



INTERNATIONAL SCIENTIFIC & EXPERT MEETING OF GAS PROFESSIONALS

03 – 05 of May 2017, Opatija, Croatia



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REPORT ON THE 32nd INTERNATIONAL SCIENTIFIC AND EXPERT MEETING OF GAS PROFESSIONALS

The 32nd International Scientific and Expert Meeting of Gas Professionals along with an extensive exhibition of gas equipment and technology was successfully held at the Congress Centre of the Grand Hotel Adriatic in the period from 3rd to 5th of May of this year and organised by the Croatian Gas Centre Ltd and the Croatian Gas Association (CGA). During three days, the largest international gas conference and exhibition in South-Eastern Europe gathered more than **600 participants from 20 countries in Europe and throughout the world**. The gathering was attended by gas and energy experts, managers from leading European energy companies, scientists from reputable Croatian and European universities, representatives from gas transporters, suppliers, producers and distributors, as well as representatives from large industrial gas consumers including producers and representatives of gas equipment from Croatia and from abroad. **A total of 240 various gas and energy businesses and organisations (of which 95 from abroad) and 47 exhibitors of equipment (of which 95 from abroad).** The gathering was covered by 15 journalists from 10 media outlets.

The main sponsor of the Meeting was the Ministry of Environment and Energy of the Republic of Croatia, and organisation of the event was supported by the perennial and main partner for this conference and exhibition, specifically the company Siemens d.d. including numerous other sponsors: INA – Industrija nafte d.d., Prvo plinarsko društvo d.o.o., Plinacro d.o.o., MET Croatia Energy Trade d.o.o., MEDIMURJE-PLIN za opskrbu plinom d.o.o., Powernext SA, Hrvatska elektroprivreda d.d., SC Eurogas Systems Ltd., IP Systems Ltd., and the co-organiser was the company Podzemno skladište plina d.o.o.

During the three days of holding the expert event, a total of 48 scientific and expert papers were presented, of which 4 were invited presentations and 10 papers in the poster session, and which was accompanied by 6 roundtable presentations covering 8 topics.

The president of the Croatian Gas Association, Prof Dr Miljenko Šunić, at the opening at the gathering emphasised the important and essential role of natural gas in future strategic documents for our country as the cleanest fossil fuel in the transition towards renewable energy sources.

Introductory talks to the gathering were given by Mladen Fogec, President of the Siemens Management Board as the main partner, followed by Tvrtko Perković, chief operations director



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of the Corporate Centre at the company INA – Industrija nafte d.d., Ivica Arar, President of the Management Board at Plinacro d.o.o., and Pavao Vujnovac, President of the Management Board at the company Prvo plinarsko društvo d.o.o. as the main sponsors. Due to the importance of the project for the gas industry in the Republic of Croatia, a brief talk was also given by Goran Frančić, director of the company LNG Croatia. All those present highlighted in brief talks the intentions behind their corporate business plans for the future.

1. INVITED TALKS AND PANEL DISCUSSION: “ENERGY STRATEGIES AND GAS IN THE FUTURE OF ENERGY”

In the first invitational presentation, **Prof Dr Frano Barbir (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split)** indicated the role and potential of hydrogen in Europe's future 2050 low-carbon strategy and foresees up to an 80% reduction in emissions of harmful gases in comparison to the reference year of 1990. He pointed out that the Republic of Croatia, regardless of achieved results, is only at the start of increasing the proportion of renewable energy sources. The future of hydrogen lies in the further technological development of fuel cells in cogeneration for user needs, whereas a large stride forward in practice has been made in the automobile industry and associated infrastructure with an emphasis on Germany as a European leader.

