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# International Conference on District Energy 2016

**Portorož, 20-22 March 2016**



**Plinovodi**  
Connected through energy

The  
challenges of  
District Energy  
in a changing  
world



**Energetika.NET**



**MARJAN EBERLIN**  
Chair of the Organising Committee

General Manager, Plinovodi d. o. o.

## The challenges of District Energy in a changing world

This year's International Conference on District Energy celebrates its 19th edition. It is of particular importance that it is being held during the intensive last stages of the creation of a national energy strategy, a document Slovenia has lacked for years. The strategy has been lacking as a guiding document which must navigate towards national targets, as well as a roadmap along the paths we are obliged to set and walk in the future. We have learned that the paths leading towards nationally binding targets should be predictable. It is true that all roads lead to Rome. This could very well apply to the energy industry, as binding targets can be met in various ways. Which is the right one, the most suitable for us and for future generations, depends solely on our decisions. Nevertheless, the question is whether we are already wise enough to evaluate the distance travelled and, at the same time, recognise the possibilities of future paths. Have we already established which way is false, or too expensive, futile, or which one to choose at all? From the outset of the conference, it will be beneficial to consider and focus on these possibilities in the light of district energy, and to establish which directions and obstacles to avoid. Without doubt, district energy is one of the promising energy paths – albeit a dynamic but difficult one – which, in the national energy map, has so far been pushed to the 'appendix'. Our international conferences have contributed to the paths being well maintained and passable.

I am confident that with Slovenia's new Energy Concept these areas are gaining in importance – to the degree that they will combine all energy sources, all energy services, and all energy markets – thus justifying investments in them. Furthermore, the demand for energy in Slovenia is waning, with estimates for 2015 indicating a consumption of 264.6 PJ, down 4.7 % from the previous year. Meanwhile, the country's district heat consumption in 2015 is estimated at 9,210.4 TJ, seeing almost no decrease.

I believe that gas, nevertheless a fossil fuel, is an environmentally friendly energy source which can easily travel the district energy paths, and which can help us climb the highest peaks of our energy targets. Our company, Plinovodi, strives to take gas where opportunities lie, where it can compete with other energy sources and prove its sustainability. Our company can tackle any challenge to which the EU energy guidelines and this conference have thrown open the door.

Plinovodi is honoured to have the opportunity to be one of the leading companies behind the International Conference on District Energy 2016, which is organised by the Slovene District Energy Association (SDDE), especially during the development of the National Energy Policy. Personally, I look forward to meeting you and to our exchange of knowledge and experience.

## CONFERENCE ORGANISERS

The conference is organised by The Slovene District Energy Association (SDDE), which is part of the Association of Mechanical Engineers of Slovenia in co-operation with Energetika.NET.

### ORGANISING COMMITTEE

**Marjan Eberlinc**, Plinovodi d.o.o., chair  
**Franč Cimerman**, Plinovodi d.o.o., vice chair  
**Franč Žlahtič**, Plinovodi d.o.o., member  
**Alenka Žumbar Klopčič**, Energetika.NET d.o.o., member  
**Mateja Kegel Kozlevčar**, Energetika.NET d.o.o., member  
**Andrej Ljubenko**, SDDE, member

### TECHNICAL COMMITTEE

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**Zdravko Bedenčič**, Slovenija, member  
**Dejan Koletnik**, Slovenija, member  
**Jože Torkar**, Slovenija, member  
**Petar Vasiljević**, Srbija, member  
**Lars Gullev**, Danska, member

## CONFERENCE PROGRAMME

### SUNDAY, 20 MARCH 2016

**16.00 – 18.00** Sponsor registration

**18.00 – 19.00** SDDE general assembly

**19.00 – 21.00** Welcome reception in the exhibition area

### MONDAY, 21 MARCH 2016

**9.00 – 10.00** Participant registration

**10.00 – 10.30**

Conference opening

**Marjan Eberlinc**, Plinovodi

**Alojz Poredoš**, President of SDDE

**Peter Gašperšič**, Ministry for Infrastructure

**Iztok Golobič**, ZSIS

**10.30 – 11.30**

Guest lecturers

**Franc Žlahtič**, Plinovodi

**David Hesseling**, ACER

### MONDAY, 21 MARCH 2016

**11.30 – 13.00** Round table session: *The challenges of District Energy in a changing world*

Moderator: **Alenka Žumbar Klopčič**, Energetika.NET

Guests:

**Alojz Poredoš**, SDDE

**Danijel Levičar**, Slovenian Energy Directorate

**Franc Cimerman**, Plinovodi

**Duška Godina**, Slovenian Energy Agency

**Hinko Šolinc**, Eko sklad

**Rok Vodnik**, Petrol

**Samo Lozej**, Energetika Ljubljana

**13.00 – 14.30** Lunch

**14.30 - 16.00** Parallel sessions

**16.00 - 16.30** Coffee break

**16.30 - 18.00** Parallel sessions

**20.00 - ...** Gala dinner with special guest: **Paul Voss**, Euroheat & Power

### TUESDAY, 22 MARCH 2016

**9.00 - 11.00** Parallel sessions

**11.00 - 11.30** Coffee and fruit break

**11.30 - 13.00** Session

**13.00 - 13.30** Closing ceremony

## CONFERENCE PROGRAMME

### MONDAY, 21 MARCH 2016 - PARALLEL SESSIONS

#### 14.30 – 16.00 **SESSION 1: DISTRICT HEATING AND COOLING SYSTEMS - parallel session**

Moderator: **Ervin Miklavžina**, KP Velenje

**Utilisation of waste heat from metallurgical processes for district heating in Ravne na Koroškem**, Kristijan Plesnik, Metal Ravne, and Miran Fužir, Petrol Energetika

