



CROATIAN
GAS
CENTRE Ltd.



CROATIAN
GAS
ASSOCIATION

MEMBER OF



39TH INTERNATIONAL SCIENTIFIC & EXPERT
MEETING OF GAS PROFESSIONALS
OPATIJA, CROATIA, 8 - 10 MAY 2024



DETAILED PROGRAMME

**TUESDAY,
MAY 7TH**

14:00 - 20:00 h Arranging of exhibition area
17:00 - 21:00 h Registration of participants

**WEDNESDAY,
MAY 8TH**

7:00 Registration of participants

8:30 **PRESS CONFERENCE**, (room Camelia 1) Coordinator:
Assoc. Prof. Dalibor Pudić, PhD., President of Croatian Gas
Association, Zagreb, Croatia, (C), (20 min)

9:00 **Opening ceremony**

host: Assoc. Prof. Dalibor Pudić, PhD.,
President of Croatian Gas Association

Welcome address / Welcome host speech on the
proposed topics / Short presentations of renowned gas
experts from ministries, agencies and companies

1

INTRODUCTORY LECTURES AND PANEL DISCUSSION: DEVELOPMENTS IN THE NATURAL GAS MARKET AND FUTURE EXPECTATIONS ON THE PATH TO A RELIABLE AND LOW-CARBON ENERGY SYSTEM

Moderator: Marko Biočina, NOVA TV, Zagreb, Croatia

9:45 **Geopolitical changes: How LNG and Smart Investments
are Powering Croatia's Energy Future** - Antonija
Glavaš, Prvo plinarsko društvo Ltd., Vukovar, Croatia, (C),
(15 min)

10:00 **Movements in the Natural Gas Market and Future
Expectations on the Way to a Reliable, Low-Carbon
Energy System**, Marin Zovko, INA-Industrija nafte d.d.,
Zagreb, Croatia, (15 min)

10:15 **PANEL DISCUSSION: SESSION 1**, Marko Biočina, NOVA
TV, Zagreb, Croatia, Panelists: Boris Miljavac, Siemens

energy Ltd., Zagreb, Croatia, (C), Antonija Glavaš, Prvo
plinarsko društvo Ltd., Vukovar, Croatia, (C), Hrvoje
Šimović, INA-Industrija nafte d.d., Zagreb, Croatia, (C),
Assoc. Prof. Darko Pavlović, PhD, Plinacro Ltd., Zagreb,
Croatia, (C), Ivan Fugaš, LNG Hrvatska Ltd., Zagreb,
Croatia, (C), Petar Sprčić, HEP d.d., Zagreb, Croatia, (C),
(45 min)

11:00 **WELCOME COCKTAIL**: sponsor: **SIEMENS ENERGY Ltd.**,
Zagreb, Croatia, (30min)

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INTRODUCTORY PRESENTATIONS AND PANEL DISCUSSION: NEW GAS EXPLORATION AND PRODUCTION AND INFRASTRUCTURE DEVELOPMENT PROJECTS FOR ENSURING SECURITY AND SUSTAINABILITY

Moderator: Assoc. Prof. Darko Pavlović, PhD, Plinacro
Ltd., Zagreb, Croatia

11:30 **Veliki Rastovac Gas Discovery: Potential of New Gas
Region Onshore Croatia**, Tomislav Baketarić, Goran Jović,
Josip Bubnić, INA-Industrija nafte d.d., Zagreb, Croatia,
(C), (12 min)

11:42 **Natural Gas Production at the "Grubišno Polje"
Exploitation Field and Lead-Up Steps for the Field
Development into the Underground Gas Storage**, Laslo
Farkaš Višontai, Bruno Ernečić, Zagreb, Croatia, (C),
(12 min)

11:54 **Synergy of the Regulation of the Gas Transport System
and the Electric Power System on the Example of
Block C in the Sisak TE-TO Facility**, Marin Dumančić,
Nenad Švarc, MSc, Marko Špoljarić, Vjekoslav Berečić,
Matija Skelo, HEP Proizvodnja d.o.o., Zagreb, Croatia, (C),
(12 min)



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12:06 **ROUND TABLE: Certalink – Clean Energy Certification Manager**, Marko Babić, Siemens Energy Ltd., Zagreb, Croatia, (C), (8 min)

