

Company Overview



oceanrenewable power company

*Generating Emission-Free Electricity from
the Boundless Energy of the Ocean*

Presented to



September 11, 2006



ORPC Background

Our Mission

Ocean Renewable Power Company, LLC (ORPC) was founded in 2004 for the purpose of generating reliable, competitive, emission-free electricity from the virtually unlimited energy resources of the oceans. ORPC will accomplish its mission by developing proprietary modular ocean current generation (OCGen™) technology and incorporating it into environmentally superior, financially successful ocean and tidal current generation projects.

- ❖ ORPC's principals include professionals with extensive experience in the development and financing of cogeneration, independent power and renewable energy facilities, and in the management of technology development and startup companies
- ❖ ORPC performed extensive technology evaluations and made key design and equipment decisions in cooperation with the U.S. Navy (Naval Surface Warfare Center – Carderock Division, "NSWCCD") to insure development of designs that are robust enough for underwater deployment in the ocean
- ❖ In addition to NSWCCD, ORPC has a core advisory team of highly respected experts in the fields of naval architect, submersible structures, underwater turbines, PM generators, power electronics and control systems, mooring systems, legal, regulatory process and environmental permitting
- ❖ To date, ORPC has been privately funded with an initial round of equity funding in 2005 and two subsequent rounds of equity funding in 2006



ORPC Management Team Bios

The ORPC management team includes highly experienced professionals with decades of experience in power generation, technology development, executive management, and project development, permitting, financing and operations.

Christopher R. Sauer, P.E. – Over 35 years in energy facility development, financing and construction, executive management, energy/environmental technology development and startup company formation and management

Captain Paul H. Wells – Over 35 years in operations and management in the shipping, shipbuilding, cruise ship and ship consulting industries

John R. Cooper – Over 30 years in the energy industry in project finance, corporate finance, and corporate structuring and restructuring

Martin R. Walicki – 28 years in finance, treasury, accounting and management in the utility and energy industries

Ernest K. Hauser – Over 30 years in energy facility development, project management, construction, operations and executive management

Patrick J. McGinnis, P.E. – Over 20 years in engineering and technology development in the aerospace and defense industries and in development of advanced concepts in shipboard machinery systems for the U.S. Navy



ORPC Technical Team Bios

The ORPC technical team includes highly respected experts in marine systems and technology, including research, engineering, fabrication, assembly, installation and operation of power and marine equipment, systems and facilities.

Design & Engineering

Kokes Marine Technologies – A worldwide leader in research, design, engineering and construction of offshore and sub-sea structures, vessels, systems and equipment

Charles D. Syverson, P.E. – 25+ years technology development and design/engineering of electrical/mechanical equipment and systems for renewable energy and other industries

William L. Hutchinson, P.E. – 25+ years in mechanical and process engineering, project management, software development and CAD applications

William A. Sullivan, Jr., P.E. – 30+ years experience in EPC and electric generation industry, including project management, project engineering, engineering and asset management

Technical Advisory Group

Alexander M. Gorlov, Ph.D., P.E. – World renown inventor and developer of the Gorlov Helical Turbine technology (patented) and Professor of Mechanical Engineering at Northeastern University for the past 30 years.

Millard S. Firebaugh, Sc.D. – Retired Rear Admiral USN, former Chief Engineer of Electric Boat Corp. and former COO of SatCom and a recognized leader in engineering and production of advanced technology, including R&D, ship design, shipbuilding, power systems and electronics, and executive management

William Venezia, Ph.D. – Respected authority and adjunct professor in ocean engineering with expertise that ranges from applied scientific research to the definition and development of complete marine systems (joining ORPC in 2007.)



