

## Scope and objectives

The 8<sup>th</sup> Conference on Sustainable Development of Energy, Water and Environment Systems – SDEWES Conference, to be held in Dubrovnik in 2013, is dedicated to the improvement and dissemination of knowledge on methods, policies and technologies for increasing the sustainability of development by de-coupling growth from natural resources and replacing them with knowledge based economy, taking into account its economic, environmental and social pillars, as well as methods for assessing and measuring sustainability of development, regarding energy, transport, water, environment and food production systems and their many combinations. Sustainability being also a perfect field for interdisciplinary and multi-cultural evaluation of complex system, the SDEWES Conference has at the beginning of the 21<sup>st</sup> century become a significant venue for researchers in those areas to meet, and originate, discuss, share, and disseminate new ideas.

## The Conference will focus on the following objectives and will be organised in the following sessions

Sustainability comparisons and measurements methodologies, **Sustainable development as a driver for innovation and employment**, Green economy and better governance, **Decoupling growth from resources**, Decarbonisation, **Energy, transport and water policy, and the energy-water interaction**, Environmental policy, **Agricultural policy**, Environment and corporate social responsibility, **Employment and energy, transport, water and environment systems**, Technology transfer and development, **Social acceptance**, Sustainable resilience of systems, **Sustainable tourism**, Urbanism, **Regional planning and cooperation**, Sustainable islands, **Research, innovation and development**, Education in sustainable development, **Cooperation in development**, Energy system analysis, **Water system analysis**, Transport system analysis, **Life cycle assessment**, Environmental impact assessment, **Eco-design and eco-labelling**, Product cycle assessment, **Energy planning**, Transport management, **Renewable energy resources**, Primary energy resources, **Water resources**, Food and agriculture, **Renewable electricity generation systems**, Thermal power plants, **District heating and/or cooling infrastructures in future energy systems**, Nano and micro technologies and science for sustainable development of energy, water, and environment systems, **Carbon capture and storage/sequestration**, Nuclear energy, **Advanced sustainable energy conversion systems**, Pyrolysis and torrefaction, **Renewable heat systems**, Biofuels and biorefineries, **Hydrogen production and use technologies**, Hybrid and electric vehicles, **Synthetic fuels**, Water treatment, **Water Desalination**, Wastewater treatment, **Waste treatment**, Waste to energy, **Recycling waste**, Pollution modelling, **Heat and mass transfer modelling**, Cogeneration, trigeneration and polygeneration, **Storage**, Electricity transmission, **Smart energy networks**, Energy efficiency in industry and mining, **Energy efficiency in agriculture and aquaculture**, Energy efficient appliances, **Buildings**, Energy markets, **Emission markets**, Political aspects of sustainable development.

In addition, acknowledging that regional coordination is the only feasible solution for gaining synergy effects for the small and only partially connected emerging energy markets of the South East European Region, the Conference will address the core goals of the Energy Community: Competitive integrated regional energy market, **Security of supply**, Climate change and environment, **Infrastructure development**, Social dimension, **External relations in light of sustainable development**.

## Organizers

University of Zagreb, Zagreb, Croatia  
Instituto Superior Técnico, Lisbon, Portugal



## In cooperation with

Industrial University of Santander, Santander, Colombia  
University of Dubrovnik, Dubrovnik, Croatia  
Aalborg University, Aalborg, Denmark  
Institut National Polytechnique de Grenoble, Grenoble, France  
National Technical University of Athens, Athens, Greece  
Cologne University of Applied Sciences, Cologne, Germany  
University of Pannonia, Veszprém, Hungary  
Macedonian Academy of Sciences and Arts, Research Center ICEIM, Skopje, Macedonia  
Delft University of Technology, Delft, The Netherlands  
Vinča Institute of Nuclear Sciences, Belgrade, Serbia  
Jožef Stefan International Postgraduate School, Ljubljana, Slovenia

## Partners

UNESCO, Paris   
International Centre for Sustainable Development of Energy, Water and Environment Systems, Zagreb  
The Club of Rome, Zagreb/Ljubljana/Vienna  
The World Academy of Art and Science  
Mediterranean Network for Engineering Schools and Technical Universities, Marseille  
The Combustion Institute - Croatian section, Zagreb

## Partner journals

(previous special issues)

Applied Energy  
Desalination and Water Treatment Journal  
Energy - The International Journal  
International Journal of Hydrogen Energy  
International Journal of Sustainable Water and Environmental Systems  
Journal of Environmental Science and Health, Part A  
Management of Environmental Quality: An International Journal  
Strojarstvo: Journal for Theory and Application in Mechanical Engineering  
Thermal Science  
Utilities Policy  
Waste Management and Research  
Water Resources Management



foto: sudbina.stance.ahho/HTZ / D. Fodljak

8<sup>th</sup> CONFERENCE ON  
SUSTAINABLE DEVELOPMENT OF  
ENERGY, WATER AND  
ENVIRONMENT SYSTEMS

September 22 - 27, 2013  
Dubrovnik, Croatia

1<sup>st</sup> CALL  
FOR PAPERS



[www.dubrovnik2013.sdewes.org](http://www.dubrovnik2013.sdewes.org)