In the next presentation, **Prof Dr Igor Dekanić (Faculty of Mining, Geology and Petroleum, University of Zagreb)** cautioned on the fact that the EU has undertaken a significant turnaround in providing incentives for the user of renewable energy sources (RES) and in the raising an low-carbon awareness as a way of life for people, due to proven pollution of the environment and an increase in greenhouse gas emissions. Given that the EU does not have adequate energy from its own sources, it depends on large imports of fossil fuels, which is an essential element in securing supply and therefore a diversification of supply becomes a priority. With regard to the Republic of Croatia, the economic imperative is a realistic energy strategy where natural gas provides a transitional role.

This was followed by **Dr Stevo Kolundžić** who said that last year the EU prepared the so-called Fourth Energy Winter Package of Measures obliging all member states to unit their low-carbon energy strategy by 2035 into a single document with a deadline for drafting it by the start of 2019. In view of various projects important for the Republic of Croatia (refinery processing, new peak underground gas storage facility at Grubišno polje, LNG terminal and TAP/IAP connection), he advocates exactly positioning them in the future energy strategy.



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The consequences of air pollution in global and national surroundings was addressed by **Dr Dalibor Pudić (member of the Governing Council before the Croatian Energy Regulatory Agency)**. In the Republic of Croatia, wood is one of the dominant sources of thermal energy, primarily due to its favourable price compared to other energy sources. Its harmful effect on the environment and production of greenhouse gases was shown, and also its dangerous effect on human health (respiratory system), especially on the younger population). He also drew a correlation between the low price of wood and the reduction in natural gas consumption in recent times in the Republic of Croatia, and indicated that it has been recovering in the last two years.

A presentation of newer technological solutions was given by the **Vaillant company director, Mario Opačak**, who gave a talk titled “Expected Global Energy Mix and Decisions on Choosing a Household Heating Technology”. According to data from the European Commission, the largest proportion for thermal needs in the energy mix of 2016 in Europe was gas (46%) followed by coal (15%), biomass (11%), petroleum (10%), nuclear energy (7%) followed by other renewable sources and fossil fuels (4%). This allocation was due primarily to the availability of these energy sources, their prices, impact on the environment, investment costs and time for return on investment. In terms of investments, the greatest expectations of consumers is directed towards energy efficiency and savings.

Viessman d.o.o. company director, Vladimir Turina, presented a novelty – microcogeneration based on fuel cells, i.e. “The First Heating Device Based on Fuel Cells as a Comprehensive Integrated Household System”. The device provides up to 36% savings on primary energy, and up to 50% less CO₂, significant independency from growing energy prices thanks to utilizing electricity from proprietary production which is also backed by government incentives (Germany) amounting to 11,100 euros.

The previous presentation was the basis for an interesting **panel discussion titled “Availability of Gas as a Future Energy Source”** which was led by **Prof Dr Igor Dekanić (Faculty of Mining, Geology and Petroleum, University of Zagreb)** with the participation of panelist **Prof Dr Frane Barbir (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split)**, **Dr Stevo Kolundžić (Croatian Gas Association)** and **Dr Dalibor Pudić (Croatian Energy Regulatory Agency)**. The conclusion from the discussion is that the Republic of Croatia needs to optimally force its own sources of gas production, and also develop in parallel energy diversification of supply routes (LNG terminal, TAP/IAP connection) and create conditions for double flow at interconnection points in line with the regulatory framework. Furthermore, emphasis was also placed on the potential of renewable energy sources and natural gas, especially in the region of Dalmatia where there continues to exist a high proportion of liquid fuel and wood as energy sources, hence some prospects for the market are evident.



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2. SMART TECHNOLOGIES IN THE GAS AND ENERGY SYSTEM

The stated topic was commenced with a presentation on explaining the role of the Internet in the gas industry in terms of remote monitoring of processes for energy efficiency. This was followed by providing practical possibilities in preserving energy along with articulating problems and solutions for energy storage, whereas the third presentation showed the development of the natural gas industry along with integration of new sources (biogas, LNG, hydrogen) and intelligent technologies aided by smart energy networks. The company Plinacro d.o.o. presented the problem of practical uses of inspecting the internal sections of a gas pipeline by introducing PIM (Pipeline Integrity Management) system and in order to implement control and safety. Finally, Max Hammer explained the technology of the fourth industrial revolution (digital) which energy companies will in the future essentially implement in the business operations.

