

Euro – CASE Annual Conference 2020

ONLINE 

“DEALING WITH CHALLENGES OF THE
EUROPEAN ENERGY **TRANSITION**”

ZAGREB | 20 November, 2020



Organisers

Euro-CASE - The European Council of Academies of Applied Sciences, Technologies and Engineering

HATZ - Croatian Academy of Engineering, Zagreb, Croatia

Programme and Organising Committee

V. Andročec, President of the Croatian Academy of Engineering

N. Čavlina, Programme Committee Chair

N. Duić, Secretary of the Department of Power Systems, Croatian Academy of Engineering

S. Krajcar, Board member of the Croatian Academy of Engineering

V. Mrša, Secretary general of the Croatian Academy of Engineering

Z. Terze, Vice President of the Croatian Academy of Engineering

Website

euro-case2020.com

Registration

E: euro-case2020@ati.hr

Technical organiser

A.T.I. d.o.o., travel agency

Zadarska 15

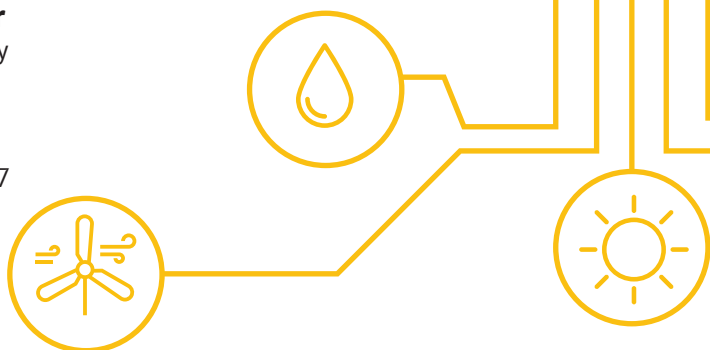
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Dear colleagues,

We are honoured to invite you to the Euro-CASE 2020 Annual Conference on 20 November 2020. Due to the COVID-19 pandemic, the Conference will be online.

Euro-CASE's mission is to pursue, encourage, and maintain excellence in engineering, applied sciences, and technology, and promote their science, art, and practice to benefit the citizens of Europe. The Croatian Academy of Engineering (HATZ), as a member of the Euro-CASE, organizes the Conference entitled "Dealing with Challenges of the European Energy Transition."

Sustainable generation and use of energy are one of the most significant challenges of the 21st century. Providing secure supply of clean, competitive, and affordable energy for all raises complex technical, economic, social, and political issues that must be addressed to ensure sustainable growth and development. Euro-CASE Annual Conference 2020 will address the above energy transition-related issue and challenges.

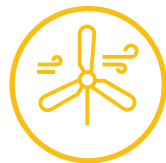
We are attaching the program of the Euro-CASE 2020 Conference. The lectures were shortened and adjusted to the online requirements. In the first session entitled "Energy Policies - Challenges and Opportunities for Transformation", four invited speakers will give lectures lasting 15 minutes each. In the second session entitled "Implementation, Economic Impact, and Challenges." Four invited speakers will give a presentation of 5-7 minutes each. The Conference will conclude with questions and answers for both sessions.

Information for registration and organization of the Conference can be found on the Conference's website, <https://www.euro-case2020.com/>.

We look forward to your active online participation, which will undoubtedly contribute to the Conference's success.

Professor Nikola Čavlina, Ph.D.
Programme Committee Chairman

Professor Vladimir Andročec, Ph.D.
President of the Croatian Academy of Engineering



PROGRAMME

Friday 20 November 2020

8:45 - 9:00

Connection check

9:00 - 9:10

Housekeeping

9:10 - 9:30

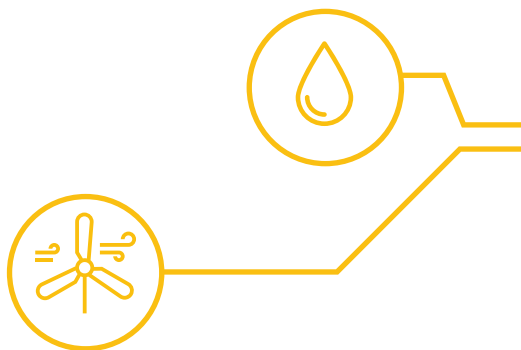
Welcome address

N. Čavlina (HATZ)

V. Andročec (HATZ)

T. Teeri (Euro-CASE)

R. Fuchs (Minister of Science and Education of the Republic of Croatia)



9:30 - 10:30

Session 1 : Energies Policies - Challenges and Opportunity for Transformation

Chair S. Krajcar (HATZ)

