



# INTERNATIONAL BUILDING DECARBONIZATION 2022 CONFERENCE

Wednesday October 5, 2022



		<b>Zeus 1</b> Level: Basement	<b>Zeus 2</b> Level: Basement	<b>Athina 1</b> Level: 1 <sup>st</sup> floor	<b>Athina 2</b> Level: 1 <sup>st</sup> floor
10:00	11:00	Registration & Welcome			
		<u>Plenary – Open Ceremony - Welcome Presentations</u>			
11:00	11:30	<p style="text-align: center;"><b>KEYNOTE ADDRESS</b></p> <p style="text-align: center;">ASHRAE's Role in Building Decarbonization</p> <p style="text-align: center;"><b>Thomas Phoenix</b></p> <p style="text-align: center;">Task-Force Co Chair 2021-22, P.E., LEED AP, FASHRAE, ASHRAE President 2004-05</p>			
11:30	13:00	<p style="text-align: center;"><b>Special Session</b> Decarbonizing CANADA</p> <p style="text-align: center;">Canadian Decarbonization: Adjusting Energy Production and Consumption</p> <p style="text-align: center;"><b>K. William (Bill) Dean</b></p> <p style="text-align: center;">P.Eng., BSME Retired from National Research Council of Canada, Saskatoon, SK, Canada</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">Decarbonization Locally Oakville, Ontario, Canada</p> <p style="text-align: center;"><b>T. David Underwood</b></p> <p style="text-align: center;">B.Sc. in Civil Engineering HVAC&amp;R Founder of Isotherm Engineering Ltd. Mississauga, Ontario Canada</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">164 - Energy Codes, Climate Policy, and Federalism in the United States</p>	<p style="text-align: center;"><b>Special Session</b> Decarbonizing MENA &amp; INDIA</p> <p style="text-align: center;">A Whole life Approach to Decarbonization: Towards Zero Operational and Embodied Carbon</p> <p style="text-align: center;"><b>GHINA ANNAN</b></p> <p style="text-align: center;">Sustainability Lead, Middle East &amp; Decarbonization Team Lead, Ottawa   Mechanical Engineer  M.Sc. Applied Energy</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">Pathway to Zero Carbon Buildings</p> <p style="text-align: center;"><b>Dr. Ali Amiri</b></p> <p style="text-align: center;">Sustainability Director – Head of Specialisms</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">Decarbonizing the buildings and infrastructure – An integrated approach</p> <p style="text-align: center;"><b>Nehme Balsam</b></p> <p style="text-align: center;">Mechanical Engineer, MS, Head of Sustainability at Dar Al Handasah (Shair and partners), Lebanon</p> <p style="text-align: center;">— . — . —</p>	<p style="text-align: center;"><b>Session-1: Policies and Practical Tools for Decarbonizing the Built Environment – Part I</b></p> <p style="text-align: center;">Achieving Limerick's 2050 Vision: How Digital Twin Technology is Supporting the Drive Towards Net-Zero Cities</p> <p style="text-align: center;"><b>Susan Pierce</b></p> <p style="text-align: center;">B.Sc., MEng, Integrated Environmental Solutions Ltd. Research Consultant at IES, Dublin, Ireland</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">Evaluating Long Term Greenhouse Gas Emissions in Buildings</p> <p style="text-align: center;"><b>Philip Fairey</b></p> <p style="text-align: center;">FSEC Energy Research Center, University of Central Florida, Cocoa, Florida, USA</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">Energy crisis– Opportunities &amp; Challenges in SE Europe</p> <p style="text-align: center;"><b>Costis Stabolis</b></p> <p style="text-align: center;">Chairman and Executive Director IENE</p>	<p style="text-align: center;"><b>Session-2: Role of Occupants &amp; other Sectors</b></p> <p style="text-align: center;">Balancing Between Occupant Behaviour and Design Parameters for Energy Saving in Greek Apartments</p> <p style="text-align: center;"><b>Aikaterini Drakou</b></p> <p style="text-align: center;">Architect Engineer, M.Sc. Environmental Design and Engineering UCL, Ph.D. (c) Dept. of Architecture, University of Thessaly</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">Setting sail for the ports of the future</p> <p style="text-align: center;"><b>Prof. Theocharis Tsoutsos</b></p> <p style="text-align: center;">Ph.D., Chemical Engineer NTUA, Technical University of Crete- Renewable and Sustainable Energy Systems Lab</p> <p style="text-align: center;">— . — . —</p> <p style="text-align: center;">Water Systems Design and Operational Management Plans in an Interurban Bus Terminal Nearly Zero Energy Building</p> <p style="text-align: center;"><b>George Leoutsakos</b></p> <p style="text-align: center;">M.Sc., DIC, Ph.D., Mechanical Engineer Deputy Engineering Director, Attiko Metro SA, Athens, Greece</p>
13:00	14:00	Lunch			

