

The Jean Monnet Module Project

Sustainable Industry 4.0 for European Union (SI4.0forEU)

Call: ERASMUS-JMO-2021-HEI-TCH-RSCH

**Debate with the academic staff, stakeholders, and
students within the Winter Camp 2024- report**

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Jean Monnet Module
SCHOOL OF ADVANCED SOCIAL STUDIES 

 **FUDŠ**
FAKULTETA ZA UPORABNE DRUŽBENE ŠTUDIJE

Document Reference

Project Acronym	Sustainable industry 4.0 for European Union			
Project number	101047744			
Project URL	https://erikaursic.wixsite.com/si40foreu			
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Deliverable Name	Report			
Deliverable Number	D1.3			
Type	Report		Distribution Level	public
Responsible Author(s)	Erika Dzajic Ursic			
Contractual Date of Delivery	2024			
Status	Final			
Quality assurance reader	SASS			

Change History

Version	Date	Status	Author (Unit)	Description
1.0	28. March 2024	final	Erika Dzajic Ursic SASS	Final document, photo materials and presentations, agenda, evaluation

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1 INTRODUCTION

Jean Monnet Module titled *Sustainable Industry 4.0 for European union (SI4.0forEU)* is dedicated:

a) to establish the **academic core** to improving the awareness of EU challenges referring **new EU industrial change** and **support through its industrial policy** and through **research and infrastructure**. Dealing with the phenomena of **Sustainable Industry**, outline forthcoming interdisciplinary research program and related materials as a mechanism for improving implementation of the **EU grand strategy Europe 2050** and

b) **student focused education** with the aim to develop independence and critical thinking of the student but nevertheless also contributing to the social cohesion and local environmental sustainability. As advanced interdisciplinary EU studies the Module is attempted to offer *learning tools* that could be *utilised in other environments through Europe*, to contribute to awareness of EU grand strategies and their implementation through other programmatic documents. It is important to mention Sustainable Development Goals (SDGs) to point out in particular Goal 4 (Target 4.7 that aims by 2030, to ensure that all learners acquire the knowledge and skills needed to promote sustainable development), Goal 7 that aims at ensuring universal access to affordable, reliable, and modern energy services and substantially increasing the share of renewable energy in the global energy mix by 2030. and Goal 12 that aims at ensuring responsible consumption and production patterns everywhere in the world, because they relate to European (EU) stories. The title of the Module reveals that industrial sustainability (4.0), whose prominence overlaps with the speeding-up of digitalization and information society, transcend the boundaries of various systems, also includes social systems.

WINTER CAMP

The FUDS/SASS Winter Camp has been held every year as an internal event among SASS/ Faculty of Information studies/Faculty of media Ljubljana (since 2010) and the purpose of this event is to enable communication between university professors, researchers, advanced students, policy-makers, professionals, industry representatives and civil society, with the purpose of mutual learning and exchange of experience, ideas.

The debate on Winter Camp was organized as a discussion led by the moderator and four panelists (from academia, the business sector, civil society, and public administration) with the audience's ability to be engaged freely in the debate. In total will be held 3 thematic debates - one for each year of the project duration without additional costs.

The roundtable would thus bring together experts from academia (including SASS as the host HEI) with public administrators related to sustainable industry 4.0 and digitalization in the EU, civil society, and business sector representatives.

The purpose of the debate/ roundtable discussion would be to address and popularize the development of European policies from the perspectives of:

- economic development and wealth;
- sustainability and development of the industry;
- digital technologies and services for profound global implications, creating opportunities for sustainable development.

This year's topic was *Advancing technology waves within Sustainable Industry 4.0 in EU / Tehnološki napredek znotraj trajnostne industrije 4.0 v EU*

Programme for 3rd-year session:

- Introductory presentation of the JM Module SI4.0forEU and activities within the project;
- Presentation of research of selected students at the master's level with an emphasis on their social impact and stakeholder involvement;
- Debate: Stakeholder meeting. Discussion of topics, answers to student research, their role in this, and suggestions for further cooperation.

Students attending the seminars (T1.1, T1.2, T1.3) were invited to attend and prepare reflections on the debate/ roundtable discussion.

To provide synergies with the existing and new Jean Monnet actions, all Slovenian Jean Monnet Chairs, Modules, Project and Network coordinators were also invited.

We invited:

- prof. dr. Vassil Kirov, Institute of Philosophy and Sociology, Bulgarian Academy of Sciences.

Dr. Vassil Kirov is an Associate Professor at the Institute of Philosophy and Sociology, Bulgarian Academy of Sciences (IPS-BAS) and an Associate Researcher at the European Trade Union Institute (ETUI). His research interests are in the sociology of work and organisations, employment relations and digitalization. Vassil Kirov has been a researcher in large EU-funded research projects (SMALL, WORKS, WALQING, ENLIVEN, BEYOND4.0) and has worked as an external expert for the European Commission, the International Labour Organisation, the European Foundation for Working and Living Conditions and CEDEFOP. Vassil Kirov is Member of the [European Commission High-Level Expert Group on the Impact of the Digital Transformation on EU Labour Markets](#). Currently he is a Visiting Professor at Sciences Po, France. He has published several books and articles in international scientific journals. Among his last publications are the co-edited books: (2017): *Policy Implications of Virtual Work*. Basingstoke: Palgrave (with Pamela Meil).

Within the debate with prof. Kirov sparked profound discussions regarding the evolving work landscape in the era of technological advancement.

In his talk, Prof. Kirov navigated through the contentious terrain of man versus machine, echoing Acemoglu's (2018) insights into the perceived race between human labor and automation. He drew attention to the apprehension surrounding redundant labor, citing Frey & Osborne (2013/7) to highlight the significant portion of jobs susceptible to automation. Moreover, Kirov underscored the imperative of skill adaptation and worker retraining in response to the transformative impact of technology, a sentiment echoed by Nedelkoska & Quintini (2018).

Contrary to common apprehensions about job loss, Kirov illuminated the nuanced trends in employment dynamics. Drawing from Blau et al. (2018), he demonstrated that employment has not uniformly declined over time. He elucidated the coexistence of processes such as job creation, destruction, shift, and change (Degryse, 2016), suggesting a multifaceted employment landscape resistant to simplistic characterization.

Kirov further challenged deterministic interpretations of technology's impact on employment, citing Kornelakis et al. (2022) to argue against deterministic views. He advocated for a nuanced understanding of the relationship between technology and employment, echoing the sentiments of Warhurst et al. (2019).

