

ORPC Alaska - Permitting

2011 Alaska Rural Energy Conference

September 27, 2011



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Ocean Renewable Power Company Overview

- Maine-based developer of hydrokinetic power systems and projects that turn ocean and river currents into reliable supplies of clean, predictable electricity



- Founded in 2004 with executive offices in Portland, Maine and project offices in Eastport Maine, and Anchorage, AK
- 28 employees, 4 in Alaska
- Proprietary technology including OCGen™, TidGen™, and RivGen™ power systems
- Project sites in Cook Inlet and Nenana, AK, and Eastport, ME, and partnering on projects in Nova Scotia
- Beta Turbine Generator Unit (TGU) deployed in March 2010

ORPC Philosophy



- Community driven and focused
- Technology development and environmental considerations are intrinsically connected

Permitting and Licensing Tidal and River Hydrokinetic Projects -

- Federal Energy Regulatory Commission (FERC) is the federal agency asserting jurisdiction
 - Developed Pilot Licensing Process to facilitate getting projects into the water, proposed in 2007 and adopted in 2008
 - Designed to facilitate getting projects and technology deployed
 - Must be small (under 5 MW) and short term (5 years recommended)
 - To date two Final License Applications (FPLAs) have been submitted to FERC
 - ORPC has submitted one of these as well as a Draft Pilot License Application (DPLA) for the Cook Inlet Tidal Energy Project

The FERC Process

- Apply for preliminary permit which gives applicant 3 years of priority to file a license application for the area
- Perform environmental, site characterization work, and project engineering
- Submit Draft License Application within two years
- Respond to Additional Information Requests (AIRs)
- Submit Final License Application
- Apply for all other permits and authorizations
- Receive Project License, other necessary permits and begin construction

What Does it Take?



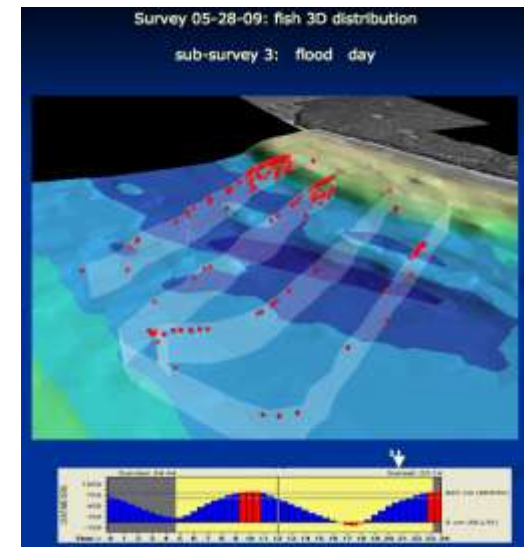
ORPC's Cobscook Bay Tidal Energy Project FPLA, Fundy Tidal's (Nova Scotia) Project Description

Other Permits Required

- US Army Corps of Engineers Section 10
- Alaska Department of Natural Resources Submerged Land Use Permit or Lease
- Alaska Department of Fish and Game Fisheries Habitat (river) Or Special Area Permit (Refuge's Sanctuary's etc)
- Alaska Department of Natural Resources Water Rights (river)
- ACMP review - not anymore ☹️
- United States Coast Guard Consultation and Review

Fire Island

- Environmental studies completed in 2009-2010
 - Fish study, beluga monitoring project
- FERC Licensing
 - Submitted Draft License Application on 3/30/09
 - Complete responses to AIR's issued in 6/09, now due 10/12
 - Complete 2 years of beluga monitoring and submit draft BA
 - Perform 6 more months of passive hydroacoustic monitoring
 - Perform 1.5 more months (May - June) visual observations
 - Submit FPLA by 10/13
- Complete other permit applications by 1/1/14
 - Secured ADNR submerged land use permit for scientific work through 2014
 - Will need additional USACE, ADNR, Biological Assessment etc



East Foreland

- Preliminary permit issued in March 2009
- Environmental Work and Project Design
 - Perform ADCP and bathymetry work for preliminary project design 2011
 - Perform Environmental studies in summer 2012
 - Consult with Agencies on required environmental data collection
 - Complete 1 year of Beluga monitoring
 - Perform fish literature review, studies as required
 - Geophysical data collection for engineering
- Draft License Application submitted by 10/12
 - Develop monitoring plans
 - Complete stakeholder consultations
- Submit Final License Application in January 2013
 - Apply for other permits (ADNR, USACE, etc)
 - Respond to AIRs during 6 month expedited review
- Receive license
- Begin First Tidgen™ Deployment in Alaska in June 2013!



Nenana RivGen™ Power Project

- Permits received from USACE, ADNR and ADF&G for Bottom Support Frame and Anchor System testing in August
- Permits received by UAF for fish study, and fish study anchoring of equipment from ADNR, USACE and ADF&G in August
- Project Licensing
 - Exploring Verdant Exemption with Golden Valley Electric Association
 - Sales of power will not justify licensing costs - ie cheaper to give the power away than acquire license to sell it ...
 - Will still require USACE, ADF&G, ADNR permits and USCG consultation for project installation

In Conclusion

- The FERC pilot process is being developed to facilitate getting pilot projects in the water, but has yet to be proven
- The costs and level of effort for licensing under this short term license (5 years suggested term) and small scale (under 5MW) are quite high
- The pathway from a FERC pilot project license to a commercial license has not been defined and needs to be addressed
- The FERC process may be prohibitively expensive for small scale projects in rural Alaska
- This may be an opportunity for the State of Alaska to develop capacity and take a role in the permitting of small scale rural tidal and hydrokinetic river projects.



Thanks for listening 😊