14:00	16:00	<p style="text-align: center;"><b>FORUM</b> Moving too Fast or too low Towards Decarbonization</p> <p style="text-align: center;">xxx</p>	<p style="text-align: center;"><b>Session-3: Case Studies and Practical Insights – Part I</b></p> <p style="text-align: center;">Identifying Reuse Pathway for Building Systems using Physical Reliability and Technological Performance Metrics - the Case of Chillers and their Components</p> <p style="text-align: center;"><b>Sébastien Loreau</b> M.Sc, in Architectural Engineering, Ph.D. (c) Université Catholique de Louvain, Louvain-La-Neuve, Belgium</p> <p style="text-align: center;">First Actions to Decarbonization of Buildings in the Health Sector: Investigation of their Energy Profile in the Area of Central and Western Macedonia in Greece</p> <p style="text-align: center;"><b>CHRISTOS KOSTADIMAS</b> Mechanical Engineer, M.Sc., MBA, Head of the Technical Department of the 3<sup>rd</sup> Regional Healthcare Authority, Thessaloniki, Greece</p>	<p style="text-align: center;"><b>Session-4: Policies and Practical Tools for Decarbonizing the Built Environment – Part II</b></p> <p style="text-align: center;">Building Performance Standards – A New Tool to Decarbonize Existing Buildings</p> <p style="text-align: center;"><b>Bing Liu</b> P.E., Fellow ASHRAE, Building Sector Manager Pacific Northwest National Laboratory Richland, WA, USA</p> <p style="text-align: center;">Earth Observations for Supporting the Decarbonization of Building Stocks</p> <p style="text-align: center;"><b>Dr. Elena Dascalaki</b> Research Director, IERSD. National Observatory of Athens</p>	<p style="text-align: center;"><b>Session-5: Embodied Carbon Solutions</b></p> <p style="text-align: center;">A ‘Just Transition’ for Renovations</p> <p style="text-align: center;"><b>Murdoch MacPherson</b> P.Eng., Mechanical Engineer, President of MacPherson Engineering</p> <p style="text-align: center;">Early-Stage Structural Estimation for Embodied Carbon Decision Making</p> <p style="text-align: center;"><b>Sara M. Laudeman</b> M.Arch, B.A. Architecture, B.S. Mathematics; Assoc. AIA, Architectural Researcher at cove.tool, Atlanta, Georgia, USA</p> <p style="text-align: center;">Proper Evaluation of Embodied Carbon in Structures</p> <p style="text-align: center;"><b>Emily Lorenz</b> PE, BS and MS in Civil Engineering, Independent Consultant in Chicago, USA</p>
16:00	16:30	<b>Coffee Break</b>			
