







## X INTERNATIONAL FORUM FOR CLEAN ENERGY TECHNOLOGIES

# **ENERGY TRANSITION OF SERBIA**



Novi Sad, 27<sup>th</sup> - 28<sup>th</sup> September 2016

PROGRAM

www.ktt.uns.ac.rs

Ladies and gentlemen, dear friends,

The Republic of Serbia is in the process of EU accession and has very clearly defined processes that will bring the country to the level of full compatibility with future European partners. The legal framework of the Energy Community of which the Republic of Serbia is a member covers the areas of electricity, gas, renewable energy, energy efficiency, oil, environmental protection, competition and statistics. The implementation of provisions of the legal framework of the Energy Community creates stable and balanced regulatory framework and market space. Almost the same obligations relate to the majority of countries in the Southeast Europe (Region) therefore, it can be considered that such activities in the energy sector can be called the energy transition.

In the jubilee tenth year of the existence and activities of the International Forum on Clean Energy Technologies (Forum) under the auspices of the Assembly of the Autonomous Province of Vojvodina, the Forum's Program Committee has opted for this year's focus of countries in the Region and of the Republic of Serbia to be as much as possible on concrete and plastic identification of the process of their energy transition and on the manner of achieving European targets until 2020. With this aim and as the symbol of adopted national need to constantly compare the achieved with the projected, this year's jubilee tenth Forum, to be held on 27<sup>th</sup> and 28<sup>th</sup> September 2016 in Novi Sad under the auspices of the Assembly of the Autonomous Province of Vojvodina, will have the title **"ENERGY TRANSITION OF SERBIA"**.

Our shared vision is that, with the credibility of presented concepts, technological solutions and scientific works, the 2016 Forum "ENERGY TRANSITION OF SERBIA" will encourage the use of available resources in this area and additionally stimulate cooperation and energy development in the countries of the region. The last year's Forum under the general title "SERBIAN ENERGY HORIZON 2020" has initiated overall and comprehensive action on both vertical and horizontal connections among actors operating in the energy sector and, in particular, efforts to increase overall energy efficiency in local governments. All activities done after the 2015 Forum, however, have only shown our socially insufficient institutional and organizational readiness for more significant improvements. Therefore, the 2016 Forum should be seen as the continuation of efforts to encourage the achievement of planned objectives in a reasonable period of time. This year's program topics should respond to challenges in the implementation of clean energy technologies in present situation through the presentation of the most successful and already applied new technological solutions, establish international partnerships and search for optimum ways of financing initiated projects and creating new ones in the energy sector.

According to many indicators, the Republic of Serbia is still significantly lagging behind in drafting its own energy efficiency policy capable of providing realistic and sustainable future development, which is today successfully achieved in EU countries. This requires better organization of governance, effective energy management and efforts to change the behavior of energy consumers and to adopt the imperative of constant energy innovations and savings. Our desire is to give additional impulse for the achievement of these objectives in our joint work at the Tenth Forum.

The first day of the Forum is dedicated to considerations and actualization of necessary activities in the process of energy transition, as well as to achieved results in relation to the existing strategy basis of the energy policy and sustainable development of the Republic of Serbia. At the same time, experiences of countries in the region and the EU will be considered through the participation of relevant representatives from participating countries and European regions and through presentations of papers by invitation. In direct contact with authors, the Program Committee will choose topics that will be proposed for the presentation and publication in scientific journals and at scientific portals. At all working sessions, after presentations, panel discussions will be opened that in the final joint conclusion should offer clear messages about possible more dynamic sustainable development of the energy sector in Serbia and in the region until 2020. The second day of the Forum under the co-auspices of the Chamber of Economy of Vojvodina will be particularly focused on the consideration of implemented business projects in the country and abroad, as well as on B2B meetings of potential partners.

We take this opportunity to kindly invite you to take part in this year's jubilee Tenth Forum "ENERGY TRANSITION OF SERBIA" and to contribute in the creation of the vision of energy future, business projects and strengthening of mutual relations and energy security in the Republic of Serbia and in the countries of our region.