3. DEVELOPMENT OF GAS INFRASTRUCTURE IN THE REPUBLIC OF CROATIA (GAS PIPELINES, COMPRESSOR STATIONS, STORAGE FACILITY, CHROMATOGRAPHY AND LNG SHIPS)

With respect to the first part of the third topic, emphasis is placed on activities relating to the construction of the compressor station for the transport system belonging to the company Plinacro d.o.o. (ensuring supply for users of a 75-bar ring), i.e. preparatory phase of obtaining the location permit, environmental impact study and commencement of the tender procedure for equipment. The use of gas chromatographs for monitoring gas quality and energy charges on Plinacro's transport system is shown in detail on the gas system map, with an explanation of the system for technical protection of the gas transport system aided by visual remote control. The latest use of GIS technology in the maintenance and development of the gas transport system is shown using an application which at all times makes timely decisions on management of the gas system and its maintenance. The second part of the topic relates to the LNG in maritime traffic, and commenced with a talk that included a simulation model for determining optimal systems for storing freight on LNG ships and which is based on operational simulations resulting from testing and the experience of the company GTT from France. This was followed by examples from the Netherlands on expanding LNG filling infrastructure for ships at ports, heavy trucks and local distribution. Moreover, emphasis was also placed on the importance of declaring SECAs (Sulphur Emission Control Areas) in seas of northwestern regions of Europe and LNG as an ecologically acceptable fuel replacement. In the talk on the role and place of



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LNG in maritime traffic for the Republic of Croatia, a description is given of its use which achieved through the construction of the LNG terminal, which might very well encourage the domestic shipbuilding industry leading to the construction of new fleets of vessels for island and coastal transport.

4. VARIOUS ISSUES IN THE GAS PROFESSION

The fourth topic commenced with a talk explaining the technological solution for increasing the hydrocarbon production based on the new investment project “Installation of a Gas Compressor Skid at the Ferfinandovac Oil-Gas Station and for Use of the Gas-Lift System in Oil Production”. The project is to ensure a prolongation of the life cycle of the fields for the next 15-20 years, allowing the delivery of gas at Molva CPS and finally increase revenue for INA d.d. The subsequent presentation explained the position of Ukraine in the process of adapting to European gas regulations and its acceptance. Emphasis is placed on the importance of Ukraine as a gas hub which also has geopolitical importance. The talk on the effectiveness of the hybrid system using fuel cells based on natural gas in Dalmatia provided insight into a simulation model of a hybrid system for production of electricity and thermal energy.

5. INTRODUCTORY PRESENTATION AND PANEL DISCUSSION: SUPPLY OF GAS UNDER CONDITIONS OF A FULLY LIBERALISED MARKET AND THE CONSOLIDATION OF SUPPLIERS

Liberalisation and deregulation of the gas market has great repercussions on the natural gas sector, note **Prof Dr Daria Karasalihović Sedlar (Faculty of Mining, Geology and Petroleum)**. She warned that consolidation is anticipated on the relatively small Croatian market, i.e. a reduction in the number of suppliers and distributors. However, the expectation is that politics will continue to have a very strong influence. In the last three years, the price of gas for households has been falling in line with the European market, and only this year has a correction been made, said **Antoniya Glavaš (Management Board member at Prvo plinarsko društvo – PPD)** in her introductory talk “Supplying Gas Under Conditions of a Fully Liberalised Market”. Natural gas prices on the European market are increasing, hence the expectation is that they will also increase in the Republic of Croatia following termination of regulated prices for households. She also talked about the model for the deregulation of prices on the gas market in Romania. Her recommendation is that the government



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redefine the role of the public service, as well as the role of suppliers in their obligation towards the public service as it should imply.