16:30	18:30	<p style="text-align: center;"><b>Session-6: Smart Grids</b></p> <p style="text-align: center;">How do Buildings Play a Role in Decarbonizing the Grid and how does the Grid Talk Back?</p> <p style="text-align: center;"><b>Katherine Hammack</b> Director, GBCI</p> <p style="text-align: center;">The future of Heating is Electric, and it is Happening NOW</p> <p style="text-align: center;"><b>Louis Rompre</b> B.Sc. in Mechanical Engineering, Portfolio Leader – Trane EMEA</p> <p style="text-align: center;">Perspectives 2020-2070 leading to Building Decarbonization</p> <p style="text-align: center;"><b>Raul Simonetti</b> HVAC/R Corporate Business Manager at CAREL Industries SpA</p>	<p style="text-align: center;"><b>Session-7: Refrigeration &amp; Refrigerants</b></p> <p style="text-align: center;">Refrigerants and Foam Insulation Blowing Agents for Residential and Commercial Building Decarbonization</p> <p style="text-align: center;"><b>Dr. Konstantinos (Kostas) Kontomaris</b> Technical Fellow at Chemours™ Co., Wilmington, Delaware, USA</p> <p style="text-align: center;">Introducing an Innovative Circular Economy Ecosystem to support the Reuse of Refrigerants extracted from a wide range of HVAC-R systems operating under the Building sector</p> <p style="text-align: center;"><b>Nikolaos Barmparitsas</b> Mechanical Engineer, MEng, MSc, MPhil, Senior Manager at Daikin Greece, Athens, Greece</p>	<p style="text-align: center;"><b>Session-8: Data Centers</b></p> <p style="text-align: center;">Data Centers and the Race to Zero: Holistic Strategies to Reach Net-Zero by 2030</p> <p style="text-align: center;"><b>Dr. Marianna Vallejo</b> Ph.D. Mechanical Engineering, Sustainability &amp; Decarbonization Specialist, Advanced Facility Modeling &amp; Analytics, Jacobs, Portland, Oregon, USA</p> <p style="text-align: center;">CO<sub>2</sub> and OPEX Optimization of New and Existing Data Centers</p> <p style="text-align: center;"><b>Michael Jux</b> Dipl.-Ing.(FH) / CDCS, Senior Area Sales Manager at STULZ GmbH, Germany</p>	<p style="text-align: center;"><b>Session-9: Market Transformation</b></p> <p style="text-align: center;">Decarbonizing Urban Environments Through Hybrid Heat Pump District Heating</p> <p style="text-align: center;"><b>Lucy Sherburn</b> Chemical Engineer MEng Consulting Engineer at FairHeat, London, United Kingdom</p> <p style="text-align: center;">Market Transformation Through Embodied Carbon</p> <p style="text-align: center;"><b>Josh Jacobs</b> LEED AP+ BD&amp;C, Vice Chair of ASHRAE 189.1, WAP Sustainability, Director of Sustainability</p> <p style="text-align: center;">MEP 2040 Challenge</p> <p style="text-align: center;"><b>Kayleigh Houde</b> PE, Associate, Computational Community Leader, Buro Happold, New York, NY</p>
18:30	20:00				
20:00	22:00	<b>Welcome Party</b> <b>Nautical Club of Paleo Faliro (NOPF)</b>			



