

## DELIVERABLE 6.8 Second Annual Conference

SMAGRINET POWERING SMART GRID EXPERTISE IN EUROPE





## Report on the 2<sup>nd</sup> SMAGRINET Conference "Energy Game Changers 2022 – The Current Energy Situation and the Importance of an Informed Society"

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#### **Revision History**

Version	Date	Reviewer	Modifications

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### Executive summary

SMAGRINET annual conferences are the main events of the project, acting as largescale information and awareness-raising events where the key findings of the project are shared with a large multidisciplinary audience.

The present document provides data and insights stemming from the 2<sup>nd</sup> SMAGRINET Conference "Energy Game Changers 2022 – The Current Energy Situation and the Importance of an Informed Society", held on the **17<sup>th</sup> of March 2022**, live streamed from Pronto Invention Factory in Tallinn, Estonia.

Similarly to the 1<sup>st</sup> SMAGRINET conference held in November 2020, Civitta was again not able to organise the conference as a physical event due to the COVID-19 outbreak across Europe. Considering the ongoing health crises, Civitta together with the Tallinn University of Technology, decided to organise the conference as an online event with a professional moderator, video production team and a broadcasting service. Only the representatives from project partner organisations were invited to join the conference in person at the Proto Invention Factory, ensuring that everyone followed the COVID-19 safety precautions set out by the Estonian government.

CIVITTA was responsible for organising the conferences and managing the contributions from all partners during the preparatory phase (elaborating the content, finding the speakers, inviting participants) and during conference implementation (managing the speakers, participants etc.).

The **aim** of the conference was to **bring together industry and academia** to discuss the current situation on the energy market from the perspective of the skills needed in the future, as well as discuss the role of industry, academia and society in energy transition, smart grid implementation and related workforce challenges. The focus was to lead the audience from the industry view to the societal aspects of the energy transition.

TARGET AUDIENCE for the 2<sup>nd</sup> Annual Conference were:

- University representatives and teaching staff that are interested in the topics of Smart Grid (AI, Economic Operations, Societal Challenges in Energy Sector, and Connection Planning), including representatives interested in further uptake of the smart grid modules.
- Students interested in learning more about the discussed topics.
- Current workforce (electrical engineers), as well as industry representatives, interested in learning more about the Smart Grid and the value of the training programmes.
- General public interested in the current energy market and learning more about the topics of Smart Grid.

#### Table 1. Summary of the SMAGRINET 2nd Annual Conference

#	Title	Date held	Registrations / Participants
1	Energy Game Changers 2022 -	17/03/2022	Registrations:
	The Current Energy Situation		- 218 registered participants





and the Importance of an Informed Society	Actual number of participants: - 174 participants on the Worksup platform
	- 239 views via Youtube live

The recording of the Conference is available under the following link: https://www.youtube.com/watch?v=Udo9fj-Hz08&ab\_channel=SmagrinetProject

## 1. Agenda of the conference

Moderator: Vladislav Lušin, SpeakSmart

9:30 - 10:00 Arrival and registration of participants attending on spot

10:00 - 10:15 | Opening of the conference

Welcome speech by **prof. Renno Veinthal**, Deputy Secretary General, Estonian Ministry of Education and Research

10:15 - 11:15 | Attracting next generation engineers - the value of up-todate smart grid skills

Panel discussion with:

Prof. Dr.-Ing. Kai Strunz, Technical University Berlin and Secretary of the IEEE Power and Energy Society Committee on Energy Development and Power Generation Ph.D.-Eng. Alex Gabriel, University de Lorraine Olga Zyabkina, Chair of Electrical Power Supply, Institute of Electrical Power Systems and High Voltage Engineering, Technical University Dresden

11:15 - 12:15 | Impact of the industry driven smart grid training programmes

Panel discussion with:

Prof. Mariusz Stepien, the head of the Department of Power Electronics at The Silesian University of Technology Klemen Knez, University of Ljubljana Olga Kyselova, head of International Research Cooperation at Technical University Dresden Karl Kull, Tallinn University of Technology, coordinator of the SMAGRINET project

12:15 - 12:45 | Break

12:45 - 14:15 | Situation in the energy market and skills of the future

Panel discussion with:





Hando Sutter, CEO of Eesti Energia
Kristian Ruby, Secretary General at Eurelectric
Prof. Dr.-Phys. Jaak Aaviksoo, Academician of the Estonian Academy of Research
Maiju Korhonen, Senior Adviser at Finnish Energy
Tarvo Õng, CEO and founder of Fusebox

14:15 - 14:35 | The future is now - the steps to shape the engineering education further

Presentation by Prof. Dr. Boštjan Blažič, University of Ljubljana

14:35 - 14:45 | Closing remark by Karl Kull, Tallinn University of Technology

## 2.Conference organisation and participants statistics

The main organiser of the conference was Civitta, however, SMAGRINET partners, including Tallinn University of Technology, LOBA, the Union of the Estonian Electricity Industry, Dresden University of Technology, Technical University of Berlin, University of Lorraine, University of Ljubljana and Kaunas University of Technology contributed to the organisation of the conference.

Energy Game Changers 2022 took place via the Worksup platform which was the main gateway for participants. This enabled them to not only watch the live broadcast of the event but also ask questions and interact with the panelists. Additionally, participants had the opportunity to watch the conference live on Youtube. The speakers of the conference, however, were connected via Zoom. The conference was broadcasted live from the Pronto Invention Factory in Tallinn, Estonia by a professional video production company. The event was also recorded in compliance with the DGPR rules.

All registered participants attended the conference online via the Worksup platform or viewed the event on Youtube. 9 speakers out of 15 attended the conference online, 5 speakers attended in person at the Proto Invention Factory, and 1 person was unable to attend due to circumstances outside of their control. Speakers present at the venue were:

- Alex Gabriel, University de Lorraine
- Klemen Knez, University of Ljubljana
- Karl Kull, coordinator of the SMAGRINET project from Tallinn University of Technology
- Hando Sutter, CEO of Eesti Energia
- Boštjan Blažič, University of Ljubljana

Other people present at the venue included:

• Anneli Roose, Project Manager at Civitta Estonia, main organiser of the conference







- Kristi Liina Vahl, Consultant at Civitta Estonia, organiser of the conference
- Vladislav Lušin, moderator of the conference
- Technical support team (4 people)
- Representatives from project partner organisations (3 people)

In total **218 participants** registered for the conference. 49% of participants came from universities or academic institutions and 21% were representatives of the energy industry. The rest of the participants were either from the public sector or the general public interested in the topic.

On the day of the conference, the live broadcast was viewed by **174 people** via the Worksup platform. The sectors from which the participants were can be seen from Figure 1 below. The broadcast was also live streamed on Youtube - the link was disseminated via Facebook by the Tallinn University of Technology, as well as the SMAGRINET Facebook page, and accumulated **239 views**. As the **KPI for the 2<sup>nd</sup> SMAGRINET conference was 100 participants**, it can be said that the event was exceedingly successful, receiving more than 4 times the number of views than were planned.

Figure 1. Sectors of participants that viewed the conference via the Worksup platform.



The geographical coverage of SMAGRINET's 2<sup>nd</sup> Annual Conference reached **19 countries**, even more than the 15 countries that were reached with the first conference. The most prevalent countries were Estonia (68), Germany (22), Lithuania (19), Slovenia (16), and France (12). A more detailed overview of the countries from which participants viewed the conference can be seen in Figure 2 below.





#### Figure 2. Countries from which participants viewed the conference.

Countries of participants

## 3.Content and speakers of the conference

The conference offered an overview of the SMAGRINET project, its impact and the plans for the future, while also addressing the current challenges that the energy market faces. Additionally, experts from industry and academia discussed the role of the industry, academia and society in the current energy transition and smart grid implementation and debated on the related workforce challenges.

The event consisted of three panel discussions, a presentation that drew on the conclusions of the project, and two speeches, one at the beginning of the conference and the other at the end. During the panel discussions and the presentation, participants of the conference were able to send in their questions to the speakers.

#### Panel discussion 1

**Title of the panel:** "Attracting next generation engineers - the value of up-todate smart grid skills"

#### Speakers:

**Kai Strunz**, professor at the Department of Sustainable Electric Networks and Sources of Energy, Technical University of Berlin, guest Professor of the Chinese Academy of Science, Beijing and the Secretary of the IEEE Power and Energy Society (PES) Committee on Energy Development and Power Generation.

