



UNIVERSITY OF
WESTERN MACEDONIA



COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

SUMMER SCHOOL

Kozani
18–22 May 2026

THE EVOLVING CLIMATE AND ENERGY LANDSCAPE IN GREECE



<https://www.uowm.gr/en/>



<https://www.columbia.edu/>



<https://globalcenters.columbia.edu/>

Campus ZEP, Kozani
University of Western Macedonia

Welcome Message

Welcome to the *Evolving Climate and Energy Landscape in Greece* Summer School, a joint initiative of the **University of Western Macedonia (UOWM)** and **Columbia University**, bringing together regional expertise and global academic excellence in the study of energy transition.

This Summer School is designed for undergraduate & graduate Engineering students, focusing on Energy Technologies within the transition to sustainable energy systems. It combines academic rigor with hands-on experience and real-world exposure, enabling participants to understand both the technical and systemic dimensions of modern energy systems.

At its core, the collaboration between the University of Western Macedonia (UOWM) and Columbia University ensures high scientific quality, interdisciplinary depth, and a strong international perspective. By linking place-based insights from Western Macedonia with global approaches, the programme bridges theory and practice.

Participants will strengthen their technical knowledge while engaging with broader connections between engineering, policy, and sustainability, equipping them with the skills to contribute to the evolving global energy landscape.

The Scientific Co-Leads

UOWM

Prof. Lefteris Topaloglou



Associate Professor in the Department of Chemical Engineering
Director of Institute of Energy Development & Transition to Post-Lignite Era
Head of Energy Transition & Development Transformation Laboratory – ENTRA Lab
<https://entralab.uowm.gr/en/>
etopaloglou@uowm.gr

COLUMBIA UNIVERSITY

Prof. Greeshma Gadikota



Professor in the Department of Earth and Environmental Engineering
Columbia Climate School at Columbia University
Lenfest Earth Institute Professor of Climate Change
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The Summer School

Aim

Energy production lies at the core of modern energy systems, particularly in the transition toward low-carbon and sustainable solutions. This transformation is generating new technical, environmental, and societal challenges, increasing the demand for engineers who can navigate both established and emerging energy technologies.

The Summer School—jointly delivered by the University of Western Macedonia and Columbia University—aims to provide participants with a strong foundation in electrical and thermal energy production, while situating this knowledge within the broader context of the global energy transition. By combining regional, place-based expertise with international academic perspectives, the programme offers a unique transatlantic learning experience that bridges theory, policy, and real-world practice.

Outcomes

By the end of the programme, participants will have developed a comprehensive understanding of how energy systems are evolving at both regional and global levels, and the role they can play as future engineers within this transition.

Students will be able to:

- Build practical knowledge of contemporary and emerging energy technologies.
- Connect theoretical concepts with real-world applications through field-based learning.
- Engage with interdisciplinary perspectives that integrate engineering, policy, and sustainability.
- Collaborate in international teams, benefiting from the combined academic strengths of UOWM and Columbia.

Anticipated Results

The programme focuses on presenting current energy production technologies and examining how they are applied, integrated, and adapted in real systems. Through case studies, field visits, and collaborative project work, students will explore how different technologies interact within complex energy systems.

A central element of the programme is the collaboration between UOWM and Columbia University, which enables participants to combine place-based insights from Western Macedonia as a living laboratory of transition with global analytical and comparative approaches.

As a result, students will develop:

- The ability to critically assess and compare energy technologies across different contexts.
- A holistic understanding of how technical solutions intersect economic, environmental, and social dimensions.
- The skills to design and evaluate integrated energy strategies in an international and interdisciplinary setting.

Ultimately, the programme cultivates a new generation of engineers equipped with both technical expertise and a global, systems-oriented perspective on the energy transition.

Specific Goals

Participants will be able to:

- Develop an understanding of energy policies and regulatory frameworks in Greece and at the international level.
- Gain knowledge of key energy generation technologies and their role within modern energy systems.
- Understand the importance of energy diversification for system stability, resilience, and sustainability.
- Critically compare energy technologies, identifying their advantages, limitations, and appropriate applications.

Lectures

- L1** Environmental basis for diversifying energy resources.
- L2** Delivering a diversified energy mix for an affordable and just society.
- L3** From Coal to Renewal: The Socio-economic Reconfiguration of Western Macedonia in the Post-Lignite Era.
- L4** Designing Pathways to Diversify Energy Resources and Carriers.