# INTERNATIONAL BUILDING DECARBONIZATION 2022 CONFERENCE

Thursday October 6, 2022



		<b>Zeus 1</b> Level: Basement	<b>Zeus 2</b> Level: Basement	<b>Athina 1</b> Level: 1 <sup>st</sup> floor	<b>Athina 2</b> Level: 1 <sup>st</sup> floor
08:00	08:30	Registration & Welcome			
08:30	09:00	<b>Plenary – Open Ceremony - Welcome Presentations</b> Dimitris A. Charalambopoulos, Conference General Chair			
09:00	09:30	<b>KEYNOTE ADDRESS</b>  ASHRAE's Focus on Broad Building Decarbonization  <b>Ginger Scoggins</b> PE, CEM, CxA, FASHRAE President-Elect, ASHRAE Principal, Engineered Designs, Inc.			
09:30	11:00	<b>Special Session</b> <b>Decarbonizing US</b>  <i>Positioning ASHRAE for a Decarbonized Future</i>  <b>Kent Peterson</b> PE, FASHRAE, ASHRAE President 2007-2008, Vice President + COO P2S INC . . . . . <i>Architect's role and collaboration opportunities in the decarbonization era</i>  <b>Dan Hart</b> FAIA, RE, Executive Vice President of Architecture, Principal, ParkHill, 2022 President, The American Institute of Architects . . . . . <i>Challenges and Opportunities for Smart and Sustainable Buildings</i>  <b>Lakisha Woods</b> CAE, Executive Vice President, Chief Executive Officer American Institute Architects (AIA) . . . . . XXX <b>Harry Bergmann</b> Management & Program Analyst, Building Technologies Office (BTO) Department of Energy . . . . .	<b>Session-10: Solar and CHP Pathways</b>  <i>Integration of Solar Thermal Heating into a Hospital Ventilation Reheat System</i>  <b>Dr. Monika Weiss</b> Doctor of Psychology – Industrial/Organizational Psychology, Chief Sustainability Officer at ergSol, Inc., Fairfield, CA, USA . . . . . <i>Combined Heat and Power plus Distributed Hydrogen Production for Building Decarbonization</i>  <b>Dr. Vikas Patnaik</b> Thermal-Mechanical Engineer, PhD, MBA, Vice President of Product Development at Modern Electron, Bothell, USA . . . . . <i>Resilient Electrification of the Built Environment, including Connected, Intelligent and Flexible Capabilities</i>  <b>Thomas Yeh</b> Consultant for the Advanced Efficiency Solutions team at the New York State Energy Research and Development Authority, New York . . . . .	<b>Session-11: Case Studies and Practical Insights - Part II</b>  <i>Skyscraper Approaching Net Zero</i>  <b>Chris K.W. Leung</b> Associate, Building Performance Services, Cundall, Hong Kong, HKSAR . . . . . <i>Modular Carbon Capture from Commercial Building Ventilation Air</i>  <b>Jo Norris</b> Materials Scientist & Engineer, M.A., B.S., B.A., Co-founder and CEO at Carbon Reform, Inc. . . . . . <i>Decarbonization Roadmap for Large Scale Facilities and Campuses</i>  <b>David Handwork</b> PE, CEFP, Chief of Engineering, United Commercial Energy Partners, Frisco, TX USA . . . . .	<b>Session-12: Role of the Building Envelope</b>  <i>Operational Characteristics and Performance of Trombe Wall – Design Instructions – A Parametric Study</i>  <b>Dr. Catherine Baxevanou</b> Mechanical Engineer, M.Sc., Ph.D., Researcher at Department of Architecture, University of Thessaly, Volos, Greece . . . . . <i>Insights from a Detailed Energy Audit of a Passive House Building</i>  <b>Dr. Athanasios Giannadakis</b> Research fellow in the Department of Mechanical Engineering, University of Peloponnese, Patra, Greece

