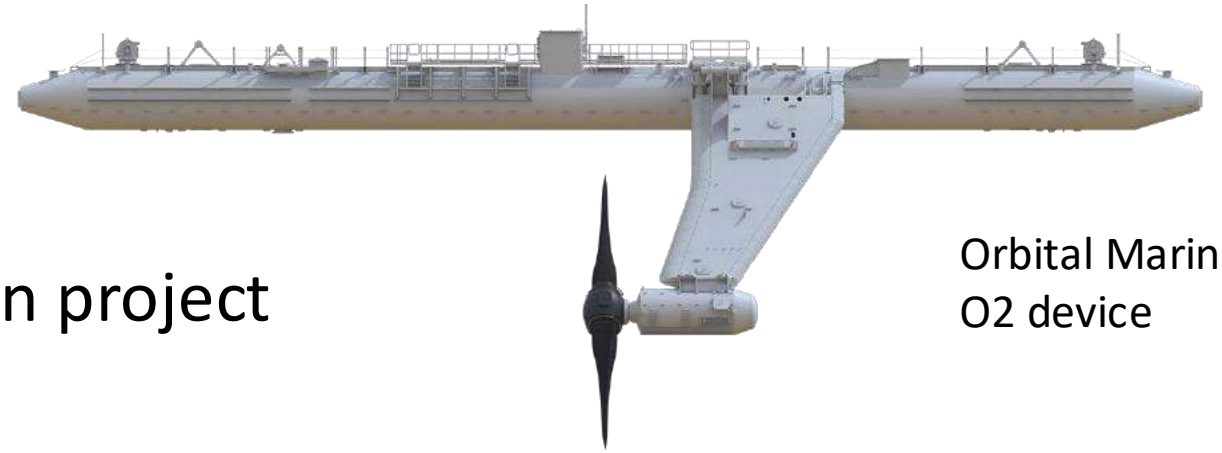
OPALCO

Co-op Run. Community Powered.

Pilot Tidal Energy Project
August 2024

DEPARTMENT OF ENERGY (DOE) PHASE 1 FUNDING-FEASIBILITY



Orbital Marine O2 device

- FERC Pilot Project
- Floating stream tidal generation project
- ~2MW Peak Output
- ~5GWh of annual generation
- Current grant is for feasibility of project and is competitive
- Successful projects will move into Phase 2 funding after 12 months

Proposed Technology

- O2 device: Orkney Islands, Scotland
  - In water since 2021
- Dimensions (current design)
  - Total Length – 243ft
  - Total Width – 194ft
  - Main Tube Width – 13ft
  - Blades – 65ft Diameter
  - Average 8.5 RPM
  - Anchored at four points
  - Drilled/bolted to rocks or gravity anchors

Proposed Site

Why this location

Pre-existing infrastructure

- Existing conduits available at south end of Blakely Island

Lower local abundance of sensitive species such as:

- SRKW (orca)
- Humpback whale
- Rockfish species
- Salmonids

Location Table

San Juan Islands Channels	Maximum Tidal Energy at Spring Tide (m/s)	Minimum Tidal Energy at Neap Tide (m/s)	Existing Infrastructure	Ferry Route	Navigation Route	Endangered Species Presence and Abundance	Critical Habitats	Protected Marine Mammals Presence	Essential Fish Habitats	Seabirds Presence and Abundance
Spieden Channel	2.55	1.37		Yes	Major route	Southern Resident Killer Whale (SRKW) ++ Humpback Whale (HW) ++ Bocaccio (B) ++	All four channels have critical habitat for: Southern Resident Killer Whale Bocaccio Yelloweye	All species*	All four channels have essential fish habitat for: CPS Pacific Coast Salmon	All species** ++
San Juan Channel	2.61	1.15	Conduit Subsea cable	Yes	Small vessels only	SRKW + HW + B ++				All species** +
Rosario Strait	3.14	1.80	Conduit	Ferry crosses very southern	Secondary route	SRKW + HW + B +	Chinook Salmon		Pacific Coast Groundfish	All species** ++
Middle Channel	3.28	1.62		No	Secondary route	SRKW ++ HW ++ B +	Middle channel also has critical habitat for: Green Sturgeon			All species** +

Most desirable Moderately desirable Least desirable

* Southern resident killer whale, humpback whale, gray whale, short-finned pilot whale, California sea lion, harbor porpoise, harbor seal, Steller sea lion, northern elephant seal, minke whale, Dall's porpoise
** Rhinoceros auklet, marbled murrelet, tufted puffin, pigeon guillemot, pelagic cormorant, double-crested cormorant, common murre
+ Moderate abundance
++ High abundance

Process & Timeline

February 2024: **DOE Award Notification**

March – Aug 2024: **Permitting to assess the site**

- This will let us deploy environmental monitoring devices at the proposed site this will include mapping the sea floor, assessing the tidal flow, monitoring tagged fish going through the area, and measuring underwater noise levels

Process & Timeline

Aug – Oct 2024: **Pacific Northwest National Lab Environmental Risk Register**

- Resource for independent/objective analysis
- Review existing studies and project data
- Help prioritize key environmental issues

April 1, 2025: **Submit Draft License Application to FERC**

May 2025: **Complete Phase 1 Grant**

External Engagement

Outreach to the following groups:

- Local, state, and federal agencies
- Tribal Sovereign Nations
- Local Stakeholders
- OPALCO members

Key Milestones

- Ongoing Community Outreach
- Site Environmental Studies
- Environmental Risk Register
- Draft License Application to FERC
- Complete Feasibility

Questions?