The University of Western Macedonia (UOWM) is a public higher education institution established in 2003 in the Region of Western Macedonia, Greece. Since its foundation, the university has developed into a dynamic academic hub, offering a wide range of undergraduate and postgraduate programmes across seven Schools and twenty-two Departments. Its academic presence extends across five cities—Kozani, Florina, Kastoria, Ptolemaida, and Grevena—reflecting a strong commitment to regional development and decentralised education.

The main campus is situated in the Active Urban Planning Zone (ZEP) of Kozani, where key administrative services, engineering departments, and core academic facilities are concentrated. A second campus in Kila, also in Kozani, hosts the School of Economics, part of the School of Engineering, as well as essential student infrastructure, including the central library, student residences, dining facilities, and athletic amenities.



The mission of UOWM is to advance knowledge, innovation, and societal progress through high-quality education, research, and engagement. Guided by its strategic vision, the university aspires to establish itself as a leading reference point within both the Greek and European higher education landscape, particularly in the fields of science, technology, and culture.





UOWM is organised into seven Schools, each encompassing a diverse range of academic disciplines:

- **School of Engineering (Kozani):** Comprises five departments: Mechanical Engineering, Electrical and Computer Engineering, Chemical Engineering, Mineral Resources Engineering, and Product & Systems Design Engineering. The School plays a central role in supporting the region's transition towards sustainable and innovative industrial systems.
- **School of Economics:** Includes seven departments distributed across multiple cities. In Kozani: Accounting and Finance, International and European Economic Studies, Regional and Cross-Border Development Studies, and Management Science and Technology. In Grevena: Business Administration and Statistics & Insurance Science. In Kastoria: Economics.
- **School of Humanities and Social Sciences:** Encompasses four departments: Primary Education, Early Childhood Education, Psychology, and Communication & Digital Media, contributing to educational sciences, social research, and digital culture.
- **School of Agriculture (Florina):** Located on the university's agricultural farm, it supports applied research and education in sustainable agriculture and rural development.
- **School of Science (Kastoria):** Offers programmes in Mathematics and Informatics, strengthening the university's foundation in fundamental and applied sciences.
- **School of Health Sciences (Ptolemaida):** Includes the Departments of Midwifery and Occupational Therapy, addressing critical needs in healthcare education and practice.
- **School of Fine Arts (Florina):** Provides a vibrant environment for artistic creation, supported by specialised studios and exhibition spaces.

Kozani: A Historical and Cultural Gem

Located in the heart of Western Macedonia, Kozani is a dynamic city that blends rich history with modern development. As the administrative center of the region, it plays a key role in the cultural and economic life of northern Greece.

Known for its strong traditions, vibrant cultural events, and academic presence—particularly the University of Western Macedonia—Kozani is also undergoing a significant transition toward a more sustainable future, moving beyond its historical reliance on lignite.



Architectural Charm

The city center of Kozani is distinguished by elegant neoclassical architecture, spacious pedestrian streets, and lively public squares. A key landmark is the iconic clock tower in Nikis Square. The city's cultural heritage is further highlighted by institutions such as the Kozani Folklore Museum and the Archaeological Museum of Aiani, which reflect the region's history from ancient Macedonia to modern Greece.

Historical Roots

The history of Kozani dates back to ancient times, with evidence of settlements from the Hellenistic and Roman periods. The city flourished, however, during the Ottoman Empire, particularly in the 17th and 18th centuries, when it emerged as a key center of commerce and education. During this period, a strong merchant class developed, expanding trade networks across the Balkans and into Central Europe.



Culture and Traditions

Kozani is renowned for its rich cultural heritage, most vividly expressed through its distinctive winter festivities centered around large open-air fires, called "Fanoi". In neighborhoods across the city, residents gather around these fires to share traditional songs, playful verses, and rhythmic dances, creating a lively and deeply communal atmosphere. The celebrations unfold in the main squares and streets, where generations come together, blending humor, music, and local customs in a ritual of collective expression that continues late into the night.

The city is also renowned for its production of saffron, locally known as Krokos Kozanis. Cultivated in the surrounding villages, this delicate spice is widely regarded as one of the finest varieties worldwide. Beyond its distinctive aroma and color in gastronomy, it holds notable value in traditional remedies and modern cosmetic applications. Deeply embedded in the region's identity, saffron cultivation reflects both a long-standing agricultural tradition and a strong sense of local pride.



