

Tire Waste Management System in Cyprus. Barriers and Improvements

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Abstract

Global tyre production is estimated to be 1.5 billion tyres/year, with a general rule that for each new tyre placed on the market, a tyre is considered to have reached the end of its life (ELT) and defined as waste. World wide the waste from tires counts 1.3 bilions t/years and by the year 2025 is expect to be double. In Europe for the year 2013, the total of used tyres, reached 3.6 million tons and their disposal in landfills is a major threat to the environment and to the public health. The tyres are a valuable source of raw materials for the production of other products or for energy recovery, but due to their diverse composition and complex structure, recycling and treatment is extremely difficult. The EU waste policy has contributed significantly to the management of used tyres, resulting in the recovery rate for 2013 be as high as 96% compared with 50% in 1996.

In Cyprus since now two management systems are in placed with the production of waste on 2012 to be 2077 t. Generally, on 2015 in Cyprus were totally import 835142 pcs of tires equal to 9638 t while at the same year the total waste from those tires were 6629 t. In the same year the cement industry used 6691 t as alternative fuel while 609 t were used to produced granules from tires and iron. The rubber granules are being used to construct tennis courts as well as a substrate on artificial lawn grounds. This research using SWOT analysis models, evaluate the waste tyre management system in Cyprus, in order to investigate the potential for improvement and implementation of circular economy model.

Taking into account the geographical isolation of Cyprus, the low absorption prospects of the products of the granulation processes in the small market in Cyprus, the high investment risk for the operation of cracking units and the failed attempts to operate cracking and granulation units, the incineration of the ETKZ in Vasiliko Cement Works, may be the only option. Moreover the results indicated a strong relation between the production of the waste and the population size, but in case that the end of waste criteria concept will be established a large amount of those waste will be a raw material for other activities improving also the concept of circular economy. Hence some proposed prevention activities could be a solution in order to control the amount of the waste that are produced

Key words: tires waste, rubber waste, end of life vehicles, pyrolysis, circular economy, industrial symbiosis