

Oceana Energy Company

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TIDAL ENERGY DEVELOPMENT

HOME

Oceana Energy Company is a renewable energy technology and site development firm with corporate headquarters in Washington, DC. Our mission is to engineer and deploy sustainable tidal power generation systems on a scale sufficient to achieve environmental improvements at minimal cost and impact.

FIRM PROFILE

Oceana is a clean energy technology and site development firm whose mission is to develop, permit, install and operate sustainable tidal power generation facilities that benefit the public and the environment. The tidal sector is forecast to show significant growth over the next decade as current environmental and political drivers are increasingly supported by rising energy costs and technological advances in marine engineering.

Oceana's corporate strategy involves developing a tidal power generation technology to harness and convert the energy of tidal currents into electricity. It also involves scouting sites and conducting feasibility studies to determine the public benefit of installing tidal power facilities at those sites. Our business model anticipates partnering with local entities that will purchase electricity generated by our facilities in markets where commercial tidal power installations are environmentally and economically feasible to operate.

We are currently evaluating characteristics of sites to establish the specifics of development opportunities, so that we may thereby prioritize the sites we prefer to retain for further development. Despite having our own technology research and development program in place, Oceana remains committed to incorporating a "technology neutral" approach in its environmental and economic site analyses. However, we believe that having both a site development strategy and a promising parallel technology development program gives us the necessary attributes to begin promoting partnership arrangements at this early stage.

Oceana represents a new way forward in the commercial success of the tidal energy industry. By serving utilities and technology developers, from site selection to plant commission, Oceana is the first venture of its kind that will be dedicated to the full spectrum of tidal energy development.

Our management team is comprised of individuals with a long history of environmental dedication and public service, including appointments at the White House, the U.S. State Department, the Department of the Interior, and the Environmental Protection Agency. Please visit our **Management** page for more information on Oceana's executives.

Oceana owns seven subsidiaries that have tidal energy development activities under review by the Federal Energy Regulatory Commission at a range of sites across the United States. Please visit our **Group Structure** page for more information on Oceana's group companies.

TIDAL ENERGY DEVELOPMENT

MANAGEMENT

William A. Nitze – Chairman

Mr. Nitze currently serves as Chairman of the Climate Institute, the Galapagos Conservancy, and Oceana Energy Company. From 2005 to 2007, Mr. Nitze was Chairman of GridPoint, Inc., a pioneer of smart grid technology, which raised \$88 million in equity capital under his leadership. He founded the Gemstar Group, a non-profit that developed market-based approaches to global environmental problems, and served as its President from 2001 to 2005. Prior to Gemstar, he served as Assistant Administrator for International Activities at the Environmental Protection Agency from 1994 to 2001, where he made environmental security a focus of the Agency's international work by establishing a formal working relationship among the Department of Defense, Department of Energy, and EPA on environmental security issues.

As President of the Alliance to Save Energy from 1990 to 1994, Mr. Nitze led a broad coalition of business, government, labor, and consumer interests in supporting and implementing policies and programs to promote energy efficiency. As Deputy Assistant Secretary of State for Environment in the Reagan and Bush administrations from 1987 to 1990, Mr. Nitze was the principal working level negotiator on multilateral environmental issues ranging from trade in endangered species to climate change. In 1988, Mr. Nitze played a key role in creating and organizing the Intergovernmental Panel on Climate Change.

After leaving the State Department in early 1990, Mr. Nitze was a Visiting Scholar at the Environmental Law Institute, where he wrote a monograph entitled *The Greenhouse Effect: Formulating a Convention*. Many of the elements discussed in this monograph were subsequently incorporated into the Framework Convention on Climate Change, signed in 1992. From 1993–94 and in 2002, he taught a course on forming an international regime to address climate change at the Paul H. Nitze School of Advanced International Studies at Johns Hopkins University.

Prior to entering the public policy arena, Mr. Nitze worked at the law offices of Sullivan and Cromwell in New York and spent fourteen years at the Mobil Oil Corporation from 1974 to 1987, where he served as Assistant General Counsel, Exploration & Producing Division, and General Counsel, Mobil Japan. Mr. Nitze holds B.A. degrees from Harvard College and Wadham College, Oxford, and a J.D. degree from Harvard Law School.

