

Advanced systems for the enhancement of the
environmental performance of WINeries in
Cyprus (WINEC)



Deliverable 9

**Review of the engineering of solar
photocatalytic collectors**

S.K. eur  market LTD
WATER & WASTEWATER ENGINEERING



Summary

This Deliverable aims at the performance of a review on the applications of parabolic trough collectors, one-sun collectors and compound parabolic concentrators. The objective of the project is to develop a compound parabolic concentrator system (CPC), but at the same time, advantages and disadvantages of all the available technologies are considered so as to optimise the system that will be later on designed and constructed.

Based on the survey conducted the photoreactors that are based on the CPC technology are currently the most suited for pilot and full scale operation. Significant knowledge and experience in the design and operation of the photocatalytic systems using CPC photoreactors already exists from studies related to the areas of both photocatalysis and solar thermal engineering. This makes the design and scale-up of a plant based on this technology easier and straightforward. The current performance of CPC photoreactors is similar to, or marginally greater than, most other photoreactor designs, and they are suited for use with supported catalysts. In addition, a number of institutions has chosen CPC photoreactors as the basis for their pilot plants in order to test their suitability in wastewater treatment.

For more information about the complete deliverable please send an email to lioann01@ucy.ac.cy or mvatyl@ucy.ac.cy.