Alex Gabriel, an industrial engineering researcher at the ERPI research team at Université de Lorraine, working on the design and evaluation of IT tools applied to innovation management.





**Olga Zyabkina**, a PhD student at the Technical University of Dresden, Germany, at the Institute of Electrical Power Systems and High Voltage Engineering, and a research assistant in the Power Quality Group.

#### Discussion points:

- Content of the SMAGRINET training programmes and reasons behind the choices.
- The ways in which universities and companies across Europe have implemented the training programmes.
- Changes that have taken place in engineering education since the start of the programmes, e.g., whether programming in the engineering study programmes is a normality already.
- The future of engineering education. The knowledge and competencies students should be taught for them to meet the demand of the industry, especially considering the current market situation.

One of the key takeaways was that the Smart Grid modules have a high international compatibility as all partner universities have worked together in a decentralised way to not only design the courses but also deliver them to students in the most beneficial ways. This has been especially difficult considering the current health crisis with the COVID-19 pandemic as most in person (practical) sessions and have been transformed into online lessons. This, however, presented the developers of the courses a great opportunity to open the modules and invite partner organisations from different countries to present their knowledge and experiences to students through those online sessions. This was noted by students to have been very beneficial as it gave them a wider perspective on the topics that they had covered previously.

The panel also covered the feedback that the Smart Grid modules received from students. Overall, the programme had a positive reception and received great feedback on the value it provided to the students. Notable keywords that emerged from the feedback included international compatibility, compactness of the course, challenging, focus on soft skills, and networking opportunities/ links to companies in the industry. Feedback on how to improve the courses have already been taken into consideration to design the next modules. The focus will remain and further build on the following three pillars: artificial intelligence, economics, and Smart Grid technologies.

#### Panel discussion 2

Title of the panel: "Impact of the industry driven smart grid training programmes"

#### Speakers:

**Mariusz Stepien**, professor at the Department of Power Electronics, Electrical Drives and Robotics, Silesian University of Technology, Gliwice, Poland.

**Klemen Knez**, student researcher in the field of smart grids at the Faculty of Electrical Engineering, University of Ljubljana.

**Olga Kyselova**, the head of International Research Cooperation at Technical University Dresden, Germany.



**Karl Kull**, Tallinn University of Technology, School of Engineering, Department of Electrical Power Engineering and Mechatronics, the coordinator of SMAGRINET project.

#### Discussion points:

- The relevance and value of the training programmes for governments, industry and to the students.
- The ways in which students have implemented the acquired skills (view of the public sector, industry, and future engineers).
- Additional skills that need to be taught for students to meet the demand of the industry/ employers, especially considering the current energy market situation.

One of the key takeaways of this panel was that to satisfy the needs of the market, the Smart Grid modules need to change and adapt together with the industry as quickly as possible. There will be rapid changes on the market going onwards, especially regarding energy security and the technologies that are utilised - even right now the market is very different from what it was a few months ago.

The value of the Smart Grid modules is its flexibility, providing the market with educated engineers that are quick to adapt to the situation at hand while also providing modules for the general public. This ensures that individuals from any sector can have the knowledge needed to make their own judgements or be an informed intermediary between the energy industry and any other sector. For instance, Smagrinet educates journalists who are a crucial link between the energy industry and the general public. Making informed statements that accurately reflect the Smart Grid ensures that continuous progress is being made and that there is no unnecessary resistance based on misinformation. Going onwards, the aim is to also reach the consumers on the energy market and involve them in the Smart Grid modules to understand their needs and wants for the future when it comes to energy consumption. This is invaluable insight which helps to understand what the future workforce has to be prepared for, especially considering that consumers and homeowners form about 40% of the current energy market.

#### Panel discussion 3

Title of the panel: "Situation in the energy market and skills of the future"

#### Speakers:

**Hando Sutter**, the Chief Executive Officer of Eesti Energia with a demonstrated multinational track of working in the oil & energy industry.

**Kristian Ruby**, a widely recognised expert with a strong communication profile and extensive experience in political affairs, currently serving as the Secretary General at Eurelectric.