Respectfully Yours,

Tihomir Simić, PhD Chairman of the Forum

Ivo Vajgl Co- Chairman of the Forum

September, 2016



## FORUM IS SUPPORTED BY



Republic of Serbia Autonomous Province of Vojvodina Assembly of Autonomous Province of Vojvodina

## FORUM IS ORGANIZED BY



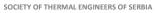


## **CO-ORGANIZERS OF THE FORUM**



National Petroleum Committee of Serbia - World Petroleum Council







**Energy Innovation Center TESLIANUM** 

#### FORUM PROGRAM COMMITTEE

| Chairman of the Forum  |
|--|
| Co-Chairman of the Forum, INEA – Institute for European Affairs, Dusseldorf, Germany |
| University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia              |
| University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia              |
| National Petroleum Committee of Serbia, Belgrade, Serbia                             |
| Society of Thermal Engineers of Serbia, Belgrade, Serbia                             |
| University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia              |
| Chamber of Economy of Vojvodina, Novi Sad, Serbia                                    |
| Energy Innovation Center TESLIANUM, Belgrade, Serbia                                 |
|  |

#### FORUM ORGANIZING COMMITTEE

| Marijana Cupać, MEM                             | Executive Director of the Forum   |
|---|---|
| Assist. Prof. Damir Djaković, PhD               | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia |
| Assist. Prof. Branka Gvozdenac<br>Urošević, PhD | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia |
| Assist. Prof. Miroslav Kljajić, PhD             | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia |
| Jovan Vujičić, PhD                              | Chamber of Economy of Vojvodina, Novi Sad, Serbia                       |

#### FORUM SCIENCE AND EXPERT COMMITTEE

| Prof. Dušan Gvozdenac, PhD                      | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia     |
|---|---|
| Assist. Prof. Mirko Stojiljković, PhD           | University of Niš, Faculty of Mechanical Engineering, Niš, Serbia           |
| Assist. Prof. Damir Djaković, PhD               | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia     |
| Assist. Prof. Dunja Sokolović, PhD              | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia     |
| Assist. Prof. Branka Gvozdenac<br>Urošević, PhD | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia     |
| Assist. Prof. Miroslav Kljajić, PhD             | University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia     |
| Assist. Prof. Mirjana Stamenić, PhD             | University of Belgrade, Faculty of Mechanical Engineering, Belgrade, Serbia |
|   |   |



# FORUM POOL



Chamber of Economy of Vojvodina 11, Hajduk Veljkova Street, 21000 Novi Sad, Serbia +381 21 4803 700; <u>http://www.pkv.rs</u>/

|  | EPS Distribution Ltd.   |
|--|---|
| Дистрибуција                           | 1-3, Masarikova Street, 11000 Belgrade, Serbia  |
|  | +381 11 3616 706; <u>http://www.epsdistribucija.rs</u> /  |
|  | IEE Group   |
|  | 113A, Petra Kočića Street, 78000 Banja Luka, B&H  |
| intelligent energy engineering         | +387 51 321 820; <u>http://www.ieegroup.net/</u>  |
|  | INSTITUTE MIHAJLO PUPIN, IMP – AUTOMATIKA Ltd.  |
|  | 15, Volgina Street, 11000 Belgrade , Serbia   |
| AUTOMATIKA                             | +381 11 2771 017; <a href="http://www.pupin.rs/organizacija-imp/imp-automatika/">http://www.pupin.rs/organizacija-imp/imp-automatika/</a> |
| $S \land C \land$                      | SAGA Ltd.   |
| SAGA                                   | 9, Milentija Popovića Street, 11070 Belgrade, Serbia  |
| new frontier group                     | +381 11 3108 500; <u>http://www.saga.rs/</u>  |
| Hungarian<br>National<br>Trading House | HUNGARIAN NATIONAL TRADING HOUSE – Representative Office in Novi Sad  |
|  | 25, Bulevar Mihajla Pupina Street, 21000 Novi Sad, Serbia   |
|  | +381 21 557 482; novisad@tradehouse.hu  |
| 2                                      | INTEKOM Ltd.  |
| 🗺 Intekom 🐽                            | 10/8, Španskih boraca Street, 11070 Belgrade, Serbia  |
|  | +381 11 311 10 17; <u>sasa.nikolic@intekom.rs</u>   |
|  | LEEN Lernende EnergieEffizienz-Netzwerke  |
| Leen ⋘                                 | Schoenfeldstrasse 8, D-76131 Karlsruhe, Germany   |
| Learning Energy Efficiency Networks    | +49 (0) 721 961 4490; <u>http://leen.de/</u>  |
|  | VODAVODA Ltd.   |
| PREMIUM NATURAL SPRING WATER           | Gornja Toplica bb, 14242 Mionica, Serbia  |
|  | info@arteska.com; http://www.vodavoda.com/  |
| COTTON<br>Novi Sad                     | COTTON Novi Sad   |
|  | 3, Dunavska Street, 21000 Novi Sad, Serbia  |
|  | +381 21 528 623; http://www.cotton.rs/  |

