – 18:30 - Model check

18:30 – 20:00 - Load tests

20:30 - Results announcement and prize giving





III. Summary of the event

9 and 11 April 2025 - HALL OF THE YEAR ADVANCED COMPETITION

An international competition open to all doctoral students of any university in the world.

Making a team of 2 – 3 students and taking part in the competition!

The contestants task was to design and build a model from the materials provided by the organizer on the day of the competition. The model must meet the specified geometric and structural requirements.

The competition was announced in the category of models assembled at the competition venue. The evaluation criterion in the competition is the model's effectiveness, i.e. the ratio between the model's load-bearing capacity and weight.

The competition took place at the [Faculty of Civil Engineering CTU in Prague](#) on 9. 4. 2025 from 8:00 a.m. to 9:30 p.m. The models were exposed to load tests there.

The Hall of the Year Academic competition was held under the patronage of the Dean of the Faculty of Civil Engineering CTU in Prague, prof. Ing. Jiří Máca, CSc., and [The Czech Chamber of Chartered Engineers and Technicians](#)

There was a presentation of the E4E project made by AECEF representatives, Prof. Roode Liias and Secretary General.

The professional guarantor of the competition was the [Department of Architectural Engineering](#).

11 April 2025 – E4E: Engineering the Future Engineer

TECHNICAL COMMITTEE

Nikolaos THEODOSSIOU, Faculty of Civil Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece

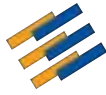
Radek ZIGLER, Faculty of Civil Engineering, Czech Technical University, Prague, Czech Republic

Alfredo SOEIRO, Faculty of Civil Engineering, University of Porto, Porto, Portugal

SCIENTIFIC COMMITTEE

Nikolaos THEODOSSIOU, Faculty of Civil Engineering, Aristotle University of Thessaloniki,





Thessaloniki, Greece, President

Alan KWAN, Cardiff School of Engineering, Cardiff University, Cardiff, UK

Alfredo SOEIRO, Faculty of Civil Engineering, University of Porto, Porto, Portugal

Cedric D'MELLO, School of Engineering and Mathematical Sciences, City University London, UK

Ivica ZAVRŠKI, Faculty of Civil Engineering, University of Zagreb, Zagreb, Croatia

Michaela GKANTOU, Liverpool John Moores University, Liverpool, UK

Michal JANDERA, Faculty of Civil Engineering, Czech Technical University, Prague, Czech Republic

Roode LIIAS, TalTech, Tallinn University of Technology

Piotr BERKOWSKI, Faculty of Civil Engineering, Wroclaw University of Science and Technology, Wroclaw, Poland

Radek ZIGLER, Faculty of Civil Engineering, Czech Technical University, Prague, Czech Republic

Remigijus ŠALNA, Faculty of Civil Engineering, Vilnius Gediminas Technical University, Vilnius, Lithuania

Conclusions of the First Panel (by Prof. Michael Gkantou)



Sustainability and sustainable development have significantly influenced the mindset of civil engineers, with younger generations focusing more on long-term mitigation, while older professionals tend to prioritise immediate adaptation.



The rising global population and increased consumption present challenges for implementing **renewable energy**; the hardest part is fostering a mindset shift toward sustainable practices.

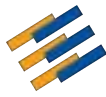


There is a need for **simplification of engineering laws and standards** to make sustainability and innovation more accessible within the profession.



The idea of a "**skills council**" was proposed to bridge the gap between academic learning and industry needs, offering guidance from experienced professionals. While technical knowledge is covered during early career stages, there is a need for better integration of practical, social, and interdisciplinary skills





The integration of **artificial intelligence** into engineering education is considered essential. Students must not only learn AI but also develop the critical thinking necessary to use it responsibly.



Continuous professional development (CPD) is crucial, particularly for academics, to keep pace with fast-evolving technologies like AI. Practical experience should complement theoretical teaching.



Digitally native students often face a disconnect between available tools and traditional teaching. This generation benefits from visual and practical learning, requiring a rethink of university methods.



