

USE OF SURFCLEANER IN A MAJOR TAIWANESE ELECTRIC POWER PLANT



“ The Taiwan Power Company will continue to actively develop renewable energy and remains committed to introducing low carbon clean energy”.

The Taiwan Power Company



The Tung Hsiao Power Plant (THPP) renewal project which is located southwest of Taipei consists of three 892 MW combined cycle units, totally 2678 MW with a thermal efficiency of 60,7%. The renewal project was completed in the end of 2022. Since mid-2023 there are two SCO 1000 systems operating at the plant.

Please tell us about your company?

The Taiwan Power Company, also known by the short name Taipower, is a state-owned electric power industry providing electricity to Taiwan with a 99.99% reliability. Taipower operate thermal, nuclear, hydro, wind, solar and geothermal power plants across Taiwan. It is closely associated with the lives of Taiwan's 23 million people. The company is a cornerstone of modern life and a driver of economic development as both traditional and emerging high-tech industries are reliant on electricity. For decades, Taipower has provided sufficient electricity to support both the public's quality of life and the island's economic development. The company's transmission and distribution network can be accessed in every corner of Taiwan.

Why did you start looking at this type of solution?

In our gas turbines, we need to have transmission oil for the moving part and cooling water. The water is then collected in basins, but oil is present in this cooling loop. The oil is a high quality mineral oil that is critical for smooth operation of the gas turbines. All moving and rotating parts need to be well lubricated with this special oil. We need to remove the oil to be able to reuse the oil but also from a sustainable point of view to avoid contamination. In mid-2023 we completed the installation and commissioning of two SCO 1000 at the Tung Hsiao power plant. The Surfcleaner systems were surprisingly easy to install and get into operating mode and with the handheld tablet adjustments were easily done.

Why the final decision to invest in a Surfcleaner system?

We needed to find a solution that could collect thin sheen and automatically operate without manual labor. We have found out that collecting the thin sheen is extra difficult and demanding and no other technologies were found to be sufficient. It is especially the thin sheen that presents difficulties and as we cannot let this thin sheen accumulate to thicker layers, we need to address the challenge as early in the process as possible. Having the oil present on the water surface also results in evaporation, thus creating VOC:s in the surrounding area. Surfcleaner SCO 1000 collects and separates oil layers from 0.1 μm and upwards, continuously keeping the water surface completely free from oil.

What were your expectations and results of technology by Surfcleaner?

We have had the two SCO 1000 systemes in operation since mid-2023 and we are very satisfied with the overall result. The continuous collection, separation and discharge means that we need to spend a minimal amount of time and effort on this operation which can be tedious as manual work tends to be complementary if other technologies are used. As the SCO 1000 units operate continuously and can be remotely controlled, we need to spend minimum amount of time around the basins. This means we can focus on other things raising the overall efficiency of the plant even more. Surfcleaner has exceeded our expectations, both in terms of capacity and maintenance.



Equipment: SCO 1000
Separation capacity: 1,000 l/h

Systems installed
2023: 2 units