ORPC
Cook Inlet Panel
Ocean Renewable Energy Conference

September 15, 2022

Improving people's lives, and their environment, through sustainable energy solutions

ORPC

ORPC

Marine Renewable Energy (MRE)

Who we are

- Founded 18 years ago, in Portland, Maine, US
- 38 employees in 4 countries (USA, Canada, Ireland & Chile)

What we do

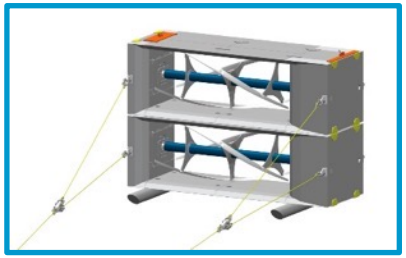
- Convert kinetic energy in water currents into clean, predictable, affordable sources of renewable electricity
- Provide smart microgrid solutions powered by ORPC power systems

ORPC's objectives

- Develop clean energy solutions for communities
- Create local jobs for installing and maintaining equipment

ORPC Product Pipeline

ORPC is developing a portfolio of products that address all segments of the global river and tidal energy markets.



Modular RivGen

1 Turbine, stackable
20 kW each
Rivers/Tailraces/Canals

Under development in partnership with US Dept of Energy

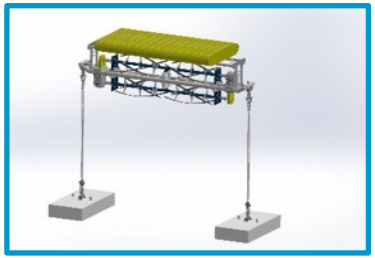
2022 Testing in Millinocket, Maine

RivGen

2 Turbines
40-80 kW
Remote Communities

Developed in partnership with US Dept of Energy & Igiugig Village Council

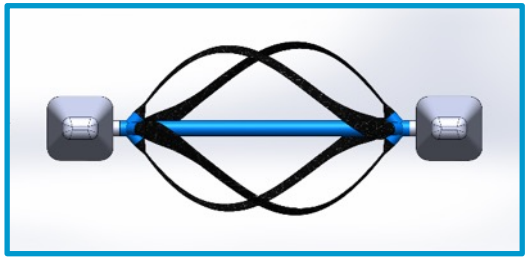
Commercialized in Alaska, 2022 installation in Manitoba



TidGen-80

4 Turbines
80-120 kW
Tidal Locations

Under development in partnership with US Dept of Energy



OPTIMOR

1 Large Turbine
1-2 MW
Tidal Locations

Under development in partnership with European Union

Testing in Cobscook Bay and Western Passage, Eastport, Maine

ORPC's Footprint in Alaska

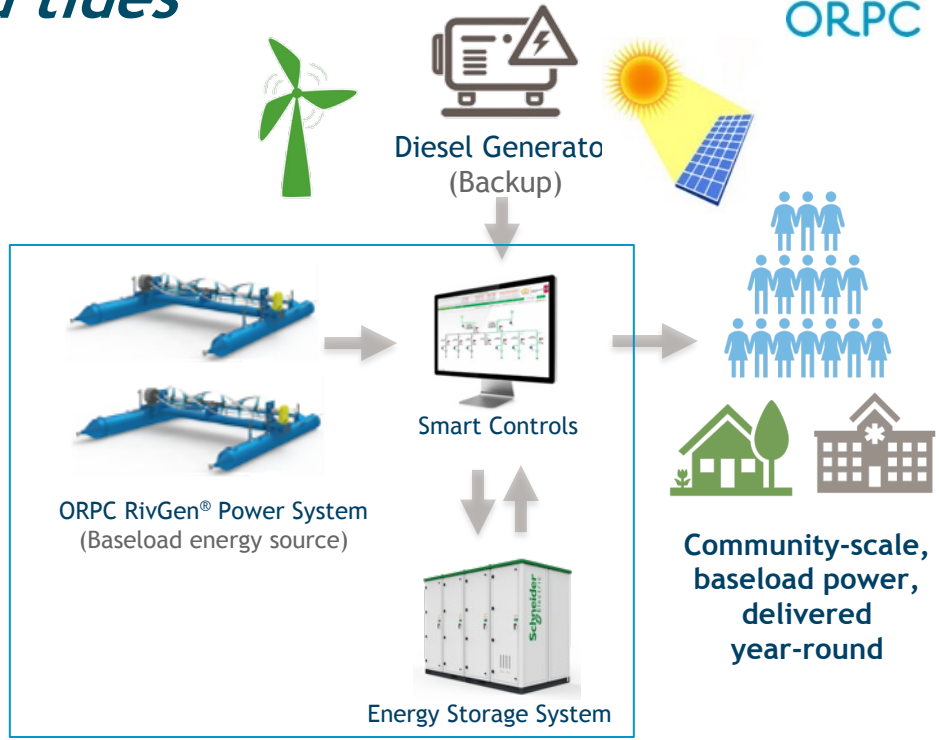
- Community centric project development
- Longest operating marine hydrokinetic project in all of the Americas in Igiugig
- Partnerships with Homer Electric Association and MatSu Borough's Port MacKenzie