There is a growing consensus that **engineering education must evolve to include broader skills**—ethical thinking, teamwork, social awareness, and adaptability—to address global challenges and prepare future engineers.

Conclusions of Second Panel (by Prof. Michael Gkantou)



There is concern over the effectiveness of online courses in teaching green, life, digital, and entrepreneurship skills, due to a lack of interaction and dialogue; while **the initiative is positive, much development is still needed**.



Online learning platforms should integrate **feedback mechanisms and student organisations** to better support the development of soft skills and foster engagement



While online and hybrid learning offer flexibility, they often fall short in quality compared to in-person teaching; **a balance must be found to ensure learning outcomes meet industry standards**



Strict quality assurance is essential in flexible systems; adaptability to industry needs should not compromise the depth and rigour of learning.



Engagement strategies such as storytelling, purposeful phone use, and interactive tools can enhance the online learning experience and student motivation.



Online courses should be structured based on learner level—undergraduate, postgraduate, professional—with clearly defined themes and outcomes to avoid superficial content.

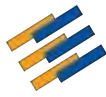


Quality assurance and recognition of online learning, especially through micro-credentials, must align with both academic and industry standards to build trust and relevance.



Collaboration with professional bodies and the inclusion of continuous feedback loops are crucial to ensure online qualifications are credible, aligned with market demands, and recognised across sectors





Meeting summary for AECEF 11Apr25 E4E (By Zoom AI Companion)

Quick recap

The meeting focused on the future of Engineering Education and of Sustainability, discussing the importance of incorporating ethical considerations, practical skills, and global perspectives into curricula. Participants debated the effectiveness of online learning versus traditional in-person education, emphasizing the need for adaptable teaching methods to engage younger generations and prepare them for global challenges. The discussion also touched on the role of artificial intelligence in engineering, the importance of soft skills development, and the need for continuing professional development to keep pace with technological advancements.

Next steps

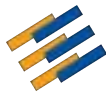
- Universities to explore ways to integrate AI into engineering education curriculum.
- Professors to adapt teaching methods to better engage students, including incorporating more interactive elements and real-world examples.
- Universities to consider implementing hybrid learning models that combine in-person and online elements.
- European Skills Council to be established to bridge the gap between academic learning and industry needs.
- Universities to improve the integration of practical, social, and interdisciplinary skills in engineering programs.
- Engineering educators to incorporate more ethical thinking, teamwork, and social awareness into curricula.
- Online learning platforms to integrate better feedback mechanisms and student engagement tools.
- Universities to explore ways to open engineering courses to the wider society for better public understanding.
- Engineering educators to adapt course content and delivery methods based on the audience (undergraduate, postgraduate, professionals, or general public).
- Universities and industry to collaborate on recognizing and implementing micro-credentials in engineering education.

Summary

Sustainability in Engineering: Young Engineers' Role

The meeting involved a discussion on the importance of sustainability in engineering, with a focus on the role of young engineers in driving this change. The panelists agreed that sustainability is crucial for future generations and that it should be incorporated into





engineering practices. They also discussed the need for practical experience and soft skills in engineering education. The panelists debated the role of artificial intelligence in engineering and its potential to augment human capabilities. They also discussed the need for continuing professional development for engineers to keep up with technological advancements. The conversation ended with a discussion on the importance of critical thinking and problem-solving skills in engineering.

Sustainability, Energy, and Engineering Education

The discussion covers various topics related to sustainability, energy, and engineering education. It has been emphasized the global nature of climate challenges, noting that Europe's emissions are only 8% of the global total. He suggests that adapting to new renewable technologies could make Europe more competitive. The group discusses incorporating ethics into engineering education, with some mentioning existing oaths or statements in professional societies. There is also a conversation about the need for global cooperation on climate issues, particularly in helping developing countries progress sustainably. The session concludes with a reminder about voting for student projects during the coffee break.