## Call for papers

The papers must report original, previously unpublished findings in the fields of sustainable development of energy, transport, water, food and environment systems and policy. All papers will be reviewed under the direction of the International Scientific Committee by the Scientific Advisory Board. The abstracts and papers must be written in English and will be published in the Conference online digital Proceedings. The papers with archival value (**archival papers**), meaning those that report significantly to the state of the art and report final results of research, with proper literature review, will be thoroughly reviewed and will be considered for publication in special issues of several archival journals. The papers that report work in progress, papers without thorough literature review, are invited as conference papers, and will receive less stringent review. Authors are invited to offer suggestion on classification of their papers as "archival" or "conference", when submitting them. Authors (**corresponding author**) willing to present a paper should submit an abstract in English via web interface:

[www.dubrovnik2013.sdewes.org/registration](http://www.dubrovnik2013.sdewes.org/registration)

Each paper to be published in online digital Proceedings and in special issues of journals will have to be presented at the Conference by one of the authors (**presenting author**). The papers will not be allowed to be presented by non-authors. Each participating author will be obliged to present one paper orally at the Conference. Any further papers will be presented in the poster sessions.

## Conference dates

Abstract deadline (archival)	February 15, 2013
Abstract deadline (conference)	May 15, 2013
Archival full paper	May 15, 2013
Fees due - membership waiver, archival papers, reduced fee	May 15, 2013
Visa requests and fee settlement	May 30, 2013
Full members fee for conference papers	July 15, 2013
Conference full paper	September 10, 2013
Corporate fee deadline	September 15, 2013
Draft online digital Proceedings	September 20, 2013
<b>The Conference</b>	<b>September 22-27, 2013</b>
Final online digital Proceedings	October 30, 2013
Submission of papers to special issues	depending on the journal

## Conference venue

Dubrovnik is situated in the southernmost part of the Republic of Croatia. Founded in the 7<sup>th</sup> century, Dubrovnik is rich in cultural and historical Monuments and is included in the UNESCO world Heritage list. Dubrovnik International Airport is situated 22 km from the city centre.



## International Scientific Committee

Prof. Maria da Graça Carvalho, Instituto Superior Técnico, Lisbon, Portugal, Co-chair  
Prof. Neven Duić, University of Zagreb, Zagreb, Croatia, Co-chair  
Prof. Viatcheslav Kafarov, Industrial University of Santander, Santander, Colombia, Co-Chair for the Americas  
Prof. Jiří Jaromír Klemeš, University of Pannonia, Veszprém, Hungary, Co-Chair for the Central and Eastern Europe  
Prof. Ingo Stadler, Cologne University of Applied Sciences, Cologne, Germany, Co-Chair for the Western Europe  
Prof. Naim H. Afgan, Instituto Superior Técnico, Lisbon, Portugal  
Prof. Zvonimir Guzović, University of Zagreb, Zagreb, Croatia  
Prof. Mireille Jacomino, Grenoble Institute of Technology, Grenoble, France  
Dr. Andreas Kallioras, National Technical University of Athens, Athens, Greece  
Prof. Tarik Kupusović, University of Sarajevo, Sarajevo, Bosnia and Herzegovina  
Prof. Vladimir Lipovac, University of Dubrovnik, Dubrovnik, Croatia  
Prof. Henrik Lund, Aalborg University, Aalborg, Denmark  
Prof. Nataša Markovska, Macedonian Academy of Sciences and Arts, Skopje, Macedonia  
Prof. Brian Vad Mathiesen, Aalborg University, Aalborg, Denmark  
Dr. Simeon Oka, Vinča Institute of Nuclear Sciences, Belgrade, Serbia  
Prof. Jordan Pop-Jordanov, Macedonian Academy of Sciences and Arts, Skopje, Macedonia  
Prof. Nikola Ružinski, University of Zagreb, Zagreb, Croatia  
Prof. Daniel Rolph Schneider, University of Zagreb, Zagreb, Croatia  
Prof. Ivo Šlaus, Ruđer Bošković Institute, Zagreb, Croatia  
Dr. Petar Varbanov, University of Pannonia, Veszprém, Hungary  
Prof. Aleksander Zidanšek, Institute Jožef Stefan, Ljubljana, Slovenia

