

Empowering Women through Solar Energy Based Water Supply Schemes of Odisha

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The [Census 2011](#) report indicates that 83.31% of the population in Odisha live in rural areas and that about [80%](#) of the population in rural areas rely on groundwater for drinking and domestic purposes. Rural Water Supply relies heavily on borewells and hand pumps. During summer, when the water level decreases, the amount of effort needed to fetch the water increases. Although there is water in the borewell, the area is declared water scarce if the pumping level drops below the lifting capacity of the hand pump. For rural women, the water crisis has drastic effects as they spend long hours every day fetching water for their drinking needs. During these hours, girls and women could be attending school or working. They are prevented from embracing opportunities that could lead to [socio-economic progress](#) because of this opportunity cost.

The Rural Water Supply and Sanitation (RWSS) department of Government of Odisha has been implementing Solar Energy based Dual Pump Drinking Water Supply schemes through Orissa Renewable Energy Development Agency (OREDA) since 2013-14 with one common standpost concept in handpump dependent habitations. A key goal of this initiative was to meet the needs of women living in remote areas without electricity. The number of solar pumps installed since then has risen to more than 11,000 so far.

As outlined in the Jal Jeevan Mission, a Functional Household Tap Connection (FHTC) is intended to provide safe and adequate drinking water to households in rural areas, so RWSS is implementing these schemes strategically to reach people in the remotest parts of the State. The majority of schemes proposed for small villages are solar-based. Technical assistance was provided to RWSS through a Renewable Energy Expert to implement Solar Energy Based Water Supply Schemes. As a part of the Jal Jeevan Mission, RWSS is about to finalize work orders for 3386 Solar Energy based Dual Pump Piped Water Supply Schemes for the purpose of providing 1,14,619 Functional Household Tap Connections across 2,950 villages. There will be Functional Household Tap Connections at every house in the habitation, and all these schemes will be integrated with the latest remote monitoring systems.

The scenario has gradually turned around, and now RWSS is proposing grid connected 700 to 1000 KWp Solar Power plants in the shadow free land and rooftops of Water Treatment Plants to optimize

the Operation and Maintenance (O&M) cost of Mega Piped Water Supply Systems. Two projects have been sanctioned by the Government in Angul and Balasore districts. In-built solar power plants will be part of the upcoming Mega Piped Water Supply Schemes.

This initiative is the first-of-its-kind in the RWSS sector in India to optimize Operation and Maintenance (O&M) costs by using renewable energy. Projects that use renewable energy contribute to decreasing carbon footprints, which leads to educating the community about climate change. RWSS Odisha and UNICEF are working together to make this project successful. Other states can also replicate this model. In using solar energy, financial resources can be utilized more efficiently, since the amount of Operation and Maintenance required will be minimal.

Overall, the mission of this initiative is to alleviate the suffering of the women who travel long distances to fetch water and sacrifice their productive time. If a household lacks access to clean drinking water, girls and women are usually left with the responsibility of collecting, storing, and managing it. These challenges can be addressed through this initiative. Moreover, the socio-economic scenario in rural areas will be improved by using this innovative scheme. Last but not least, the renewable energy approach offers an edge in terms of environmental sustainability.

Proposed 500 KWp Grid connected Floating Solar Power Plant for Angul District