## FORUM MEDIA PARTNERS



|               | PLENARY SESSION   |
|---------------|---|
|               | ENERGY TRANSITION OF SERBIA – PARIS CLIMATE CONFERENCE  |
| 8:30 - 9:30   | Registration of participants  |
| 9:30 - 10:30  | Ceremonial opening of the Tenth Forum ENERGY TRANSITION OF SERBIA   |
| 10.50         | Introductory Speech – Tihomir Simić; Chairman of the Forum, Novi Sad, Serbia  |
|               | Welcome Speeches  |
|               | Ivo Vajgl; President of the Institute for European Affairs (INEA) for Southeast Europe, Dusseldorf, Germany and the Member  |
|               | of the European Parliament, Brussels, Belgium   |
|               | Miloš Banjac; Assistant Minister of Mining and Energy in the Government of the Republic of Serbia, Belgrade, Serbia   |
|               | <b>Dorđe Milićević</b> ; Vice-President of the Government of AP Vojvodina, Novi Sad, Serbia   |
|               | <b>Predrag Grujičić</b> ; Head of Gas Unit at the Energy Community Secretariat, Vienna, Austria<br><b>Ljubo Maćić</b> ; President of the Council of the Energy Agency of the Republic of Serbia, Belgrade, Serbia |
|               | <b>Bojan Atlagić</b> ; Acting Director of EPS Distribution, Belgrade, Serbia  |
|               | Rade Doroslovački; Dean of the Faculty of Technical Sciences, Novi Sad, Serbia  |
|               | <b>Petar Škundrić</b> ; President of the National Petroleum Committee of Serbia – World Petroleum Council, Belgrade, Serbia   |
|               | Martin Bendel; The First Mayor of the City of Ulm, Ulm, the Federal State of Baden-Wurttemberg, Germany   |
|               | Attila Pintér; His Excellency, Ambassador of Hungary to Serbia, Belgrade, Serbia  |
|               | Pál Ságvári; His Excellency, Ambassador-at-large in charge of energy security at the Ministry of Foreign Affairs and Trade of   |
|               | Hungary, Budapest, Hungary  |
|               | "TOP ENERGY" and JUBILEE CHARTERS AWARD CEREMONY  |
|               | <b>Opening of the Forum – István Pásztor</b> ; President of the Assembly of AP Vojvodina, Novi Sad, Serbia  |
|               | Joint Photograph (Central Hall of the Assembly)   |
|               | Statements to the media   |
| 10:30 - 11:00 | Coffee Break  |
|               | FIRST WORKING SESSION   |
| 4 00 42 40    | EUROPE 20-20-20   |
| 11:00 - 13:40 | INTRODUCTORY SPEECH<br>Tihomir Simić; Chairman of the Forum, Novi Sad, Serbia   |
|               | ON THE ROAD TOWARDS EU  |
|               | Miloš Banjac; Ministry of Mining and Energy in the Government of the Republic of Serbia, Belgrade, Serbia   |
|               | ENERGY SECURITY OF THE REGION OF THE SOUTHEAST EUROPE AND PROSPECTS OF GAS SUPPLY   |
|               | Predrag Grujičić; Energy Community Secretariat, Vienna, Austria   |
|               | THE HUNGARIAN ENERGY POLICY IN THE LIGHT OF ENERGY SECURITY   |
|               | <b>Pál Ságvári</b> ; Ministry of Foreign Affairs and Trade of Hungary, Budapest, Hungary  |
|               | ENERGY EFFICIENCY AS THE BASIS FOR SUSTAINABLE DEVELOPMENT OF THE AUTONOMOUS PROVINCE OF VOJVODINA  |
|               | <b>Ivan Đoković;</b> Provincial Government, Novi Sad, Serbia  |
|               | RENEWABLE ENERGY SOURCES AND SUSTAINABLE ENERGY DEVELOPMENT OF REPUBLIC OF SERBIA   |
|               | Vesna Simić; Ministry of Mining and Energy in the Government of the Republic of Serbia, Belgrade, Serbia  |
|               | ACCESSION NEGOTIATIONS AND CHALLENGES IN THE ACCESSION OF THE REPUBLIC OF CROATIA TO THE EUROPEAN   |
|               | UNION – FOCUS ON ENERGY   |
|               | Željko Tomšić; Faculty of Electrical Engineering, Zagreb, Croatia<br>ENERGY STRATEGY: PLANETARY TRANSFORMATION OF AN ERA  |
|               | Mirjana Prijević, Miloš Dimitrijević; Energy Innovation Center TESLIANUM, Belgrade, Serbia  |
|               | BIOMASS HEATING PLANT GRADISKA AFTER THREE YEARS OF OPERATION – FINANCIAL EFFECTS AND SAFETY  |
|               | Dragiša Zečević; IEE Group, Banja Luka, B&H   |
|               | SECURED ENERGY FORTRESS   |
|               | Bojan Antović; SAGA, Belgrade, Serbia   |
|               | Panel Discussion  |
|               | SECOND WORKING SESSION  |
| F             | PETROLEUM PRODUCTS QUALITY MANAGEMENT AND REGIONAL MARKET INTEGRATION   |
| Ses           | sion is organized by the National Petroleum Committee of Serbia – World Petroleum Council   |
| 3:40 - 15:10  | Session Moderator:  |
|               | <b>Slobodan Sokolović</b> ; National Petroleum Committee of Serbia – World Petroleum Council (NNKS), Belgrade, Serbia   |
|               | Session participants:   |
|               | Snežana Ristić; Ministry of Mining and Energy in the Government of the Republic of Serbia, Belgrade, Serbia   |
|               | Representative of the Czech Government (TBC)  |
|               | Artur Thernesz; AMEI Petroleum Products Quality Company, Budapest, Hungary  |