Technological Innovation

Competitively priced power from an endless natural resource with no gas or liquid discharges to the environment

Ocean current vs. other renewables:

- Water has a higher energy density than wind
- Ocean and tidal currents are predictable
- There are no visibility issues

OCCGen™ Design philosophy:

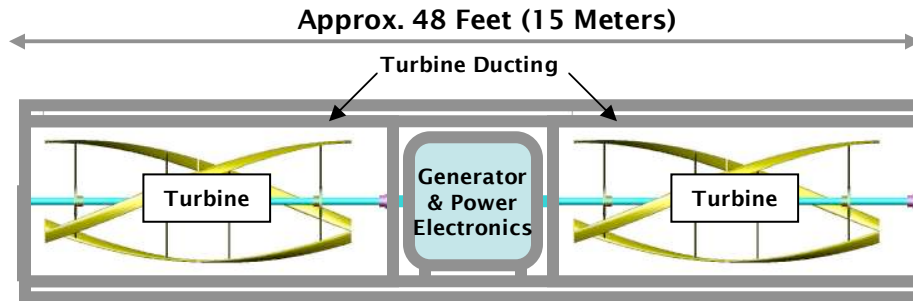
- Maximize simplicity of design, efficiency and reliability
- Locate projects where ocean and tidal current power potential is greatest
- Develop a modular, rugged, low maintenance OCCGen™ module design:
 - ✘ Two ducted turbines drive a single generator
 - ✘ Turbines capture energy from currents regardless of flow direction
 - ✘ Installed in arrays consisting of a few modules to dozens of modules
 - ✘ Single underwater transmission line to shore
 - ✘ Brought to the surface for easy maintenance
- Minimize environmental & marine impacts



