

EXPLORING TIDAL POWER FOR THE ARCHIPELAGO OF THE SAN JUAN ISLANDS

The Island Way

Who We Are

Orcas Power & Light Cooperative (OPALCO) is a local member-owned, non-profit cooperative utility providing energy services to 20 rural-remote islands in San Juan County since 1937. To champion a reliable and resilient local power supply for the islanders they serve, they are expanding their microgrid infrastructure and investing in renewable energy sources. OPALCO is proposing to deploy a series of tidal energy turbines in Rosario Strait, marking the company's first tidal energy initiative.

Our Goals

1) Grid Reliability

Resilience, independence, and affordability for the residents of and visitors to the San Juan Islands.

2) Year-Round Power Generation

Meet more electricity needs with green and renewable energy.

3) Integration to OPALCO Grid

Interconnection to the Blakely or Orcas Island distribution system.



OPALCO, with support from the Pacific Northwest National Laboratory (PNNL), selected **Rosario Strait** for a tidal energy project. It is a favorable location due to its persistent strong tidal currents and lower abundance of sensitive marine species such as orcas, humpback whales, and rockfish.

Tidal Energy

Tidal power is generated by harnessing the energy that flows through sea channels and passes coastlines like clockwork. The world's tides are predictable gravitational forces, meaning they are not linked to weather patterns. Like wind turbines, tidal turbines rotate to power a generator and create electricity. The benefit of tidal energy is the production of a green and renewable source that provides a continuous and predictable supply of power with high energy efficiency. Conditions in Washington waters present the opportunity to realize tidal energy's potential in meeting electricity demands.



360-376-3589



communications@opalco.com



www.opalco.com

Environmental Stewardship

Rosario Strait is home to several protected species under the Endangered Species Act, Marine Mammal Protection Act, and Magnuson-Stevens Act. Minimizing risks to marine wildlife is always a primary concern to OPALCO, and limiting possible impacts to protected species and habitats is a key objective of this project.

OPALCO seeks to work closely with its Tribal, State, and Federal partners to mitigate risks to wildlife and ensure project success while protecting the region's sensitive resources.

Tribal Fishing

The Tribes have strong spiritual and cultural ties to salmon and other aquatic species in the region that includes thousands of years of use for tribal religious/cultural ceremonies, subsistence, and for commercial purposes. The project would be located in the Usual and Accustomed fishing area (U&A) for the region's Native American Tribes who were signatory to the Treaty of Point Elliott. The Treaty secures the Tribe's "right of taking fish at usual and accustomed fishing ground and stations." Engagement and collaboration with regional Tribes will be a key aspect of the development of the project.

The Tech Orbital Marine O2

O2 is a unique floating platform that is moored via anchors in powerful tidal stream or river currents.

OPALCO aims to deploy two to four 2MW+ O2 turbines in an array to provide utility-scale, clean energy.

It floats at the surface with two rotors suspended underneath. The underwater blades rotate in a steady, rhythmic motion, and cover the same area as three tennis courts.

check it out online!
scan here



secured by
four anchors
15m² /
160 ft²

each about
the size of a
parking space

74m /
243 ft
long

like a
sequoia



ORBITAL
MARINE POWER

48north
solutions

ESA