		<p>U.S. Government Action on Building Decarbonization</p> <p><b>Clay Nesler</b> M.Sc. Mechanical Engineering Founder and CEO, The Nesler Group</p>			
11:00	11:30	<b>Coffee Break</b>			
11:30	13:00	<p><b>Special Session</b> <b>Decarbonizing EU</b></p> <p>Decarbonizing the European Building Stock: Past-Present-Future Decarbonization</p> <p><b>Dr. Constantinos Balaras</b> Mechanical Engineer, FASHRAE, Research Director, National Observatory of Athens — . — XXX</p> <p><b>Dimitris Athanasiou</b> Civil Engineer, M.Sc., Policy Officer DG ENER, European Commission — . — XXX</p> <p><b>Dr. Eleftherios Bourdakis</b> Policy Adviser at European Health and Digital Executive Agency (HaDEA) — . —</p> <p>Assessing Sustainable Mediterranean Cities and Decarbonization</p> <p><b>Kalliopi (Popi) Droutsas</b> M.Sc. Environmental Physicist, Research Assistant, National Observatory of Athens — . —</p>	<p><b>Session-13: Case Studies and Practical Insights - Part I</b></p> <p>Energy Consumption Reduction of Commercial Buildings through the Implementation of Virtual and Experimental Energy Audit Analysis</p> <p><b>Ji Bae</b> M.S. Mechanical Engineering, Graduate Research Assistant at University of Maryland, College Park, United States of America — . —</p> <p>Decarbonizing America's Largest Public Library System</p> <p><b>Pallavi Mantha</b> LEED AP, WELL AP, M.Sc. in Sustainable Design BA. in Architecture, Associate, Carbon and Sustainability at Arup, New York, USA — . —</p>	<p><b>Session-14: Developments</b></p> <p>The Current State of Standards and Methods for Quantifying Total Carbon in HVACR Appliance and Equipment</p> <p><b>William F. McQuade</b> P.E, LEED AP, Fellow ASHRAE Vice President Sector Services, Air Conditioning Heating and Refrigeration Institute (AHRI) — . —</p> <p>The Green Awakening: A Potential Future Carbon Economy and Determining Your Building's CO2 Footprint</p> <p><b>Dr. Thomas Lawrence</b> Ph.D., P.E. and LEEED-AP Professor of Practice, College of Engineering, University of Georgia, Athens, Georgia USA — . —</p> <p>Best Practices Towards Concrete Material Transparency and Decarbonization</p> <p><b>Tien Peng</b> M.Arch, BE Mech Eng, LEEDap bd+c, PMP — . —</p> <p>Building EQ – The Latest including Carbon Score</p> <p><b>Doug Cochrane</b> P.Eng., LEED AP, MAshrae Independent Consultant Mississauga, Ontario Canada</p>	<p><b>Session-15: LIGHCOCE Workshop "The Future of Construction Materials in the Decarbonization Era"</b></p> <p>Building Decarbonisation: Interventions and Requirements for Energy Saving and Next Gen Construction Materials</p> <p><b>Prof. Maria Taxiarchou</b> Mining and Metallurgical Engineer National Technical University of Athens — . —</p> <p>Decarbonization Potential in the Heavy Clay Industry</p> <p><b>Dr. Jens Geduhn</b> Senior R&amp;D Manager at Schlagmann Poroton GmbH &amp; Co.KG, Germany — . —</p> <p>Investigating the Use of Lightweight and Thermally Improved Structural Concrete for Greener Buildings - A Test Case</p> <p><b>Dr. Chrysanthi Panagiotopoulou</b> Chemical Engineer. Senior Researcher National Technical University of Athens — . —</p> <p>Smart Bridges: Unlocking the Potential of Self-Sensing and Lightweight Concrete</p> <p><b>Juliusz Żach</b> Head of Research and Development Department Mostostal Warszawa S.A., Poland — . —</p>
13:00	14:00	<b>Presidential Luncheon</b>			
14:00	16:00	<p><b>Special Session</b> <b>Buildings &amp; Beyond</b></p> <p>Accelerating Decarbonization in Buildings and Infrastructure</p> <p><b>Dr. Heleni Pantelidou</b> Civil Engineer, Ph.D., CEng, MICE Associate Director at Arup, London, United Kingdom — . —</p> <p>The Carbon Cost of Comfort &amp; Safety</p>	<p><b>Session-16: Case Studies and Practical Insights - Part II</b></p> <p>Targeted Carbon Impact Analysis through Stakeholder Based Stratification and Visualization of Carbon Data</p> <p><b>Twisha Raja</b> M.AAD, B.Arch, LEED AP (BD+C), Computational Designer at cove.tool, Atlanta, Georgia, USA — . —</p>	<p><b>Session-17: XXX</b></p>	<p><b>Session-18: LIGHCOCE Workshop "The Future of Construction Materials in the Decarbonization Era"</b></p> <p>Lightweight Ceramic Tiles Development and Test Case for Green Buildings, part I</p> <p><b>Dr. Carmen Segarra Ferrando</b> Senior Researcher and Head of the Pilot Plant at the Institute of Ceramic Technology (ITC) — . —</p>