Economic Role and Energy Production

One of the most defining features of Kozani's contemporary identity is its central role in energy production. The nearby area of Ptolemaida has long served as the core of Greece's lignite-based electricity system. For decades, power plants across Western Macedonia generated a substantial share of the country's electricity, establishing the region as a key industrial and energy hub. In recent years, however, this model has been undergoing a profound transformation. As part of a broader national and European shift toward sustainability, lignite production is being gradually phased out, giving way to investments in renewable energy sources such as solar and wind. This transition is not only environmental but also socio-economic, aiming to reshape the local economy, create new employment opportunities, and ensure a balanced and resilient development pathway for the region's future.



A City of the Future

While deeply rooted in its traditions, Kozani is steadily shaping a forward-looking identity. Through ongoing infrastructure upgrades, the growing presence of the University of Western Macedonia, and a strong emphasis on sustainability initiatives, the city continues to evolve into a modern regional hub without losing its character. This balance between progress and heritage defines Kozani's appeal. Surrounded by the landscapes of Western Macedonia, it offers a setting where natural beauty meets cultural depth. Whether one is drawn by its layered history, its vibrant local traditions, or the calm of its mountainous environment, Kozani presents an authentic Greek experience—distinct, understated, and far removed from the usual tourist routes.

SUMMER SCHOOL AGENDA

Monday, May 18

Foundations of Energy Resource Diversification (Campus – based Module)

- 08:45 Bus departs for the UOWM ZEP Campus
- 09:00-09:30 Registration & Welcome Coffee
- 09:30-10:15 Official Opening (UOWM & Columbia)
Rector UOWM, **Prof. Theodoros Theodoulidis**
Columbia University, **Prof. Greeshma Gadikota**
Vice Rector UOWM, International Relations, **Prof. Eleni Griva**
Vice Rector UOWM, Research & Innovation, **Prof. George Christoforidis**
- 10:15-10:30 Orientation Session
Scientific Lead UOWM, **Prof. Lefteris Topaloglou**
- 10:30-11:30 Lecture 1* **Dr. Despoina Kanteler & Prof. Lefteris Topaloglou**
- 11:30-11:45 Coffee Break
- 11:45-12:45 Lecture 2* **Prof. George Christoforidis & Dr. Stavros Filippidis**
- 12:45-13:45 Lunch at the UOWM cafeteria
- 13:45-14:45 Lecture 3* **Prof. Lefteris Topaloglou & Dr Despoina Kanteler**
- 14:45-15:45 Mapping Energy Transitions (Interactive Group Work)
Moderation: **Dr. Despoina Kanteler**
- 15:45-16:00 Coffee Break
- 16:00-17:30 Group Formation & Project Briefing,
Moderation: **Dr. Stavros Filippidis**
- 17:00-18:00 Reflection & Discussion
- c.18:00 Bus departs for the Hotel
- c.20:30 Welcome Dinner at 'Resto-bar Restaurant'

Tuesday, May 19 - Field Trip

Renewable Energy Systems: Solar Power (Field Day)

- 08:45 Bus departs for the Vasileiada PV Plant **
- c.09:30 Estimated arrival
- 09:30-12:15 Guidance & Lecture
- 13:00-14:00 Lunch at the UOWM cafeteria
- 14:00-16:00 Class Meeting
- c.16:00 Bus departs for the Hotel
- c.19:00 Walking Guide Tour in city (optional)
Evening free

Wednesday, May 20 - Field Trip

Renewable Energy Systems: Hydropower (Field Day)

- 08:45 Bus departs for the Ilarionas Hydropower Plant **
- c.09:30 Estimated arrival
- 09:30-12:00 Guidance & Lecture
- c.12:00 Bus departs for the Archaeological Museum of Aiani
- c.12:30 Estimated arrival

12:30-13:30 Guidance & Lecture
c.13:30 Bus departs for the Neraida village
13:30-15:00 Lunch at the Neraida Village (Anemochadi Restaurant)
c.15:00 Bus departs for the UOWM ZEP Campus
c.15:30 Estimated arrival
15:30-18:00 Class meeting
c.18:00 Bus departs for the Hotel
Evening free

Thursday, May 21 - Field Trip

Technological Futures (Field Day)

08:00 Bus departs for DIADYMA & Integrated Waste Management
c.08:45 Estimated arrival
08:45-10:45 Guidance & Lecture
c.10:45 Bus departs for the CERTH Innovation Hub Green
c.11:15 Estimated arrival
11:15-13:00 Guidance & Lecture
c.13:00 Bus departs for the Agios Panteleimonas Village
c.13:30 Estimated arrival
13:30-15:00 Lunch at the Agios Panteleimonas Village (Naoumidis Restaurant)
c.15:00 Bus departs for the Alpha Estate Winery – Amyntaio
15:15-16:30 Guidance & Lecture
c.16:30 Bus departs for the Hotel
Evening free