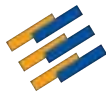
Civil Engineering and Online Learning

In the meeting, one speaker discussed his background in Civil Engineering and Geotechnics, as well as his involvement with the International Society for Soil Mechanics and Geotechnical Engineering. One speaker shared his experience in building physics and life cycle assessment, and his role as director for research and innovation at the University Center for Energy Efficient Buildings. The team also discussed the relevance of online courses for students, with one speaker expressing concerns about the effectiveness of the methodology and the lack of connection with students. Another speaker suggested incorporating practical skills and dialogue in online courses to improve engagement. The team also discussed the importance of motivation in students and the potential for micro-credentials to enhance their learning experience.

Future of Engineering Education

The panel discussed the future of Engineering Education, focusing on the role of online courses and hybrid learning models. Participants debate the necessity and effectiveness of online education, with some arguing for its benefits like accessibility and flexibility, while others emphasize the importance of in-person interaction. The discussion touched on the need to adapt teaching methods to engage younger generations, integrate practical skills with theoretical knowledge, and to prepare engineers for global challenges. The panel also considered the potential impact of artificial intelligence on engineering education and the importance of developing soft skills alongside technical expertise. There is a consensus that Engineering Education must evolve to include broader skills such as ethical thinking, teamwork, and social awareness.

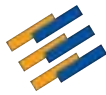


**ANNEX 1. Attendance list – 146 participants and 44 registered online**

Faculty of Civil Engineering, Czech Technical University in Prague, 9Apr25

Jméno a příjmení	Podpis
Jakub Houllík	
Eliška PILÁŘOVÁ	
Vojtěch Štejn	
Věra Kubičková	
THOMAS JUSTIN	
MIROSLAV JACEL	
DARČOVKA KŘISTKOVÁ	
JAN MACHŇEK	
DAVID HES	
Pavel Batišček	
Matyáš Rátislav	
PAVEL HORÁK	
Eliška Katková	
JAN VESECKÝ	
BOHUMIL ŠPACIČEK	
Ondřej Holý	
DARTIN LEBEDA	
Roman Kubat	
Tomáš Dvořák	
MIROSLAV ČAP	
ALFREDO FORIRO	
Rodee Lina	
ŠARAPATKOVÁ Marie	
ŠARAPATKA Jan	
ŠATZOVÁ JULIE	
MAREKETA PROBOŘOVÁ	
David Vaneč	
Fousová Anič	
TOMÁŠKOVÁ LUCIE + JAN (SYN)	
TOMÁŠEK	
Ondřej Píkos	

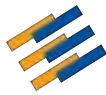




Faculty of Civil Engineering, Czech Technical University in Prague, 9Apr25

Jméno a příjmení	Podpis
MAGDALENA MIKESOVA	
EVA HONKREVA	
MATHEU BAUMGARTL	
JAN HLAVSA	
Martin Dura	
Tomáš Bystrov	
MARTIN KOVÁČEK	
Klára Nohal	
VOSTEK ŠERVA	
BLANKA HAVLÁTOVÁ	
Anna Sobková	
Juhub Kovc	
Pavel Hnjardil	
VERA KOTKOVÁ	
VOSTEK LINDA	
Strišenci Filip	
MARTIN NEVHITKA	
SIMONA ŠEDIVÁ	
KAROL ČADA	
Lucia Janovick	
PETR KUŇECKO	
JOUAŠ PAVLÍTA	
Martin Plachta	
Stanislav Hecel	
ELIZAVETA VEJNENKO	
Marek Jan	
Linda Lúča	
Jan Šebela	
JAN KRIVAN	
Janka Matějsková	