The presentation by Antonija Glavaš was also an introduction to the panel discussion: “Supply of Gas Under Conditions of a Fully Liberalised Market and the Consolidation of Suppliers” which was moderated by Marko Biočina, executive editor of the Jutarnji list newspaper, and participating as panelists were: D.Sc. Nikola Vištica (Croatian Energy Regulatory Agency), Antonija Glavaš (Prvo plinarsko društvo d.o.o.), Marko Blažević (HEP – Opskrba plinom d.o.o.), Srećko Ezgeta (Elektrometal – distribucija plina d.o.o.) and Damir Škugor (INA – Industrija nafte d.d., Department for Trading in Natural Gas). The lively and interesting discussion touched on topics relating to further incomplete deregulation of prices for buyers having obligations towards the public service. Its implementation is expected in April 2018, whereas the price households will be paying for natural gas is still unknown, hence it would be beneficial that it be published by the end of this year so that businesses may prepare on time. **D.Sc. Nikola Vištica (director of the Sector for Gas and Oil at the Croatian Energy Regulatory Agency – HERA)** said that it is not necessary to hurry into that process which needs to be well organised in order that all stakeholders may prepare well and on time. In the discussion, **Marko Blažević** emphasised that **HEP – Opskrba plinom** as of 1st of April of this year by decision of the Croatian Government purchases under market and sells under market regulated conditions, which is not a simple task for companies that are suppliers on the wholesale market. This has given some opportunity to INA’s business, noted the **director of INA’s Department for Trading Natural Gas, Damir Škugor**, who added that the price of gas should definitely incorporate the costs of exploration, preparing the exploitation field and production. **Srećko Ezgeta (director of the Bjelovar company Elektrometal – distribucija plina** and president of the Group of Gas Distributors and Suppliers in the Croatian Chamber of Economics, noted that the prices of all energy sources have been deregulated, except gas for households. He also included that a decision has to be made as to how to balance the transport system and invest into smart metering solutions. He cautioned that it is not possible to simultaneously want such investments and lower gas prices, as it is unrealistic, hence such investments should be planned into distribution tariffs. In concluding, the unifying view is that the main goal of market liberalisation is strengthening competition, transparency and avoiding any form of discrimination.

6. GAS DISTRIBUTION SYSTEMS AND ASSOCIATED ISSUES

Liberalisation of the gas market in Europe began back in 1998. An overview of supplementary additions and the passing of new directives including repercussions for development of the gas market was given by **Marcel Kramer (president of the Energy Delta Institute from the Netherlands)**. The topic was further treated by **Attila Török (Central European Gas Hub AG, Austria)** who addressed the latest developments in gas trading in Central and Eastern Europe and the role of the gas hub in Austria. This was followed by **a series of presentations given by Zagreb City Gasworks. Dubravko**



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Duvančić pointed out the importance of testing gas installations as a legal obligation of the distribution system operators and cautioned of the lack of logic that responsibility for correctly functioning devices, i.e. gas installations is not borne by owner but instead by the distribution system operator, which for other energy providers is not the case. The issue of safety and correctly operating gas networks was explained in the presentation that pointed out the procedure of impact odorisation on the Zagreb City Gasworks' distribution region, and the following presentation showed the importance of testing for leaks in the gas distribution system as preventive and corrective maintenance of the gas networks operating at different pressures. The **roundtable discussion led by the company Gdi Gisdata** gave practical examples of comprehensive technical support in managing parameter data for a gas system using GIS technology at the company Zelina-plin d.o.o. The company **Met Croatia Energy Trade d.o.o.** showed its approach to the market and the specifics of business providing offers to buyers, and in terms of risk management when indexing product prices.