Jaak Aaviksoo, an Estonian politician and physicist, a former rector of the University of Tartu and Tallinn University of Technology (TalTech), and the former Estonian Minister of Defence and Minister of Education and Research.







**Maiju Korhonen**, a senior advisor at Finnish Energy, helping member companies with issues related to education, skills, competence, youth and employer branding & recruitment communications.

**Tarvo Õng**, the Chief Executive Officer of Fusebox, a company that helps balance supply and demand in the electricity system as a virtual power plant.

Discussion points:

- Discussion around the current energy market and energy policy from the perspective of the speakers.
- The existence/ non-existence of a skills gap in the energy industry.
- The current needs of the industry vs the needs of the industry in the future, regarding skills and competences (needs vs challenges).

The current energy market is focused on solving the dilemma of affordability, sustainability, and security of the energy supply, especially considering the rapidly changing situation in the industry right now. The focus is constantly shifting between those three aspects, and currently the question of energy security is the most prevalent. However, the industry is searching for a way to prioritise all three by interlinking the topics. For instance, when talking about energy security, it is a good opportunity to fasten the process to a greener energy supply, solving the dilemma of sustainability and security of the energy supply with an interlinked solution.

The rapidly changing energy market requires an unprecedented need for agility from the workforce and the ability to adjust fast to what is happening on the market. As the keywords describing the future of the energy industry can be summed up as electric, integrated, and digital, the future candidates on the market should ensure that these areas are of focus on their profiles. The ideal employee in the energy workforce in the future would be an adjustment focused interdisciplinary energy scholar. Employers will increasingly value specialists with top level skills and cutting-edge knowledge to stay ahead of competition. Additionally, focus will be on effective teamwork as this is the backbone of a successful company, especially in times of uncertainty.

#### Presentation by Prof. Boštjan Blažič

**Title of the presentation:** "The future is now - the steps to shape the engineering education further"

**Prof. Boštjan Blažič**, a professor at the University of Ljubljana, Faculty of Electrical Engineering, Slovenia. In the frame of teaching, he is leading the courses in the fields of power-network elements and operation, and high-voltage engineering. His research work focuses on three main areas: operation and control of distribution networks, mathematical analysis and control algorithms of power converters, and power quality. Currently, he is involved in the set-up of a national flexibility market, where the flexibility service is provided by active distribution-network users.

**Key topics:** SMAGRINET project: its value, importance, and the future of engineering education.





#### **Discussion points:**

- The importance of the Smagrinet project. As there are changes taking place in the modern power system, such as electrification of transport and heating sectors, shift to renewable energy sources, and integration of users in power system operation and control, the industry needs an educated workforce that can assist with the transformation. Smagrinet mapped the needs of the industry and addressed them through their educational programmes.
- Changes needed in the field of education. There needs to be continuous cooperation between the providers of education and industry representatives, more cooperation between different fields (domains) within electrical engineering, and interdisciplinarity with different sciences. This enables education and industry to work in unison to create a valuable impact that benefits not only them, but also the future workforce.
- The future of engineering education. There will be a high demand for highly educated power and electrical engineering workforce in the future. However, attracting students to this discipline will be challenging as currently not enough people are enrolled in engineering related courses. Future engineering education will increasingly focus on renewables and the green transition and will place a bigger emphasis on collaboration and teamwork, not only with people from different fields within electrical engineering but also with other disciplines.

## 4.Photo coverage

Below we provide some photos that capture some important moments from the 2<sup>nd</sup> SMAGRINET Conference. As the participants joined the conference online, the EU logos referring to the number of Grant Agreement and EU funding we added to the visuals and clips used during the online broadcast (see sections 5.2 and 5.3).

