

Event:

Energy in Buildings Athens Conference 2026

Date:

Saturday October 24, 2026

Place:

Divani Caravel Hotel Athens, Greece



#	Irene Koronaki	
Title:	Professor, School of Mechanical Engineering, National Technical University of Athens	
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Presentation title:	Universities as Living Labs for Decarbonisation: The Case of the National Technical University of Athens	
Universities occupy a unique position in the decarbonisation of the public sector: they are large energy consumers with ageing building stock, but they are also the institutions that train the engineers, generate the knowledge and test the technologies on which the energy transition depends. This talk explores what happens when a university turns that expertise on itself, using the National Technical University of Athens (NTUA) as a case study of the campus as a living laboratory for decarbonisation. The starting point is NTUA's first institution-wide energy and carbon footprint, compiled by the university's own Laboratory of Applied Thermodynamics (THERMOLab) for 2024–2025 from utility billing, fuel invoices and hourly grid data. In 2025 the university consumed 15.07 GWh and emitted approximately 3,870 t CO₂e (Scope 1 & 2), about 95% of it on the Zografou campus, corresponding to roughly 61 kWh and 15.6 kg CO₂e per square metre. Energy use and emissions rose by 8–9% year-on-year, driven almost entirely by a 45% increase in natural gas consumption. The most revealing finding, however, came from the hourly data: a continuous baseload of about 910 kW accounts for 70% of annual electricity use, even though the campus is in active operation for only 43% of the hours in a year. The presentation then shows how these findings are being translated into an experimental agenda on campus — intensity indicators for year-on-year tracking, sub-metering by School linked to incentive schemes, lighting and control upgrades, Scope 3 data collection, on-site photovoltaics and renewable procurement — and how institutional governance, research and teaching can be aligned around them. The talk closes by considering what the NTUA experience offers to Greek higher education more broadly, and how campuses can serve as credible testbeds for the decarbonisation of public buildings.		

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Short CV (EN) :

Irene Koronaki is Professor of Mechanical Engineering at the National Technical University of Athens (NTUA) and Director of THERMOLab, the Laboratory of Applied Thermodynamics. Her research focuses on energy systems, heat pump and refrigeration systems, natural refrigerants (R290, CO₂, NH₃), building energy performance and clean energy technologies, with strong engagement in the implementation of EU regulatory frameworks such as the F-Gas Regulation, the EPBD and the EED. She serves as Vice President of the NTUA Senate Committee for Energy Management and Sustainability, where she has led the development of the university's campus energy monitoring system, its greenhouse-gas accounting tools and its annual energy and carbon footprint reporting, and she coordinates NTUA's sustainability reporting to international rankings. She has coordinated and participated in numerous European and national research and innovation projects in the fields of energy efficiency, refrigeration and sustainable buildings.