Over 150 MW in development

Baseload renewable energy

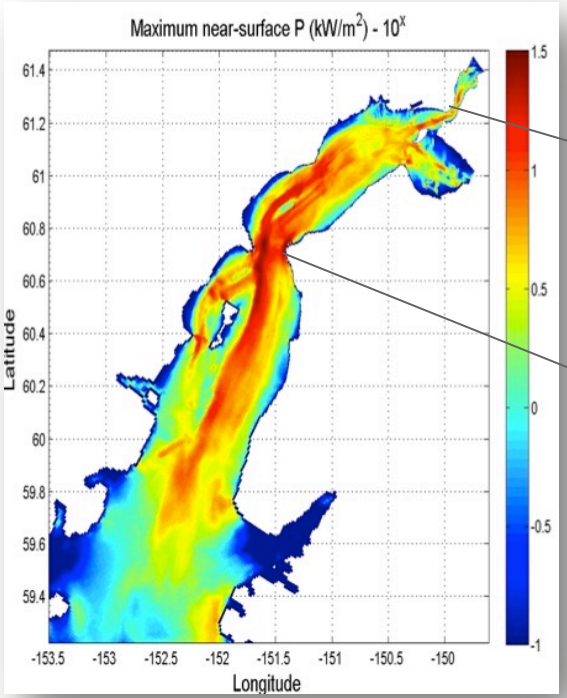
from free-flowing rivers and tides

- A smart microgrid powered by an ORPC Power System can relegate diesel generators to backup only.
- ORPC Power Systems provide constant, predictable power (baseload).
- Energy storage and smart controls, coupled with ORPC baseload power system, allow incorporation of intermittent sources like wind and solar.



ORPC's RivGen®-based Microgrid Solution

Cook Inlet: The Hydrokinetic Energy Opportunity



Port MacKenzie project site

East Foreland project site

- A world class resource, estimated at 18 gigawatts[1]
- 120 TWh of extractable annual energy
- ORPC targeting first deployment in 2023 with full development 2026-2030

Graph: Cook Inlet – Tidal Power for the Railbelt NOAA & AEA project to assess Cook Inlet tidal energy, 2012. Insets from UAA modeling of ORPC investigated sites, 2013. *Haas et.al., Assessment of energy production potential from tidal streams in the United States (DOE/GO/1817-8). Georgia Tech Research Corporation, 2011

Barriers – Cook Inlet Beluga

- Endangered distinct population segment of Cook Inlet Beluga pose significant challenge
- ORPC has conducted passive acoustic monitoring and visual observations at multiple sites
- Recently completed an internal state of the science initiative, including engaging with technical experts and regulatory officials

Thank You

John Ferland, President
JFerland@orpc.co