

**13th International Conference on
"Energy, Sustainability and
Climate Crisis"
ESCC 2026**

Conference Program

Rethymno, Greece, August 24 - 28, 2026



Scan for the online program

Conference Venue

The conference will take place at the House of Culture, Rethymno, Crete, Greece (Address: Emmanouil Vernardou 25, Rethymno, Crete; location 35.36924845343666, 24.474097225504693). The House of Culture is in the old town of Rethymno.

For more information, please go to: <http://esc.uth.gr/venue/>

Directors of the Conference:

Distinguished Professor Panos Pardalos, Center for Applied Optimization, University of Florida (USA).

Associate Professor Georgios K.D. Saharidis, <https://greenyourfreight.eu>, University of Thessaly (Greece).

Professor and Chairman Soteris Kalogirou, Mechanical Engineering and Materials Science and Engineering, Cyprus University of Technology (Cyprus).

Associate Professor Vítězslav Máša, Faculty of Mechanical Engineering, Brno University of Technology (Czech Republic).

Associate Professor Maria do Castelo Gouveia, Coimbra Business School | ISCAC (Portugal).

Professor Gülgün Kayakutlu, Faculty of Management, Istanbul Technical University (Turkey).

Associate Professor Mihalis M. Golias, Civil Engineering, University of Memphis (USA).

Research Director Vassilios Kappatos, Head of Constructural and Infrastructure Research in Maritime and Air Transport Lab, Hellenic Institute of Transport (HIT), Center for Research and Technology Hellas (CERTH) (Greece).

Associate Professor Amela Ajanovic, Energy Economics Group, TU Wien (Austria).

Professor Reinhard Haas, Energy Economics Group, TU Wien (Austria).

Professor Mustafa Kumral, Department of Mining and Materials Engineering, McGill University (Canada).

Associate Professor Azlin Mohd Azmi, School of Mechanical Engineering, Universiti Teknologi MARA (Malaysia).

Scientific Committee:

Eunika Mercier-Laurent, Chair of TC12 International Federation for Information Processing IFIP (France).

Dimitris Zissis, Norwich Business School (United Kingdom).

Antonios Fragkogios, University of Thessaly (Greece).

Organizing Committee:

Eleousa Zygouri, University of Thessaly (Greece).

Anna-Maria Panagiotaki, University of Thessaly (Greece).



Program Summary

Monday, 24 August 2026

- 09:00-10:00 Registration
- 10:00-12:00 Session 1: Transportation, Maritime, Aviation & Logistics
- 12:00-13:00 Plenary Talk: Professor Dr. Panos Pardalos
A New Frontier: From a Single Network to a Network of Networks
- 13:00-14:00 Light Lunch
- 14:00-16:00 Session 2: Energy, Sustainability and Climate Change
- 16:10-16:20 **"Panos Pardalos" Young Researcher Award**
- 16:20-18:00 Session 3: Hydrogen, Fuels & Powertrain Systems

Tuesday, 25 August 2026

- 09:00-11:20 Session 4: Sustainability, Efficiency & Built Environment Economics
- 11:20-12:00 Poster Session
- 12:00-13:00 Plenary Talk: Professor Dr. Soteris Kalogirou
Renewable Energy systems: Current status in the world, prospects and problems
- 13:00-14:00 Light Lunch
- 14:00-15:00 Plenary Talk: Associate Professor Dr. Amela Ajanovic
Hydrogen Mobility: Competitiveness, Constraints, and Future Prospects
- 15:00-16:40 Session 5: Energy Policy, Grids & Governance
- 20:30 ESCC Dinner (TBD)**

Wednesday, 26 August 2026

- 09:00-11:20 Session 6: Renewable & Alternative Energy Technologies
- 11:20-12:20 Plenary Talk: Professor Dr. Reinhard Haas
A Renaissance for Nuclear in the Western World?



12:20-13:20 Light Lunch

13:20-15:00 Session 7: Climate Change Impacts & Human Dimensions

COFFEE, JUICE, WATER AND SNACKS
WILL BE OPEN AND FREE DURING THE SESSIONS

Sessions – Regular Presentations

Monday, 24 August 2026

Session 1: Transportation, Maritime, Aviation & Logistics

Chairman: V. Máša

(10:00-12:00)

