

Innovative and Operational Infrastructure for the Implementation of Research and Development Actions in Waste Management within the Circular Economy Framework

Rombogiannakis, I., Kosmadaki, M., Vidakis, N. and Manios, T.

Hellenic Mediterranean University Property and Management Company. 71410 Heraklion, Crete, Greece.

Abstract

The development of a multidisciplinary infrastructure useful to research and development projects related with the management and utilization of solid waste and wastewater, is under development within the facilities of the Hellenic Mediterranean University's (HMU) Farm, named All4Waste. The All4Waste facility will be operated by the Hellenic Mediterranean University Property and Management Company and the main aim is to allow mainly (but not exclusively) private entities to implement their research and innovative activities related to municipal solid waste, agro-industrial waste and wastewater management, utilization and treatment in the framework of the Circular Economy. Within the development of this research and innovation park, any interested party will be able to have access for a respective fee, allowing it to utilise for example the All4Waste license to accept quantities of different residues and waste (see above), for the needs of the respective projects, since it will be able to provide the appropriate final management handling. The users will also have access to various treatment units of different dimensions and capacities such as experimental, bench size, pilot and demonstration, for all main processing technologies, such as composting, anaerobic digestion, solar drying, bio-transformation (in bio-reactors of different operating conditions) and gasification. The users will also have access to analytical equipment of high precision (with appropriate technical supervision) in order to conduct their own analysis, or they will be able to assign them to specialized and experienced staff, as an alternative service. Finally, any action that will take place within this framework, will be implemented in the context of strong legal commitments on copyright and intellectual property rights and, of course, confidentiality of all supportive personnel. The common use of these facilities will reduce the expected cost of a research project between 25 to 35%, an important motivation for using All4Waste but also for investing in research and development by mainly SME. Another key feature of the All4Waste park, concerns the direct and continuous interaction between the users who wish to carry out research activities, as well as the staff and the students of HMU, which will host all these activities

in its facilities. This interaction and coexistence under the same roof, is the only real way to develop synergies (including B2B services) and of course accelerate transition from research to innovation and to the market.

Keywords: waste management, circular economy, innovative technologies park

Acknowledgments: This research is co-funded within the Partnership Agreement for the Development Framework 2014-2020 by European Union and Greek national funds, through the Operational Program Competitiveness, Entrepreneurship, and Innovation (project No. code ΓΤ1CL-0058445).