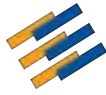


Co-funded by
the European Union

Faculty of Civil Engineering, Czech Technical University in Prague, 11Apr25

Name	Surname	Institution, country	Signature
Tamer	Atabrut	Bogazici U., TR	
Piotr	Berkovski	Wroclaw U. Technology, PL	
Jiří	Brožovský	TU Ostrava, CZ	
Tomáš	Čejka	CTU, CZ	
Cédric	D'Mello	City St George's, U. London, UK	
Michaela	Gkantou	Liverpool John Moore's U., UK	
Daniel	Hanuš	ČSVTS, Engineers Europe, CZ	
Richard	Hlaváč	CTU, CZ	
Michal	Jandera	CTU, CZ	
Lara	Jovanovic	IACES, SR	
Karel	Kabele	CTU, CKAIT, CZ	
Klára	Kroftová	CTU, CZ	
Alan	Kwan	Cardiff U, UK	
Roode	Liias	Tallinn U. Technology, EE	
Tamas	Lovas	Budapest U. Technology Economics, HU	
Antonin	Lupíšek	CTU, CZ	
Matej	Mihic	U. Zagreb, HR	
João	Poças Martins	U. Porto, PT	

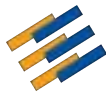




Faculty of Civil Engineering, Czech Technical University in Prague, 11Apr25

Name	Surname	Institution, country	Signature
Jifi	Pazderka	CTU, CZ	
Martin	Pospíšil	CTU, CZ	
Thibaut	Skrzypek	ENPC, FR	
Sarunas	Skuodis	EUCEET, RO	
Juris	Smirnovs	Riga TU, LV	
Eef	Smits	KIVI & Engineers Europe, NL	
Alfredo	Soeiro	AECEF, PT	
Antonia	Sophocleous Lemonari	University of Nicosia, CY	
Platonas	Stylianou	ECCE, GR	
Petr	Svitak	ISHCCO, CZ	
Nikolaos	Theodossiou	Aristotle U. Thessaloniki, GR	
Ken	Thomas	SETU, IE	
Evangelitsa	Tsoulofta	ISHCCO, LU	
Katrijn	Vandenborne	BEST, BE	
Zora	Vidovencová	CSVTS, CZ	
Ivica	Zavrski	U. Zagreb, HR	
Radek	Zigler	CTU, CZ	
Demigias	Sakana	ISTU, LT	
Eleni	Photopoulou	AUTH	

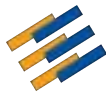




Faculty of Civil Engineering, Czech Technical University in Prague, 11Apr25 – students' form

Jméno a příjmení	Podpis
Hedvika Jarolínková	Jarolínková
Kristýna Beránková	Beránková
Eva Hrnčířová	Hrnčířová
Bořivoj Pílit	Pílit
Adam Kopecký	Kopecký
Cenek Šrám	Šrám
Matěj Srejtkovský	Srejtkovský
Hai Nhu Bui	Bui
Peťo Pátek	Pátek
Jiri Altman	Altman
Zdeněk Filas	Filas
Lucie Forejtová	Forejtová
Matěj Blaha	Blaha
TADĚAŠ TUMA	Tuma
JAN PREGLIČ	Preglič
Viktorie Šatařová	Šatařová
KRISTÝNA KLIMEŠOVÁ	Klimešová
MAREK FOREJF	Forejf
Vítava Janiš	Janiš
Jenůček Běláček	Běláček
Kobayashi Jiro	Jiro
Štěpán Štěpán	Štěpán
Zuzana Stalniková	Stalniková
Kryštof Kolera	Kolera
Josef Rujna	Rujna
Štěpán Čermák	Čermák





ANNEX 2. Presentations

9Apr25

Flyers and copies of the PPT file, included in the documentation folder, describing the E4E project, as obtained from the Engineers For Europe website, were distributed among participants. A verbal presentation was made by the Secretary General of AECEF (photo 4). Emphasis was made about the reasons for such a project and the planned outcomes were described, including the existing free online courses of the E4E platform. During the session questions were answered. There were more than 60 participants.