**Energy viability of electric heat pumps in Slovenia**, Andrej Kitanovski, Alojz Poredoš, Tjaša Duh, University of Ljubljana, Faculty of Mechanical Engineering, Laboratory for Refrigeration and District Energy

**Analysis of tariff systems and prices of heat from regulated district heating systems in the Republic of Slovenia**, Aleksander Trupej, Energy Agency of the Republic of Slovenia

**Analysis of performance of heating and cooling systems during the European Water Polo Championship at the Kombank Arena in Belgrade**, Bojan Bogdanović, Petar Vasiljević, Vladimir Jelin, Public Utility Company "Beogradske elektrane", Stevan Matić, KOMBANK Arena

#### 14.30 – 16.00 **SESSIONS 2 AND 3: NATIONAL ENERGY CONCEPT AND DISTRICT ENERGY AND NATURAL GAS – parallel session**

Moderator: **Dejan Koletnik**, Plinovodi

**District heating and cooling in Slovenia's Energy Concept: The role of gas**, Peter Novak

**Business plans of Distribution System Operators for gas for the 2016-2018 regulatory period**, Urška Ritonja, Energy Agency of the Republic of Slovenia

**Development of the Slovenian natural gas market: New capacity products, virtual trading point and trading platform**, Jošt Štrukelj and Marko Širovnik, Plinovodi

**Natural gas and gas systems in view of ambitious environmental targets**, Marko Ileršič, Plinovodi

#### 16.30 – 18.00 **SESSION 4: PROCESS MANAGEMENT IN DISTRICT ENERGY - parallel session**

Moderator: **Jože Torkar**, Petrol

**Aerial thermography: An effective inspection method for Energetika Ljubljana's district heating pipeline**, Primož Matičič, Marko Cimerman, Blaž Jamnik, Energetika Ljubljana, Matevž Lenarčič, Domen Grauf, Aerovizija

**Central historian as a basis for managing processes in district energy systems**, Aljaž Stare, Milan Dobrić, Saša Sokolić, Metronik, Mojmir Debeljak, Energetika Ljubljana

**Hydraulic balancing in district heating systems operated according to the PUSH philosophy**, Oddgeir Gudmundsson, Marek Brand and Jan Eric Thorsen, Danfoss A/S, Heating Segment – Nordborg - DK, Application Centre

**IoT in energy networks**, Tomaž Fatur, Gašper Lakota, Marko Šepič, Solvera Lynx

## CONFERENCE PROGRAMME

### MONDAY, 21 MARCH 2016

#### 16.30 – 18.00 **SESSION 5: SOLUTIONS AND ENERGY EFFICIENCY – parallel session**

Moderator: **Hinko Šolinc**, Eko sklad

**Utilising excess heat from supermarket refrigeration systems in district heating grids as part of a smart energy system**, Jan Eric Thorsen<sup>1</sup>, Torben Green<sup>2</sup>, Torben Funder-Christensen<sup>3</sup>, Danfoss A/S, Danfoss Heating Segment<sup>1</sup>, Application Centre, Denmark, Danfoss A/S, Danfoss Cooling Segment, Denmark<sup>2,3</sup>

**CO<sub>2</sub>-neutral district heating in Greater Copenhagen 2025 – From vision to action**, Lars Gullev, VEKS

**Energy self-sufficiency of the local community by 2020**, Uroš Pikl, Energetika Šentrupert

**District heating substation with electrical heater supplied by 40°C district heating water**, Marek Brand, Danfoss A/S, Danfoss Heating Segment, Application & Technology, Denmark, Christian Holm Christiansen, Danish Technological Institute, Denmark, Niels Vilstrup, COWI, Denmark, Denmark and Lars Overgaard Lisberg, Odder Varmeværk, Denmark

### TUESDAY, 22 MARCH 2016

#### 9.00 – 11.00 **SESSION 6: DISTRICT HEATING AND COOLING SYSTEMS – parallel session**

Moderator: **Mitja Dolinšek**, Energetika Maribor

**District heating system re-engineering in a state of transition - a great energy challenge**, Amer Karabegović, Centralno grijanje Tuzla

**Thermal performance evaluation and techno-economic analysis of the hot water boiler economiser in the Konjarnik district heating plant**, Vladimir Tanasić<sup>1\*</sup>, Vidačić Branislav<sup>1</sup>, Nikola Tanasić<sup>2</sup>, <sup>1</sup>Public Utility Company „Beogradske elektrane“, <sup>2</sup>University of Belgrade – Faculty of Mechanical Engineering, Belgrade