Transitioning to examining digital transformation's impact on ecosystems, Kirov

deltved into the perspective of Stam & Spigel (2018) on entrepreneurial ecosystems. He outlined the ten critical elements contributing to creating value through entrepreneurial activity within specific regions, setting the stage for an analysis of various European regions and their response to digital transformation.

By examining regions such as Oulu, Brainport, Sofia, Salo, West Midlands, Basque Country, and Düsseldorf, Kirov provided insights into the differential impact of digital transformation across diverse locales. He highlighted instances where digital transformation positively influenced employment dynamics, particularly benefiting women in regions like Oulu/Salo, Brainport, or Sofia.

Looking ahead, Kirov emphasised the need for a broader perspective on technology's role in shaping the future of work. He underscored the importance of proactive social and policy measures to ensure inclusive outcomes amidst the pervasive impact of digital transformation, especially considering the exacerbating effects of the Covid-19 pandemic.

In conclusion, Prof. Dr. Vassil Kirov's session comprehensively explored the intricate interplay between Industry 4.0, digital transformation, and regional development. His nuanced analysis and pragmatic recommendations underscored the imperative of adaptive policies and collaborative efforts to harness technology's potential while safeguarding inclusive growth and employment opportunities for all.

- Filip Škoda, Uprise, Hrvaška

Mr. Filip Škoda works at the Uprise, a fast-growing software engineering and consultancy company that delivers innovative, cutting-edge software for the electric power industry. Our expertise ranges from electrical power engineering to software engineering, combining different programming areas: optimisation, machine learning, web development, and integration. We implement the latest advancements in technology to develop novel solution concepts that drive the efficiency and growth of our customers/clients.

Mr Škoda is an experienced professional who has worked in B2B/C industries and has a proven ability to grow revenue, acquire new customers, and build brands. I work best in dynamic, result-orientated environments while collaborating with people. I can help companies formulate and execute strategies to boost sales and build strong, profitable, long-term relationships with their partners.

On the other side within the debate on the 2030 Climate Targets, Mr. Škoda advocated for a comprehensive energy framework encompassing specific targets and policy objectives spanning climate, energy, transport, and taxation policies from 2021 to 2030. A central goal of this framework is the reduction of net greenhouse gas emissions by at least 55% by 2030, relative to 1990 levels. Additionally, the long-term strategy aims for the European Union to become the first climate-neutral continent by 2050.

Transitioning to the discussion on Electrical Power Transmission, Škoda outlined the organisation of European Union member states into capacity calculation regions (CCRs). Within these regions, transmission system operators collaborate on coordinated capacity calculations (CCC), determining the available capacity for cross-border power exchanges. This process involves remedial actions (RAs), operational measures such as switching operations and adjustments to phase-shifting transformers (PSTs), to modify power flows and impact cross-zonal capacity.

Škoda then introduced solutions developed by Uprise to optimise cross-zonal capacities in CCRs, enhancing market liquidity and supporting the integration of renewable energy sources. These tools facilitate efficient allocation of transmission capacity, enabling market-driven price discovery without grid curtailments and fostering stability in electricity markets.

Highlighting the importance of increasing cross-zonal capacity, Škoda emphasised its role in facilitating the coordinated procurement of balancing energy and maintaining grid stability in a carbon-free Europe. Moreover, he presented a modern, AI-driven web application aimed at providing accurate predictions for PV production, carbon prices, system load, and net position forecasts.

Looking towards the future, Škoda introduced the concept of Industry 5.0, which envisions industry leading the digital and green transitions while placing worker wellbeing at the forefront. This approach emphasizes the role of industry in societal prosperity beyond jobs and growth, leveraging new technologies to ensure sustainable production within planetary limits.

Mr. Škoda's argument emphasized the importance of a holistic approach to energy policy, technological innovation, and industrial transformation in addressing climate challenges and fostering sustainable development.

2 WINTER CAMP 2024 AGENDA

With the support of the Erasmus+ Programme of the European Union

FIS Fakulteta za informacijske študije
Faculty of Information Studies

FUDŠ FAKULTETA ZA UPORABNE DRUŽBENE ŠTUDIJE

ZIMSKI TABOR 2024

Program aktivnosti za
14. marec (virtualno) in
15. marec (v živo, na Leskoškovi 9e,
Ljubljana)

Jean Monnet Module
SCHOOL OF ADVANCED SOCIAL STUDIES

TIA2030
Technology and Innovation for Agenda 2030

MEDIAPOP

tic
2030

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ZIMSKI TABOR FIŠ FUDŠ 2024

Prvi dan:
Četrtek, 14. 3. 2024 (Izvedba preko spletne povezave <https://zoom.us/j/3377055318>)

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- 9.00 - 9.05 Pozdravni nagovor
Jean Monnet Center of Excellence "Mediji, populizem in politična stabilnost v Evropski uniji" (MEDIAPOP)
- 9.05 - 10.15 Moderator: prof. dr. Matevž Tomšič
Povabljeni diskuttanti:
• dr. Milan Zver (EP),
• prof. dr. Matej Makarovič (FIŠ/FUDŠ)
• Uroš Urbanija (Planet TV)
- This session was financially co-funded by the Erasmus+ programme of the European Union, Key Action: Erasmus+, Jean Monnet, Action Type: Jean Monnet Centre of Excellence, Project Reference: MEDIAPOP - ERASMUS-JMO-2021-COE-101048084.
- 10.15 - 12.15 Jean Monnet Module Sustainable Industry 4.0 for EU: Advancing technology waves
within Sustainable Industry 4.0 in EU / Tehnološki napredek znotraj trajnostne industrije 4.0 v EU
Moderator: doc. dr. Erika Džajić Uršić
• Uvodna predstavitev JM Modula SI4.0forEU in aktivnosti znotraj projekta/ Introductory Diskuttanti:
• Dr. Vassil Kirov, Prof. and Deputy Director, Institute of Philosophy and Sociology, Bulgarian Academy of Sciences
• Filip Škoda (and colleagues), Project42 Technologies d.o.o.
Debate, Q&A
- This session was financially co-funded by the Erasmus+ programme of the European Union, Key Action: Erasmus+, Jean Monnet, Action Type: Jean Monnet Module, Project Reference: SI4.0forEU - ERASMUS-JMO-2021-MODULE - 101047744.
- 12.15 - 13.30 Jean Monnet Module "Technology and Innovation Communities 2030": topics - City hubs, Development, Competitiveness.
Moderator: doc. dr. Cristian Gargaliuc
• Povabljeni diskuttant: asist. dr. Maruša Gorišek, IRSA Ljubljana
- 13.30 - 14.30 EU as a Global Actor in Fragmented and Traumatized World (EU-GlobalAct)
Moderator: dr. Janja Mikulan
This session was financially co-funded by the Erasmus+ programme of the European Union, Key Action: Erasmus+, Jean Monnet, Action Type: Jean Monnet Module, Project Reference: EU-GlobalAct - ERASMUS-JMO-2023-MODULE-101127119.
- 14.30 - 15.30 Technology and Innovations for Agenda 2030 - EU Global Leadership" (TIA2030) Grand Strategies and their Implementation
Jean Monnet Center of Excellence
Moderator: pred. Ksenija Gramova



