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Technical and economic analysis and assessment of the possibility of building an agrophotovoltaic installation based on an existing solar power plant

Friday 13 September 2024 09:00 (20 minutes)

Abstract. The aim of the paper is to demonstrate the multidimensional benefits resulting from building a photovoltaic system in agricultural areas intended for asparagus cultivation. Energy, agronomic and economic analyzes will be conducted. For the purposes of extensive energy analyses, solar irradiation and energy production data from an existing solar power plant located in western Ukraine will be used. The agronomic analysis, in turn, will include an in-depth analysis of the conditions for growing asparagus in fertile Ukrainian lands, taking into account weather conditions, soil quality and plant irrigation needs. An important part of this paper will also be an economic calculations will be made based on the analysis of average electricity prices and asparagus purchase prices applicable to the Ukrainian market. Economic calculations will be carried out on the basis of an analysis of average electricity prices and asparagus purchase prices applicable to the Ukrainian market. The summary of the work will also propose possible ways to improve the agrophotovoltaic system and justify such a choice.

Keywords: agrophotovoltaic system, renewable energy, solar power plant, technical-economic analysis.

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