		<p><b>Dr. Mohammad Tabarra</b> Mechanical Engineer, Ph.D. Director at Arup, London, United Kingdom — . —</p> <p>Operation Carbon for Rail Stations</p> <p><b>Armand Buesa</b> Mechanical Engineer, CEng Senior Engineer at Arup, London, United Kingdom — . —</p> <p>HVAC Systems Design and Operational Management Plans in an Interurban Bus Terminal Nearly Zero Energy Building</p> <p><b>George Leoutsakos</b> M.Sc., DIC, Ph.D., Mechanical Engineer Deputy Engineering Director, Attiko Metro SA, Athens, Greece</p>	<p>Whole Life Carbon Zero</p> <p><b>LUKE LEUNG</b> PE, ASHRAE Fellow, LEED Fellow, BEMP, P Eng, ASHRAE Board of Directors, Sustainable Engineering Studio, Principle, SOM</p>		<p>Lightweight Ceramic Tiles Development and Test Case for Green Buildings, part II</p> <p><b>Luis Guaita</b> MBA &amp; B.Sc., in Chemistry, Head of R&amp;D of KERABEN GRUPO SAU — . —</p> <p>Nano Modified Cellular Lightweight Concrete</p> <p><b>Thomas Vendel</b> Mechanical Engineer Aercrete Technology AB, Sweden — . —</p> <p>Novel Low Embodied Energy Multi-Functional Construction Materials, part I</p> <p><b>Prof. Maria Taxiarchou</b> Mining and Metallurgical Engineer National Technical University of Athens — . —</p> <p>Novel Low Embodied Energy Multi-Functional Construction Materials, part II</p> <p><b>Prof. Antonis Peppas</b> Mining and Metallurgical Engineer National Technical University of Athens — . —</p> <p>The LightCoce Business Ecosystem: Opportunity to Innovate in Building materials</p> <p><b>Konstantina Papakonstantinou</b> M.Sc., Chemical Engineer, Business Development Manager at Lightcoce Ike, Lavrion, Greece</p>
16:00	16:30	Coffee Break			
16:30	17:30				
17:30	18:30	<p style="text-align: center;"><b>FORUM</b> Planning for Tomorrow</p> <p>Panel:</p> <ul style="list-style-type: none"> <li>○ Ginger Scoggins</li> <li>○ Kent Peterson</li> <li>○ Dimitris Athanasiou</li> <li>○ Dan Hart</li> <li>○ Clay Nesler</li> <li>○ Harry Bergmann</li> </ul> <p>Contributors - Brief positions</p> <ul style="list-style-type: none"> <li>○ Prof. Pantelis Kapros</li> <li>○ Costis Stambolis</li> </ul>			