• Povabiljeni diskutant: prof. dr. Žiga Turk – "A project on regenerative economy"

• Povabiljeni diskutant: prof. dr. Nikolai Genov – "A brief presentation focusing on Musk's achievements and EU R&D planning"

This session was financially co-funded by the Erasmus+ programme of the European Union, Key Action: Erasmus+, Jean Monnet, Action Type: Jean Monnet Centre of Excellence, Project Reference: TIA2030 - ERASMUS-JMO-2023-COE-101127584.

16.00 - 18.00 Akademski zbor FIŠ (izvedba na FIŠ, hibridna izvedba)
Moderator: Po pooblastilu predsednika AZ prof. dr. Risteja Šarekovičnega bo Akademski zbor vodil izr. prof. dr. Blaž Rodič.

- nagovor dekana prof. dr. Mateja Makaroviča
- samoevalvacijsko poročilo (doc. dr. Urška Fric)
- internacionalizacija študija (prof. dr. Matej Makarovič)
- osnove javnega naročanja (mag. Maja Kocjan)

Drugi dan:
Petek, 15. 3. 2024 (izvedba na FUDŠ, Leskova 9e, Ljubljana in preko spletne povezave <https://zoom.us/j/3377055318>)

9.00 - 9.30 Zbiranje prisotnih
9.30 - 9.40 Pozdravni nagovor dekana FIŠ prof. dr. Mateja Makaroviča
9.40 - 9.50 Pozdravni nagovor dekana FUDŠ prof. dr. Boruta Rončevića

9.50 - 11.20 Predavanje "Ukrepi za preprečitev nasilja nad študenti in zaposlenimi na fakulteti"
Predavatelj: Tadej Cunder

11.20 - 11.40 Odmor

11.40 - 13.10 Praktičen del predavanja "Ukrepi za preprečitev nasilja nad študenti in zaposlenimi na fakulteti"
Predavatelj: Tadej Cunder

13.10 - 14.00 Kosilo

14.00 - 15.30 Predavanje "Osebnostne finance in investicije"
Predavatelj: izr. prof. dr. Matjaž Škabar

15.30 - 16.15 Predstaviteljski informacijski sistem FUDŠ - primer dobre prakse digitalizacije procesov
FUDŠ
Moderator: pred. Goran Babič

18.30 - 20.30 Akademski kolokvij za dr. študente
Moderator: doc. dr. Urška Lamut

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Fakulteta za informacijske študije
Faculty of Information studies



FUDŠ
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ZIMSKI TABOR 2024

Hvala za udeležbo!

Jean Monnet Module
SCHOOL OF ADVANCED SOCIAL STUDIES



TIA2030
THE INSTITUTE OF ADVANCED STUDIES

MEDIAPOP



Co-funded by the European Union



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Jean Monnet Module
SCHOOL OF ADVANCED SOCIAL STUDIES

FUDŠ
FAKULTETA ZA UPORABNE DRUŽBENE ŠTUDIJE

3 SESSION PRESENTATIONS

Presentation Slides by guests

BEYOND 4.0

Industry 4.0 and the digital transformation of the European regions: is there an inclusive growth?

Prof. Dr. Vassil Kirov
(Institute of Philosophy and Sociology, Bulgarian Academy of Sciences- IPS-BAS)

Winter School FUDŠ/FAM/FiS
14 March 2024 Slovenia

Industry 4.0 and the End Of Work?

- "A race between man vs machine" and redundant labour (Acemoglu 2018)
- Large percentage of the jobs can be automated (Frey & Osborne, 2013/7)
- Adaptation of skills and workers (Nedelkoska & Quintini, 2018)

But

- Employment has not declined in the period 1890-2018 (Blau et al., 2018)
- Four processes co-exist – job creation, job destruction, job shift and job change – and develop simultaneously (Degryse 2016)
- Technologies are not deterministic (Kornelakis et al. 2022)
- A more nuanced approach is needed... (Warhurst et al. 2019)

The Ecosystem Analysis to Track the Deployment of the Digital Transformation

- The perspective of Stam & Spigel (2018) on the **entrepreneurial ecosystem**, defined as a 'set of interdependent actors and factors that are governed to enable productive entrepreneurship within a particular territory'.
- **Ten elements** play a role in creating value through entrepreneurial activity - formal institutions, culture, physical infrastructure, demand, networks, leadership, finance, talent, knowledge & support services/intermediaries.
- The analysis departs from the logic that elements in an ecosystem are substitutable, and there are **many different possible pathways** to a high-performing entrepreneurial ecosystem (Schrijvers, Stam and Bosma, 2021).
- We are interested on the impact of the digital transformation on the functioning of ecosystems, what impact on inclusive growth, and the respective implications for the future of work.

The regional perspective Incumbent entrepreneurial ecosystems

Technology logics and incumbent entrepreneurial ecosystems 2008-2020?

What Are The Inclusive-growth Related Impacts Of Digital Transformation At The Ecosystem And Regional Level?

- The unemployment decrease and the development of new, knowledge intensive jobs is due not only to the economic conjuncture but also to the **performance of the regions and ecosystems**.
- The impacts have sometimes been in favour of women – e.g. Oulu/Salo, Brainport or Sofia
- One question that remains unanswered is if the distribution of income between employers and employed has changed over the past decade. It is necessary to complete such information to evaluate inclusive growth fully. An analysis at the level of the separate companies is needed to answer this question.