12:18 **PANEL DISCUSSION: SESSION 2**, Moderator: Assoc. Prof. Darko Pavlović, Plinacro Ltd., Zagreb, Croatia, Panelists: Josip Bubnić, INA-Industrija nafte d.d, Zagreb, Croatia, (C), Laslo Farkaš Višontai, Podzemno skladište plina Ltd., Zagreb, Croatia, (C), Marin Dumančić, HEP Proizvodnja Ltd., Zagreb, Croatia, (C), Marko Babić, Siemens Energy Ltd., Zagreb, Croatia, (C), (30 min)

12:48 **OPENING OF THE POSTER SESSION** (exhibition area), Coordinator: Zoran Dojčinović - Croatian Gas Association, Zagreb, Croatia, (duration of the session 60 min)

- **Fifty Years Discovery of the Molve Field - The Most Significant Energy Potential of the Republic of Croatia**, Ines Hemetek-Potroško, PhD, Lidija Jaković, Vladimir Tišljar, Mladen Ferenčić, Zagreb, Croatia, (C)
- **Leading the Energy Transition: How Hydrogen Contribute to Energy System**, Dr Nadia Haddoum née Kherfella, Sonatrach, Algiers, Algéria, (E)
- **Monitoring and Control of Aging of Anticor Liners in HDPE Reinforced With Aramid Fibers, Used in Relining Applications of Natural Gas SeaLines Installed in Environments Subject to Inspections of the Directive 2012/18/EU**, D. Di Fonzo, MSc, G. Vaccaro, MSc, Inail - Uot di Palermo, Palermo, Italy, G. Augugliaro, C. Mennuti, Inail – Dit Rome, Rome, Italy, (E)

- **Quality Control of Welding Process on "End cross L" part of the Intermodal Sgmmnss 40' Wagon Used for Gas Tank Transport**, Arijan Herceg, Đuro Đaković Specijalna vozila, Slavonski Brod, Croatia, Prof. Leon Maglić, PhD, University of Slavonski Brod, Mechanical Engineering Faculty, Slavonski Brod, Croatia, (E)
- **Use of Saturated Steam in the Pre-Drying Process of Steel Gas Cylinders in Order to Prevent Internal Corrosion and to Achieve Significant Energy Savings in Terms of Emission of CO₂ Equivalent**, Giovanni Vaccaro, MSc, INAIL Uot di Palermo, Palermo, Italy, Elisa Maini Pichini, INAIL Rome, Rome, Italy, D. Di Fonzo, MSc, INAIL UOT di Palermo, Palermo, Italy, (E)

13:48 **LUNCH BREAK** (until 16:30 o'clock)

3 CRUCIAL ROLE OF GAS IN THE ENERGY TRANSITION: RENEWABLE GASES AND LOW-CARBON GASES AS KEY COMPLEMENTS TO RENEWABLES

16:30 Moderator: Marko Blažević, HEP-Trgovina Ltd., Zagreb, Croatia

16:30 **CO₂ Recompression at Process Plant Etan**, Danijel Štavalj, Hrvoje Bator, Edo Perišić, Nikola Cota, INA-Industrija nafte d.d., Zagreb, Croatia, (C), (12 min)

16:42 **Biomethane: European Guidelines and National Potentials for the Production and Transport**, Marijan Svjetličić, Branka Belamarić, Plinacro Ltd., Zagreb, Croatia, (C), (12 min)



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16:54 **Microgrids Enabling Renewable Growth**, Klaus Payrhuber, PhD, Teki Suajibi, Robert Autengruber, INNIO Jenbacher GmbH & Co OG, Jenbach, Austria, (E), (12 min)

17:06 **ROUND TABLE: Alternative Fuels for Safe Energy Supply of Medium - or Large-Sized Boilers**, Igor Baltić, Weishaupt-Zagreb Ltd., Zagreb, Croatia, (C), (12 min)

17:18 **ROUND TABLE: Gas Pipeline Evacuation by Mobile Recompression Unit**, Hrvoje Rukavina, Macel plin Ltd., Zagreb, Croatia, (C), (12 min)

17:30 **DISCUSSION: SESSION 3**, (10 min)