**INTERNATIONAL BUILDING DECARBONIZATION 2022 CONFERENCE**

**Friday October 7, 2022**



		<b>Zeus 1</b> Level: Basement	<b>Zeus 2</b> Level: Basement	<b>Athina 1</b> Level: 1 <sup>st</sup> floor	<b>Athina 2</b> Level: 1 <sup>st</sup> floor
08:00	08:30	Registration & Welcome			
08:30	09:00	<b>Plenary – Open Ceremony - Welcome Presentations</b> Dimitris A. Charalambopoulos, Conference General Chair			
09:00	09:30	<div style="background-color: #008000; color: white; padding: 2px; text-align: center;"><b>KEYNOTE ADDRESS</b></div> <p style="color: blue; text-align: center;">ASHRAE's Focus on Broad Building Decarbonization</p> <p style="text-align: center;"><b>Prof. Donald Colliver</b></p> <p style="font-size: small;">Task-Force Co Chair, Ph.D. P.E., Professor, University of Kentucky, FASHRAE, ASHRAE President 2002-03</p>			
09:30	11:00		<div style="background-color: #d9ead3; padding: 2px; text-align: center;"> <b>Panel Discussion:</b>  <b>Building Decarbonization Global Advisory Panel discussion</b>   <b>By invitation only</b> </div>	<div style="background-color: #d9ead3; padding: 2px; text-align: center;"> <b>Session-19: Case Studies and Practical Insights</b> </div> <p style="color: blue; text-align: center;">Prudent Consumption: A Systemic Approach for Addressing Energy Efficient Design</p> <p style="text-align: center;"><b>José Luis Marrero Sicardo</b></p> <p style="font-size: small;">Mechanical Engineer, JLMS, Consulting Engineers, PSC, San Juan, Puerto Rico, Founder and President</p> <p style="color: blue; text-align: center;">Decarbonizing the Health Care Sector</p> <p style="text-align: center;"><b>Walt Vernon</b></p> <p style="font-size: small;">PE, EDAC, LEED AP, MBA, JD, LLM</p> <p style="color: blue; text-align: center;">Decarbonizing the Existing Residential Stock in India: Upgrading RETV through Uncertainty Analysis (VIRTUAL)</p> <p style="text-align: center;"><b>Urvi Shah</b></p> <p style="font-size: small;">B.Arch., M.Tech., LEED GA, IGBC AP ICL Project Consultant at Integrated Environmental Solutions (IES), Pune, India</p> <p style="color: blue; text-align: center;">Decarbonization &amp; the Health Care Sector – The California Example</p> <p style="text-align: center;"><b>Walt Vernon</b></p> <p style="font-size: small;">PE, EDAC, LEED AP, MBA, JD, LLM</p>	<div style="background-color: #d9ead3; padding: 2px; text-align: center;"> <b>Session-20: Lighting</b> </div> <p style="color: blue; text-align: center;">Daylight and the Energy Balance of Buildings</p> <p style="text-align: center;"><b>Prof. Aris Tsangrassoulis</b></p> <p style="font-size: small;">Lab. of Sustainable Design of Building Structures, Dept. of Architecture, University of Thessaly</p> <p style="color: blue; text-align: center;">Reducing the need for electric power: The role of artificial lighting</p> <p style="text-align: center;"><b>Prof. Doulos T. Lambros</b></p> <p style="font-size: small;">Ph.D., M.Sc., Physicist, Hellenic Open University, Associate Professor, Patra, Athens</p> <p style="color: blue; text-align: center;">Evaluating the Impacts of Artificial Lighting Systems to Abiotic Resources and Biosphere</p> <p style="text-align: center;"><b>Prof. Georges Zissis</b></p> <p style="font-size: small;">Vice-Rector Toulouse 3 University for International Projects &amp; Cooperation</p>

11:00	11:30	Coffee Break			
11:30	13:00		<p>Panel Discussion:  <b>Building Decarbonization Global Advisory Panel discussion</b></p> <p><b>By invitation only</b></p>	<p><b>Session-21: Role of the HVAC Systems</b></p> <p>Unlocking Hidden Energy Efficiency Potential in Buildings using Artificial Intelligence Algorithms for HVAC systems</p> <p><b>Filippo Bernardello</b>  Computer Science Engineer, Business Unit Manager at Alperia Green Future, Soave (VR), Italy</p> <p>Climate Change Impact on Office Building Cooling Demand and Life Cycle Assessment</p> <p><b>Ammar MHD Bachar Khourchid</b>  Sustainable Energy, M.S. candidate, College of Science and Engineering, Hamad Bin Khalifa University, Qatar Foundation</p>	<p><b>Session-22: ROLE OF THE BUILDING ENVELOPE</b></p> <p>Decision Support Tool for designing hybrid TES materials for construction applications</p> <p><b>Chrysa Politi</b>  M.Sc, Mechanical Engineer, Researcher at National Technical University of Athens, Greece</p>
13:00	14:00	Lunch			