The Perspective And The Implications For The Future Of Work

- To understand the future, there is a need of a larger perspective related to technology, more than a just task perspective. Growth in Europe is how regions use the opportunities to conquer new markets and develop new products/services.
- The same technology can have different uses and be adapted into different products and services. The are different scenarios, a region can be resilient or turn into an economic disaster - social and policy shaping is needed to ensure socially inclusive outcomes.
- The digital transformation has been exacerbated by the Covid-19 pandemic but is here to stay.

Five recommendations for policy makers and stakeholders in the context of the digital transformation

- Preparing, attracting and preserving talent
- Boosting networks: a long-term mission towards collaboration
- Crafting conditions and building on knowledge
- Developing infrastructures is also needed also in the context if theof digital transformation
- Formal institutions: – competence and rule of law

https://www.researchgate.net/publication/371225571_THE_PRACTICAL_SIDE_OF_DIGITAL_TRANSFORMATION_A_TOOL_BOOK_FOR_PRACTITIONERS

Outline of the Presentation

1. About Uprise

- Who we Are
- What We Do
- Areas of Expertise

2. Uprise & the European Energy Transition

- Electrical Power Transmission
- Our Solutions
- Solution Benefits

3. In-House R&D

- SOLO
- EAGLE
- OPTIMUS

4. Future Focal Points

- Industry 5.0

Who We Are

50th Anniversary
Uprise 50th Anniversary
Uprise 50th Anniversary

1000 EUROPE'S
FASTEST GROWING
COMPANIES 2024

- IT and consultancy from Zagreb (founded 2017)
- Team of 35+ combining expertise in **electrical engineering** and **software engineering**
- Aligned with the **European Green Deal** and directly supporting green energy transition
- Our largest sector is **energy** but our products/services are used by other industries such as **fintech, civil engineering, robotics, culture** etc.



About Uprise

What We Do



Grid optimization
Design and implementation of optimization algorithms for various e-mobility and electrical power grid operation problems. Strong expertise in using of Gurobi solver.

Grid & market analysis
Deep understanding of electrical power system operation and energy market. Experience in development tools for load flow and security analysis, as well as system adequacy assessment.

System forecasting
Application of machine learning/AI algorithms for prediction of system load, PV production, electricity and CO2 price, etc.

Legislation consultancy
Consultancy services provided to different energy sector players on legal requirements and methodologies impacts and implementation possibilities.

Areas of Expertise

Mobile & web development

- Track record of creating tailored and most complex solutions using latest technologies
- Visual identity and design part of the service package
- Experience in cloud and distributed computing programming

Artificial Intelligence

- Experience in using neural networks for different purposes (image classification, NLP, time-series)
- Multiple projects related to time-series forecasting
- Closely following and experimenting with the latest deep learning trends

Green energy transition

- Dedicated to building applications supporting green energy transition
- Deep understanding of electrical power system operation and electricity markets
- Different EU and pilot projects related to e-mobility and energy management

Linear optimization

- Using mathematical solvers to optimize complex problems
- Experienced in solving Mixed-integer linear programming problems (MILP) with multiple objectives
- Experienced in using Gurobi Solver

Uprise & the European Energy Transition

2030 Climate Targets

- Part of an energy framework with **specific targets and policy objectives** for the period from 2021 to 2030
 - Climate policies
 - Energy policies
 - Transport policies
 - Taxation policies
- Reducing net greenhouse gas emissions by **at least 55%** by 2030, compared to 1990 levels.
- Long-term strategy: becoming the **first climate-neutral continent** by 2050.



Electrical Power Transmission

- The European Union member states are grouped into so-called **capacity calculation regions (CCRs)**
- The capacity calculation region is a geographical area in which the associated transmission system operators carry out a **coordinated capacity calculation (CCC)**
 - Coordinated capacity calculation is a joint process of transmission system operators regional coordination centres
 - It is a mathematical representation of the possibilities for **cross-border power exchanges** that the transmission system can safely accommodate
 - Result of the CCC is the available capacity for cross-zonal trading per each hour and each oriented bidding zone border
- Remedial actions (RAs)** are operational measures that are used to modify power flows on the critical network elements and directly impact cross-zonal capacity
 - These actions include switching operations and PSTs adjustments (non-costly RAs)



Our Solutions

- Uprise has developed a set of **tools for performing computations and data processing** for the purpose of:
 - maximizing cross-zonal capacity** of Core CCR oriented bidding zone borders during the DA & ID coordinated capacity calculation process
 - determining the cross-zonal capacity** of Italy North CCR oriented bidding zone borders during the DA & ID coordinated capacity calculation process
- We have also contributed to the **Non-costly Remedial Action Optimization (NRAO)** in Core CCR resulting with:
 - Expanding flow-based domain (maximizing cross-zonal transmission capacity offered to the market) by utilization of non-costly remedial actions
 - Optimization that includes **topological measures** (switching operation) and/or **changes in tap positions** of the phase-shifting transformers (PSTs)



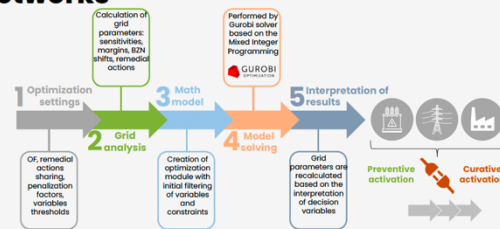
Solution Benefits

- Developed tools have the purpose of determining and maximizing cross-zonal capacities in CCRs**
 - Additional capacity creates new opportunities for all market participants, increases market liquidity, and supports increased penetration of renewable energy sources
 - Efficient allocation of scarce transmission capacity plays a crucial role in establishing a fair and competitive electricity market
- Implemented solutions make it possible to switch to efficient and market-driven price discovery without grid curtailments**
 - Ensuring that buyers and sellers are able to find a price that is mutually beneficial, which is important for the efficient allocation of resources and improving energy efficiency
 - Stabilizing markets can help reduce volatility and uncertainty, facilitating integration of renewable energy sources
- Increasing cross-zonal capacity enables greater penetration of renewable energy sources, further supporting Europe's energy transition**
 - An increase in cross-zonal capacity increases the possibility for coordinated procurement of balancing energy, which is essential for maintaining the grid stability and the security of supply in a carbon-free Europe

In-House R&D

Solution for Optimization of Networks

SolDN



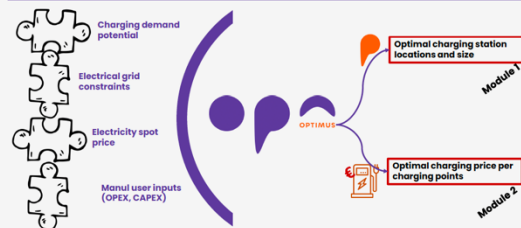
Forecasting Tool for Energy Data

EAGLE
www.eagleforecast.ai

- Main motivation behind the tool was to develop web application with **highly accurate predictions** based on the cutting-edge AI methods, wrapped in a **modern, intuitive user interface**
- Forecasting is based on the novel **Deep Learning** methods and model was trained on the **Google Cloud**
- Foreseen supported **predictions** include:
 - PV production forecasting
 - Carbon price forecasting
 - System load forecasting
 - Net position forecast

OPTIMUS

Development of a flexible **cloud-based web portal** in order for users to **determine optimal charging station locations and size and charging price** throughout the day.