The Euro-CASE Energy Platform

E. Álvarez Pelegry, Y. Caristan (Euro-CASE)

Realising the Green Deal: EU actions and priorities

V. Berrutto (DG Energy, European Commission)

Energy Strategy of the Republic of Croatia

T. Čorić (Minister of Economy and Sustainable Development)

Options for Future Mobility Systems

M. Fichtner (Helmholtz-Institute Ulm for Electrochemical Energy Storage)

PROGRAMME

Friday 20 November 2020

10:30 - 11:20 Session 2: Implementation, Economic Impact and Challenges

Chair S. Krajcar (HATZ)

Energy Efficiency, Key Dimension of the Energy Union: Implementation Perspective

Ž. Tomšić (University of Zagreb)

IAS view of Slovenian energy transition

Z. Marinšek (IAS)

The Role of SME in Energy Transition

A. Čurković (Encro energy)

Energy Transition: Impact on Economy

T. Radoš (Croatian Chamber of Economy)

Challenges the Power Utility is Facing

M. Ćosić (Croatian utility HEP)

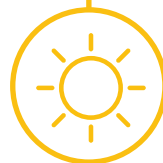
11:20 - 11:50 Q&A for both sessions

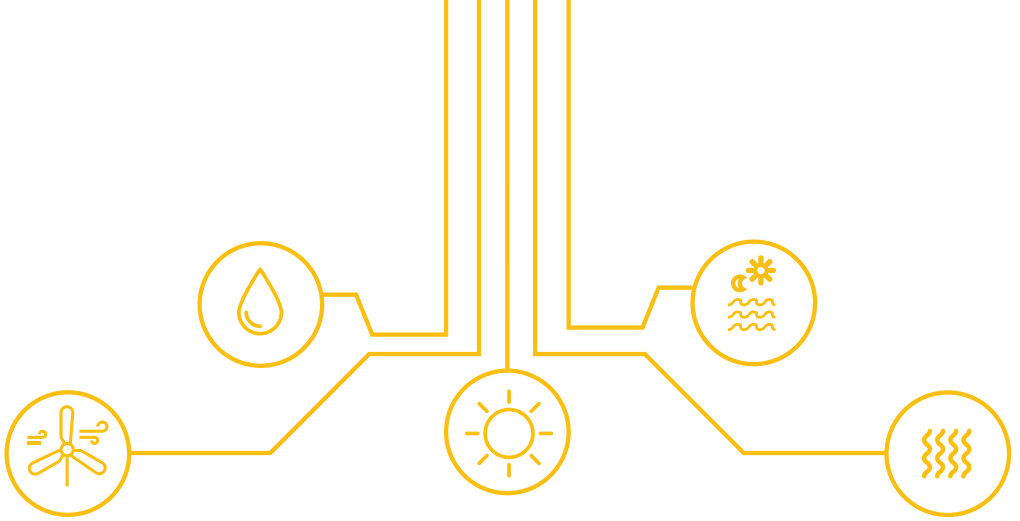
Moderator N. Duić (HATZ)

11:50 - 12:00 Closing remarks

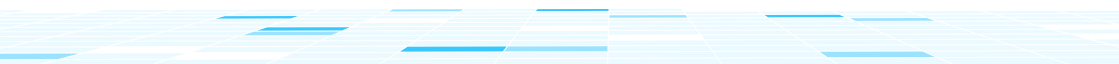
V. Andročec (HATZ)

