

The photovoltaic panels installed on the lake surface have to be removed again

Does PV panel deployment affect lake water temperature?

In October, the water temperature 0.5 m inside the plant was higher than that outside the plant, and the average water temperature inside and outside the plant was 20.12. °C and 12.74 °C. It can be seen that the impact of PV panel deployment on the lake water temperature was not constant.

How do PV panels affect water quality?

Large areas of PV panels cast shadows on the water surface and thus can reduce light availability to waterbodies, and floating materials on the water surface reduce contact between the air and waterbody, which may lead to reductions in water temperature and dissolved oxygen^{17,18}. These changes might impact aquatic organisms.

Does the albedo change after PV panels are installed?

Overall, the albedo presented a "U"-shaped change behavior. The average albedo of the free water surface and PV panel was 0.101 and 0.082, respectively. After the PV panels were installed, the albedo of the lake surface was reduced compared to the free water surface.

Do FPV panels change the albedo of water?

The comprehensive albedo (0.082) decreased by 18.8% relative to the free water surface (0.101). The water energy change was dominated by the water-air vapor pressure deficit. In addition, the FPV panels had a heating effect on the ambient environment; however, the range of this effect was related to the water depth.

Does water surface albedo decrease in PV panel deployment areas?

The following conclusions are derived from the model analysis and investigation: The water surface albedo in PV panel deployment areas (0.082) was decreased by 18.8% relative to the albedo of the free water surface (0.101) during the observational period.

What is water-surface photovoltaic (WSPV)?

To avoid negative impacts of PV system on terrestrial ecosystems, water-surface photovoltaic (WSPV) systems, in which PV panels are installed on the water surface, have become the fastest-growing power generation technology in the past decades^{6,7}.



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