



Power Generation from Solar Photovoltaic Panels Floating on Water Reservoirs



Sustainable Development Goals Addressed



Organization, Institution or Company
China Energy Conservation and Environment Protection Group (CECEP) and Ciel et Terre (France)
Location of project site, Country
Anhui, China
Brief narrative description of objective/project/activity/initiative
<p>As solar PV panels become cheaper and more widely used for electric power generation, the identification of suitable and available sites can pose growing constraints. Large-scale PV installations require considerable space which is not always available in built-up urban or intensively used agricultural areas. In a growing number of countries power generation companies have turned to the surface of otherwise unused inland water reservoirs and lakes to place PV panels of floating platforms.</p> <p>In China, the China Energy Conservation and Environment Protection Group (CECEP), a large state-owned renewable energy developer, has partnered with Ciel & Terre Company (France) and recently completed a 70MW floating solar project located at a submerged former coal-mining area in Yongqiao District of Suzhou City, Anhui Province.</p>
Economic, environmental and climate benefits, challenges and lessons learned
<p>The project uses monocrystalline PV modules manufactured in China. The project spreads across 13 separate islets on an area of 140 hectares and was completed in late 2018. Engineering, procurement, and construction services were provided by China Energy Conservation Solar Technology and the China Energy Engineering Group Shanxi Electric Power Design Institute. The floats were designed in collaboration with a French company (Ciel&Terre).</p> <p>A separate 18 km long 110V overhead line was built for grid connection of the plant. The floating solar plant is expected to generate more than 70,000 MWh of electricity annually, equivalent to the power consumption of nearly 21,000 households. For a brief period, the project was one of the largest of its kind. However, according to recent reports, the Three Gorges New Energy Company is in the process of constructing a similar facility which may have even twice the capacity of the CECEP project once it is completed.</p> <p>In a recent report the World Bank highlighted the various advantages of electricity generation from solar PV panels mounted on floating platforms, which include low opportunity costs, reduced evaporation, as well as comparatively low construction, installation, and maintenance costs. The technology is being applied in both industrialized and developing</p>

countries, and appears to be particularly suitable for locations where land is comparatively scarce and expensive. Some 70 larger-scale projects of floating PV are presently operational or under construction, but their number is increasing rapidly.

Additional information: website addresses and contacts

CECEP website: <http://www.cecep.cn/g3614.aspx>

Ciel & Terre France), China Office website: <http://cieletterre.cn/>

For additional information: World Bank (2018): Where Sun Meets Water (Floating Solar Market Report – Executive Summary)

<http://documents.worldbank.org/curated/en/579941540407455831/Floating-Solar-Market-Report-Executive-Summary>

Photo by Ciel etTerre <https://www.ciel-et-terre.net/project/anhui-cecep-70005-kwp/>