Friday, May 22

Technological Futures (Field Day)

08:45 Bus departs for the University
09:00-10:30 Lecture 4* Prof. Konstantinos Oureilidis
10:30-10:45 Coffee Break
10:45-13:00 Students Group Presentations (Part I)
Moderation: Prof. Greeshma Gadikota
13:00-14:00 Lunch at the UOWM cafeteria
14:00-15:45 Students Group Presentations (Part II)
Moderation: Prof. Greeshma Gadikota
15:45-16:00 Coffee Break
16:00-16:30 Faculty Feedback Panel
16:30-17:30 Certificates Ceremony & Closing
17:30 Bus departs for Kozani
c.20:30 Farewell Dinner at Avli Restaurant

* See Lectures Outline section

** Important: Please make sure to wear closed-toe footwear

LECTURES OUTLINE

18 May - Lecture 1

Climate Change, Justice and the future of Sustainable Energy Transitions

Dr. Despoina Kanteler & Prof. Lefteris Topaloglou

1. Climate Change, Justice and the Need for Energy Diversification
 - Climate change as a driver of energy transition and decarbonization
 - Global warming, emissions reduction and the urgency of low-carbon systems
 - Linking climate action with climate justice and intergenerational responsibility
2. Just Transition and Environmental Justice in Energy Systems
 - Environmental, climate and energy justice as foundations of sustainable transitions
 - Unequal distribution of environmental burdens and benefits
 - Protecting vulnerable communities and ensuring no region is left behind
3. Governance and Public Participation in Energy Transition
 - Governance structures, institutions and decision-making processes
 - Role of public engagement, deliberative democracy and local participation
 - Community-centered approaches for fair and inclusive transition planning
4. Towards a Sustainable and Resilient Energy Future
 - Renewable energy diversification: solar, wind, hydro and emerging technologies
 - Integrating environmental sustainability with social equity and governance
 - Pathways toward climate neutrality, regional development and long-term resilience

18 May - Lecture 2

Power Generation in Smart Energy Systems

Prof. George Christoforidis & Dr. Stavros Filippidis

1. Transition to Smart Energy Systems
 - Transition towards smart energy systems driven by decarbonization goals and the 2050 climate neutrality vision
2. Growth of Renewable Energy Sources
 - Rapid increase of renewable energy sources (RES), with high penetration of variable RES (wind and solar) and declining role of conventional generation
3. Operational Challenges of Variable RES
 - Operational challenges due to RES variability and uncertainty (frequency stability, voltage control, residual load)
4. Need for Flexibility and Dispatchable Generation
 - Growing need for system flexibility and fast-ramping, dispatchable generation
5. The Role of Energy Storage
 - Key role of energy storage in balancing supply and demand across multiple time scales

6. Storage Technologies and Their Applications

- Overview of storage technologies (e.g., pumped hydro, batteries, CAES, power-to-gas) and their applications

7. Sector Coupling and Large-Scale Storage

- Importance of sector coupling and large-scale storage for ensuring a reliable and sustainable future energy systems

18 May - Lecture 3

From Coal to Renewal: The Socio-economic Reconfiguration of Western Macedonia in the Post-Lignite Era

Prof. Lefteris Topaloglou & Dr. Despoina Kanteler

1. Introduction to the Region

- Western Macedonia as a former lignite-based energy hub
- Transition towards a post-carbon regional economy

2. The “Living Laboratory” Concept

- Real-world experimentation in energy transition
- Place-based learning and policy testing

3. Energy Transition in Practice

- Decommissioning of lignite infrastructure
- Deployment of renewable energy systems (solar, wind, storage)
- Integration into new energy systems and grids

4. Economic and Social Transformation

- Regional restructuring and diversification
- New sectors: agrifood, circular economy, innovation ecosystems
- Employment challenges and reskilling needs

5. Governance and Stakeholder Ecosystem

- Role of public authorities, academia, businesses, and communities
- Quadruple helix collaboration model

6. Challenges and Opportunities

- Barriers: funding, coordination, social acceptance
- Opportunities: innovation, investment, regional branding

7. Lessons for Other Regions

- Transferability of the Western Macedonia model
- From local transition to global relevance

