

Waterproof photovoltaic energy storage container for wastewater treatment plants in Bahrain





Overview

Water and energy are intimately related, as water is required for energy applications and energy is required for water-based technologies. Two large groups of photovoltaic adoptions have been identified.

Where are solar PV wastewater treatment plants located?

Most of the solar PV adopted wastewater treatment plants are located in California, USA. For wastewater treatment plant capacity of above 5 Million Gallons per day inflow, around 8–30% of its energy demand is met by solar PV modules.

Are solar PV modules a viable alternative to oxidation tanks?

Colacicco and Zacchei [53] suggested solar PV modules to be an effective candidate in meeting the energy demand of oxidation tanks which consumes nearly 30–60% of the entire energy supplied to the wastewater treatment plants. Energy consumption of wastewater treatment plants is in the range of 0.52 kWh to 2.0 kWh/m³.

Which site is suitable for photovoltaic installation & utilization?

Wastewater treatment plants are identified to be the most suitable site for photovoltaic module installation and utilization. Among power sectors, hydro power plants are highly compatible with photovoltaic adoption because it enhances hydro power plant's operation time and utilization.

Can wastewater treatment plants be used for solar PV projects?

The potential of using wastewater treatment plants for solar PV projects is found to be economically viable in twenty six urban sites of China. Self consumption of the PV power by the waste water treatment plant and solar radiation potential of the plant plays an effective role in deciding the economic viability of this initiative.



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