Future Focal Points

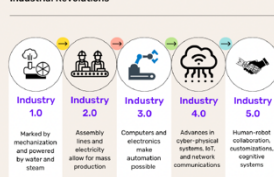
Industry 5.0

What is Industry 5.0 ?

European industry is a key driver in the economic and societal transitions that we are currently undergoing. In order to remain the engine of prosperity, **industry must lead the digital and green transitions**. This approach provides a vision of industry that aims **beyond efficiency and productivity** as the sole goals and **reinforces the role and the contribution of industry to society**. It places **the wellbeing of the worker at the center of the production process** and uses **new technologies to provide prosperity beyond jobs and growth while respecting the production limits of the planet**.

(source: European Commission)

Industrial Revolutions



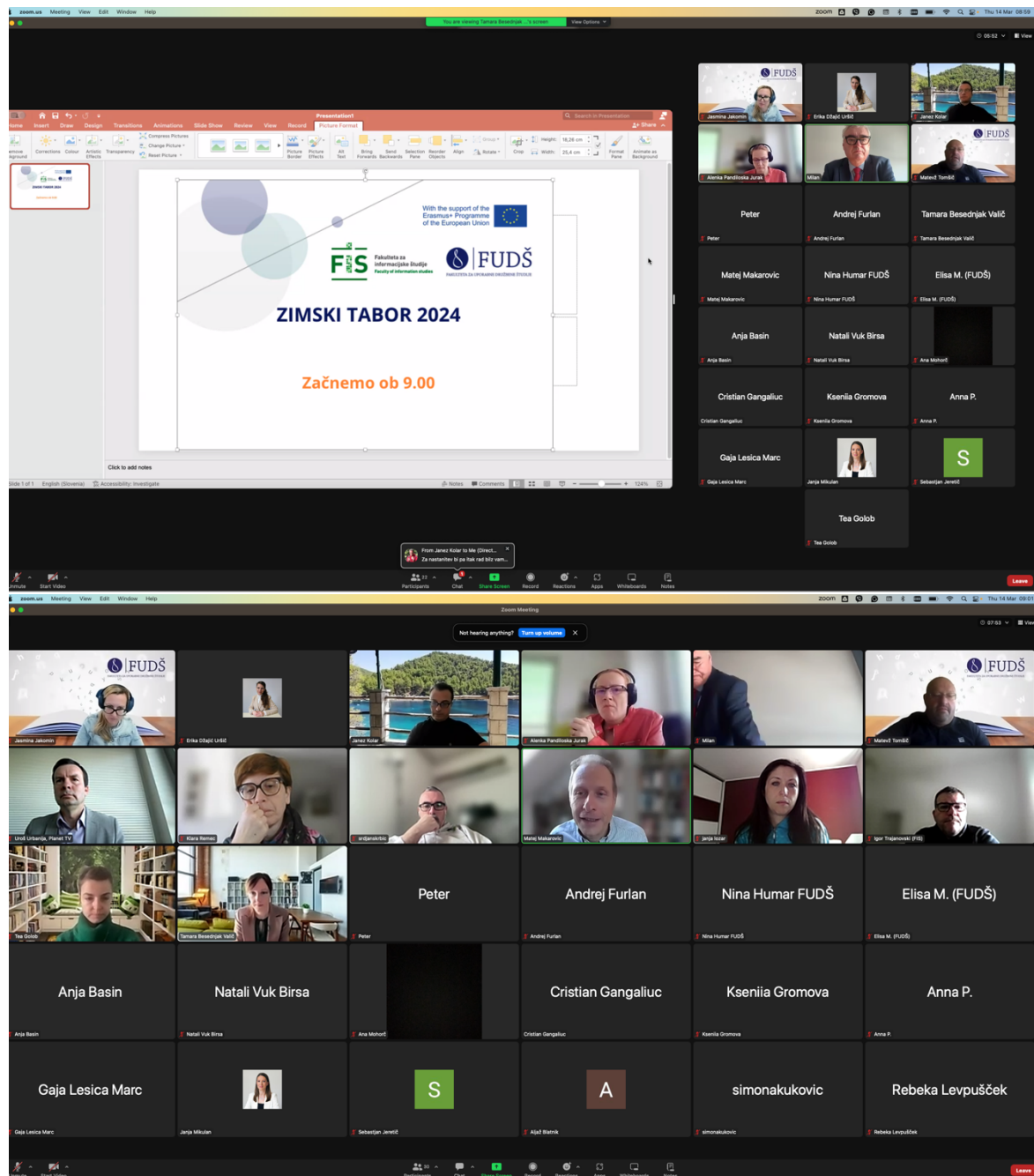
Industry 5.0

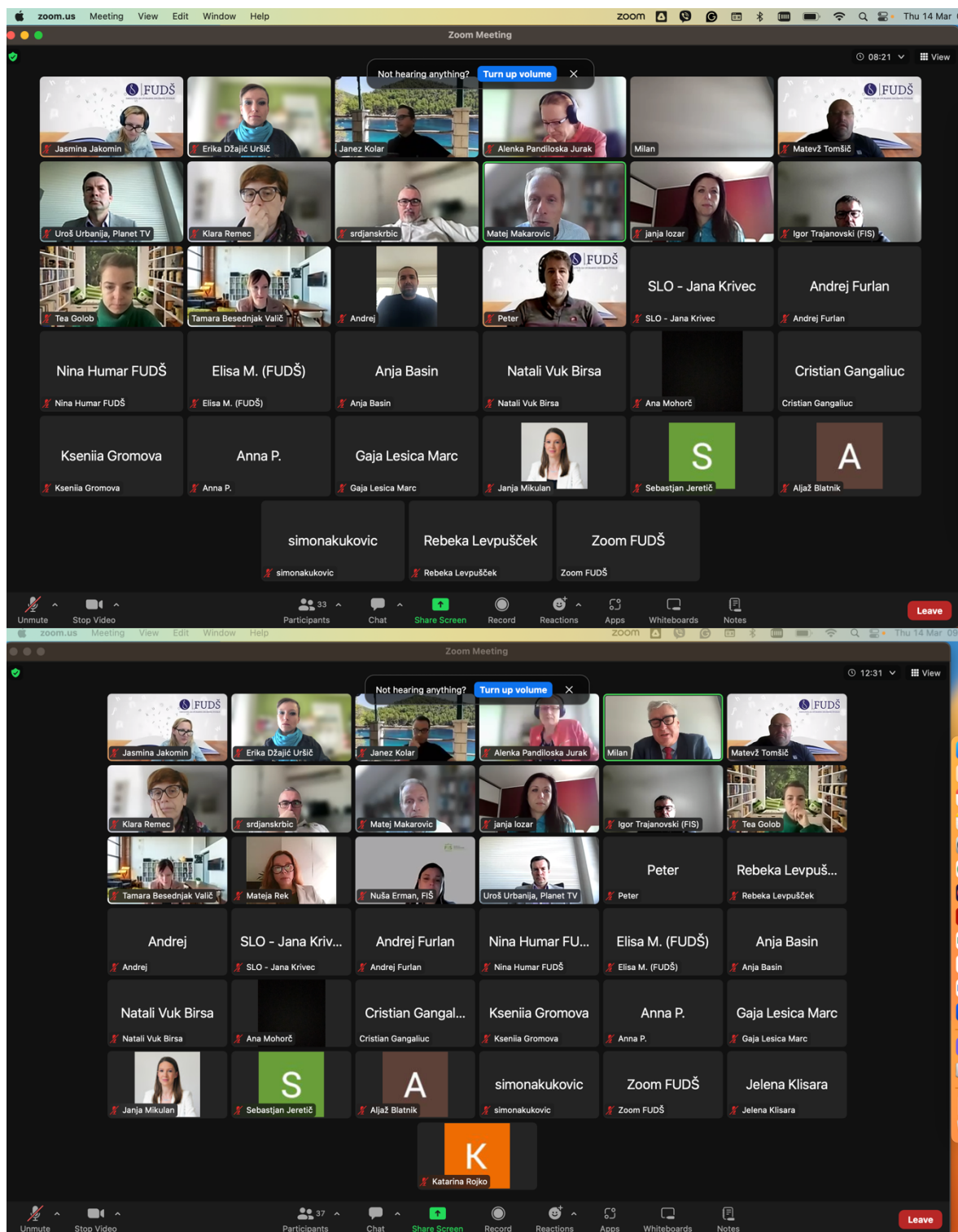
What composes Industry 5.0 ?

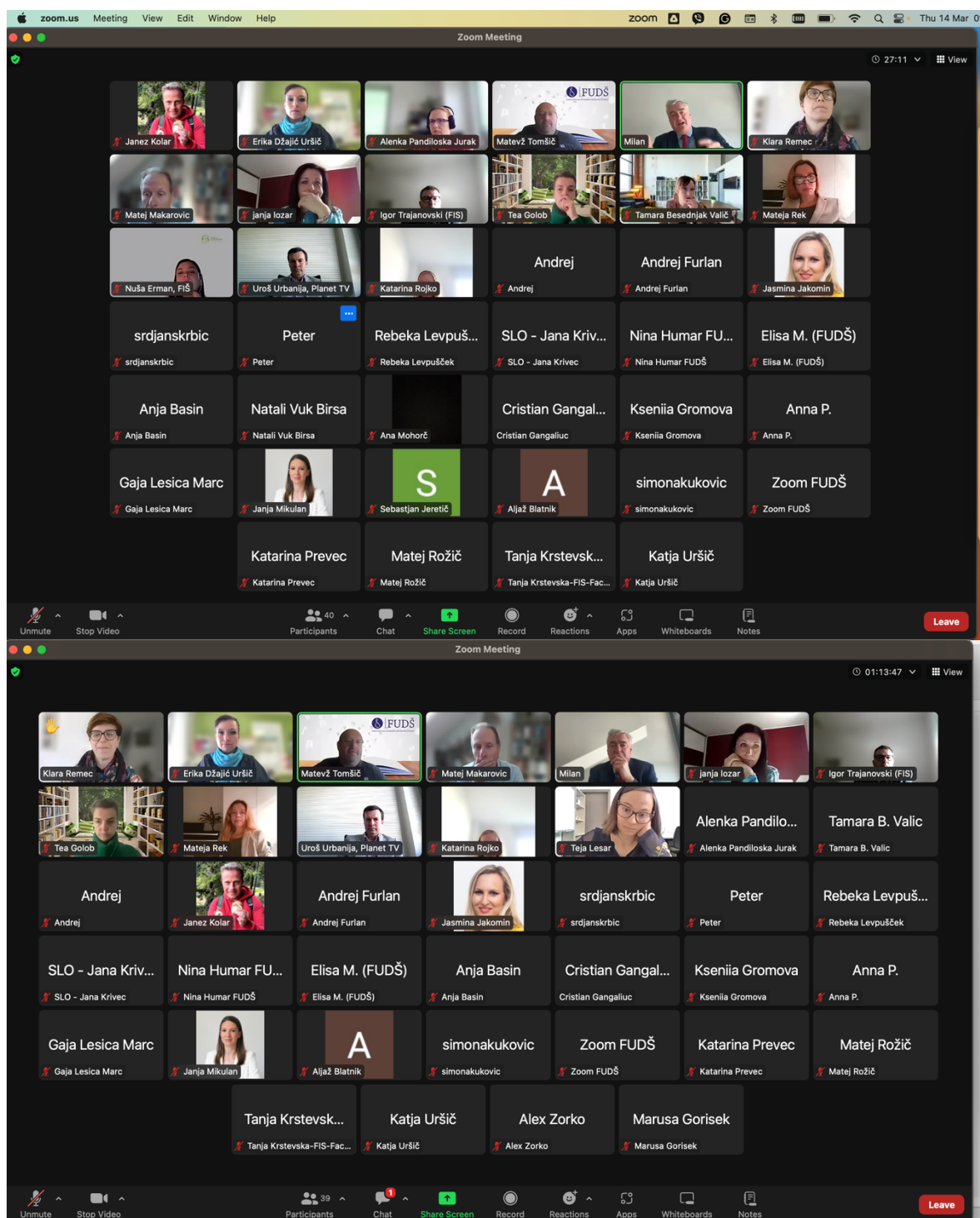
The technologies supporting the concept of industry 5.0 include:

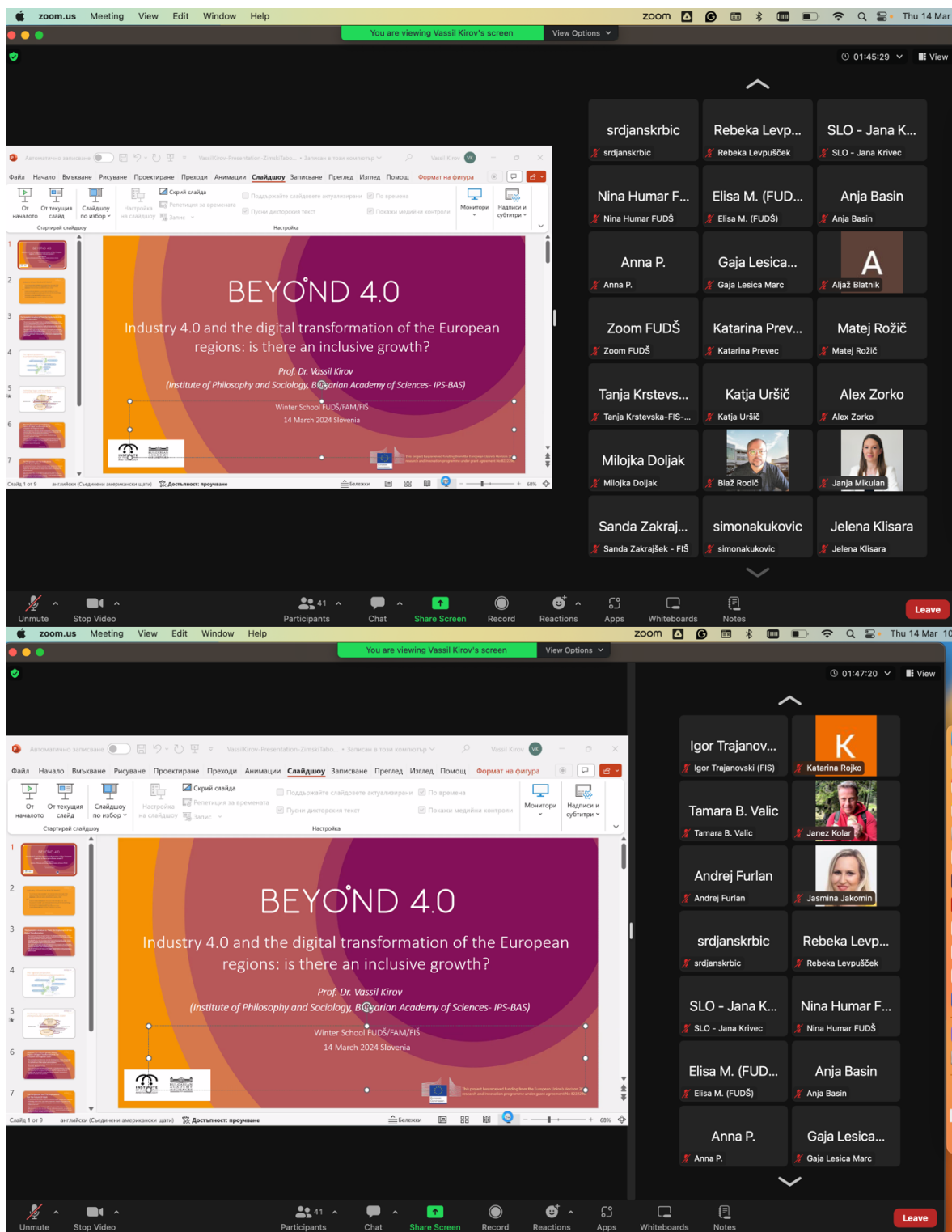
- Human-centric solutions** and **human-machine-interaction** technologies that interconnect and combine the strengths of humans and machines.
- Bio-inspired technologies** and **smart materials** that allow materials with embedded sensors and enhanced features while being recyclable.
- Real time based digital twins** and simulation to model entire systems.
- Cyber safe data** transmission, storage, and analysis technologies that are able to handle data and system interoperability.
- Artificial Intelligence** e.g. to detect causalities in complex, dynamic systems, leading to actionable intelligence.
- Technologies for energy efficiency** and trustworthy autonomy as the above-named technologies will require large amounts of energy.

4 PHOTOS









The screenshot displays a Zoom meeting window. The top bar shows the Zoom application menu and system status. The main area is divided into two sections. The upper section is a grid of 30 participant tiles, each showing a video feed and the name of a participant. The lower section is a presentation slide titled "uprise" with the tagline "AIM HIGHER". The slide content includes a list of topics: "1. About Uprise", "2. Uprise & the European Energy Transition", "3. In-House B2B", and "4. Future Road Points". The presentation controls at the bottom show "Slide 1 of 21".

Participants (Grid):

- Row 1: Klara Remec, Erika D. Uršič (S14.0forE...), Matevž Tomšič, Teja Lesar, Janja Izar, Mateja Rek
- Row 2: Vassil Kirov, Cristian Gangaliuc, Ksenia Gromova, Aneja Marinič, Alenka Pandiloska Jurak, Peter
- Row 3: Filip Škoda, Emil Karajić, Marusa Gorisek, Igor Trajanovsk..., Katarina Rojko, Tamara B. Valic
- Row 4: Janez Kolar, Andrej Furlan, Jasmina Jakomin, srdjanskrbic, Rebeka Levpuš..., SLO - Jana Kriv...
- Row 5: Nina Humar FUDŠ, Elisa M. (FUDŠ), Anja Basin, Anna P., Gaja Lesica Marc, Aljaž Blatnik
- Row 6: Zoom FUDŠ, Katarina Prevec, Matej Rožič, Tanja Krstevsk..., Katja Uršič, Alex Zorko
- Row 7: Milojka Doljak, Blaž Rodič, Sanda Zakrajšek - FIS, simonakukovic, Jelena Klisara, Janja Mikulan

Presentation Slide:

uprise
AIM HIGHER

Sustainability & digitisation of Industry 4.0: technological solutions facilitating transition to green energy

Outline of the Presentation

1. About Uprise
2. Uprise & the European Energy Transition
3. In-House B2B
4. Future Road Points

No Notes.