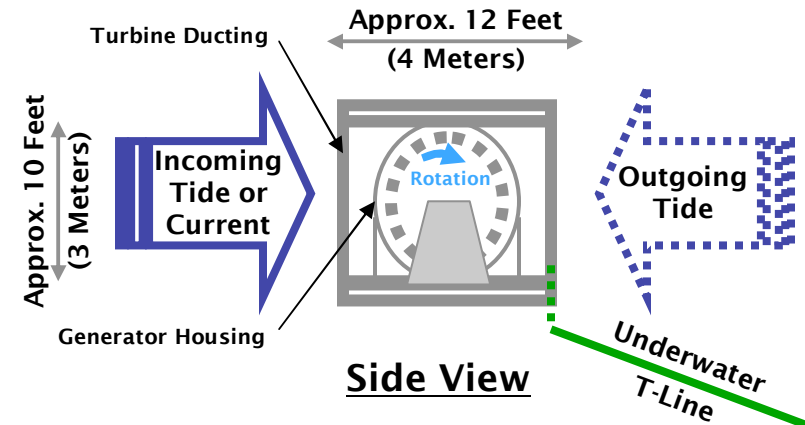


The OCGen™ Module

Patent applications in process



Front/Back View



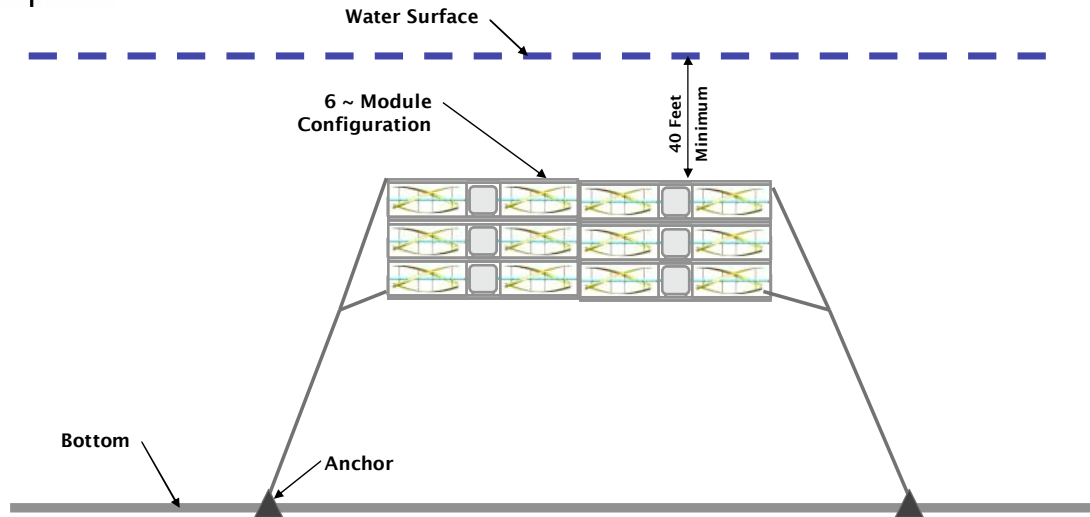
Side View

Key Design Features

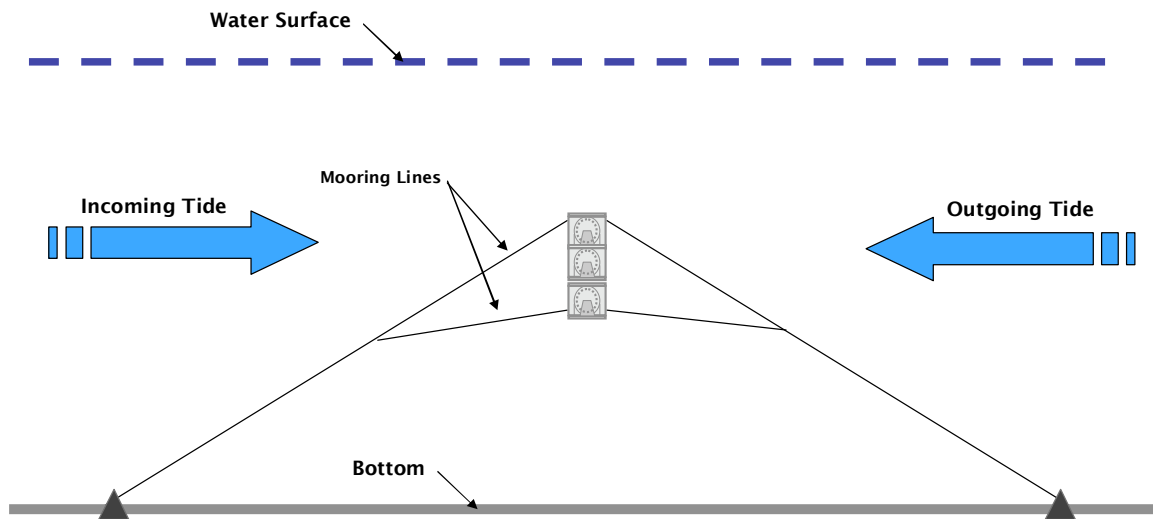
- ★ Generating capacity of over 500 kilowatts in an 8 knot current
- ★ Unique patented turbine rotates in one direction only, regardless of current flow direction
- ★ Two ducted helical turbines drive a single generator (only one moving part and no gears)
- ★ Modular design of turbines and generator for ease of assembly and maintenance
- ★ Modules can be mounted on various support structures in many differing orientations (mooring systems, foundations, floating platforms, submersible structures, etc.)
- ★ Modules can “stacked” (connected together in a grid pattern) and deployed in large arrays consisting of multiple stacked modules
- ★ Modules are connected to on-shore substations using an underwater transmission line
- ★ Operations are monitored and controlled from on-shore computers
- ★ Modules are brought to the water surface for inspection and maintenance



