

AN INNOVATIVE SOLUTION TO RESOLVE THE ISSUE OF POWER SHORTAGE IN MALAPPURAM DISTRICT (Through floating solar + Battery Energy Storage Systems (BESS))

In Malappuram district, there is acute shortage of power due to infrastructure capacity constraints. The estimated deficit is to the tune of 500 MW.

There were reports that the minimum waiting time to get a new power connection in the district is as high as 3 years. Based on these reports, the Electricity Regulatory Commission (ERC) had initiated a suo-motu petition and ordered in April 2024 to address the issue in such a way that the new investors should be provided with a new connection within a month.

It is in this context that the model of West Kallada Floating Solar Project becomes relevant to Malappuram. The West Kallada Floating Solar Project is a unique model for generation of renewable energy (RE).



Figure: Waterlogged wetland area suitable for Floating Solar PV installation



Figure: Floating solar project marine construction platform and equipment

The project is developed by NHPC Ltd., a Central Public Sector Unit (PSU), in collaboration with the West Kallada Non-Conventional Energy Promoters Pvt Ltd (WKNCEPPL). A case study on this project is attached as Annexure.

It is also pertinent to point out here that the **“Pradhan Mantri Surya Sarovar Yojana (PM-SSY)” announced in August 2026 for floating solar** is particularly relevant here. The Union Government approved a ₹5,070 crore scheme intended to increase India's floating solar capacity from around 700 MW to 5,000 MW, with storage of at least two hours envisaged for supported projects.

Considering geographical landscape of Malappuram, the floating solar power project is an ideal answer to address the issue of power shortages. There are plenty of land parcels which are uncultivable. There also exist many **“abandoned clay mines”** on the sides of all west flowing rivers in Kerala. All these fields are very much suitable for the setting up of floating solar power projects.

The West Kallada project is without a storage arrangement. In order to ensure uninterrupted power supply during peak hour also, storage facility will have to be integrated to the project.

During peak hours, the Renewable Energy regulations, 2025 offers Rs 7.50 per unit of electricity. Therefore, the solar with storage plants will become financially viable much earlier.

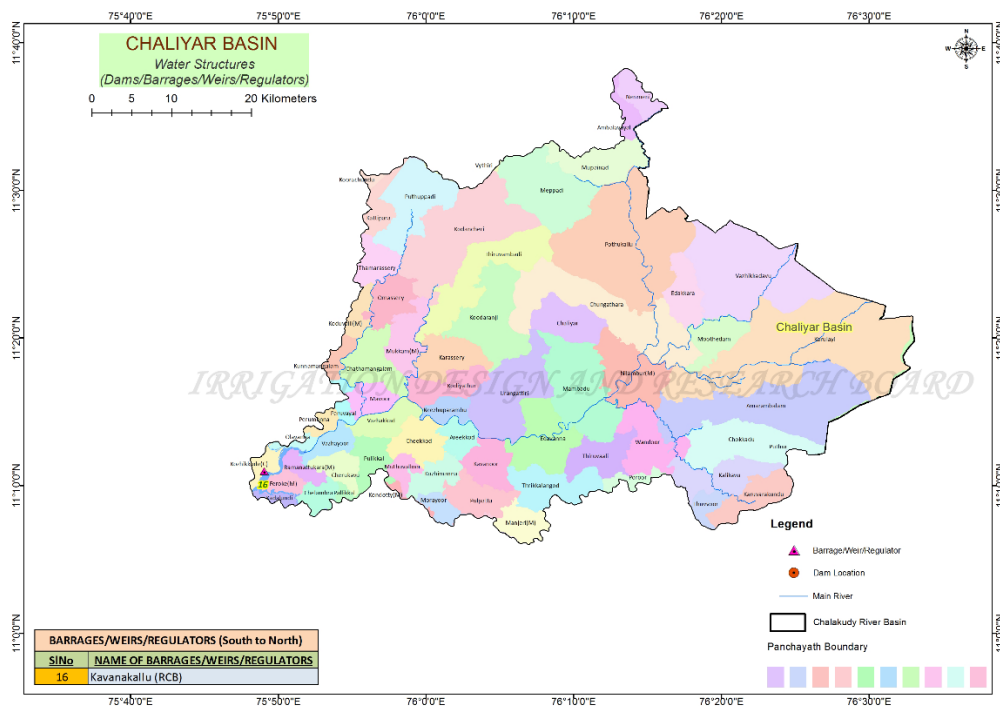
It is also to be noted that KSEB sources power during peak hours at rates as high as Rs 10 per unit from the power exchanges.

Major PUSs in the central sector including NHPC, NTPC, SJVN and SECI have already evinced interest in establishing solar projects with storage facility in Kerala. The total capital investment is brought by these developers and they enter into a power sales agreement (PSA) with KSEB Ltd. KSEB has the mandate to ensure reasonable returns on investment and profitable tariff for power generators.

There are four west flowing rivers in Malappuram. They are

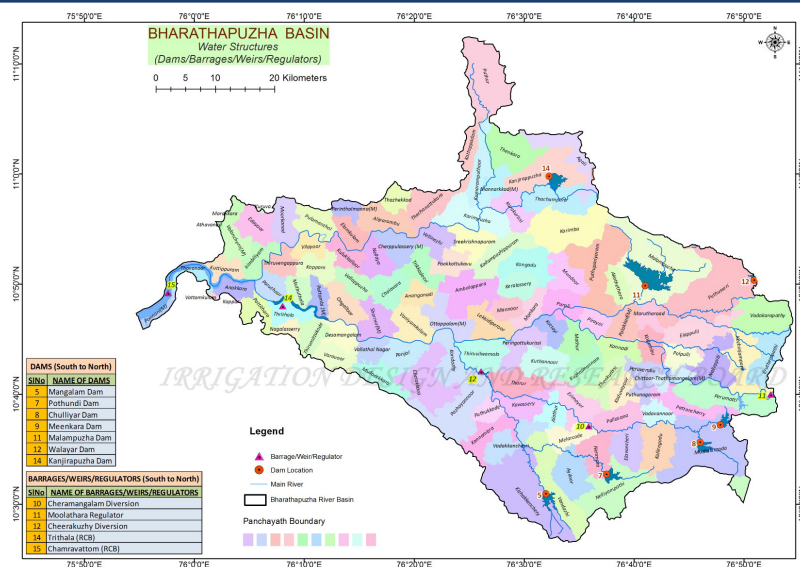
- i. Chaliyar
- ii. Kadalundipuzha
- iii. Bharathapuzha
- iv. Tirur Puzha

The picture below shows the Chaliyar river basin. Sites ideal for setting up of floating solar power projects can be identified along the banks of this river.



Please see below the sites which can be utilised for setting up of floating solar power projects on the banks of Bharathappuzha.

RIVER BASINS - ABANDONED CLAY MINES FOR FLOATING SOLAR PROJECT SITE - BHARATHAPUZHA



11

To set up a solar power project with an installed capacity of 1 MW would require approximately 2.5 acres. The total area required for a

500 MW project would be around 1,250 acres. Adequate area required for installing solar power projects with an aggregate capacity of 500 MW can easily be found in Malappuram district alone.

Kindly alert the Revenue staff to scout for such abandoned clay mines on the basins of the above mentioned four rivers.