7. VARIOUS INTERESTING PRESENTATIONS ON THE GAS INDUSTRY

The **roundtable discussion by the company Duing presented its subsidiary company MTU Onsite Energy Gas Power Systems** for sustainable energy solutions in the production of electricity and thermal energy, as well as for the servicing of gas cogeneration with the emphasis on offers for the Croatian market. This was followed by presenting a technology for using gas in electricity production based on waste from the Jakuševac waste depot in Zagreb. **Dr Berislav Pavlović (Zagreb City Gasworks)** explained the impact of operating pressures on the characteristics of turbine flow meters based on testing methods when configuring test installations for closed and open systems.

At the end of the series of topics, the latest indicators of advancements in construction of gas infrastructure in Dalmatia was shown, and also the contentious issues in constructing the gas pipeline from Dugopolje to Solin (Split) with respect to archaeological findings that stand in the way of rapidly achieving the project. However, thanks to investments totalling more than 170 million kuna by the company EVN and the determination of its employees that everything be done in accordance with the law and good engineering practices, results will surely be evident. In such terms, **design engineer Jakov Bakić** presented in the last talk the specifics and examples of good practice in constructing gas infrastructure in the services industry and sector on route from Zadar to Split, as well as an overview of the contentious issues in preparing design and detailed construction documentation.



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8. TECHNICAL REGULATIONS AND RULES OF THE PROFESSION FOR SECURE AND EFFECTIVE USE OF GAS

The last topic began with a presentation of smart system technologies for reducing gas leakages from distributive networks applied by the company Pietro Fiorentini under “EU Life Projects”. Use of laser spectroscopy in testing gas leakages from distribution networks is a new method by the company Termoplin d.d. Varaždin which allows for very quick and effective monitoring of gas installations. Its safety is explained based on experience from Germany where all actors in the gas chain are obligated to apply technical rules DVGW G 1020. A final overview was given of European and Croatian legislation and topics related to consumer rights under conditions of a fully liberalised gas market. It primarily involves the right to choose and change one’s gas supplier and clear information when entering contracts and charging for gas consumption.

As was the case in previous years, due to a large number of registered papers, this year too a poster session was organised where a total of 10 papers from Croatia and abroad were registered and presented.

At the same time, the largest three-day exhibition of gas equipment in South-Eastern Europe was shown at the exhibition premises in front of the congress hall of the Grand Hotel Adriatic where a total of 47 exhibitors displayed their offers on stands and billboards, of which 14 exhibitors were from abroad.

Participating at this year’s exhibition was the largest number of producers and representatives of gas equipment. Amongst there were a significant number of companies who have over a number of years been actively involved as exhibitors at the Opatija Meeting of Gas Experts, and also a large number of new exhibitors of gas equipment from Croatia and abroad, which indicates a continual growth of interest in exhibiting at the gas technology and equipment exhibition in Opatija.

At the end of this year’s conference, **Anita Baričević (director of Croatian Gas Center Ltd.),** extended her appreciation to all participants at the conference and exhibition which through their participation had contributed to the success and quality of this traditional meeting which is important for the gas industry, and which this year has succeeded in gathering in Opatija a great number of experts and maintain a high professional level and quality despite dynamic changes in the structure of the energy market and complex economic situation. **Special thanks was also extended to Prof Dr Miljenko Šunić (president of the Croatian Gas Association),** as the most deserved expert who through his knowledge, commitment, professional authority and great enthusiasm has been devising and for more than three decades been creating interesting and useful programs for the International



32nd

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Meeting of Gas Experts in Opatija, and as such has contributed to the development of the gas industry in the Republic of Croatia.

At the very end of the conference, an announcement was made for the holding of the next **33rd International Scientific & Expert Meeting of Gas Professionals, which will be held as is tradition in Opatija from 9th to 11th May 2018.**

If you were not able to attend the 32nd Meeting but are interested in the presented topics, you can order the Proceedings (in print and online version) which include all the published papers and roundtable presentations of the Meeting in Opatija. We kindly request that you send your order via email to opatija@hsup.hr

Photographs from the recently held Meeting can be viewed on the website of the conference and exhibition under the section **Gallery**.