11Apr25

There were no presentations from Speakers. There were two panels with three invited speakers and three moderators in each session. Moderators and audience presented several questions related with the project and with the documents made available. The debate in each one of the sessions took about 75 minutes. There was a rapporteur from AECEF Board that redacted conclusions presented above in Summary. The AECEF President described the outcomes of the whole morning debate at the end of the morning. The documents that have been discussed and distributed among participants and registered online participants are available at:

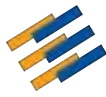
<https://drive.google.com/drive/folders/1K-dhy7aRWrrKVrcLRlJtmw2CgSG6mNJ2?usp=sharing>

List of documents available to be debated was:

- 0. AECEF_Flyer_11Apr25
- 1. E4E Skills Strategy & QA Presentation 6Dec24
- 1. E4E Skills Strategy
- 2. Digital Skills
- 2. Engineers 4 Europe Learning Platform
- 2. Entrepreneurial Skills
- 2. Green Skills
- 2. Life Skills

Recording of the event of 11Apr25 (about 3 hours) is on platform Zoom. The files (video and audio) can be consulted by an approval of a request made to AECEF.





ANNEX 3. Pictures



Figure 1 - First Panel



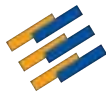


Figure 2 - Participants



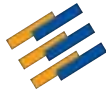


Figure 3 - Testing models.

Figure 1 - Organizing TeamF



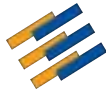


Figure 4 - Presentation of E4E



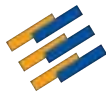


Figure 5 - Organizing Committee



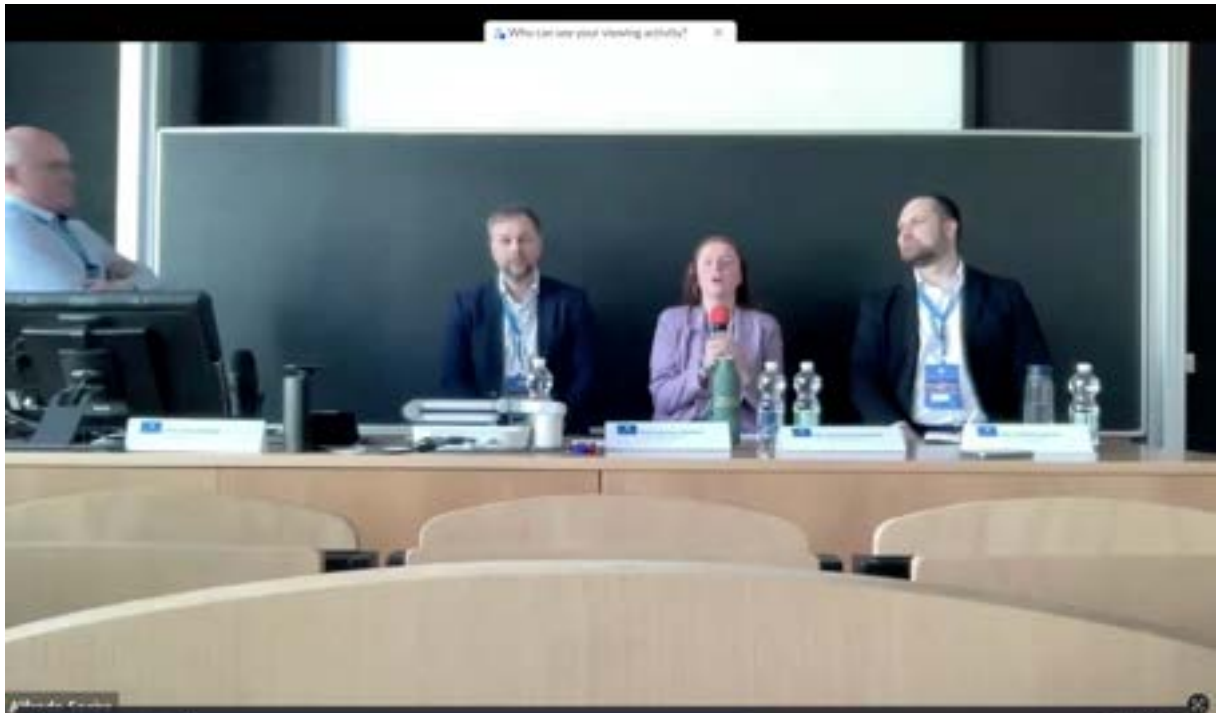
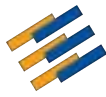


Figure 6. Second panel.