Prof. Konstantinos Oureilidis

1. From Strategy to Implementation
 - Translating energy transition goals into actionable pathways
 - Linking environmental, technological, and economic dimensions
2. Energy Resources vs. Energy Carriers
 - Distinction between primary resources (solar, wind, biomass) and carriers (electricity, hydrogen, heat)
 - Role of electrification and sector coupling
3. System Integration & Infrastructure
 - Smart grids, storage systems, and flexibility mechanisms
 - Integration of renewables into existing energy systems
4. Scenario Design & Transition Pathways
 - Short-, medium-, and long-term planning
 - Use of scenarios and modelling tools
 - Managing uncertainty and system resilience
5. Technological Pathways
 - Renewable expansion strategies
 - Hydrogen value chains and energy storage
 - Digitalisation and AI in energy systems
6. Policy, Markets & Investment
 - Regulatory frameworks enabling diversification
 - Market design, incentives, and financing tools
 - Public-private partnerships
7. Just and Inclusive Transition
 - Ensuring affordability and social acceptance
 - Workforce transition and regional cohesion
8. From Vision to Action
 - Designing integrated, place-based energy strategies
 - Monitoring, evaluation, and adaptive policy making

UOWM LOCATION

📍 Location:

All lectures will take place in Classroom БП1_12, located at the University of Western Macedonia (UOWM) campus in ZEP, Kozani.

💻 Computer Access:

For hands-on activities or computer use, you will have access to the computer lab, located on the floor below Classroom БП1_12.

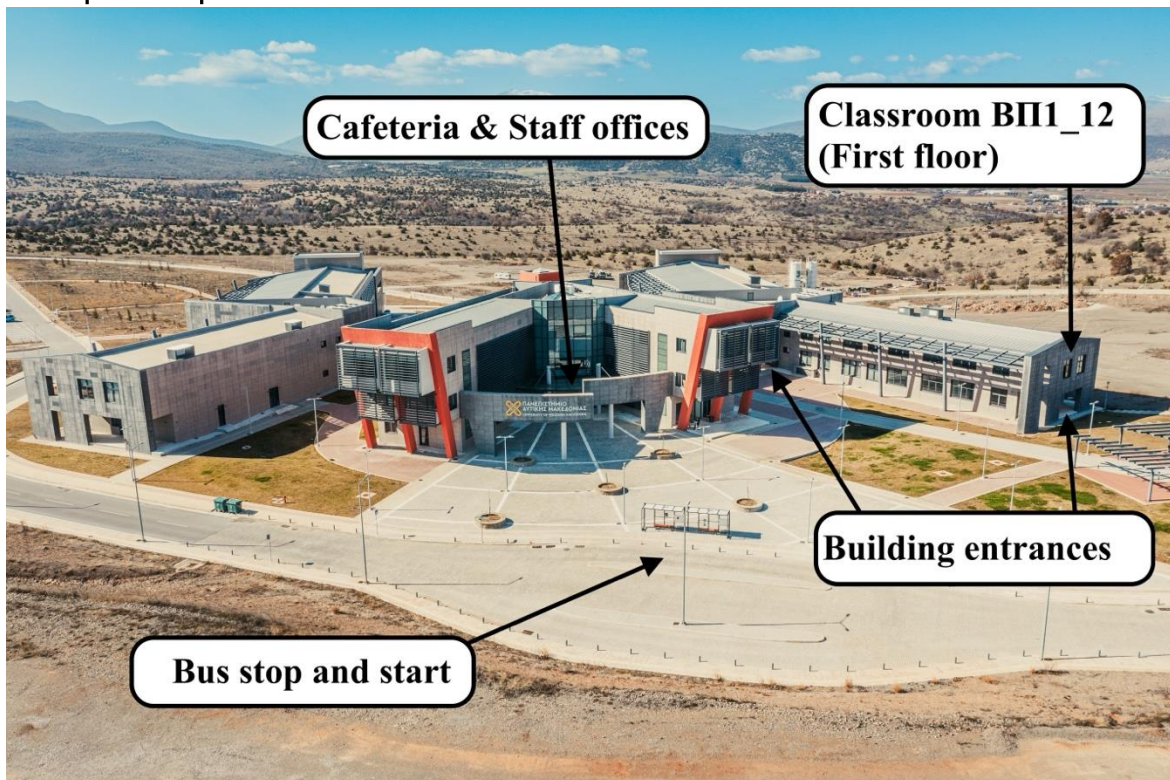
Classroom БП1_12:



Computer Classroom:



Campus Map:



MEALS & SOCIAL DINING

Welcome Dinner in Kozani – Resto Bar Restaurant – 18 May

Resto Bar Restaurant in Kozani is an exceptional culinary spot in the city, offering a friendly, warm, and modern atmosphere. It's the restaurant that perfectly blends Greek flavors with a gourmet touch. You'll find Resto Bar at Melinas Merkouri and Karamanli corner in Kozani, and from Monday through Sunday, you'll have the chance to enjoy fresh salads, feta with honey and sesame seeds, the delicious chicken roll, beef burgers, spaghetti, veal cutlets, and much more, as Resto Bar's menu is very extensive and caters to all tastes and preferences.



