

Installing Beehives in Solar Parks to Enhance Local Biodiversity

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Abstract : Renewable energies have been proposed for some years as a solution to the ecological crisis caused by traditional fuels. The installation of solar parks for electricity production is therefore necessary for a transition to cleaner energy. Additionally, spaces occupied by solar parks can be ideal places for biodiversity promotion consisting in controlled areas allowing free transit of numerous animal species in absence of phytosanitary products or other substances commonly used in rural areas. The main objective of this project is increasing local biodiversity. Secondary objectives include the installation of beehives with *Apis mellifera iberiensis* swarms (native honeybee species), the monitoring and periodic evaluation of the state of health and demographic progression of these swarms and study of biodiversity increase in these areas, mainly due to the presence of *Apis mellifera iberiensis*. Prior to bee-hives installation, a preliminary study of the area is carried out to quantify floral load, biocenosis and geo-climatological characteristics of the area of study for determining the optimal number of hives for the benefit of the local ecosystem. Once beehives set up, the bee-swarms health status is monitored and evaluated quarterly using monitoring systems. Parameters studies are weight, humidity inside the hive, external and internal temperature, and sound inside the hive. Furthermore, a biodiversity study of the area was conducted by direct observation and quantification of species (S) in the area of bee-foraging (1 km around the beehives). A great diversity of species has been detected in the area of study. Therefore, the population of *Apis mellifera iberiensis* is not displacing other pollinators in the area, on the contrary, results show that it is contributing to the pollination of the different plant species enhancing wild bees' biodiversity.

Keywords : biodiversity, honeybee, pollination, solar park

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