

Executive Summary

Agratio - Photovoltaic Solutions for Agriculture

Fertile land + solar energy harvesting

Double-Harvesting is a new and promising trend in agriculture. Two-level use with Solar panels above fertile grounds offer solar energy and at the same time improve the growth conditions for most crops with half-shadow-conditions and reduced water vaporization. For dry and arid conditions solar energy allows economic water supply management and irrigation.

New Technologies

Latest research findings and new technologies have encouraged Agratio to concentrate on project-developments with agro-photovoltaic applications. Our new TUBESOLAR-modules offer low weight, high stability, low wind resistance and best dispersion of rain water and therefore are ideal for agro-photovoltaic installations several meters above the cultures. A new steel rope-fixation, derived from world-famous bridge designs offers lowest cost wide support distances and is especially economic for large areas of several ten or even hundreds of acres, providing Megawatts of Energy and improved harvests at the same time.



Agro below - Solar above - with TubeSolar glasstube Modules

A combination with standard bifacial semi-transparent Si-modules of Chinese design as alternative:



Our business

Prospect-analysis is always the start of a project. Geologic and meteorological conditions, energy needs and energy pricing as well as the potential of improved harvesting have to be promising. In that case we form a special purpose company, on request with participation of other stakeholders, and develop a more detailed concept, the basis for financing and government support. The concept offers technical alternatives and looks for an optimized agricultural use. Own solar energy allows more generous water- and irrigation-systems and is in many areas a precondition for fertile crops, such as vegetable, berries or just best growing wheat.

We provide a team, organize a bid process, local manufacture of structure, mechanics and local installation and train the local team in order to ensure the quality of local content as well as knowledge for future service and maintenance.

Sustainability is our strength

Our agro-photovoltaic systems address an unusually high level of sustainability goals. Twelve of the seventeen goals of the United nations Sustainability Goals - SDGs - are addressed. Not only affordable new energy and climate change effects are addressed but also nutrition, employment, water management and several others. In particular in all the sunbelt Agratio addresses the need not only to manage dry or arid agricultural situations but also offers the best Return on Investment - RoI - due to sunshine-conditions that double energy output compared with Central Europe.

German Websides <http://www.agratio.org/> und <http://www.tubesolar.de/>, English on request
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Prof. Koch and Federal Secretary Egon Müller at the research installation of TUBE SOLAR Modules at Hochschule Weihenstephan-Troisdorf. Especially the enormous potential of half-shadow agriculture for Mediterranean countries has



impressed