Lunch in Neraida Village – Anemochadi Restaurant – 20 May

Located in the picturesque village of Neraida, Anemochadi Restaurant offers an inviting dining experience with sweeping views over Lake Polyfytos, the Servia bridge, and the Pieria mountain range. Celebrated as a “Traveler’s Choice 2020”, this charming spot is praised for its excellent Greek-Mediterranean dishes served in a warm, welcoming atmosphere. Anemochadi combines fresh regional ingredients with stunning panoramas—making it a must-visit for those exploring the area.



Dining in Agios Panteleimonas – Naoumidis – 21 May

The restaurant is located in the village of Ag. Panteleimon and offers unique moments of tasting and relaxation with stunning views of Lake Vegoritida. In a warm and friendly environment, you will find traditional recipes and flavors whose biggest secret is the pure ingredients and our passion for what we do. For this reason, they grow their own vegetables, make their own wine and prepare traditional products with local raw materials which you can take with you leaving.



Farewell Dinner in Kozani – Avli Restaurant – 22 May

Avli Restaurant is located in the heart of Kozani, at Olympiou Georgaki 6, offering a warm and authentic setting for a memorable farewell evening. Blending the charm of a traditional Greek tavern with the lively spirit of a *tsipouradiko*, Avli is known for its rich variety of homemade meze dishes. With its welcoming atmosphere and central location, Avli provides the ideal setting to celebrate the closing of our time together in Kozani.



FIELD VISITS

Visit #1 - Vasileiada PV Power Plant – Tuesday May 19

Nominal Capacity: 100.977 MWp

Number of Photovoltaic Panels: ~232,346 units

Inverters: Included

Structure: Fixed structure / tracking system

Infrastructure: Substations, interconnection lines, step-up substations



Presenter Information



Mr. Konstantinos Tsampouris is an electrical engineer with a strong academic background and extensive experience in the energy and infrastructure sectors. Throughout his career, he has contributed to major energy projects across Greece, including work on wind farms, photovoltaic plants, substations, steam power plants, and gas pipeline infrastructure. His professional journey includes roles such as commissioning engineer, quality engineer, and site manager in companies like Tekim A.E., Global Energy Services SIEMSA S.A., and ELINCO S.A. Since 2021, he has been working at KIEFER TEK, where he currently serves as the Electrical Area Manager of Operation and Maintenance for photovoltaic plants and high-voltage substations.

Visit #2 - Ylarionas Hydropower Plant – Wednesday May 20

The Ylarionas Hydropower Plant is a conventional storage facility situated on the Aliakmon River in the Kozani Regional Unit of Western Macedonia, Greece. Officially commissioned in 2015, the plant is operated by the Public Power Corporation (PPC) and has a nameplate capacity of approximately 154 MW, produced by two turbines. Its strategic placement within the Aliakmonas hydropower complex underlines its importance in regional renewable energy production and grid stability.



During the visit, students will explore the plant's key operational features, including its dam structure, intake systems, turbines, and 150 kV switchyard. They will gain an understanding of how hydraulic head and reservoir storage enable efficient electricity generation, and how such facilities contribute ancillary services like frequency regulation and emergency reserve capacity. This technical overview will be supported by PPC engineering staff who will discuss electro-mechanical equipment—including governors, valves, and transformers—as well as the environmental control measures in place during operation.

Presenter Information

Mr. Miltiadis Zormpas graduated from the Department of Electrical Engineering and Computer Science at the Democritus University of Thrace in 1997 and obtained his teaching license in 1998. Before joining PPC, he worked in electrical construction and safety roles for ASPATE, TECHNINVEST-ASPATE, and VIELFYS, gaining experience in lighting systems, wind farms, and quality control systems. Within the PPC Group, he has served in distribution, hydro power station maintenance, and large-scale power plant construction. Since 2021, he has been Manager Officer of the Polyfyto and Ylarionas Hydro Power Stations within the Aliakmonas Complex.

Visit #3 - DIADYMA Waste Management – Thursday May 21

The DIADYMA Integrated Waste Management System is a regional system used to manage municipal waste across Western Macedonia in Greece. It is operated by DIADYMA S.A., a company formed by local authorities to handle waste in an organized and sustainable way.



