

Run-of-River Hydroelectric Technology

Run-of-river (ROR) hydroelectric systems are a form of small-scale hydropower that harness the natural flow of a river or stream without the need for large dams or reservoirs. This technology is well-suited for rural or island settings with consistent water sources, such as Naviti Island. In an ROR system, a portion of the river's water is diverted through a low-impact intake structure into a penstock (a pipeline), which channels the water to a small turbine. The flowing water spins the turbine, generating electricity, after which the water is returned to the river downstream. This setup minimizes ecological disruption and maintains natural water flow. ROR systems are particularly valuable for supplementing solar energy by providing continuous power during cloudy weather and at night, improving the overall energy reliability of off-grid projects like the "Hands of Life from the Garden." With a properly sized stream and gradient, an ROR system could supply 1–3 kW of clean, renewable energy year-round.



Potential ROR – Hydro to compliment