Goran Radosavljević; National Petroleum Committee of Serbia – World Petroleum Council (NNKS), Belgrade, Serbia

| 15:10 - 15:30 | Discussions, Conclusion and Message for the Public |
|---------------|--|
| 15:30         | Cocktail (Vojvodina Assembly Club)                 |



| THIRD WORKING SESSION  |
|--|
| PROFESSIONAL AND EXPERT PAPERS IN THE AREA OF ENERGY EFFICIENCY, |
| RENEWABLE ENERGY AND ENERGY MANAGEMENT                           |

|               | RENEWABLE ENERGY AND ENERGY MANAGEMENT   |
|---------------|--|
| 8:30 - 9.00   | Registration of participants   |
| 9:00 - 9:05   | ADDRESS OF THE CHAIRMAN OF THE FORUM   |
| 0.05 0.40     | Tihomir Simić; Chairman of the Forum, Novi Sad, Serbia   |
| 9:05 - 9:10   | WELCOME SPEECH<br>Ratko Filipović: President of the Chamber of Economy of Vojvodina, Novi Sad, Serbia  |
| 9:10 - 9:20   | UNDP/GEF PROJECT: REDUCING BARRIERS TO ACCELERATE THE DEVELOPMENT OF BIOMASS MARKET IN SERBIA -  |
| 5.10 5.20     | SUPPORT TO CONSTRUCTION OF BIOGAS CHP  |
|               | Maja Matejić; UNDP Serbia, Belgrade, Serbia  |
| 9:20 - 9:30   | AN ALTERNATIVE FOR CLEAN ENERGY AND WATER SUPPLY FROM NEW TECHNOLOGIES PROSPECTIVE - HYBRID  |
|               | TECHNOLOGIES   |
|               | Predrag Spasojević; Advanced Technical Solutions, Johannesburg, South Africa   |
| 9:30 - 9:40   | MCDA APPROACH FOR DEVELOPMENT OF SUSTAINABLE ENERGY STRATEGIES - CASE STUDY WIDER BIOMASS USE IN   |
|               | SERBIA<br>Branka Gvozdenac Urošević*, Damir Đaković*, Goran Vasić**; *University of Novi Sad, Faculty of Technical Sciences, Novi  |
|               | Sad, Serbia; **Guarantee Fund, Novi Sad, Serbia  |
| 9:40 - 9:50   | WOOD DRYING IN TERMS OF ENERGY EFFICIENCY IMPROVEMENT  |
|               | Damir Đaković, Đorđije Doder; University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia  |
| 9:50 - 10:00  | AMR SYSTEM'S SUPPORT IN THE OPEN ELECTRICAL ENERGY MARKET  |
|               | Saša Marčeta, Zdravko Majstorović, Boris Holik; EPS Distribution, Novi Sad, Serbia   |
| 10:00 - 10:10 | ENERGY STORAGE: SIGNIFICANCE AND PERSPECTIVES, WITH SPECIAL ATTENTION TO STRATEGY OF EU AND  |
|               | OPPORTUNITIES IN SOUTH EAST EUROPE   |
| 10:10 - 10:25 | Borivoj Stepanov, Dorđije Doder; University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia Coffee Break  |
| 10:25 - 10:35 | TRAINING OF ENERGY MANAGERS WITHIN ENERGY MANAGEMENT SYSTEM IN REPUBLIC OF SERBIA  |
| 10.25 10.55   | Mirjana Stamenić, Nikola Tanasić, Tomislav Simonović; University of Belgrade, Faculty of Mechanical Engineering,   |
|               | Belgrade, Serbia   |
| 10:35 - 10:45 | MEASURES TO IMPROVE ENERGY EFFICIENCY OF PULVERIZED COAL-FIRED STEAM BOILER  |
|               | Nikola Tanasić, Mirjana Stamenić, Tomislav Simonović; University of Belgrade, Faculty of Mechanical Engineering,   |
| 10.15 10.55   | Belgrade, Serbia   |
| 10:45 – 10:55 | PRACTICAL EXAMPLES OF ENERGY-EFFICIENT HVAC SYSTEMS BASED ON RENEWABLE ENERGY SOURCES<br>Nebojša Mišić, Božo Lazić, Predrag Lončar; Energy net, Kać (Novi Sad), Serbia   |