The system is designed to cover the entire waste management chain. Waste is collected from municipalities and transported to a network of transfer stations located throughout the region. From there, it is moved to a central treatment facility, where different processes take place. Recyclable materials are separated and recovered, organic waste undergoes biological treatment (such as composting), and the remaining non-recyclable waste is safely disposed of in properly engineered sanitary landfill sites.

The DIADYMA system is fully aligned with European and national environmental regulations and supports the transition toward a circular economy. By promoting recycling, recovery of materials, and reduction of landfill use, it contributes to lowering environmental impacts and making better use of resources. Overall, it is widely regarded as a successful model of regional waste management, combining infrastructure, planning, and cooperation between local authorities. It not only improves environmental performance but also demonstrates how organized, large-scale systems can support sustainable development at the regional level.

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Presenter Information



Periklis Kafasis is an Electrical Engineer with two master's degrees, one in Environmental Policy and the other in Human Resource Management. He has extensive experience in project management and EU-funded projects. He is the Head of the Procurement, Services & Programs Department at DIADYMA, having acquired extensive knowledge in waste management. He is PMI-certified in project management and speaks Greek and English.

Visit #4 - CERTH Innovation Hub Green – Thursday May 21

The CERTH Innovation Hub “Green” is an initiative focused on promoting innovation, research, and entrepreneurship in the fields of clean energy, sustainability, and green technologies. It operates under the Centre for Research and Technology Hellas (CERTH), one of Greece’s leading research organizations, and aims to bridge the gap between research, industry, and real-world applications.

The hub brings together researchers, startups, businesses, and public stakeholders to collaborate on developing and testing new solutions related to the green transition. Its activities cover a



wide range of areas, including renewable energy, energy efficiency, circular economy, smart energy systems, and environmental technologies.

The CERTH Innovation Hub “Green” also contributes to regional development, particularly in areas undergoing economic transition, such as Western Macedonia. By encouraging investment in sustainable technologies and fostering collaboration between academia and industry, it helps create new opportunities for growth, employment, and knowledge transfer.

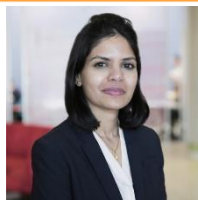
Presenter Information



Dr. Nikos Margaritis is a Research associate at CERTH/CPERI since 2010 and Managing Director of Clean Energy Ltd (CERTHs spin off) since 2013. He is a Mechanical Engineer (Aristotle University of Thessaloniki, AUTH) with a Phd on lean NOx traps operation. He has also expertise in design, operation of experimental facilities and characterization of alternative biofuels (biomass, SRF). He has participated in several national and European projects (above 50) for promotion of bioenergy in urban and rural areas, District heating from biomass and alternative energy sources, development of regional biomass action plans etc. He is also involved in projects related to green hydrogen, green buildings using RES, smart cities and grids, electromobility, application of New European Bauhaus methodology, bioeconomy and waste heat recovery in heavy industry. Technical support to Coal Platform Working Team of Region of Western Macedonia (Pilot Region in the Coal Regions for Transition Platform of EU).

[in https://www.linkedin.com/in/nikolaos-margaritis-76640369/](https://www.linkedin.com/in/nikolaos-margaritis-76640369/)

ACACEMIC STAFF CVs



Greeshma Gadikota

Professor of Climate Change (Columbia University)

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Dr. Greeshma Gadikota is a Professor in the Department of Earth and Environmental Engineering at Columbia University. Her research is focused on: (i) advancing novel technologies for the co-recovery of sustainable energy carriers and energy critical and relevant metals while valorizing multiple emission streams and (ii) developing sustainable subsurface energy technologies. This vision is realized by unlocking the underlying cross-scale fluid-surface interactions to inform field scale deployment. Her scientific contributions are recognized by the DOE, NSF and ARO CAREER Awards, Sigma Xi Young Investigator Award, Cornell Engineering Research Excellence Award, Inaugural Cornell Rising Women Innovator Award, AIChE Sabic Award for Young Professionals, and ACS Women's Chemists Committee (WCC) Rising Star Award to list a few notable recognitions.



