



# HYDROKINETIC PROJECTS

Environmental Law Institute  
July 29, 2008



# What are Hydrokinetic Projects?

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## Ocean Energy

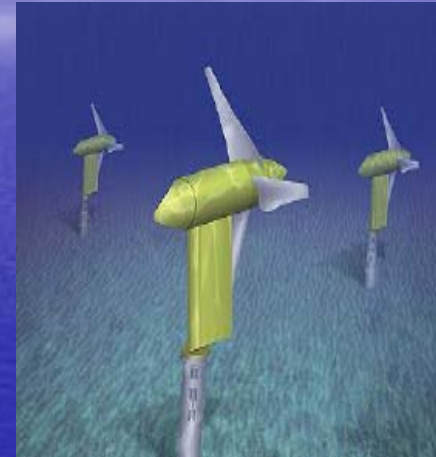
- Tidal
- Wave
- Current
- In River





# What are Hydrokinetic Projects?

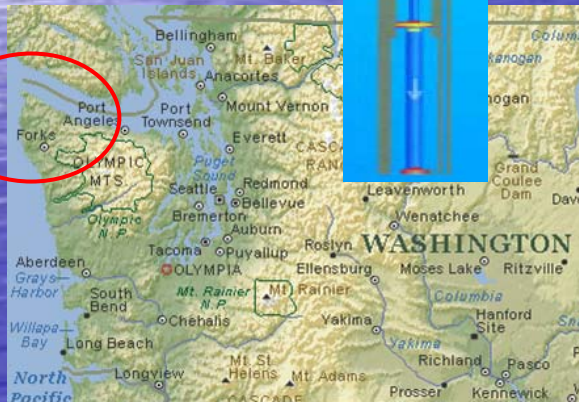
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# FERC Jurisdiction: Ocean Energy

- AquaEnergy Group (now Finavera)
  - Makah Bay Project, DI02-3, Oct. 2002/Feb. 2003



- Technology considered a hydropower project
- Located in navigable waters
- Occupies Federal Lands (Indian Reservation)
- Connected to the interstate electric power system





# Test Projects

(section 23(b) of FPA not implicated)

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- Verdant Declaratory Order, April 2005/July 2005
  - Roosevelt Island Tidal Energy Project, P-12178
- No license required if:
  - Experimental technology
  - Short term installation for conducting studies
  - Test project does not transmit into, or displace power from, the national electric energy grid

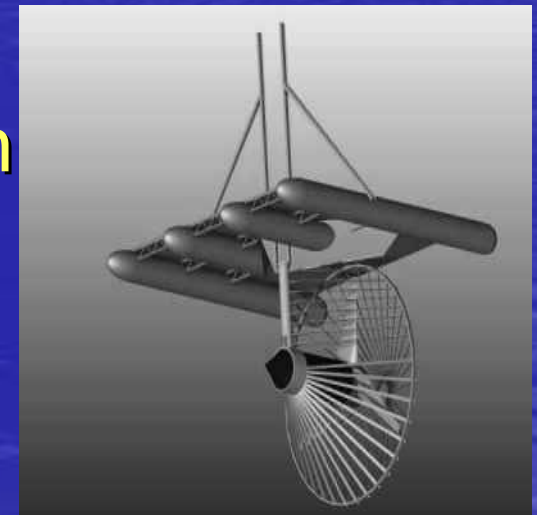




# Types of Issuances

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- Preliminary permits
  - Maintains priority of application for three years
  - Conduct feasibility studies and prefilings activities
  - Doesn't authorize construction
- Licenses
  - Authorizes construction and operation after consultation and environmental review
  - Original up to 50 years
  - Relicense 30-50 years







# Hydrokinetic Filings (as of July 7, 2008)

	Issued License	License App Filed	License Pre-Filing	Issued Prelim Permit	Pending Prelim Permit
Wave	1	0	3	8	5
Tidal	0	0	1	34	4
Ocean Current	0	0	0	0	3
Inland Current	0	0	0	70	65
<i>Total (MW)</i>	<i>1</i>	<i>0</i>	<i>253</i>	<i>4593 - 6595</i>	<i>4244 - 4555</i>





# FERC-Issued Hydrokinetic License and Preliminary Permits







# Challenges

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- To realize potential, there are significant challenges
  - Technological
  - Financial
  - Regulatory
- Environmental effects not well known
- Commission proactive in taking steps to address these challenges