Y. Caristan (Euro-CASE)



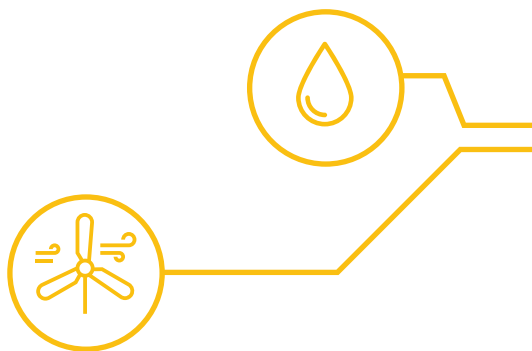


ABSTRACTS



The Euro-CASE Energy Platform

Eloy Alvarez Pelegry



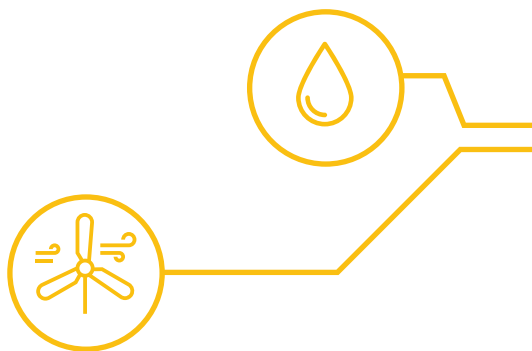
Secretary General at the Royal Academy of Engineering of Spain, and member of the Euro-CASE energy platform. PhD in Mining from the Higher Technical School for Mining of Madrid (ETSIMM). Also holds a bachelor's Degree in Economics from the Complutense University (UCM), and a Diploma in Business Studies from the London School of Economics. His career has been devoted to the field of energy. He has a long executive career at Union Fenosa Group where he has been deputy general director for Environment, R&D and secretary general at UFGas. He worked also for Electra de Viesgo and Enagas. He has had a parallel career in the academic field, as Director of the Energy Chair at Deusto University, and Associate Professor at the ETSIMM, and the UCM. He is author and co-author of various books, and numerous papers on energy issues.

ABSTRACT

In early 2019 the Euro-CASE Energy Platform issued a report on "Energy transitions in Europe". The report examines the targets and the instruments for the objectives of reduction of 40% of CO₂ emissions by 2030, the energy production and energy consumption. There is a wide range of situations, as exemplified by seven countries, members of Euro-CASE. Goals are common but the paths are different. In parallel, Euro-CASE issued a concept paper emphasizing the need for a systemic and holistic approach to energy in Europe, including social aspects. It served as a basis to launch a Working Group in March 2020, through the European Scientific Advice Mechanism/ SAPEA.

The Euro-CASE Energy Platform

Yves Caristan



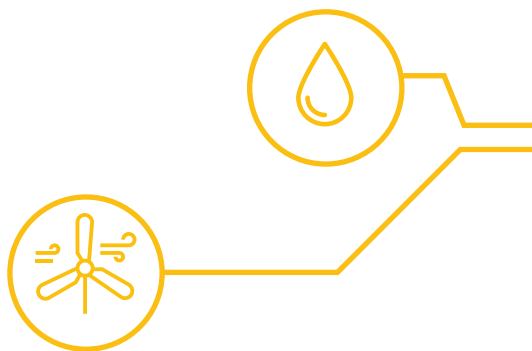
Yves Caristan graduated from the French Ecole Normale Supérieure of Paris, PhD in Geophysics from the MIT, and a French PhD in physics from the University of Grenoble. In 1981 he joined the French Atomic Energy Commission. In 1996 he became Head of the Department of Monitoring of the Environment. From 1999 to 2004, he was Director General of the French Geological Survey. In 2005, he was appointed as Director of the Physical Sciences Division at CEA, and Director of the Saclay Research Center. Since 2013 he is a Fellow of the National Academy of Technology of France and Secretary General of Euro-CASE.

ABSTRACT

In early 2019 the Euro-CASE Energy Platform issued a report on “Energy transitions in Europe”. The report examines the targets and the instruments for the objectives of reduction of 40% of CO₂ emissions by 2030, the energy production and energy consumption. There is a wide range of situations, as exemplified by seven countries, members of Euro-CASE. Goals are common but the paths are different. In parallel, Euro-CASE issued a concept paper emphasizing the need for a systemic and holistic approach to energy in Europe, including social aspects. It served as a basis to launch a Working Group in March 2020, through the European Scientific Advice Mechanism/ SAPEA.

