



Project Title:

“Valorization of Glass for the Development of Building Materials”

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1 Project Summary and Objectives

The general objective of GOAL project is to transform the glass generated in all municipalities from waste to secondary raw material for the production of innovative binders and hence, of marketable pre-casted building materials, with high compressive strength and application in the construction industry. Towards this end, the scope of the GOAL project will be to make all the necessary laboratory preliminary activities for producing innovative building materials from glass, based on the innovative technology of geopolymerisation. The geopolymerisation technology includes the mixing of an aluminosilicate raw material with an alkaline activator resulting to materials similar to cement based products.

The GOAL project will:

- Reduce resource consumption, by utilising secondary raw materials, and by substituting natural resources
- Reduce environmental impact, by reducing the land-footprint of a series of Municipalities in Cyprus, by eliminating a source of airborne dust, and by indirectly reducing a source of CO₂, since concrete production can be substituted by a new geopolymer binder product
- Encourage the use of pre-casted building materials with high added value, by proposing new building materials that are known to have improved mechanical properties in contrast to Ordinary Portland Cement (OPC)

The above mentioned advantages will be efficiently combined in the production of additional products for the existing Cypriot and EU market. The management of Municipal Waste in Cyprus faces several challenges and appears to be underperforming, despite the fact that a comprehensive legislative framework concerning the management of waste is in place since 2011.

In Cyprus the seasonal variation of tourism flows during the summer period, has a direct impact on the volume of municipal waste (MSW). Based on research (Ministry for the Environment, Energy and Climate Change – Hellastat, September 2009), 3-9% of the total waste in several EU countries during high seasons comes from glass. The glass waste comes from bottles used (beer, beverages etc.) which at present has no way of being recycled (apart from some glass industries), in contrast to organic waste, for which composting is already a mature technology e.g. as applied in the Paralimni Municipality. Therefore, glass waste ends up in landfills. As a result, the recyclability of the glass waste is an important problem for most touristic Municipalities in Cyprus during high season.

The following activities will be carried out during the project in order to achieve the best results before the industrial investing and exploration:

- Glass characterization
- The development of lab scale geopolymers – building materials
- The evaluation of the materials in terms of mechanical and physical properties
- The technoeconomical evaluation of the project

2 Glossary of Terms

Acronym	Meaning
EC	European Commission
EU	European Union
OPC	Ordinary Portland Cement
MSW	Municipal Waste
HO	Host Organisation

2.1 Definitions

Words beginning with a capital letter shall have the meaning defined either herein or in the Rules or in the Grant Agreement related to the Project.

2.2 Additional Definitions

Project refers to the GOAL project funded from the Research Promotion Foundation Programmes For Research, Technological Development and Innovation – RESTART 2016 – 2020.

3 Intellectual Property Rights (IPR)

IPR are property rights that protect the added value generated by Europe's knowledge economy on the strength of its creators and inventors. IPR catalogues are an important part of many European businesses. Capitalising on IPR portfolios is key for European creators and businesses to sustain operations, generate revenues and develop new market opportunities.

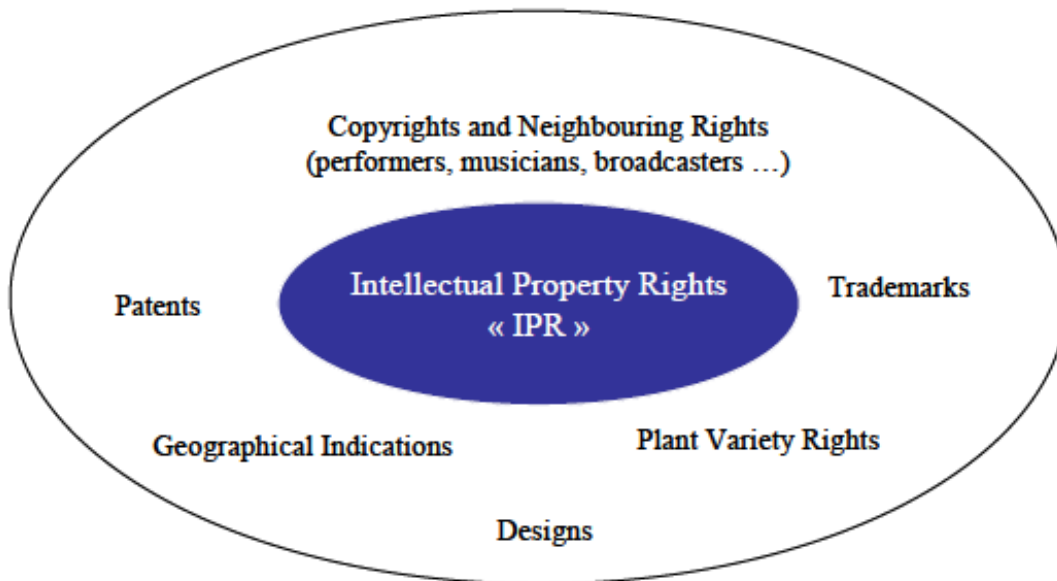


Figure 1. The world of IPR as it is defined by European Commission

Due to its high innovation capacity and early development, the GOAL concept will be kept as a **Trade Secret** inside the company which developed it (STRATAGEM), in order for the technology to be safe from copying, have additional time to investigate exploitation strategies, identify more application and draw a specific exploitation plan in the future.

For this reason apart for the Project's Website, the Poster and the Publication (article), all other Public Deliverables (D2.3 Dissemination Plan, D3.1 Datasheet, D3.4 Lab Results and D4.1 Technoeconomic Analysis) will be kept Confidential.

DISCLAIMER

The Project GOAL CONCEPT /0618/015 is co-financed by the European Regional Development Fund and the Republic of Cyprus through the Research and Innovation Foundation

