THE TEAM at:
Global Solar EPC O&M services and technologies

TECHNICAL ASSISTANCE REQUEST: For the project entitled:

User-Friendly Eco-Friendly Cost-Effective floating solar panel platform, maintenance access and anchoring float system for commercial and utility scale floating solar projects.

Abstract: A common criticism of solar power is that ground-mounted arrays take land out of use for the duration of a system's lifespan of 20 years or more. But rooftops and land aren't the only places solar can be installed — developers are now looking to fresh water bodies in lakes, reservoirs, ponds, etc.. also.

What are the Benefits of Floating Solar Panels in fresh water bodies?

Solar panels actually work better when they are cooled. That's why if you have two identical systems, **one on land and one on the water, the one on the water is going to actually perform better**. Many studies showed that the **one on the water performed more than +10% better output**.

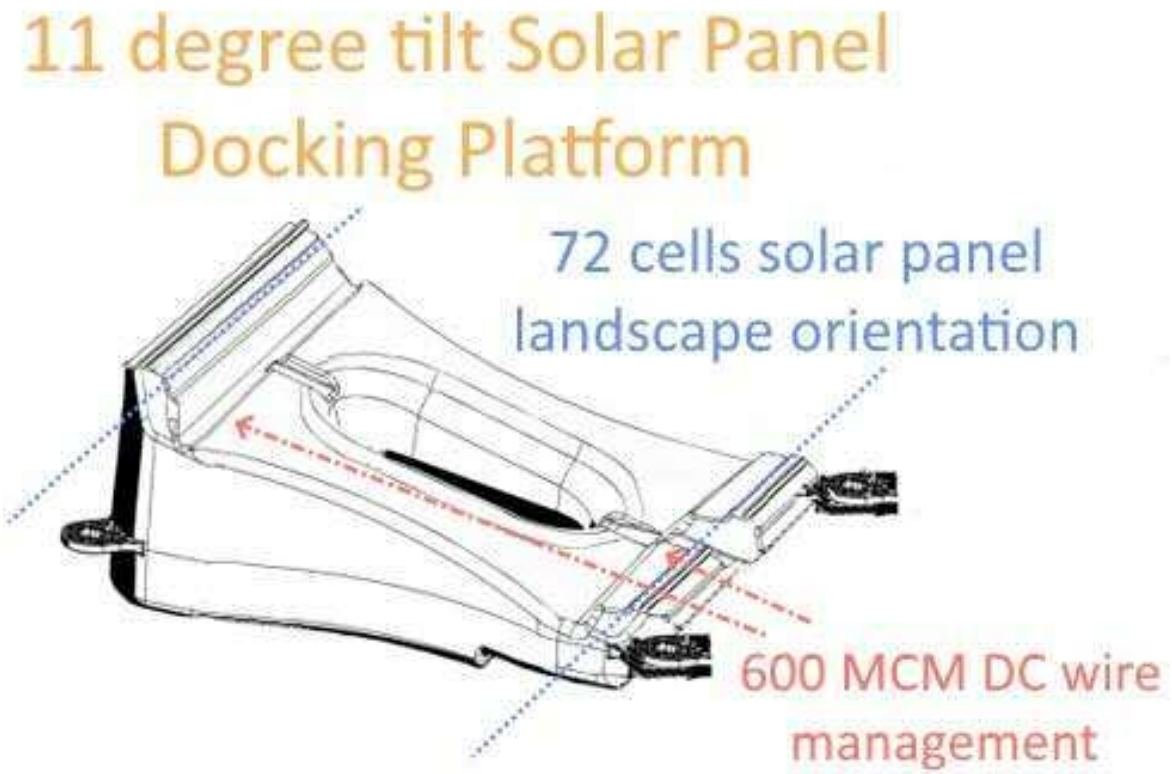
Another advantage of floating solar panels is that **they can shade the water they float on and reduce evaporation by up to 70%.** For example, if a 3 acres water storage reservoir was covered with solar panels, 4 million gallons of water could potentially be saved from evaporating every year. Also, **the solar panels prevent sunlight from hitting the water which can slow down algae growth.** When it comes to energy generation, one square acre of floating solar panels is capable of generating 500,000 kWh.

The USA & the world floating solar projects need new floating platform system with **less plastic**, **uses recycled plastic**, **cost-effective, environmental-friendly**, **stronger more stable buoyant maintenance float for access, no/very little maintenance for DC solar panel strings/arrays, no/very little metal parts on the water** and **easy & fast to install.**

SolarDOCK™ - SolarDOCK floating solar platform system made from 100% recycled plastic consists of (1) the solar panel docking platform with 0, 11 or 20 degree tilt, (2) the floating maintenance access platform and (3) anchoring system. We have completed several small (less than 500kW) floating solar projects with great success with our preliminary products. (see photo 1 below) **Integration engineering** is the **innovation** and the **key** to integrate different **existing** and **developing new technologies** are a **real technological challenge** to meet the floating solar **renewable energy needs** and the accompanying and environmental prerogatives. The **innovative** floating system **SolarDOCK™** :

- eco-friendly made from 100% recycled plastic
- cost-effective for the entire system using greater than 15% less plastic, less parts, simpler installation, resulting in less cost than competitors' system in USD more than 0.04 $/watt. Typical cost for floating platform system with anchoring system is from 0.24-0.34 $/watt DC. For a 50MW floating solar project, the developer will save more than $2MM USD just on the products. The developer reap the benefit of more saving from the easy & fast installation.
- the solar panel docking platform uses less plastic with option of 0, 11 or 20-degree tilt. The build-in wire management system for DC trunk cable size 600 MCM that capable of handling the Big Lead Assembly from SHOALS Technologies Group in Tennessee, USA DC wire with in-line fuse resulting in free of DC string combiners.
- the floating maintenance access platforms when connected together in a system are strong, very buoyant, stable and don't sink into the water to get the people feet wet even with +500 lbs. on top,
- easy & fast to setup with no special tools or equipment.

(1) Assistance with the manufacturing of the mold and injection molding manufacturing facilities for the version 2 solar panel docking platform 11 degree tilt for the plastic injection molding process. Produce 30 pieces prototype of the version 2 solar panel docking platform 11 degree tilt using recycled plastics. Produce 120 pieces of the maintenance access platforms and accessories with the existing molds.



(2) Assistance with the testing of the prototype version 2 solar panel docking platform 11 degree tilt with the maintenance access platform on a small scale with 30 solar panels string for

a. Stability and strength floating in fresh water with 72 cells solar panels with loads on the maintenance access platforms.
b. Environmental impact short term and long term with the recycled plastic materials.