OCGen™ Module Deployment



6-Module Configuration
Front/Back View



6-Module Configuration
Side View



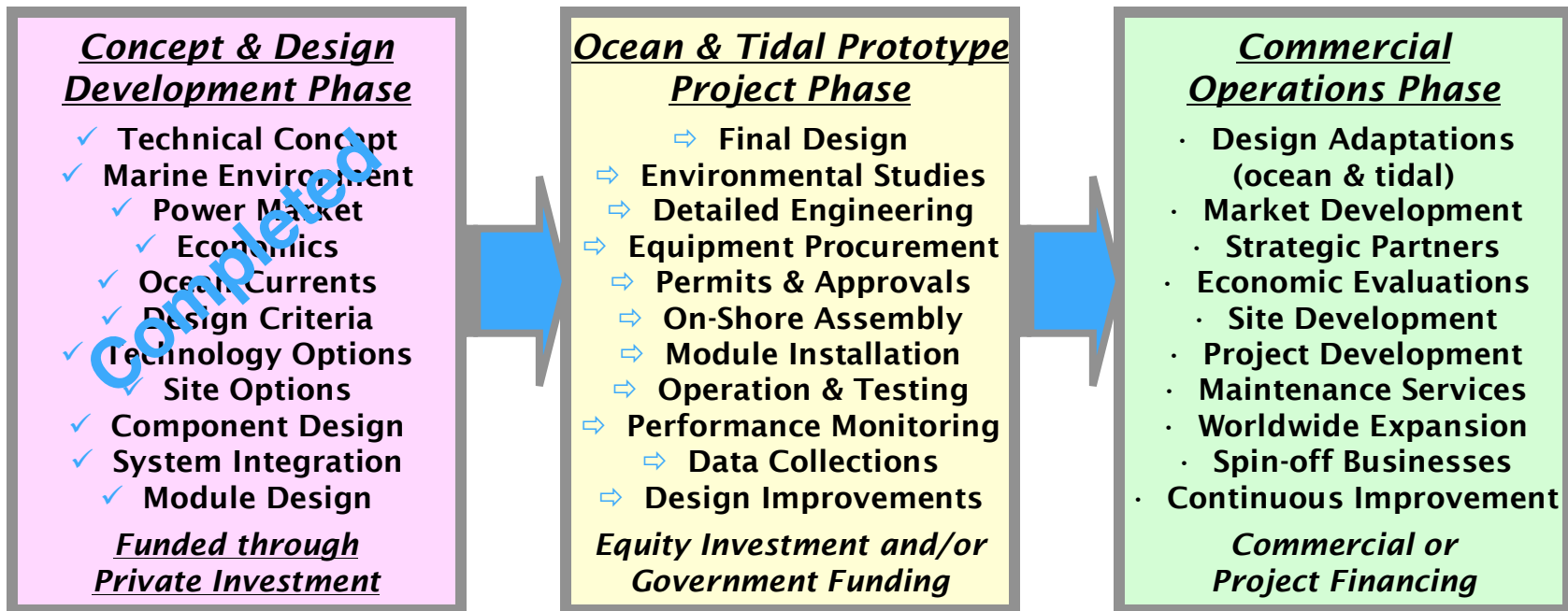
Advantages of OCGen™ Technology

“Top 10” Competitive Advantages of OCGen™ Technology

1. Lower cost to build, install and maintain
2. Simpler, more robust turbine (prime mover) and power train
3. Slower turbine tip speed resulting in reduced wear and tear, noise, vibration and lower potential for impacts on sea life
4. Turbine turns in one direction only, regardless of direction of current flow, so no equipment repositioning required in tidal currents
5. OCGen™ modules have only 1 moving part as the turbines and generator rotate on a single shaft
6. There are no gears, which is the leading cause of failure for axial flow (windmill) turbines
7. OCGen™ modules have a very low vertical profile and are “stackable”, making them very adaptable to a variety of project sites
8. There is no impact on the surface of the water (except during brief installation and maintenance periods) so there is no interference with commercial shipping or recreational boating
9. There is minimal impact on the bottom of the water body because mooring systems (anchors) are used to hold them in place. There are no pilings or foundations that would disturb the marine floor
10. OCGen™ modules are “smart” and submersible so they can be “told” to submerge to and maintain a prescribed depth and “told” to come to the surface for maintenance or emergency situations



ORPC Development Plan



ORPC is developing two OCGen™ prototype projects:

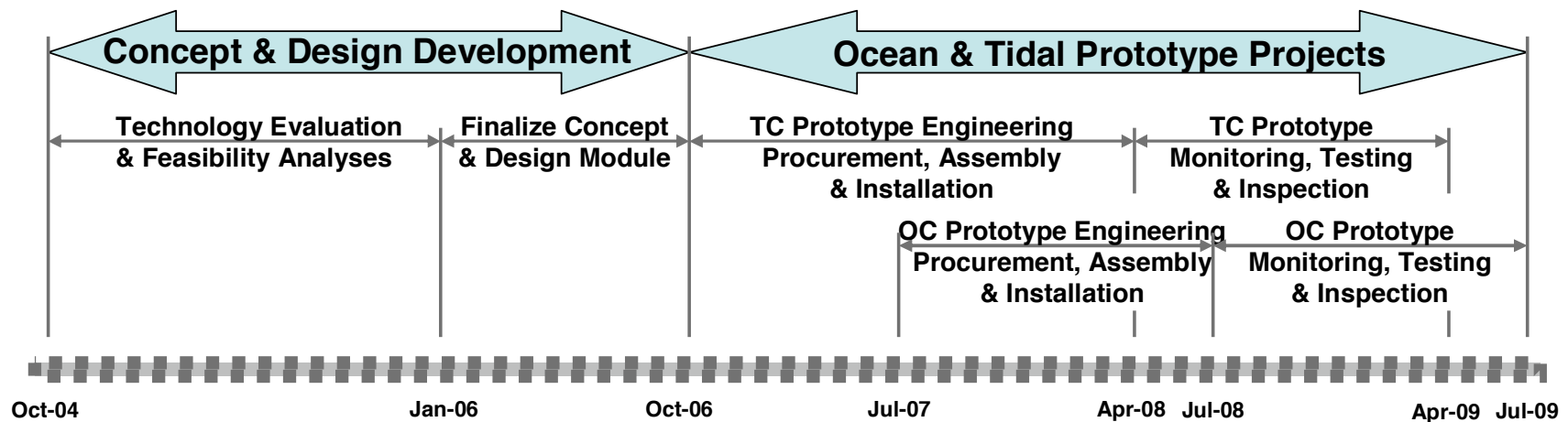
- ① an open *Ocean Current Prototype* in the Florida Current
- ② a *Tidal Current Prototype* in Maine and/or Alaska

with the goal of installing both types of prototypes within two years



ORPC Development Schedule

Development Schedule



Key OCGen™ Prototype Project Activities

- ❏ Perform final engineering and procurement of OCGen™ modules and platforms
- ❏ Obtain required environmental, governmental and regulatory permits and approvals
- ❏ Assemble, and install prototype modules, platforms and mooring systems
- ❏ Monitor prototype performance and collect key current and environmental data
- ❏ Make appropriate modifications to OCGen™ module designs based on performance and environmental data



Tidal Current Prototype Scope of Work

In conjunction with local companies and state agencies in Maine, ORPC proposes to design, engineer, fabricate, assemble, install, operate, test and monitor a prototype OCGen™ module in Western Passage.

- ◆ Current and bathymetry studies will be performed in the area within the Western Passage site to determine the ultimate generating capacity of the site and the optimal location of the prototype project
- ◆ Upon receiving funding, ORPC will complete final design, detailed engineering and procurement specifications for the prototype OCGen™ module
- ◆ ORPC will then procure, manufacture and ship all major components to an assembly site in Eastport
- ◆ The prototype OCGen™ module will then be assembled, pre-tested and installed in the water, securing it into position at a prescribed depth using an anchoring system with mooring lines
- ◆ All require environmental and other permits and approvals will be obtained prior to installation of the prototype OCGen™ module
- ◆ The prototype module will be operated, tested and monitored for a period of 12 months, during which relevant data will be collected, including current characteristics (flow rate, direction) and marine environment (noise, fish, etc.)
- ◆ The results will be used to improve the design of the OCGen™ module design and mooring system and develop final design, installation and O&M criteria



Eastport/ORPC Partnership

ORPC believes strongly in including the local community in the planning and execution of any OCGen™ projects in Western Passage and Cobscook Bay (and other potential Maine sites). We intend to work with the City of Eastport on a “partnership” basis throughout the planning, development, construction, installation and operations phases.

Our goal is to maximize the benefits of any OCGen™ projects to both the local community as well as to ORPC. Accordingly, we will work hard to:

- ▶ Make the OCGen™ projects a reality and a source of pride in the community
- ▶ Maximize local economic development benefits by using local businesses, contractors, services and labor whenever they are available, qualified and economically feasible
- ▶ Keep the City informed of the status of the development process and seek their input on matters which may affect the community
- ▶ Obtain the full support of the City in ORPC’s efforts to raise the funding needed to proceed with the prototype project at the state and federal level
- ▶ Once the funding is in place and the project is a 100% “go”, enter into a formal host community agreement with the City to memorialize the strong relationship between ORPC and Eastport and to institute a package of appropriate host community benefits (TBD)

We sincerely appreciate your support!