| 10:55 – 11:05 | SOLAR PV PLANTS IN SERBIA AND PRACTICAL EXPERIENCE FOR SOLAR PLANT "SOLARIS 1" IN KLADOVO  |
| 10.55 11.05   | Goran Jankes; Innovation Center of the Faculty of Mechanical Engineering, Belgrade, Serbia   |
| 11:05 - 11:15 | THE ROOFTOP PHOTOVOLTAIC SOLAR POWER PLANT REPORT AND ANALYSIS   |
|               | Radomir Stamatović, Aleksandar Car; Institute Mihajlo Pupin – Automation and Control Systems, Belgrade, Serbia   |
| 11:15 - 11:25 | THE BASIS AND ACHIEVEMENTS OF MAGNETIC TECHNOLOGY  |
|               | Šandor Mraz; Alfa-term, Kula, Serbia   |
| 11:25 – 11:35 | POWER FUNCTIONS OF DISTRIBUTION MANAGEMENT SYSTEM  |
| 11:35 – 11:45 | Aleksandar Bošković, Dragan Kačar; EPS Distribution, Novi Sad, Serbia<br>CONTROL OF ELECTRICITY FLOW BASED ON USE OF MULTIFUNCTIONAL MEASURING DEVICES   |
| 11.55 11.15   | Vladimir Kulpinski; EPS Distribution, Novi Sad, Serbia   |
| 11:45 - 12:00 | Coffee Break   |
|               | FOURTH WORKING SESSION   |
|               | PROMOTION OF MODERN ENERGY TECHNOLOGIES AND CONCRETE SOLUTIONS   |
|               | Session is organized by the HUNGARIAN NATIONAL TRADING HOUSE   |
| 12:00 - 14:00 | Presentation of companies and institutions from Hungary:   |
|               | Boldizsár Tóth; President of Alliance of the Organizations in Renewable Energy Sources field of Hungary, Budapest –  |
|               | PRESENTATION OF ALLIANCE OPERATION   |
|               | János Szanyi; Presidency Member of Alliance of the Organizations in Renewable Energy Sources field of Hungary (professor at  |
|               | University of Szeged), Szeged – EXPLOITATION OF GEOTHERMAL ENERGY IN HUNGARY   |
|               | András Léderer; CEO, Thermo Kft. Budapest – ENERGY LAKE AND ALTERNATIVE RENEWABLE ENERGY SOURCES   |
|               | János Berkán; Representative, Wind Electric-Green Energy Solution, Újlengyel – INOVATIVE WIND TURBINES<br>Atilla Lengyel; Representative of Arundo Cellulóz Farming Kft. company, Újfehértó – PRESENTATION OF ACF, ARUNDO- |
|               | GIANT REED PLANTATIONS   |
|               |  |

 GIANT REED PLANTATIONS

 Andrea Sarusi-Molnár; CEO, Alternconsult Kft., Hódmezővásárhely – PRESENTATION OF COMPANY OPERATION

 József György Kunos; Regional representative of MetalCom ZRT. Budapest, Szentes – POSSIBLE RENEWABLE ENERGY

 SOURCES/TECHNOLOGIES (MARKET EXPERIENCES COMPARISON: HUNGARY-SERBIA-B&H)

 János Bleján; Representative of Ble-Sys HEWA Systems & Engineering Kft., Székesfehérvár – WWTP'S ZERO EMISSION,

 INDUSTRIAL LIGHTNING

 András Gonda; President of Cluster for renewable energy sources and energy efficiency ARCHENERG, Szeged –

 PRESENTATION OF THE CLUSTER WORK

 14:00 – 14:15
 Proposal of Conclusions of the Tenth Forum and ceremonial closing of the event

 14:00 – 14:15
 Proposal of Conclusions of the Tenth Forum and ceremonial closing of the event Tihomir Simić; Chairman of the Forum for Clean Energy Technologies, Novi Sad, Serbia

 14:15
 Cocktail

