



Many examples demonstrate the contribution of energy efficiency to our lives (Photo: UNEP)

University Researchers Boost Energy Efficiency through Innovative Software

Within the 2030 Agenda for Sustainable Development, Goal 7: Affordable and Clean Energy makes within two of its targets concrete references to a concept widely used over the past few years and yet, not universally understood. "Double the global rate of improvement in energy efficiency" and "enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology" are within the targets of Goal 7.

Precisely, the Energy Policy and Development Centre (KEPA) of the National and Kapodistrian University of Athens, a UNAI member institution in Greece serving as the Hub for Goal 7, advocates for energy efficiency through several activities and research initiatives. Energy efficiency, or the use of less energy to attain the same amount of useful output or the same level of service, is key to having a greener world. It refers to reducing energy consumption or using technology that requires less energy to perform the same function.

Some common examples in many different countries are characteristic of achieving energy efficiency gains. Examples such as the use of light-emitting diode (LED) light bulbs, the replacement of a single pane window in a house for an energy-efficient one that prevents heat from escaping in the winter while keeping the heat out in the summer, or the preference for an appliance with a more energy-efficient model. The use of alternative modes of transport like bicycles and tree planting programs are also worth mentioning.

Along these lines, KEPA, as the UNAI SDG Hub for Goal 7, developed an innovative methodology and software to facilitate policymakers to incorporate end-users behavior into energy efficiency forward-looking analysis. The user-friendly software leads to an optimum combination of energy efficiency technologies and practices. Its purpose was to confront the problem of how to overcome deviations in energy efficiency targets created by behavioral barriers demonstrated by end-users.

Its concept satisfies the need to quantify qualitative data concerning end-users behavior in forms capable of being incorporated into energy efficiency modeling input drivers. The software, named HERON – DST or Decision Support Tool, is available free of charge upon request. Its implementation allows the calculation of the barriers' negative impact, created by the input the end-users behavior has, on forward-looking energy efficiency scenarios and presents the deviation from the expected targets.

It covers the definition of negative input concerning barriers of energy efficiency targets and the capacity to examine various combinations, allowing scenario analysis inputs' optimization. Dr. Popi Konidari, Head of the Climate Change Policy Group of KEPA, says that they "would like to set the example for other academic and research institutes working on issues related to Goal 7". "We are focused on supporting the United Nations efforts for the mitigation of climate change with the adoption of relevant initiatives," she adds.

Many examples demonstrate the contribution of energy efficiency to our lives. According to the 2021 Global Status Report for Buildings and Construction recently issued by the United Nations Environment Programme and the Global Alliance for Buildings and Construction, investment in building energy efficiency has increased by 40% since 2015. Moreover, energy efficiency and energy codes in buildings are the second most frequently cited actions within Nationally Determined Contributions made under the Paris Agreement on climate change.

Despite these promising facts and figures, much more needs to be done. Moreover, energy efficiency helps reduce greenhouse gas emissions and pollution in general while improving livelihoods and the competitiveness of businesses. In this sense, it is clear the significant relevance of academia to boost and implement the concept of energy efficiency. Energy efficiency is crucial to reducing power demand and building a more sustainable future for all, particularly considering the recovery efforts amid and after the COVID-19 pandemic.



2022 World Wildlife Day Film Showcase

GOAL OF THE MONTH



Goal of the Month: December 2021



Equality & Social Justice
Friday 10 December 2021, 12.30 – 2.00pm

Online Event - World Human Rights Day