Georgios C. Christoforidis

Professor in Electrical Power Systems (UOWM)

e-mail: gchristoforidis@uowm.gr, Mob: +30 6977996980

Dr. Georgios Christoforidis is a Professor in the Department of Electrical and Computer Engineering (ECE) at the University of Western Macedonia (UOWM). His research interests include Electric Power Systems, applications of Artificial Intelligence in power systems, distributed generation, smart grids, energy storage systems, electromagnetic compatibility, among others. He has participated as a researcher or project leader in over 25 international/national projects in the field of Electric Power Systems. He has published 56 papers in international scientific journals, 113 conference papers with peer review, and 2 book chapters, with 2,500 citations (Google Scholar) and 1,800 (Scopus) as of June 2025.



Lefteris Topaloglou

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Dr. Lefteris Topaloglou is an Associate Professor at the Chemical Engineering Department of the Polytechnic School of the University of Western Macedonia, in the field of "Energy Transition & Development Transformation Policies". He holds the position of Director of the Institute of Energy Development & Transition to the Post-Lignite Era, UCRI TEMENUS of the University of Western Macedonia. He serves as the Head of the Laboratory of Energy Transition and Developmental Transformation - ENTRA Lab of the Department of Chemical Engineering. Lefteris is a Member of the European Commission's (DG Regio) Academic Sounding Board (ASB) for Cohesion for Transition (C4T). His research interests currently focus on just energy transition, spatial justice, place-based approaches and analysis, and issues related to the governance of energy transition. His research experience is related to more than 30 research projects, most of which involve European Commission multiannual funding (FP5, FP6, FP7, HORIZON, INTERREG, ERASMUS+, ESPON) on just transition and border space. In several of these research projects, he is the scientific manager. His scientific work involves co-editing of books, publications in collective volumes, publications in scientific journals and a significant number of publications in scientific conferences with review & proceedings.



Konstantinos Oureilidis

Assistant Professor in Power Electronics (UOWM)

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Dr. Konstantinos Oureilidis is Assistant Professor at University of Western Macedonia (UOWM), Department of Electrical & Computer Engineering. He received his Diploma (2008) and PhD degrees (2015) in Electrical and Computer Engineering from the Aristotle University of Thessaloniki (AUTH) and his Bachelor degree in Business Administration from the University of Macedonia, Thessaloniki (2015). During his post-doc research, he received funds from IKY Fellowship of Excellence (IKY-Siemens). Since 2008, he works as a freelancer engineer conducting energy projects, technical and economic reports for investment laws, as an inspector in photovoltaic projects and as consultant in electricity markets. During 2016-2017 and 2020-2022, he worked as Adjunct Lecturer in AUTH and UOWM. During 2017-2022, he worked in Hellenic Energy Exchanges (former LAGIE), as a Special Scientist and Head of Markets Support at Markets Operation for the development and operation of the new electricity markets in Greece. His fields of interest include storage systems, control of power electronics, distributed generation and electricity markets.



Dimitrios Dimitriadis

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Dr. Dimitrios Dimitriadis is a Laboratory Teaching Staff, at the Department of Electrical and Computer Engineering (DCE) of the University of Western Macedonia (UWMC). His research interests include Electrical Power Systems, Drives, Electrical Machines. Since 2004, he has been working at the University of Western Macedonia, Department of Electrical and Computer Engineering, in the field of Electrical Power., administrative, and educational roles, she is committed to creating a positive social impact through her work.



Stavros Filippidis

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Dr. Stavros Filippidis holds a PhD in Electrical and Computer Engineering from the University of Western Macedonia, where he focused on the design optimization of superconducting magnetic energy storage systems. He is currently a postdoctoral researcher at the same university, working on the integration of energy storage systems into modern power grids. Over the years, he has participated in numerous national and European research projects in the fields of energy transition, smart cities, renewable energy, AI applications, and advanced storage technologies, contributing to both technical development and digital infrastructure. His work has involved collaboration with academic institutions and organizations across Europe, and he has supported the development and maintenance of academic platforms and postgraduate programs. He has published peer-reviewed scientific articles in high-impact journals, including contributions on the modeling and optimization of superconducting devices.



Despoina Kanteler

Post-Doctoral Researcher in Energy Transition (UOWM)

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Dr. Despoina Kanteler holds a PhD in Emergency Management and has 12 years of professional and academic experience in the fields of Sustainability, Emergency/Disaster Management, Regional Development, and Geospatial Technologies. She also has a strong background in project management, coordination, and implementation. Over the years, she has worked in international companies in the field of geospatial applications, as well as in academia as a research associate in the areas of civil protection and energy transition. Throughout her career, she has successfully managed large-scale projects and budgets. With a proven track record in European projects, teaching, and experience across technical, administrative, and educational roles, she is committed to creating a positive social impact through her work.



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Please don't hesitate to let us know if you need anything.

Sincerely,
The UOWM team