TIDAL ENERGY DEVELOPMENT

MANAGEMENT

George T. Frampton, Jr. – Director

Mr. Frampton is a partner at the New York law firm of Boies, Schiller & Flexner LLP. His areas of practice include complex litigation, white-collar criminal defense, and environmental and energy corporate strategy. From 1998–2001, Mr. Frampton served as Chairman of the White House Council on Environmental Quality where he was the President's principal advisor on environmental policy matters, and where he directed the White House environmental policy group of approximately two dozen professionals.

From 1997–98, he served as Corporate Advisor to the Earth Satellite Corporation in Bethesda, MD, and represented Vice President Al Gore as his personal attorney in connection with the Justice Department's preliminary investigation into possible fundraising violations. From 1993–97, Mr. Frampton was Assistant Secretary of the Interior for Fish, Wildlife and Parks. In this position, he was responsible for supervising the National Park Service and U.S. Fish and Wildlife Service; chaired a number of government-wide major regional initiatives within the Clinton Administration including restoration of the Florida Everglades Ecosystem and distribution of funds from the Exxon Valdez Oil Spill Restoration Fund; and led efforts to negotiate land-management agreements with state and local governments and large private landowners to protect sensitive habitats.

From 1986–1993, Mr. Frampton was President of The Wilderness Society, a non-profit advocacy and research group based in Washington, DC. Founded in 1935, with a membership that grew to more than 400,000 during his tenure, The Society focuses on issues relating to the management and use of federal lands and natural resources.

From 1976–1985, Mr. Frampton was affiliated with the Washington, DC litigation firm of Rogovin, Hugel & Lenzner where he specialized in major litigation and various special projects and investigations. These included: special litigation counsel for the State of Alaska in a \$3.0 billion Supreme Court case involving the constitutionality of the State's separate accounting of corporate income tax on oil producing companies; special advisor to the State of Ohio in the investigation into the collapse of the state bank insurance system; special prosecutor for the State of Alaska in a grand jury investigation into corruption allegations against the Governor of Alaska; Deputy Independent Counsel in the special federal investigation into allegations concerning Edwin Meese, III; litigation counsel to Rep. John B. Anderson in his independent candidacy for President; Deputy Director and Chief of Staff, Nuclear Regulatory Commission's Special Inquiry Group into the Three Mile Island Accident. Mr. Frampton was also an Assistant Special Prosecutor on the Watergate Special Prosecution Force from 1973–75.

From 1971–72, Mr. Frampton served as Law Clerk to Supreme Court Justice Harry A. Blackmun. He is a graduate of Yale College, the London School of Economics (M.Sc. Econ.) and Harvard Law School, where he served as the Treasurer (Managing Editor) of the Harvard Law Review. He has been a Visiting Lecturer in Constitutional Law at Duke Law School and a professor of International Environmental Law and Policy at Johns Hopkins' Nitze School of Advanced International Studies in Washington, DC..

TIDAL ENERGY DEVELOPMENT

MANAGEMENT

Daniel E. Power, III – President and Chief Technology Officer; Director

Mr. Power has worked for the past thirty years in the energy, environment and engineering fields. Most recently, he has fostered relationships with and developed technologies for companies in the ocean energy industry. Prior to Oceana's formation, he successfully linked one of these companies to the U.S. Navy, and, in doing so, developed valuable contacts with Navy engineers. He conceived and designed the tidal energy collection technology at the core of Oceana's pending patent applications.

In his role as Chief Technology Officer, Mr. Power leads Oceana's planning and engineering effort and is the principal technology investigator under Oceana's Tidal Defense and Energy System (TIDES)[™] research and development contract with the U.S. Naval Surface Warfare Center's Hydromechanics Directorate and NASA's Marshall Space Flight Center. His tidal energy collection invention forms the basis for a development, testing and large-scale field demonstration program currently underway.

Mr. Power previously served as a lieutenant colonel in the U.S. Air Force, where he was responsible for the management of an annual defense construction budget of more than \$180 million. As an engineering officer, he also successfully supervised the Air Force's pilot Energy Conservation Investment Program that was later implemented across the Department of Defense.