Realising the Green Deal: EU actions and priorities

Vincent Berrutto



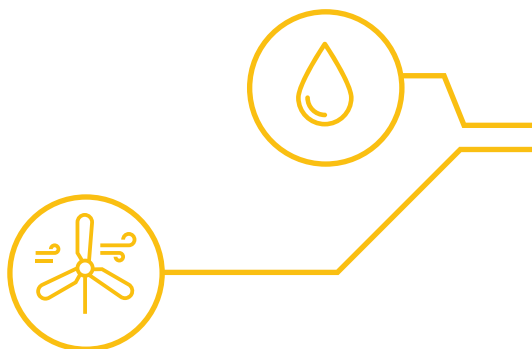
Vincent Berrutto is the Head of Unit “Innovation, Clean Technologies, and Competitiveness” at the European Commission Directorate General for Energy (DG ENERGY). His Unit aims to foster research, innovation and competitiveness in clean energy technologies, with the long term goal to decarbonise Europe by 2050. Prior to this, Vincent Berrutto was heading the Unit in charge of energy efficiency at the Executive Agency for Small and Medium-size Enterprises (EASME). Beforehand, he also dealt with sustainable energy issues in other services of the European Commission, as well as in the French government. He holds a PhD in science and more than 25 years of professional experience.

ABSTRACT

The European Green Deal is the growth strategy to address climate and environmental challenges. At the heart of it is the mission to become the first climate-neutral continent by 2050. To this end, the European Commission has proposed a comprehensive package to become more energy efficient, increase the share of renewable energies, promote energy system integration, and foster research and innovation. This package includes changes in the legislative framework, as well as several enabling measures, notably a 2021-2027 Multiannual Financial Framework and the recovery instrument NextGenerationEU that provide an unprecedented opportunity to support the energy transition. A key success factor in this endeavour will be the mobilisation of all market actors.

Energy Strategy of the Republic of Croatia

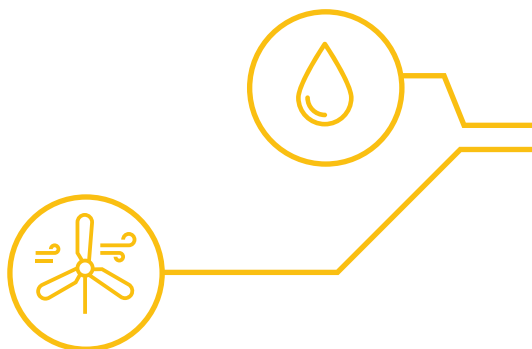
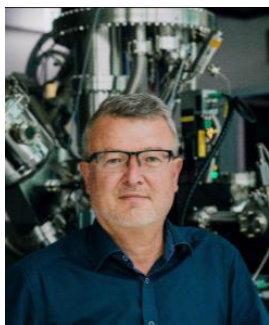
Tomislav Ćorić



Professor Tomislav Ćorić Ph.D. starts in 2003 as an assistant at the Department of Finance, Faculty of Economics and Business of the University of Zagreb. In 2011 as a senior assistant and in 2013 as an Assistant Professor at the same Department. From 2016 until today, he has been Minister of Labor and Pension System, Minister of Energy and Environmental Protection, and is now Minister of Economy and Sustainable Development.

Options for Future Mobility Systems

Maximilian Fichtner



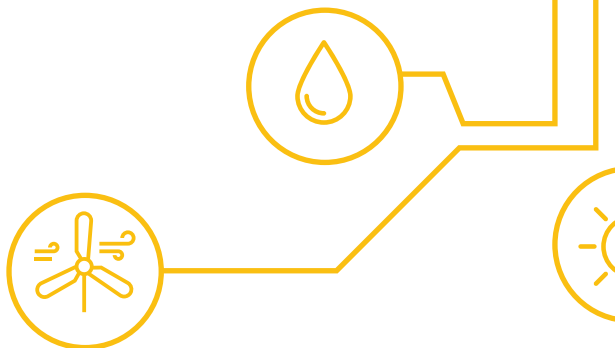
Prof. Dr. Maximilian Fichtner is director at the Helmholtz-Institute Ulm (HIU) for Electrochemical Energy Storage, professor for Solid State Chemistry at the Ulm University and head of the department "Energy Materials" at the Institute of Nanotechnology, Karlsruhe Institute of Technology. He is a scientific director of CELEST (Center for Electrochemical Energy Storage Ulm-Karlsruhe) and spokesperson of the German Excellence Cluster on battery research, entitled "Energy Storage Beyond Lithium (POLiS)", with about 100 new employees. He is also a member of the core team of an upcoming European Large Scale Research Initiative (formerly known as "Flagship"), named "BATTERY2030+". His current research interest is on resource- and sustainability issues, novel principles for energy storage and the synthesis and investigation of related storage materials. He is author and co-author of more than 350 research-, conference papers and book chapters, 20 patent applications and editor of a book on magnesium batteries.

