

Municipality of Kozani 2030 Roadmap: A giant leap to carbon neutrality

Abstract

The global community is trying to move towards a greener future by taking actions to reduce its Green House Gas emissions, which are considered responsible for the rise of the planet's average temperature and the extreme phenomena that occur more and more often on our planet. Governments alone are not enough to help our planet embark into a new greener tomorrow: cities host today more than 50% of the total earth's population. At the same time, cities are responsible for a large part of the GHG emission increase. The city of Kozani has the potential and the Mayor with the Municipal Council have the ambition to accelerate the transition of the city to climate neutrality by 2030.

Key points

The Carbon Neutral Kozani 2030 Roadmap works as a tool to describe the measures to achieve carbon neutrality by 2030.

The STARDUST project supports the city's objectives of the carbon neutrality and digitalization.

The project has been active in developing a series of actions such as smart and efficient buildings, smart lighting management and smart sensors in various sectors.

City of Kozani goes to climate neutrality by 2030

The city of Kozani has decided to achieve climate neutrality by 2030 - seeking to become a city with zero greenhouse gas emissions. Kozani is one of the 100 Climate Neutral and Smart Cities (EU Mission) by 2030. In the following you may find a summary of the action plan for achieving the target.

<https://climatenutral2030.cityofkozani.gov.gr/climate-action-plan/>

Citizens along with local, regional and national stakeholders will unite under the Municipal Authority guidance in order to reverse the current declining situation and become a thriving community of the future!

STARDUST actions supporting city strategies

The collaboration of municipal authorities, stakeholders and third parties, includes several projects such as EU Horizon 2020 STARDUST which promotes energy efficiency and smart mobility actions. STARDUST will provide the necessary inputs of adapting the local policy and influencing mechanism and finally will help the transition of the city to a post-lignite era. Moreover, in the frame of the STARDUST contract amendment, Kozani intends to extend its activities to the surrounding region. The foreseen impacts of STARDUST activities are reflected on the improvement of energy efficiency in buildings through intelligent energy consumption systems, smart lighting management, monitoring of environmental conditions and the use of sensors to control the water and district heat supply system, as well.

The Municipality of Kozani together with its 3rd parties Smart DH and water supply system

The scope of the Project is the improvement of the District Heating Network with the use of intelligent systems through simulation and optimization. The project would allow the elaboration of smart control strategies, aiming at peak shaving and load shifting techniques. The whole system aims at predicting the thermal request profile at a building level and optimizing the substation operation. The operation of the control system would allow the consideration of thermal comfort aspects, on a demand side approach; its combination with supply side aspects, namely availability of heat load and selection of energy sources, would allow the District Heating company to proceed to the optimization of the heating system, through the on-going decarbonization process.

Energy upgrade of Municipal buildings (Municipal swimming pool of Kozani)

As part of the implementation of the STARDUST project, Western Macedonia Development Company (ANKO SA), has undertaken the necessary studies for the energy upgrade of the Municipal Swimming Pool of Kozani.

Heating System Upgrade Study: The proposed upgrade involves utilizing the existing district heating system as a heat source and installing solar collectors to assist in heating and provide hot water for the pools.

Electrical Installation & HVAC Upgrade Study: A study was conducted to evaluate the upgrade of the existing electrical installation, including high-current systems, low-current systems, lighting and ventilation system.

Smart mobility

The application of ICT (Information and Communication technologies) in the transportation sector can contribute to the efficiency and safety improvement of passengers' transportation as well as to the reduction of air pollution. Smart management of the Municipality's vehicle fleet through the installation of sensors, new intelligent parking management system, route tracking system and electrical vehicle recharging stations are actions towards implementing a holistic and intelligent transportation approach

Smart Environment

As energy requirements are constantly increasing, every city must manage both natural resources and energy in a smart way. In this perspective, Kozani focuses on using LED technology lamps coupled with smart lighting management system for the whole city. More specifically, each lamp will be connected to the network and so adjusted by motion sensors to activate lighting on low traffic roads.

Moreover, various types of measuring sensors have already been installed to mo-

onitor the environmental conditions (temperature, pollutants, air and water quality, etc.). Finally, the implementation of bin level sensors acts as a tool to redesign the waste collection management system, targeting cost reduction and optimization of the coverage of place of interest.

STARDUST impact on local ecosystem

The involvement of the Cluster of Bioeconomy and Environment of Western Macedonia (CluBE) in Stardust project has strengthened its knowledge and experience on such a level that it was entrusted by the Municipality of Kozani to undertake the proposal for Kozani to become one of the first 100 Climate Neutral and Smart Cities by 2030. Further, upon the approval of the proposal, the Municipality appointed CluBE as the coordinator of Kozani's Climate City Contract. At the same time, being itself an integrated ecosystem, CluBE was able to transfer knowledge and ideas created through Stardust to other local and regional stakeholders, thus multiplying the effects of the project in the long term.

References

- Municipality of Kozani – Climate action plan: <https://climateneutral2030.cityofkozani.gov.gr/climate-action-plan/>
- Kozani-Smart City: <https://smartcity.cityofkozani.gov.gr/>

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