


Event:
Date:
Place:

ENERGY in BUILDINGS 2018
Saturday November 3, 2018
Athens, Hellas



#	<p>Platon V. Pallis Mechanical Engineer, M.Sc. PhD cand.</p>	
Title:	Senior Researcher at Laboratory of Steam Boilers & Thermal Plants, National Technical University of Athens, Zografou Campus, Greece	
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Presentation title:	Cost effectiveness assessment and beyond: a study on energy efficiency interventions in new Greek residential building stock	
<p>Nearly zero energy buildings (NZEBs) are one of the main priorities of the European Union energy policy. Nevertheless, the interdependence between cost-optimality and energy performance of NZEBs has not been sufficiently investigated. The present work includes a cost effectiveness analysis among different energy efficiency intervention packages oriented towards new buildings being added to the Greek building stock. The goal is the determination of the most cost effective (cost-optimal) measures that are applicable for two different building types ; Single Family House buildings and Multi-family House apartment blocks, taking into account the boundary conditions of the climate zone they belong to. All calculations were based on the methodology defined in the Directive 2010/31/EU on the energy performance of buildings. The economic evaluation assumptions were based on the EN 15459-1 standard. The scope of the paper additionally includes the evaluation of the financial gap between the examined intervention packages and nZEB thresholds. The analysis showed that the minimum requirements of the new legislation permit the construction of buildings with primary energy consumption slightly above the 60 kWh/m² threshold and at relatively low cost, but not within the cost-optimality threshold. Natural gas boilers for space heating and domestic hot water production combined with split units and low temperature reversible heat pumps are ranked as the optimal measures for SHFs, while their ranking is reversed in the case of MFH buildings. Also the study demonstrated that the combination of conventional heating systems with solar thermal utilization for heating and central DHW production makes it possible to reach nZEB PEC levels. However, in order to meet the ZEB criteria, the inclusion of highly efficient low temperature or geothermal heat pumps accompanied by PVs (currently inhibited by the net-metering schemes) is necessary. Lastly, a flexible and location-specific ZEB standard definition is necessary among different climate zones.</p>		

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CV:

Mr. Platon Pallis is a senior researcher at Laboratory of Steam Boilers & Thermal Plants of N.T.U.A.. He graduated from the School of Mechanical Engineering of the National Technical University of Athens (NTUA) in 2002 and since 2003 holds a M.Sc. in Energy Management & Production. He is certified by IRCA as Auditor/ Lead Auditor of Energy Management Systems according to the requirements of ISO 50001: 2011 and of Environmental Management Systems according to ISO 14001: 2004.

From 2002 to 2007 he worked as a research associate in the Laboratory of Steam Boilers and Thermal Plants and participated in research projects funded by the EU research. The research objective of most programs was in the field of design, laboratory measurements and techno economic analysis of hot water boilers but also in experimental fluidized bed combustion plants. From then, as a member of the permanent staff of the Laboratory of Steam Boilers and Thermal Plants, provides scientific and technical support to the accredited laboratory services and acts as head of the team performing environmental measurements & sampling.

Since 2011, he was also assigned as energy responsible for Buildings "M", "Ξ" & "O" of the School of Mechanical Engineering, organized and supervised the data collection of energy consumption by energy source, various energy measurements with the use of scientific instruments, planning out of energy balances by energy end use and the correlation of baseline consumption with influence parameters.

In addition he participated as member of the working team assigned by the Ministry of Environment, Energy & Climate Change of Greece to review the Regulation of Buildings' Energy Performance (K.EN.A.K.) according to the requirements of European directive 2010/31/EU. He also acts as substitute member of the Coordination Committee for the updating of national legislation on the energy performance of buildings set up and established by decision 170914/109/22.01.2016 of the General Secretary of Energy and Fossil Resources of the Ministry of Environment and Energy.

Finally, he supervised energy projects aiming to energy savings. Still actively participates in several research projects funded by the EU focusing on both the evolution of energy production systems and pollutant abatement technologies.