**Activities in price regulation of district heating**, Tina Štok, Energy Agency of the Republic of Slovenia

**Opportunities for decentralised production of heat and power in residential buildings**, Boris Vidrih, Sašo Medved, University of Ljubljana, Faculty of Mechanical Engineering

**Exergoeconomic optimisation of district cooling pipeline network**, Tjaša Duh, Andrej Kitanovski in Alojz Poredoš, University of Ljubljana, Faculty of Mechanical Engineering, Laboratory for Refrigeration and District Energy

## CONFERENCE PROGRAMME

**TUESDAY, 22 MARCH 2016**

**9.00 – 11.00**      **SESSION 7: NATURAL GAS – parallel session**

Moderator: **Franc Cimerman**, Plinovodi

**Natural gas distribution 9 years after market opening**, Aleš Žurga, Energy Agency of the Republic of Slovenia

**DVGW and GIZ DZP co-operation in the field of technical regulations and education**, Aida Bučo-Smajič, DVGW Office Sarajevo and Urban Odar, Direktor, GIZ DZP

**New gas pipeline inspection methods**, Marko Kogovšek, Plinovodi

**Interaction between energy facilities**, Leopold Lovšin, Plinovodi

**11.30 – 13.00**      **SESSION 8: PROCESS MANAGEMENT IN DISTRICT ENERGY**

Moderator: **Andrej Kitanovski**, Fakulteta za strojništvo

**Measuring flow in district heating pipelines**, Jernej Böhm, Tjaša Oštir, Marjeta Petrišič, Energetika Ljubljana, Martin Vuk, University of Ljubljana, Faculty of Computer and Information Science

**SCADA system as a base for implementation of PUC Business Information Systems “Beogradske elektrane”**, Tatjana Nušić, Dubravka Jovančić, Petar Vasiljević, PUC “Beogradske elektrane”, Belgrade, Serbia

**Utilisation of pipeline flow analysis software for water leakage assessment in district heating pipelines**, Matjaž Perpar, Matej Konstantini, Primož Škerl, Iztok Žun, University of Ljubljana, Faculty of Mechanical Engineering, Energetika Ljubljana

The official languages of the conference are Slovene and English. Simultaneous interpretation will be available throughout the conference for an undisturbed flow of ideas from one language to the other. For more information, please visit the Association website at: [www.sdde.si](http://www.sdde.si) or call us at 00386 1 40 12 872 (Mateja)

**The Slovene District Energy Association**  
International Conference on District Energy 2016  
Karlovška cesta 3  
1000 Ljubljana, Slovenia

## REGISTRATION FEE

Registration fee for participants:

SDDE Members	330.00 EUR
SDDE Non-members	370.00 EUR
Lecturers	270.00 EUR
Accompanying persons*	180.00 EUR

\*Price includes participation at the opening, lunch and gala dinner.  
Prices are without VAT.

Registration fee includes:

- Participation at the conference
- Conference materials
- Lunch, light snacks during the breaks and gala dinner

NOTE: Accommodation is not included in registration fee

Registration is possible using the form available at the website [www.sdde.si](http://www.sdde.si).  
After registration you will be sent further information.



## SPONSORSHIP

Dear Sir/Madam,

We would like to invite you to participate at the International Conference on District Energy 2016. The event will take place at the Hotel Bernardin in Portorož from 20 - 22 March 2016. The conference will offer a great opportunity to promote the company's activities. The method of participation can be chosen from the enclosed offer. For additional information please contact Mateja Kegel Kozlevčar (+386 1 40 12 872) or konferenca@sdde.si.

### SPONSORSHIP: LUNCH / BREAK

**3,500.00 EUR**

Sponsorship includes the company's name and logo in reports about the conference, on the inner pages of the collection of abstracts from the conference and on the welcoming notice-boards at the exhibition grounds. Sponsors have a notice-board and a table at their disposal (free of charge). They are also given a chance to have a ten to fifteen-minute presentation of the company's activities. The presentation will be chosen for individual sections of the conference. Sponsors are entitled to an accompanying two persons free of charge. Sponsors have a five minute speech before lunch or the break.

### SPONSORSHIP: CLASSIC

**2,000.00 EUR**

Sponsorship includes the company's name and logo in reports about the conference, on the inner pages of the collection of abstracts from the conference and on the welcoming notice-boards at the exhibition grounds. Sponsors have a notice-board and a table at their disposal (free of charge). They are also given a chance to have a ten to fifteen-minute presentation of the company's activities. The presentation will be chosen for individual sections of the conference. Sponsors are entitled to an accompanying person free of charge.

### PRESENTATION OF THE COMPANY

**1,000.00 EUR**

At the exhibition grounds in Grand Hotel Bernardin Portorož. Display booth (notice-board - dimensions 2 x 1 m; table-dimensions 2 x 0.5 m). Sponsors are entitled to an accompanying person free of charge.

### PUBLICATION OF AN ADVERTISEMENT IN THE CONFERENCE BOOK

1 -page

**1,000.00 EUR**

1/2 - page

**500.00 EUR**

VAT is not included.