Some of his other activities in this area have included working overseas in China on environmental issues, spearheading an effort to encourage the greening of United Nations facilities, serving on the Board of the National Council for Clean Indoor Air, and serving on the Board of the Climate Institute for more than twenty years. He holds a civil engineering degree from the Vanderbilt University School of Engineering, and a master's degree in City Planning from the University of Tennessee.

TIDAL ENERGY DEVELOPMENT

MANAGEMENT

Michael J. Hoover – Secretary, Treasurer & General Counsel; Director

Mr. Hoover has deep domain knowledge of the marine renewable energy sector. Over the past five years, he has created and implemented successful business development strategies for multiple companies in the ocean energy industry. His expertise extends into the business, legal, regulatory, marketing, technological and financial development aspects of corporate operations.

He previously served as Legal and Environmental Director for Florida Hydro, Inc., and as a director of OpenHydro Group Limited during the transition period following its acquisition of Florida Hydro's assets. At Florida Hydro, Mr. Hoover refocused the company's underlying growth strategy from regional project development to global product development. He revamped its website, wrote its business and marketing plans, managed its complex and unprecedented offshore environmental permitting activities, helped it secure the largest preliminary hydropower permit in the United States from the Federal Energy Regulatory Commission (FERC), and played a critical role in the negotiation and sale of its assets to OpenHydro.

Mr. Hoover has demonstrated experience managing intellectual property issues, nationally and internationally, including technology development and licensing transactions. He has hands-on experience in the cradle-to-grave construction and testing processes for emerging energy technologies, including experience testing tidal energy equipment with the U.S. Navy.

In 2005, Mr. Hoover hatched the idea for Golden Gate Energy Company, which went on, under the leadership of its corporate founder, Joseph Cannon, to secure a FERC preliminary permit to study the feasibility of producing electricity from the tidal currents in San Francisco Bay. Golden Gate Energy Company later became a subsidiary of Oceana shortly after Mr. Hoover joined the firm in late 2005.

He has been a guest lecturer at renewable energy conferences and workshops across the country. In 2003, he won the Levy-Rosenblum Institute for Entrepreneurship's annual business plan competition at Tulane University's A. B. Freeman School of Business with a plan, called Gulf Stream Energy, based on the development of the Gulf Stream ocean current.

Prior to entering the marine renewable sector, he worked on criminal defense matters in New Orleans, Louisiana, and in the Risk Litigation Division of the Office of the Attorney General for the State of Louisiana. He holds a J.D. degree from Tulane Law School and pursued a post-graduate degree in Energy and Environmental Law specifically for a career in this industry.

TIDAL ENERGY DEVELOPMENT

MANAGEMENT

John C. Topping, Jr. – Vice-President; Director

Mr. Topping has been President and CEO of the Climate Institute, an international environmental group concerned with climate protection, since its founding in 1986. Under his leadership the Climate Institute has worked in over thirty nations and has developed with local teams climate protection and energy plans in nations with a quarter of Earth's population.

He is the Editor of two books on climate change and co-Author of one on U.S. air pollution control law. A graduate of Dartmouth College and Yale Law School, Mr. Topping served as Staff Director of the U.S. Environmental Protection Agency's Office of Air and Radiation from 1983 to 1986. Together with his EPA colleague, Joe Cannon, he was instrumental in phasing out lead from gasoline, movement to a fine particulate air quality standard, and initiation of the risk assessment of CFCs that helped lay the groundwork for the negotiation of the Montreal Protocol to protect the stratospheric ozone layer.

An attorney, he is a member of the Bar in the Commonwealth of Massachusetts and the District of Columbia and served in the U.S. Air Force as a member of the Judge Advocate General Corps. As an attorney, he also served as Chief Counsel of the Office of Minority Business Enterprise of the U.S. Department of Commerce. In 1976, he received the President's Award of the National Bar Association in recognition of outstanding contributions to the minority legal community. In 2002, he was the first person to receive the Martin Luther King, Jr. Social Justice Award for Lifetime Achievement from Dartmouth College. He served on the Energy Resolution Team of the Presbyterian Church USA from 2004 to 2006.