4 **DECARBONISING THE GAS VALUE CHAIN: REDUCTION OF METHANE EMISSIONS AND THE APPLICATION OF CCUS IN THE GAS INDUSTRY**

Moderator: Prof. Daria Karasalihović Sedlar, PhD, University of Zagreb, Faculty of Mining, Geology, and Petroleum Engineering, Zagreb, Croatia

17:40 **The Role of CCUS in Achieving Net Zero**, Lidija Božić, Croatian Hydrocarbon Agency, Zagreb, Croatia, (C), (12 min)

17:52 **Full Decarbonization of the Gas Sector of the Republic of Croatia – Opportunities and Challenges in Achieving Climate-Neutral Energy Systems**, Assoc. Prof. Luka Perković, PhD, Amalia Lekić Brettschneider, University of Zagreb, Faculty of Mining, Geology, and Petroleum Engineering, Zagreb, Croatia, (C), (12 min)

18:04 **Reduction Methane Emissions on the Gas Transmission System of the Republic of Croatia**, Luka Dermišek, Mihael Slunjski, Plinacro Ltd., Zagreb, Croatia, (C), (12 min)

18:16 **ROUND TABLE: A Smart Solution for Reducing Fugitive Emissions and Flow Meter Compliance in Gas Networks**, Leonardo Mazzoli, Automa S.r.l., Ancona, Italy, (E), (12 min)

18:28 **Thermodynamic Parameterization of Carbon Dioxide in the Process of Permanent Storage of CO₂**, Amalia Lekić Brettschneider, University of Zagreb, Faculty of Mining, Geology, and Petroleum Engineering, Zagreb, Croatia, (E), (12 min)

18:40 **DISCUSSION: SESSION 4**, (10 min)

20:30 **NETWORKING COCKTAIL PARTY**, for all participants, terrace of the Grand Hotel Adriatic's outdoor pool - Sponsor: **Croatian Gas Center Ltd.**, Zagreb Croatia, (until 22,30 o'clock)

THURSDAY
MAY 9TH

5 **CURRENT STATUS AND PERSPECTIVES FOR LNG DEVELOPMENT AND EXPANDING LNG USE IN EUROPE**

Moderator: Tin Ljubetić, LNG Croatia LLC, Zagreb, Croatia

9:30 **Model of Joint Use of the Terminal for Liquefied Natural Gas on the Island of Krk**, Mihovil Galić, LNG Croatia LLC, Zagreb, Croatia, (C), (12 min)

9:42 **Maritime Part of the LNG Terminal Business**, Andreja Ana Lopac, Ivo Kapučija, Dejan Maroh, LNG Croatia LLC, Zagreb, Croatia, (C), (12 min)

9:54 **ROUND TABLE: Cryogenic Technology as the Pathway to Energy Independence and Security Through Small-Scale LNG and the Gateway to a Hydrogen Economy**,

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Julie Cejkova, Chart Industries, Decin, Czech Republic, (E), (12 min)

10:06 **DISCUSSION: SESSION 5**, (10 min)

10:16 COFFEE & NETWORKING BREAK (30 min)

6 DIGITAL TRANSFORMATION OF THE GAS AND ENERGY INDUSTRY IN THE ERA OF DECARBONIZATION

Moderator: Berislav Pavlović, PhD, Zagreb Gasworks, Zagreb, Croatia

10:46 **Cyber Security Development of IT and OT Infrastructure**, Marko Grbić, Ema Rizoniko, LNG Croatia LLC., Zagreb, Croatia, (C), (12 min)

10:58 **The Application of the Artificial Intelligence Regulation to the Energy Sector**, Assoc. Prof. Mihael Mišo Mudrić, PhD, University of Zagreb, Faculty of law, Zagreb, Croatia, (C), (12 min)

11:10 **ROUND TABLE: Revolutionising Asset Management in the Oil & Gas Industry: Predictive Analytics, Maintenance Strategies, and Digitalization**, Luka Klancir, Feromihin Ltd., Novoselec, Croatia, (C), (12 min)

11:22 **ROUND TABLE: Managing Gas Infrastructure: New Perspectives Through Digital Transformation**, Ivan Juras, GDi Ltd., Zagreb, Croatia, (C), (12 min)

11:34 **DISCUSSION: SESSION 6**, (10 min)

