

Roosevelt Island Tidal Energy (RITE) Project Backgrounder



The Roosevelt Island Tidal Energy (RITE) Project in New York’s East River is a demonstration of Verdant Power’s fifth generation (Gen5) tidal power system and its TriFrame™ mounting system. It is the next step on the Company’s pathway to technology commercialization and profitable commercial operations.

DOE7349 - Water Power Technologies Office’s Project Goals – TriFrame™ (TF) Demonstration

“Project goals include advancing the TF design from the Technology Readiness Level (TRL) 3 to TRL 8 and optimizing the TF design for Capital Expenditures (CAPEX) and Operation Expenditures (OPEX), specifically reducing the metrics of time and cost for installation and Retrieve & Replace (R&R) on-water efforts, while meeting structural performance and regulatory/environmental requirements, and providing a path for scale-up, which leads to a Levelized Cost of Energy (LCOE) reduction.” The 2020 RITE Project demonstration will provide a validation of:

Organization

- Verdant Power’s organizational capability and quality processes to execute and document a successful system deployment and operation

Gen5 Tidal Power System

- Component design, manufacturability, operation through testing, and system interoperability
- System assembly, integration, and component interoperability
- System in-water operational performance of:
 - Turbine power performance and energy efficiency
 - System reliability and turbine array performance
 - Environmental impact and electricity generation
- Grid interconnection and electricity delivery
- Baseline turbine and electrical system cost
- Scale-up capability
- Technology Readiness Level (TRL) 8 - actual system completed and qualified through test and demonstration.

TriFrame™ Mounting System

- Optimizing design for Capital Expenditures (CAPEX) and Operation Expenditures (OPEX)
- Integrated turbine-TriFrame™ system installation, O&M cost, and scalability for LCOE reduction
- Installation, reinstallation, and positioning
- Retrieval and on-water barge turbine replacement (Operation and Turbine Maintenance)
- Technology Readiness Level (TRL) 8 - actual system completed and qualified through test and demonstration