TIDAL ENERGY DEVELOPMENT

MANAGEMENT

Dr. Ned Hansen – Chief Engineer

Dr. Hansen is a principal of Ride Centerline, LLC, a roller coaster and amusement ride design consultancy firm. When scientists at NASA were researching whether electromagnets could be used to send rockets into space, they turned to the engineers affiliated with Ride Centerline to design the track and coaster car system of the maglev launch vehicle. Dr. Hansen works closely with engineers Alan Schilke and Dody Bachtar. Schilke is somewhat of an icon in the amusement ride industry. He has designed many of the world's largest roller coasters and theme park rides. Dody Bachtar, with a master's degree in civil engineering from Cornell University, completes the Ride Centerline team with a wealth of expertise in structural design. Bachtar has more than twelve years of experience in roller coaster and amusement ride design.

In addition to his work at Ride Centerline, Dr. Hansen is also President of Hansen Engineering Analysis and Design, Inc. of Hyde Park, Utah, where he employs both Schilke and Bachtar to perform engineering consulting work on independent projects. Other challenging projects undertaken by these three engineers include NASA ride vehicles used to carry primates into space and orbiter simulators. Their expertise in developing fiberglass designs that withstand the wear and tear of a roller coaster have been used in a variety of industrial applications from simulated rock-climbing walls to aircraft components.

Prior to forming Ride Centerline with Schilke and Bachtar, Dr. Hansen served as Chief Engineer for S&S Power, the largest amusement ride manufacturer in the world, located in Utah. He also previously worked on national security projects at Sandia National Laboratories in Albuquerque, NM, including design work on the nuclear bunker-buster bomb. Due to his service at Sandia, he brings significant government contract management experience to the company. Dr. Hansen will manage the technology development efforts at the direction of Oceana's Chief Technology Officer. He holds a doctorate degree in mechanical engineering from the University of New Mexico.

TIDAL ENERGY DEVELOPMENT

MANAGEMENT

Joseph A. Cannon – Co-Founder

Mr. Cannon is Editor of the Deseret News in Salt Lake City, Utah. He is a former partner of the Washington, DC law firm of Pillsbury Winthrop Shaw Pittman, LLP, where he represented some of the largest energy companies in the United States. He is also the former Chairman of the Republican Party for the State of Utah.

From 1987–2001, Mr. Cannon was Chairman and CEO of Geneva Steel, where he was responsible for transforming Geneva into the most modern and environmentally sound steel mill in the nation. His efforts to balance environmentalism and industry were recognized when the Environmental Protection Agency honored Geneva Steel with its Outstanding Achievement Award in 1991 for its commitment to the environment. Mr. Cannon was named Entrepreneur of the Year 1987 by *Utah Business Digest* and Businessman of the Year 1988 by the Utah Manufacturers Association.

From 1985–87, he was a partner at the Washington, DC office of San Francisco's Pillsbury, Madison & Sutro (now Pillsbury Winthrop Shaw Pittman, LLP) in the firm's environmental law practice. He rejoined the Pillsbury law firm after a 2002 campaign for the U.S. Senate.

In 1981, he was appointed by President Ronald Reagan as Associate Administrator for Policy and Resource Management at the Environmental Protection Agency where he served for two years. In this position, he played a central role in the development of the agency's rules tightening the standards for lead in gasoline and in expanding EPA's emissions trading policy. He was later confirmed by the U.S. Senate as Assistant Administrator for Air and Radiation. His duties involved implementation and enforcement of the national air policy mandated by the Clean Air Act and the regulation of fine particulate matter in the atmosphere. He also had a significant role in the agency's research on global warming.

Mr. Cannon received his B.A. degree in political science, and in 1977 graduated cum laude from BYU's law school, where he was an editor of the law review. He served as a law clerk in Salt Lake City for Judge Aldon J. Anderson before accepting positions with the Washington, DC law office of Philadelphia's Morgan, Lewis & Bockius, and later with Andrews and Kurth, also located in Washington, DC.