11:44 **LUNCH BREAK** (until 16:30 o'clock)

7 IMPROVEMENTS IN THE GAS TRANSPORT, DISTRIBUTION AND STORAGE SYSTEMS FOR INCREASED SAFETY, EFFICIENCY AND SUSTAINABILITY

Moderator: Dean Gnjidić, E.ON Hrvatska Ltd., Zagreb Croatia

16:30 **Plinacro Cathodic Protection and Pipeline Protection Against Electromagnetic Influences of EE Plants**, Marko Zrno, Končar Engineering Ltd., Zagreb, Croatia, Krešimir Gomboc, David Roketinec, Plinacro Ltd., Zagreb, Croatia, (C), (12 min)

16:42 **Report on Gas Flow Comparison Measurements in Range from 0.04 m³/h up to 10 m³/h**, Berislav Pavlović, PhD, Fikret Nasić, Zagreb Gasworks, Zagreb, Croatia, Prof. Hrvoje Kozmar, PhD, University of Zagreb, Faculty of mechanical engineering and Naval Architecture, Zagreb, Croatia, (C), (12 min)

16:54 **Revitalization of Communication Equipment of the System for Remote Consumption Meter Reading in Plinacro Company**, Ivan Krapić, Končar Inženjering Ltd., Zagreb, Croatia, Marin Sabolek, MSc, Danijel Ciglar, Krešimir Gomboc, Plinacro Ltd., Zagreb, Croatia, (C), (12 min)

17:06 **ROUND TABLE: Methane Emission Reduction During Functional Inspection of Gas Pressure Regulating Stations**, Jan Sietsma, Macel plin Ltd., Novoselec, Croatia, (E), (12 min)

17:18 **SCADA System Development and Usage in Croatian Transmission System Operation**, Matej Nikola Raič, Marko Zrno, Končar Engineering Ltd., Zagreb, Croatia, Josip Jovanovac, Plinacro Ltd., Zagreb, Croatia, (C), (12 min)



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17:30 **Analysis and Evaluation of Dynamic Stray Current Interference on Gas Pipeline Near Two Metro Rails**, Jinhua Li, Chaokui Qin, Zhiguang Chen, Jianguo Feng, Yitong Xie, Ruihan Liu, School of Mechanical Engineering, Tongji University, Changhai, China, Chending Wen, Foshan Natural Gas High-Pressure Pipe Network Co. Foshan City, Guangdong, China, Yujie Ou, Foan Technology Co. Foshan City, Guangdong Province, China, (E), (12 min)

17:42 **PANEL DISCUSSION: SESSION 7**, Moderator: Assoc. Prof. Dalibor Pudić, PhD., Croatian Gas Association, Panelists: Goran Babić, Croatian Energy Regulatory Agency, Zagreb, Croatia, (C), Dean Gnjidić, E.ON Hrvatska Ltd., Zagreb Croatia, (C), Nenad Hranilović, Međimurje-Plin Ltd., Čakovec, Croatia, (C), Srećko Ezgeta, Gradska Plinara Bjelovar Ltd, Bjelovar, Croatia, (C), (30 min)

8 **DEVELOPING THE HYDROGEN ECONOMY: CHALLENGES AND ACTIONS NEEDED TO SCALE HYDROGEN**

Moderator: Bruno Lacković, Zagreb Gasworks Ltd., Zagreb, Croatia

18:12 **ROUND TABLE: Gas Turbines Fired by Hydrogen / System for Hydrogen Mixing and Injection Unit**, Danijel Bukša, Siemens Energy Ltd., Zagreb, Croatia, (E), (12min)

18:24 **White Hydrogen Coalition Platform and Production of Green Hydrogen Ogulin Project**, Robert Serec, White hydrogen Ltd., Ljubljana, Slovenia, (E), (12 min)

18:36 **Hybrid Renewable Energy Sources for Decarbonization of Energy**, Dalibor Veseli, HEP Toplinarstvo Ltd., Zagreb, Croatia, Mladen Antolić, MPOWER Synergy simple limited liability company, Zagreb, Croatia, (C), (12 min)

18:48 **Hydrogen in Gas Distribution Systems – Open Questions**, Bruno Lacković, Zagreb Gasworks Ltd., Zagreb, Croatia, (C), (12 min)