## Local Organising Committee

Prof. Neven Duić, FSB, University of Zagreb  
Prof. Zvonimir Guzović, FSB, University of Zagreb  
Prof. Daniel Rolph Schneider, FSB, University of Zagreb  
Dr. Marko Ban, FSB, University of Zagreb  
Dr. Goran Krajačić, FSB, University of Zagreb  
Nevena Grubelić, FSB, University of Zagreb

## Contact addresses of the Organising Committee

Conference secretary: Prof. Zvonimir Guzović  
Mailing address:  
2013 Dubrovnik Conference, FSB  
Ivana Lučića 5, 10000 Zagreb, Croatia  
Fax.: + 385 1 6156940  
E-mail: [dubrovnik2013@sdewes.org](mailto:dubrovnik2013@sdewes.org)  
[www.dubrovnik2013.sdewes.org](http://www.dubrovnik2013.sdewes.org)



## Scientific Advisory Board

Prof. I. Šlaus, HR – Chair  
Dr. A. Abdala, AE; Dr. A. Ajanović, AT; Dr. M. Alata, SA; Dr. L. Alves, PT; Prof. B. Angelova, MK; Dr. A. Anić Vučinić, HR; Prof. J. Arauzo, ES; Prof. H. Ashiabor, AU; Prof. L. Atanasova, BG; Prof. O. Ayalon, IL; Prof. M. Babić, RS; Prof. J. Baeyens, UK; Dr. V. Bakić, RS; Prof. I. Balen, HR; Dr. M. Ban, HR; Dr. S. Bekteshi, KS; Dr. D. Beysens, FR; Dr. V. Bigo, FR; Prof. V. Borozan, MK; Prof. B. Bošnjaković, CH; Dr. W. Budzianowski, PL; Dr. M. Camuffo, IT; Prof. E. Cardona, IT; Prof. D. Chinese, IT; Prof. P. J. Coelho, PT; Prof. L. Cortez, BR; Prof. R. M. Cotta, BR; Prof. T. Daim, US; Prof. G. Danon, RS; Prof. I. Dekanić, HR; Dr. C. Desha, AU; Prof. J. Deur, HR; Prof. S. Dobrović, HR; Dr. D. Dović, HR; Dr. D. Dražić, RS; Prof. D. Durão, PT; Prof. M. Đurović, ME; Prof. E. Džafaerović, BA; Prof. J. Elias, PL; Dr. M. Emtir, LY; Mr. B. Erichsen, AL; Prof. J. A. Esfahani, IR; Prof. B. Fabiano, IT; Prof. M. de Falco, IT; Prof. Y. Fan, CN; Prof. G. Finnveden, SE; Dr. G. Florides, CY; Dr. M. Flörke, DE; Prof. G. Fraisse, FR; Prof. B. Franković, HR; Prof. N. Gaaloul, TN; Prof. A. Galović, HR; Prof. S. Gaskin, CA; Prof. M. Gavrilescu, RO; Prof. R. Gechev, BG; Prof. M. Georgiadis, GR; Prof. N. Ghaddar, LB; Dr. D. Giannakopoulos, GR; Prof. R. Goić, HR; Prof. I. Golobič, SI; Dr. M. Golušin, RS; Dr. B. Grubar, SE; Dr. K.C.T. Gulbrandsen, NO; Prof. P. Gvero, BA; Prof. R. Haas, AT; Prof. S. Harvey, SE; Prof. P. C. Hasal, CZ; Prof. H. Hasanov, AZ; Prof. B. He, CN; Prof. A. Heidebrecht, CA; Prof. C. Henriques, PT; Dr. J. Hetland, NO; Prof. H. Hong, CN; Prof. K. Hristovski, US; Prof. G. Janke, RS; Prof. G.M. Jannuzzi, BR; Prof. Á. Jiménez Álvaro, ES; Prof. F. Johnsson, SE; Dr. S. Kabashi, KS; Dr. Y. Kadar, IL; Prof. Y. Kajikawa, JP; Prof. E. Kakaras, GR; Prof. S. Kalogirou, CY; Prof. P. Kapustenko, UA; Dr. L. Keat Teong, MY; Dr. J. Koch, US; Prof. A. Kochov, MK; Prof. K. Kovarik, SK; Prof. P. Kowalik, PL; Dr. D. Kozarac, HR; Dr. G. Krajačić, HR; Prof. Z. Kravanja, SI; Ms. A. Krkoleva, MK; Prof. S. Krstić, MK; Dr. H. Wei Kua, SG; Dr. V.I. Kupriyanov, TH; Dr. A. Lazarov, ES; Prof. W. Leal