# Pilot Project License

## July 2007

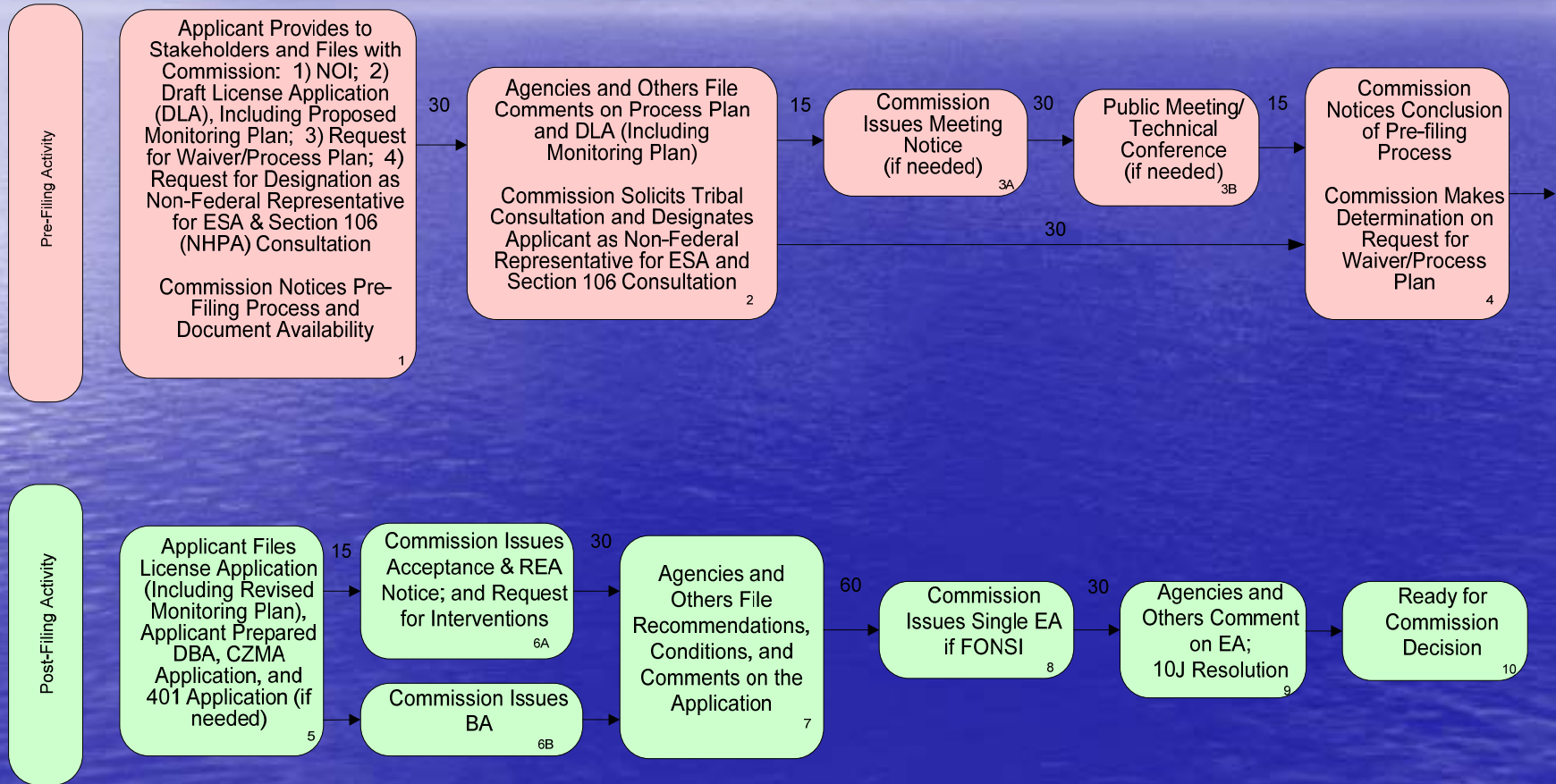
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- Goals of process
  - Allow developers to test new technologies, determine appropriate site, and confirm environmental effects while generating electricity
  - Provide for Commission oversight and agency input
  - Complete licensing in as few as 6 months
- Process available to projects that are:
  - Small ( $\leq 5$  MW)
  - Removable or able to shut down on short notice
  - Not located in waters with sensitive designations





# Hydrokinetic Pilot Licensing Procedures





# Resources and Potential Effects

Makah Bay Project No. 12751

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- Fish\*, marine mammals\* (disturbance, entanglement, collision, noise, EMF)
- Seabirds (disturbance, entanglement)
- Marine benthic habitat (disturbance, loss)
- Water quality (turbidity, chemical toxicity)
- Recreation\*, navigation, fishing, aesthetics, socioeconomics (use and user conflicts)
- Archeological sites (disturbance)

\*received cumulative as well as site-specific analysis





# Next Steps

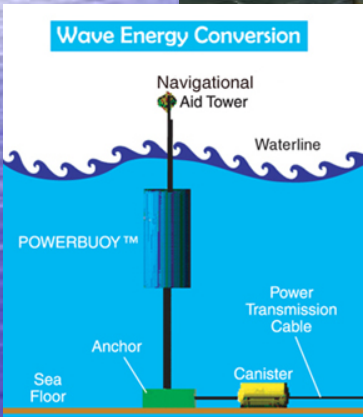
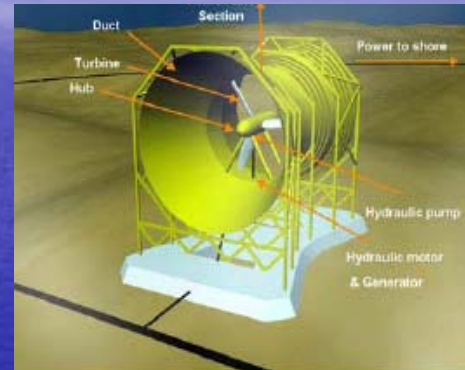
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- Project specific
  - Participate in pre-filing and process applications
- Programmatic
  - Coordinate with agencies (MOUs, etc)
  - Continue outreach
  - Consider additional strategies for issues that may arise as we gain experience with regulation, technology, industry, and knowledge base



# Questions

[www.ferc.gov](http://www.ferc.gov)



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