ABSTRACT

While the discussion about climate change and CO₂ content in the atmosphere is governing international policies, an even stronger factor is already looming at the horizon: the depletion of fossil resources and its consequences. In the light of the actual numbers alternative options such as electromobility based on battery or hydrogen as storage media will be highlighted. The actual developments, challenges, and opportunities will be discussed of these options and a guideline will be given on how to deal with resources available in the future.

Energy Efficiency, Key Dimension of the Energy Union: Implementation Perspective

Željko Tomšić



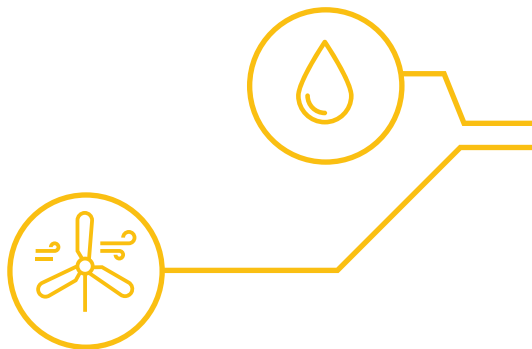
Željko Tomšić is working as full professor at University of Zagreb Faculty of Electrical Engineering and Computing at the Department of Energy and Power Systems. From 2004- 2008 he was Assistant Minister for energy and mining in the Croatian Ministry of Economy, Labour and Entrepreneurship. From 2008-2009 he was a board member at Croatian power Utility-HEP d.d. Scientific research in: energy policy and energy strategies, ecology and energy, modelling and analysis of energy and emissions markets, energy management. He is a co-author of two university books and has published more than 100 papers in journals and conference proceedings. He is also co-author of more than 50 scientific and expert studies. Full Member of Croatian Academia of Technical Sciences; and HAZU Scientific Council for Oil and Gas Economy and Energy.

ABSTRACT

Back in 2008 the EU has adopted an energy policy known as “20:20:20 by 2020” and later declared EU energy policy credo ‘Energy efficiency first’! The lessons learned are even more important in the context of new target for improving energy efficiency by 32.5% by 2030, and even more in the context of EU proclaimed goal of becoming carbon neutral by 2050 for fighting the climate change where energy efficiency again plays a pivotal role. In order to implement these policies and to achieve the given targets, the 2020 -2030 must be the decade of action. If we continue with business as usual the targets will not be achieved! What are our options? At this point of time we still have more questions than answers, but we have to start this journey boldly and with energy efficiency first. Energy efficiency in Europe: A fuel still waiting to take off!

IAS view of Slovenian energy transition

Zoran Marinšek



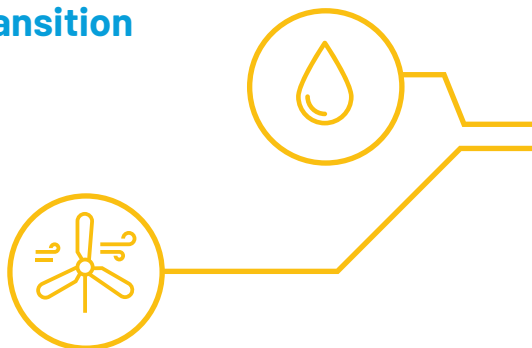
Zoran Marinšek has graduated and holds Ph.D, from University of Ljubljana. He is co-founder of INEA d.o.o., first spin-off of Institute Jožef Stefan, and its first CEO. He is co-author of a number (10) innovations, technical improvements in the field of process control technology, recognized by several awards (4), including as co-author of Best poster-paper award at a World Smart Grids Forum 2013 for significant contribution to Smart Grids. His present focus has been management and trading of energy flexibilities of prosumers in Smart Grids. He participated in number of FP and H2020 R&D projects. Zoran is a fellow of Slovenian Academy of Engineering, in 2014/15 its Vice President, presently the President of its Energy Platform and since 2018 a member of the Steering committee of Euro-CASE energy platform.