19:00 **DISCUSSION: SESSION 8**, (10 min)

20:30 **NETWORKING COCKTAIL PARTY**, for all participants, **terrace of the Grand Hotel Adriatic's outdoor pool** - Sponsor: **Croatian Gas Center Ltd.**, Zagreb Croatia, (until 22,30 o'clock)

FRIDAY
MAY 10TH

9 **INTRODUCTORY PRESENTATIONS AND PANEL DISCUSSION: NATURAL GAS AND RENEWABLE GASES AS SUSTAINABLE TRANSPORTATION FUELS**

Moderator: Davor Matić, MSc, Energetska akademija Ltd., Zagreb, Croatia

9:30 **Green Transition of Filling Station to Compressed Natural Gas**, Krešimir Marijanović, Miroslav Šolić, Brod-plin Ltd., Slavonski Brod, Croatia, Luka Čarapović, MSc, Abaco Ltd., Slavonski Brod, Croatia, Igor Grozdanić, MSc, Turbomehanika Ltd., Kutina, Croatia, Dalibor Bukvić, Brod-plin Ltd., Slavonski Brod, Croatia, (C), (12 min)

9:42 **The Condition of the Vehicle Fleet in Croatia and Vehicles Powered by Gas as a Propulsion Fuel**, Igor Marjanović, Center for Vehicles of Croatia d.d., Zagreb, Croatia, (C), (12 min)



9:54 **Natural Gas and Hydrogen in Marine Application**, Vladimir Pelić, PhD, Assoc. Prof. Radoslav Radonja, PhD, University of Rijeka, Faculty of Maritime Studies, Rijeka, Croatia, Prof. Tomislav Mrakovčić, PhD, Assist. Prof. Ozren Bukovac, PhD, Faculty of Engineering, University of Rijeka, Rijeka, Croatia, (C), (12 min)

10:06 **PANEL DISCUSSION: SESSION 9**, Moderator: Davor Matić, MSc, Energetska akademija Ltd., Zagreb, Croatia, (C), Panelists: Krešimir Marijanović, Brod-plin Ltd., Slavonski Brod, Croatia, (C), Igor Marjanović, Center for Vehicles of Croatia d.d., Zagreb, Croatia, (C), Vladimir Pelić, PhD, University of Rijeka, Faculty of Maritime Studies, Rijeka, Croatia, (C), (30 min)

10 LEGISLATION, TECHNICAL REGULATIONS, RULES OF THE PROFESSION AND CONSUMER RIGHTS IN THE GAS AND ENERGY SECTOR

Moderator: Fikret Nasić, Zagreb Gasworks Ltd., Zagreb, Croatia

10:36 **Energy Balance of Natural Gas in the Republic of Croatia in 2022**, Vlatka Kos Grabar Robina, Daniel Golja, Toni Alar, Energy Institute Hrvoje Požar, Zagreb, Croatia, (C), (12 min)

10:48 **The EU State Aid Rules for Energy Transition**, Lawyer Petra Šantić LL.M., Zagreb, Croatia, (C), (12 min)

11:00 **Corporate Social Responsibility (CSR) of Plinacro Ltd. in the Era of Energy Transition**, Marko Ivandić, Goran Križ, Plinacro Ltd., Zagreb, Croatia, (C), (12 min)

11:12 **Protection of End Customers in Gas Distribution Systems – The Influence of the Consumption Calculation Method**, Berislav Pavlović, PhD, Fikret Nasić, Zagreb Gasworks Ltd., Zagreb, Croatia, (C), (12 min)

11:24 **Proposal for a Directive on Common Rules for the Internal Market in Renewable and Natural Gases and in Hydrogen – A Step Towards Decarbonised Gas Market**, Marija Mušec, LL.M., Šime Dujmović Maruna, Law firm Bardek, Lisac, Mušec, Skoko and partners limited liability company in cooperation with CMS Reich-Rohrwig Hainz, (CMS Croatia), Croatia, (C), (12 min)

11:36 **DISCUSSION: SESSION 10** (10 min)

11:46 **ORGANISER'S CLOSING SPEECH** (10 min)



DETAILED PROGRAMME

UNDER THE HIGH AUSPICES:



REPUBLIC of CROATIA
Ministry of Economy and
Sustainable Development



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