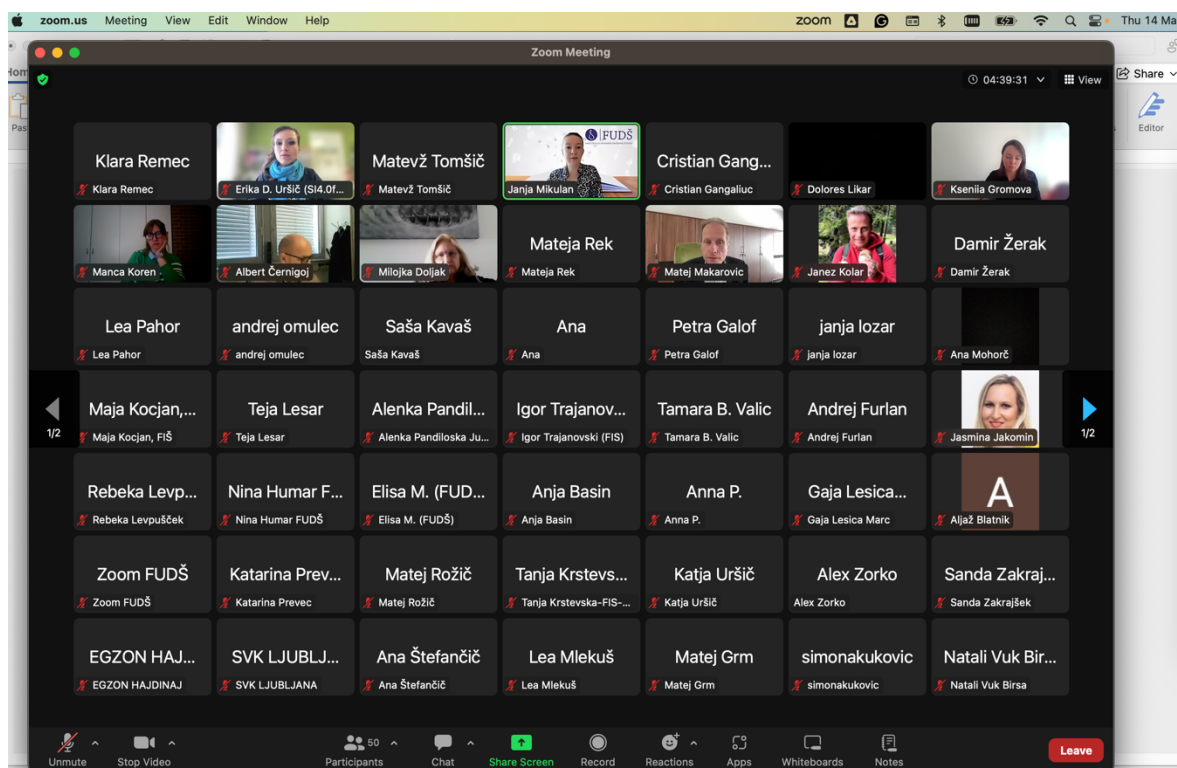
Slide 1 of 21

The screenshot displays a Zoom meeting in progress. The top window shows a presentation slide titled "Electrical Power Transmission". The slide content includes:

- The European Union member states are grouped into so-called **capacity calculation regions (CCRs)**.
- The capacity calculation region is a geographical area in which the associated transmission system operators carry out a **coordinated capacity calculation (CCC)**.
 - Coordinated capacity calculation is a joint process of transmission system operators regional coordination centres.
 - It is a mathematical representation of the possibilities for **cross-border power exchanges** that the transmission system can safely accommodate.
 - Result of the CCC is the available capacity for cross-zonal trading per each hour and each oriented bidding zone border.
- Remedial actions (RAs)** are operational measures that are used to modify power flows on the critical network elements and directly impact cross-zonal capacity.
 - These actions include switching operations and PSTs adjustments (non-costly RAs).

A map of Europe highlights the CCRs: CORE (purple), Italy North (orange), and SWE (green). A "Next slide" preview shows "Our Solutions" with a map of Europe and bullet points.

The bottom window shows a grid of 43 participants. Visible names include Klara Remec, Matevž Tomšič, Filip Škoda, Teja Lesar, Mateja Rek, Vasil Kirov, Janja Iozar, Cristian Gangaluc, Ksenia Gromova, Marusa Gorisek, Andrej, Aneja Marinič, Alenka Pandilo..., Peter, Emil Karajić, Igor Trajanovsk..., Katarina Rojko, Tamara B. Valic, Janez Kolar, Andrej Furlan, Jasmina Jakomin, srdjanskrbic, Rebeka Levpuš..., SLO - Jana Kriv..., Nina Humar FU..., Elisa M. (FUDŠ), Anja Basin, Anna P., Gaja Lesica Marc, Aljaž Blatnik, Zoom FUDŠ, Katarina Prevec, Matej Rožič, Tanja Krstevsk..., Katja Uršič, Alex Zorko, Milojka Doljak, Blaž Rodič, Sanda Zakrajšek - Fiš, simonakukovic, and Jelena Klisara.



5 SESSION EVALUATION

<div>Ordinalna</div> <div>Nominalna</div>											
Q1	E+ Jean Monnet Module SI4.0forEU Activity Evaluation Question (general)										
***	Podvprašanja	Odgovori	Frekvence		Odstotki			Veljavni	Št. enot	Povprečje	Std. odklon
		I do not agree at all	I do not agree	Neutral	I Agree	I Agree at all	Skupaj				
Q1a	The covered topics are relevant and up-to-date	0 0%	0 0%	0 0%	0 0%	1 100%	1 100%	1	1	5.0	0.00
Q1b	Topics are presented in a clear and understandable way	0 0%	0 0%	0 0%	0 0%	1 100%	1 100%	1	1	5.0	0.00
Q1c	Speakers are well acquainted with the topics they presented	0 0%	0 0%	0 0%	0 0%	1 100%	1 100%	1	1	5.0	0.00
Q1d	It was possible to confront different points of view	0 0%	0 0%	0 0%	0 0%	1 100%	1 100%	1	1	5.0	0.00

		Nominalna											
Q2	What did you like most about the event? (if you didn't like anything, write "nothing")?												
...	Odgovori												
	everything was great												

Nominalna

Q3	What bothered you most about the event? (if nothing bothered you, write »nothing«)?
...	Odgovori
	nothing