- (1) K.M. Kotoula, E. Spyrou & V. Kappatos "Human-Centered AI and Digital Twins for Enhanced Safety in Aviation Industry".
- (2) N. Alamanis, G. Papageorgiou, T. Chrysanidis, D. Christodoulou, D. Zachos & V. Liakos "Ancient and Modern Port Engineering: Historical Development, Structural Comparison and Sustainable Design".
- (3) P.G. Machado, T. Gebreegziabher, D. Iribarren, N.M. Ramón & J. Dufour "Decarbonizing Aviation: Assessing the Economic Impacts of Biojet Fuel Production from Residues in Spain Using Input-Output Modeling".
- (4) J. Hobža, L. Němcová, J. Kubowský, V. Nevrlý & R. Šomplák "Algorithmic Acceleration of Large-Scale Vehicle Routing for Greenhouse Gas Emission Reductions".
- (5) J. Kubowský "Matrix Service for Sustainable Logistics Planning with Traffic-Aware Distance and Time Metrics".

Session 2: Energy, Sustainability and Climate Change

Chairman: P.G. Machado

(Young Researcher)

(14:00-16:00)

- (1) B. Goma, M. Lofajová, P. Skryja, V. Brummer, A. Kopunec, T. Vaculovič, D. Vsiansky & J. Kučera "Thermochemical Removal of Heavy Metals from Sewage Sludge Ash: A Comparative Kinetic Study of Chloride-Based Additives".
- (2) M. Duri, C. Savvides, A. Avgoustis, H. Iordanou, M. Constantinou, C. Hadjistassou & S. Achilleos "Vehicle Tailpipe Emissions, Secondary Aerosol Formation and Pertinent Health Implications".
- (3) L. Němcová, J. Hobža, J. Kubowský & V. Nevrlý "A Decision Support Framework for Sustainable Vehicle Routing via Pre-Optimization Outlier and Constraint Screening".
- (4) F. Krog & J. Avsec "Hybrid Photovoltaic-Hydrogen Microgrid for Off-Grid Community Power Supply".
- (5) C. N. Ellinopoulos & S. A. Kalogirou "Integrated Methodology for Quantitative Assessment and Certification of Circular Economy Performance in Hotel Operations".

Session 3: Hydrogen, Fuels & Powertrain Systems

Chairman: B. Goma

(16:20-18:00)

- (1) I. Alsafadi, A. Goharzadeh & D.C. Kyritsis "Data-Driven Analysis of Ethanol-Based Fuel Atomization Using Experimental Measurements and Machine Learning Techniques".
- (2) M. Yildirim "Electromagnetic Analysis of an Outer Rotor BLDC Motor for Hydrogen Fuel Cell Electric Vehicle Applications".



(3) S. Kousouris "Data-Driven Analytics on the Intelligent Asset Management Platform (iAMP) for Hydropower Operation & Maintenance".

(4) C. Guido, C. Beatrice, P. Napolitano, I. Nova, N. Usberti, G. Montenegro & A.D. Torre "Additively Manufactured Metallic Periodic Open Cellular Structures as High-Performance SCR Substrates for Heavy-Duty Gas Engines".

Tuesday, 25 August 2026

Session 4: Sustainability, Efficiency & Built Environment

Chairman: A. Moia-Pol

Economics

(09:00-11:20)

(1) D. Hupkova, L. Dobošová & P. Švikruhová "Vertical Linkages and Price Transmission in the Slovak Dairy Supply Chain: Volatility and Sustainability".

(2) C.E. Stoeniu & F.M. Șerban "Exploring the Nexus of Environmental and Capital Efficiency in the EU27: A Window-DEA Perspective on Economic and Structural Dynamics".

(3) S. Ioannidis, N. Panagopoulos & K. Kalaboukas "A Study of the Impact of Order Service Times on Market Share and Profitability in Single-Stage Production Systems".

(4) T. Chrysanidis, S. Ladopoulou, N. Alamanis, S. Kotsopoulos, G. Papageorgiou & E. Farsirotou "Environmental Conditions, Land and Housing Values around Energy, Environmental and Transport Infrastructure: Evidence from Urban Corridors and Case Studies".

(5) A. Želazna & M. Mazur "Eco-Design of School Building Renovation: An Integrated Energy, Environmental and Economic Assessment".

(6) C.E. Stoeniu "Exploring the Nexus of Environmental and Electricity Efficiency in the EU27: A Window-DEA Perspective on Economic and Structural Dynamics"

POSTER Session

(11:20-12:00)

(1) R. Hunek & W. Franus "Microstructural Characterization of Methyl Ester and Stearic Acid Anti-Corrosion Coatings on the Reinforced Concrete Walls of Cooling Towers".

(2) D. Barnat-Hunek, M. Grzegorzczak-Frańczak & A. Szewczak "Non-Toxic Hydrophobization of Lightweight Mortars: Replacing Aliphatic Hydrocarbons with Bio-Based Oils and Water-Based Nanopolymers".