ABSTRACT

A snapshot of the current status of energy transition in Slovenia is given and lack of convergence is pointed out due to delays systemic measures and instruments, representing obstacles and barriers to the success of energy transition. IAS's view on the Slovenian energy transition until 2030 and 2050 is outlined. IAS views the development of the energy system as a constitutive part of comprehensive socio-economical development policy. To pursue its strategic objectives within the time horizon of energy transition, two level planning and evaluation is proposed, on the first level consisting of criteria space defined by eight criteria and on the second – nested level, of three aspects of energy planning - sources, conversion and usage - and their specific objectives. Some highlight views and suggestions on objectives are listed.

The Role of SME in Energy Transition

Ante Ćurković



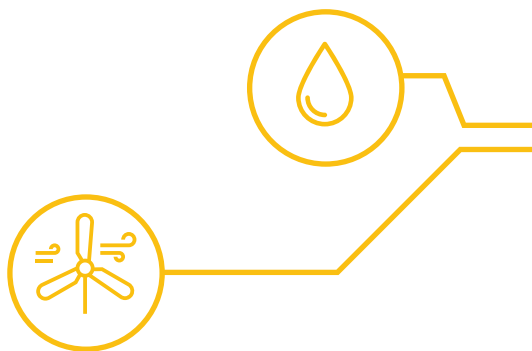
Ante Ćurković, Ph.D., completed his graduate studies at the Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, where he also received his Ph.D. He worked for Končar in the sector to produce and develop electric generators and then became the director of the Končar - small household appliances factory. In 1991 he was started working in the Ministry of Industry of the Republic of Croatia as an advisor to the Minister. After two years, he transferred to HEP to the positioning member of the Management Board. In 2010 he started working in the private company Porzana. It deals with developing and implementing projects to use renewable energy sources, project financing models, investment planning, and business development planning. He is an honorary lecturer in the energy transition at the Faculty of Mechanical Engineering and Naval Architecture.

ABSTRACT

Small and medium size enterprises (SME) represent 99% of all businesses in the EU. European energy sector was for decades dominated by vertically integrated, usually publicly owned giants. Market liberalization, new regulation and transition to renewable/sustainable energy provided new opportunities for SMEs. With their simple/fast decision-making, SMEs were ideally positioned for rapid technology advancement and ever changing regulatory and market environment of the energy transition, which allowed SMEs to progress faster than the incumbents. ENCROs -Croatian SME track record (140 MW wind realized, 500 MW new wind and 500 MW solar in development) shows how SMEs can be an important factor in energy transition in the market that was up until recently closed to all participants apart from the public utility.

Energy Transition: Impact on Economy

Tomislav Radoš



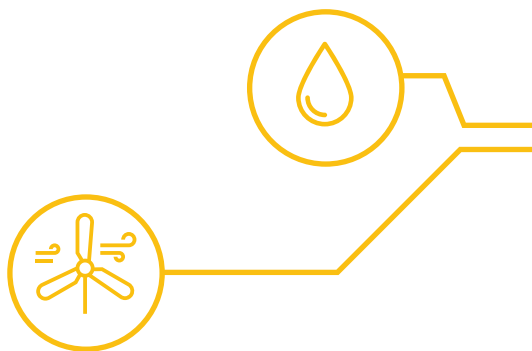
Tomislav Radoš earned his PhD title from the Faculty of Economics in Zagreb in 2009. After years in private sector, he founded his company Strategic Plan Ltd. in 2008, operating in the field of renewable energy project development. Having completed IMD Business School educational program in digital business transformation leadership, he was the lead author and a workgroup coordinator for creating the Industrial Strategy of the Republic of Croatia 2014- 2020. In 2014, he was the Assistant to the Minister of Economy responsible for industry, investments and EU programs and projects. Since 2015, he has been the Vice President of the Croatian Chamber of Economy, responsible for industry, energy and environmental protection, EU projects implementation and digital transformation of the Chamber.