### 4.1 Photos from the conference

Photo 1. The moderator and a panelist (Alex Gabriel) during the first panel discussion







Photo 2. The first panel discussion with one panelist at the venue and two panelists joining the discussion online











Photo 4. Third panel discussion with the moderator and a panelist (Hando Sutter) at the venue and four panelists joining online



Photo 5. Third panel discussion from a different perspective







Photo 6. Presentation by Prof. Boštjan Blažič

Photo 7. Catering for the conference







# 4.2 Screenshots of the conference broadcast (participants view)

Photo 8. Welcome speech by prof. Renno Veinthal



Photo 9. Participants view of the first panel discussion on the Worksup platform



Photo 10. The coordinator of the project (Karl Kull) speaking on the second panel



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 837626







Photo 11. Participants view of the third panel discussion on the Worksup platform

Photo 12. Discussion taking place during the third panel







## 5.Annex

## 5.1 List of registered participants

Name	Email	Organisation
		TEESSIDE UNIVERSITY
		VDE FNN
		USAID ESP
		LOBA
		LOBA
		TU Berlin
		LOBA
		TalTech
		Silesian University of Technology, Gliwice/Poland
		TalTech
		Université de Lorraine/GREEN
		Université de lorraine
		TU Dresden
		GREEN - Université de lorraine
		Technical University of Berlin
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		Tallinn University of Technology
		EEA
		Etudiant Université de Lorraine
		Université de Lorraine
		Technical University of Dresden
		Université de Lorraine
		Technical University of Berlin
		TUBERLIN
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		LOBA
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		UniversitA© de Lorraine
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	SNBU
	University of Porto
	UNL - FCT - Portugal
	Kaunas University of Technology
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	TU Dresden
	Silesian University of Technology
	French embassy
	French Institute of Estonia
	French Embassy in Tallinn
	Rexplorer
	University of Ljubljana, Faculty of electrical engineering
	Rexplorer
	University of Ljubljana
	student
	Student, UNIBZ
	TU Berlin Mobility Club
	Rexplorer
	RENN solutions d.o.o.
	UL, faculty of electrical engineering
	ULFE
	TALTECH
	ONG ADEI
	UL-FE
	University of Ljubljana
	University of Ljubljana
	Technical University Berlin
	Faculty of Electrical Engineering, University of Ljubljana
	TU Berlin
	Scopeinvest
	NA
	University of Ljubljana, Faculty of electrical engineering
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	TU Berlin
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Union of Electricity Industries of Estonia
Finnish Energy
Mphi-it, Franc Muška s.p.
Tallinn University of Technology
TU Berlin
Ncc
TalTech
Lithuanian Energy Institute
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Elektro Ljubljana
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Lviv State University of Life Safety
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Kaunas Technology University
Tallinn University of Technology
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Estonian Inventors Association
Enefit Connect
Tallinn University of Technology
Kaunas University of Technology
Estonian Electronics Industries Association
AS Ehitusfirma Rand ja Tuulberg
Estonian Qualifications Authority
EMJMD DENSYS
Université de Lorraine - France
Energy
Enterprise Estonia
GREEN - Université de lorraine





Student in TU Berlin
TalTech
Kauno technikos kolegija
EE
Tallinna linnameedia
UGT
WEC Estonia
TalTech
ULJUB
Kose Huvikool
Technische Universität Dresden

## 5.2 Conference banner



LIVE BROADCAST FROM TALLINN ESTONIA

17 MARCH 2022

## ENERGY GAME CHANGERS 2022

THE CURRENT ENERGY SITUATION AND THE IMPORTANCE OF AN INFORMED SOCIETY

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This project has received funding from the E
Union's Horizon 2020 research and innovation
programme under grant agreement no. 837626
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## 5.3 Conference agenda

## ENERGY GAME CHANGERS 2022

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Christoph Wulkow, Technical University Berlin         12:15 - 12:45       Break         12:45 - 19:15       Situation in the energy market and skills of the future         Panel discussion with:       Jaak Aaviksoo, Former Estonian Minister of Defence and Minister of Education and Research & Former rector of the University of Tartu and TaTech Kristian Ruby, Secretary General et Eurelectric Maiju Korhonen, Senior Adviser, Finnish Energy Erik Tamsalu, CED and Founder, of Fusebox         14:15 - 14:35       The future is now - the steps to shape the engineering education further Presentation by Prof. Dr. Boštjan Blažič, University of Ljubljana         14:35 - 14:45       Closing remarks         by Karl Kull, Tallinn University of Technology	Christoph Wulkow, Technical University Berlin12:15 - 12:45112:45 - 12:45112:45 - 14:15113:10 Constraints114:10 Constraints1 <td< td=""><td></td><td></td><td>Klemen Knez, University of Ljubljana</td></td<>			Klemen Knez, University of Ljubljana
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