(3) M. Grzegorzczak-Frańczak, D. Barnat-Hunek & A. Szewczak "Effect of Water Glass Addition on the Microstructure and Mechanical and Thermal Properties of Cement Mortars with Expanded Shale Aggregate".

(4) M.-A. Charitopoulou, M. Tournaviti & V. Kappatos, "Sustainable Methanol for Maritime Transport Produced Through an Electrified Steam Methane Reformer".

(5) D. Baveli, O. Syntelis, S. Skarpos, D. Kostoglou, K. Bavelis, G. Andreakos, N. Lettas, L. Akritidis, D. Stimoniaris & D. Tsiamitros "A Data-Driven Statistical Analysis of Electrical Distribution Network Faults Incorporating Weather Conditions Using PCA and Feature Selection Techniques".

(6) Y. Perlman & S. Westreich "Strategic Decision-Making for SSbD Products: A Three-Stage Stochastic Optimization Model".

(7) F.M. Șerban & C.E. Stoeniu "The Evolution of Climate Policy and Industrial Efficiency: A Global Bibliometric Perspective".

(8) A. Pirkarami, E. Cardoso, M. Lanza & A. Motheo "Inorganic–Organic Bilayer Electrocatalyst for Efficient Polyester Microplastic Degradation and Hydrogen Evolution Reaction".



Session 5: Energy Policy, Grids & Governance
(15:00-16:40)

Chairman: A. Želazna

- (1) D. Strušnik & J. Avsec "Evaluation of Fuel Replacement Options for the Transition from Coal to Low-Carbon Energy in District Heating System in Central Slovenia".
- (2) E. Costa, E. Mercier-Laurent & B. Caulfield "Governance Drivers of Renewable Energy and EV Integration in the EU".
- (3) K. Tsatsakis & T. Tsitsanis "Digital Innovative Cross-Sector Services for Greater Citizen Integration in the Energy Transition".
- (4) D. Kostoglou, K. Bavelis, G. Andreakos, N. Lettas, D. Stimoniari & D. Tsiamitros "Distribution Network Fault Analysis using Queueing Theory".

Wednesday, 26 August 2026

Session 6: Renewable & Alternative Energy Technologies
(09:00-11:20)

Chairman: D. Hupkova

- (1) A. Moia-Pol, J.V. Noguera, I.A. de Miguel, V. Martínez-Moll, Y. Díaz & P.A.B. Mulet "Mallorca Olive Oil Mills with Positive Energy".
- (2) A. García-Gil, J. Jiménez, J. Martínez-León, R. Sariago, C. Baquedano, A.M. Savic, B.B. Badenes, J. Urchueguía, N.C. Pérez & J.C. Santamarta "Evaluation of the Maximum Sustainable Exploitation Limits of Shallow Geothermal Resources in Urban Aquifers: The EDGEOTER Project".
- (3) C. Christou, D. Pasias, L. Aresti, D. Graikos, C. Filippou, G.A. Florides & P. Christodoulides "Performance Analysis and Dynamic Modeling of a Ground Source Heat Pump System in a Historic Mediterranean Building".
- (4) H.A. Abderrahmane "Injector Design at the Heart of Energy Transition".
- (5) U. Novosel, B. Ferčec & J. Avsec "The Historical and Future Development of Hydrogen Production Technologies in the Process of Implementing the Green Transition".
- (6) A. D. Prasad & P. V. Reddy "Life Cycle Assessment of Porous Concrete: Carbon Footprint, Energy Consumption, and Sustainability Evaluation".

Session 7: Climate Change Impacts & Human Dimensions
(13:20-15:00)

Chairman: T. Chrysandidis

- (1) S. Sousa "Perceived Climate Change Severity and Mitigation Action Intentions among Higher Education Students in Portugal".
- (2) F. Thomaidou "Geopolitical Conflicts, Cognitive Biases, and Effects on the Environment and Climate Change".
- (3) A. Zafeirakou, M. Karasani, K. Piliakas & A. Katsouleas "Estimation of the Blue Water Footprint for Key Agricultural Crops in Evros River Basin, Incorporating Climate Pressures (SPEI) and Climate Change Scenarios (KNMI)".
- (4) S.S. Güleriyüz & M. Yörükoğlu "Analyzing the Non-Linear Impact of Extreme Temperature Variations on Mortality in the Mediterranean Basin: A Mixed-Effects Modeling Approach".

Emergency Telephone Numbers

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