ABSTRACT

Fossil fuels-based economic growth is coming to an end. New models of economic growth and development based on renewable energy and models with the electricity as the dominant form in final energy consumption are being sought. The transition of the energy sector largely relates to increasing energy efficiency with the biggest challenge in energy renovation of buildings, which is also an opportunity for stronger engagement of the construction sector and development of innovative products and services. Another important component of the transition of the energy sector is renewable energy, whose full potential can be expected at the national level with the new market-oriented policies. The consequence is a new model of the energy market, new roles for energy consumers, growing importance of a distributed energy production, which all will have a significant impact on the economy.

Challenges the Power Utility is Facing

Marko Ćosić



Born in 1981. Graduated from the Faculty of Economics in Zagreb in the field of macroeconomics in 2004. Completed the post-graduate study in Corporate Finance in 2008 acquiring the master's degree in economics as well as a specialist study in economic diplomacy in 2005 at the Diplomatic Academy of the Ministry of Foreign and European Affairs and the Harvard Business School Executive Education programme in 2012. In 2018 completed the Global Executive MBA programme at INSEAD Business School, Paris, Singapore. From 2005 until 2007 adviser in the Investment and Export Promotion Agency of the Croatian Government, and a project partner at the Faculty of Electrical Engineering and Computing, Zagreb during 2007. From 2008 to 2012 executive director of Korlea Invest Holding daughter company in Croatia, and from 2010 until 2012 director for SE Europe in charge of development, energy trade, cross-commodity trading and investments in production capacities. From 2012 to 2017 general manager of Proenergy Group in charge of business operations in Croatia, Slovenia, Bosnia and Herzegovina, Serbia and Macedonia. A guest lecturer at the Faculty of Economics in Zagreb in the Electricity Market and Energy Economics programmes where he also started his PhD study in 2012. His papers were published in international power magazines. Additionally educated at British educational institutions in the field of gas.

ABSTRACT

The presentation gives overview of main challenges today's power utilities deal with, It consists of three sections: (i) Global challenges; (ii) Local challenges; and (iii) Financial market expectations. The first part of presentation "Global challenges"

discusses the digital transformation as global challenge number one. Power Plant 4.0. is a term used to describe future expected power utility facilities as a response to ongoing growing technology requirements. Answer to demand for improvement of unit efficiency and at the same time increased optimization resilience could be in machine learning and artificial intelligence as a response to optimized decision making and increased flexibility. One of the main goals for not only the future, but even for today's engineers is to learn how and then transform recent advances in analytics into actionable insights that would build fact based and data driven culture. All the benefits of digital transformation, need to be supported by applicable cyber security in order to implement a tech-enabled ecosystem. The global target of CO2 emissions reduction puts pressure on the green value chain and sustainable system of pre and post operational logistics. One of the remedies for having a resilient electric system could be set through "client-centric" solutions based on service models and evolution of smart cities. The second part of presentation "Local Challenges" summarizes key challenges in the Croatian electricity market. Climate change goals are part of the global green energy story "The Green Deal". The main pillars of green strategy are change of generation capacities structure having more installed capacities in renewable energy sources, decrease of CO2 footprint and improved energy efficiency. The goals aim for 36.4% of the renewable energy share, cut of CO2 greenhouse gas emissions by 40% from 1990 levels, and improvement of energy efficiency at least by 32.5%. The challenges of integration of renewable energy sources into the system are present in Croatia as well as in the rest of Europe. Also, technological challenges in transportation are expected to be more visible in the upcoming years with increased number of electric vehicles. Third part of the presentation discusses key financial market considerations: assessment of climate risk as part of risk policies, demand for so called ESG products from investors' side and overall growing importance of ESG domains through capital markets. Number of ESG and overall green products are increasing due to increased interest from financial markets accelerated by COVID situation during 2020 when the number of "sustainable" products realized at the capital markets. Sustainable economy could be new imperative.

SPONSORS



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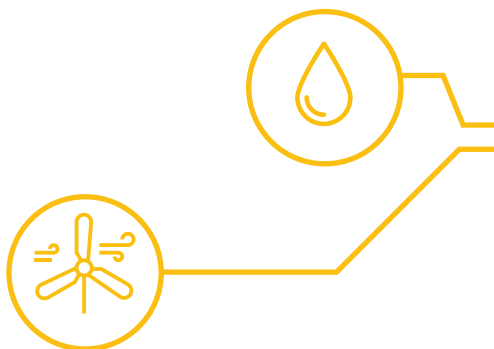
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