Mr. Cannon has served as a member of the Board of Trustees of the American Enterprise Institute; member of the Administrative Conference of the United States; member of the Board of Trustees of the Salt Lake Olympic Organizing Committee; Chairman of the American Bar Association, Natural Resources Law Section, Air Quality Committee; Vice Chairman of the Committee of Interagency Radiation Research and Policy Coordination; United States Representative to the Environment Committee, Organization for Economic Cooperation and Development; and member of the United States Holocaust Memorial Council and capital campaign committee.

TIDAL ENERGY DEVELOPMENT

GROUP STRUCTURE

Oceana controls six subsidiary companies that have nine active tidal energy permits issued by the Federal Energy Regulatory Commission. These permits enable Oceana to explore the environmental and economic feasibility of developing tidal power infrastructure at the requested sites, in order that we may determine those sites with the highest potential for successful development. Consistent with our commitment to developing sustainable, environmentally-friendly tidal power projects, Oceana has surrendered three permits due to environmental, use-conflict and commercial feasibility constraints.

Oceana's subsidiaries and their associated projects are as follows:

Alaska Tidal Energy Company

Icy Passage Tidal Energy Project – [Docket Link](#)>> P-12695

Wrangell Narrows Tidal Energy Project – [Docket Link](#)>> P-12697

Central Cook Inlet Tidal Energy Project – [Docket Link](#)>> P-12705

Golden Gate Energy Company

San Francisco Bay Tidal Energy Project – [Docket Link](#)>> P-12585

Maine Tidal Energy Company

Kennebec Tidal Energy Project – [Docket Link](#)>> P-12666

Penobscot Tidal Energy Project – [Docket Link](#)>> P-12668

Massachusetts Tidal Energy Company

Cape and Islands Tidal Energy Project – [Docket Link](#)>> P-12670

New Hampshire Tidal Energy Company

Portsmouth Area Tidal Energy Project – [Docket Link](#)>> P-12664

New York Tidal Energy Company

Astoria Tidal Energy Project – [Docket Link](#)>> P-12665

Surrendered Permits

Kachemak Bay Tidal Energy Project – [Docket Link](#)>> P-12694

Gastineau Channel Tidal Energy Project – [Docket Link](#)>> P-12696

Columbia Tidal Energy Project – [Docket Link](#)>> P-12672

TIDAL ENERGY DEVELOPMENT

TECHNOLOGY

Oceana is developing a durable tidal power generation technology that we consider to be a vast improvement over all other tidal technologies in the public domain, in terms of manufacturability, ease of operation and cost. In 2006, we entered into a Cooperative Research & Development Agreement (CRADA) with the U.S. Navy to utilize its Naval Surface Warfare Center, Carderock Division's engineering facilities and expertise to develop and test Oceana's Tidal Defense and Energy System (TIDES)[™] power generation platform. This arrangement with the U.S. Navy is continuing and will extend through to the completion of the design and delivery of at least one large-scale beta demonstration device.

Likened to an underwater windmill, Oceana's technology operates on principles far different from that of windmills and marine energy systems that resemble windmills. Oceana's system is innovative in that its design incorporates features to enhance power production through substantive improvements to existing tidal and marine current systems being developed today. The system was designed with a clear focus on advancing the following goals:

- > Minimizing Environmental Impacts
- > Reducing Construction, Installation and Operation Costs
- > Improving Energy Extraction Efficiencies
- > Increasing Upward Scalability

Important features of TIDES[™] are its free-scaling range of motion and the infinite options for manipulating the size and shape of its hydro blades to vary the ratio of freely flowing water-to-water contact over its blade surfaces. Thus, designers and manufacturers can build our devices much larger than propeller-based units and in more optimal configurations than shaftless technologies that are limited to the geometry of a circle. This ability opens up many possibilities in environments unsuitable for, or only partially suitable for, other tidal technologies. Furthermore, an existing industry is equipped to manufacture, transport and fabricate almost every component of this new energy system.

While we believe there are many benefits of this design over existing forms of power production and competitive emerging technologies, Oceana remains committed to incorporating a "technology neutral" approach in its environmental and economic site analyses. Therefore, we encourage all other tidal energy technology developers to participate in the device evaluation phases of our site feasibility studies.

TIDAL ENERGY DEVELOPMENT

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