
10MW British photovoltaic energy storage container for wastewater treatment plant

Can photovoltaic and biogas be integrated in a WWTP?

Integrating renewable energy sources, biogas, and solar energy could provide up to 88% of the annual energy requirements of WWTPs. Recommendations are provided for further research considering the limited availability of integrated resources for studying the simultaneous utilization of photovoltaic and biogas systems. 1. Introduction

Can solar PV be used at a WWTP?

At WWTPs with flow rates less than 1.89 m³/d, solar PV provides 30%-100% of the required energy and is typically used as the sole RES. On the other hand, most studies examining the applications of PV cells at WWTPs have focused on the conventional fixed-beam-supported technology.

What is the current state of solar PV systems in WWTPs?

Strazzabosco et al. (2019) assessed the current state of solar PV systems in WWTPs and found that solar PV is primarily used in hybrid configurations with anaerobic digestion at WWTPs with flow rates greater than 1.89 m³/d. In these treatment plants, biogas meets 25%-65% of the total energy demand, and solar energy supplies 8%-30%.

Can a hybrid system reduce costs for a medium-sized WWTP?

Consequently, the design of a hybrid system with a biomass gasifier, solar energy, and power grids can reduce costs for a medium-sized WWTP, and the use of a hybrid system combining multiple energy sources could be a technically and economically viable alternative for use at medium-sized WWTPs (Buller et al., 2022).

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