Filho, DE; Prof. D. Lončar, HR; Prof. A.G. Lopes, PT; Prof. P. Lund, FI; Prof. W. Malalasekera, UK; Prof. A.M.B. Marigorta, ES; Prof. A.M. Marinov, RO; Prof. D. Marinova, AU; Dr. I.P. Marques, PT; Dr. F.V. Matera, IT; Dr. K. Matsumoto, JP; Dr. M. McManus, UK; Mr. J.M. Mendes, PT; Prof. V. Meško, MK; Prof. J.P. Meyer, ZA; Prof. A. Micangeli, IT; Prof. A. Midilli, TR; Dr. S. Milutinović, RS; Prof. M. Mohsen, JO; Prof. S. Mojsosvska, MK; Prof. R. Moles, IE; Dr. B. Möller, DK; Prof. T. Morosuk, DE; Prof. B. Mouhouche, DZ; Dr. K. Mulder, ML; Prof. V. Naso, IT; Prof. S. Nebra, BR; Prof. S. Nicosia, IT; Prof. V. Nikolić, RS; Prof. B. N. Kuznetsov, RU; Prof. P. Novak, SI; Prof. S. Obara, JP; Ms. A. Offermans, ML; Prof. S. Oliveira Junior, BR; Dr. A. Omer, UK; Prof. A. Öpik, EE; Prof. F. Orecchini, IT; Dr. B. O'Regan, IE; Dr. A. Pakina, RU; Prof. M.O. Panão, PT; Prof. T. Palander, FI; Dr. J.P. Garciga, CU; Dr. T. Penney, US; Prof. P. Pereira da Silva, PT; Prof. N. Perić, HR; Prof. M. Pešić, RS; Prof. T.P. Mircevska, MK; Mr. G.P. Izquierdo, ES; Prof. M. Pietrafesa, IT; Prof. P. Pilavachi, GR; Prof. R. Polenakovic, MK; Prof. A. Pollard, CA; Dr. N. Popov, MK; Prof. T. Popova, RU; Prof. P. Popovski, MK; Prof. A. Predin, SI; Mr. T. Pukšec, HR; Prof. E. Putun, TR; Prof. P. Rašković, RS; Dr. R. Raven, ML; Prof. N. Ravlić, HR; Prof. M. Reini, IT; Prof. I. Ristović, RS; Prof. G. Rizzo, IT; Prof. N. Rofail, EG; Dr. A. Runchal, US; Dr. E. Ruuskanen, FI; Prof. D. L. Ryan, CA; Prof. I. Sakata, JP; Prof. M. Sarmento, PT; Dr. T. Schauer, AT; Dr. H. Schlör, DE; Prof. J. Schmandt, US; Prof. V. Schnitzer, AT; Prof. E. Scubba, IT; Mr. J. Segalas, ES; Dr. B. Seiti, AT; Prof. D. Sekulic, US; Prof. V. Semiao, PT; Prof. R. Semiat, IL; Prof. S. G. Shahneshin, CH; Dr. S.K. Sikdar, US; Prof. S. Silveira, SE; Prof. N. Simões, PT; Dr. D. Sitanyiova, SK; Prof. D. Škrlec, HR; Prof. B. Slee, UK; Prof. I. Smajević, BA; Dr. B. Sodagar, UK; Dr. V. Soldo, HR; Prof. S. Soriani, IT; Prof. W. Stanek, PL; Prof. G. Stefanović, RS; Prof. V. Stevanović, RS; Prof. V. Stojanova, MK; Prof. S. Švaić, HR; Prof. M.R. Taha, MY; Prof. R. Taleski, MK; Dr. M. Tarantini, IT; Prof. Z. Tomšić, HR; Prof. B. Tourancheau, FR; Prof. S. Trpevski, MK; Prof. A. Tsamba, MZ; Dr. A.T. Tymczynna, PL; Dr. J. Uche, ES; Prof. S. Ulgiati, IT; Dr. G. Unakitan, TR; Prof. K. Urbaniec, PL; Prof. O. Uslu, TR; Dr. B.B. Uzun, TR; Dr. A. Vakhitov, UZ; Dr. L. Velazquez, MX; Prof. V. Verda, IT; Dr. N. Voća, HR; Prof. B. Vučićak, BA; Prof. D. Vučinić, RS; Dr. M. Vujanović, HR; Prof. V. Vuković, MK; Dr. M. Vulić, SI; Dr. M. Vynnycky, IE; Dr. M. Wang, CN; Prof. Y.M. Wei, CN; Prof. J. Yan, SE; Prof. M.F. Yassin Eisa, KW; Prof. E.S. Yoon, KR; Prof. A. Zabaniotou, GR; Dr. T. Zamora, ES; Prof. B. Zelić, HR; Dr. D. Zernovskij, MK; Prof. N. Zhang, CN; Dr. L. Zhou, CN; Prof. A. Ziebig, PL; Dr. M. Zoulias, GR; Dr. Z. Zsigraiová, PT; Prof. D. Zvizdić, HR

*"Those who seek paradise on Earth should come to Dubrovnik and see Dubrovnik."*

*George Bernard Shaw*