

10.4 APPENDIX D – CONSTRUCTION AND ASSEMBLY SUPPLEMENTAL INFORMATION

10.4.1 Appendix D.1 – Offshore Wind Supplier List

Appendix D.1

The following is a list of Maine companies with ability to provide products, support or services to the development of offshore wind energy.



→ Indicates Experience in providing products or services to wind and/or ocean energy industries.

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Metal Fabrication

Bath Iron Works (BIW) - Part of General Dynamics Marine Systems, Bath Iron Works is a full-service shipyard that specializes in the manufacturing of highly outfitted and complex modules. www.gdbiw.com



Cianbro is an Employee Owned Company with over 2300 employees in the northeast, Cianbro is positioned to take on all phases of wind projects from development through start up and commissioning. In house engineering, fabrication, logistics, in addition to construction services on shore and offshore provide unparalleled efficiencies for a wide range of projects. www.Cianbro.com

M.C. Faulkner & Sons Welding and Fabrication. Steel and Aluminum Fabrication – we have an 8' X 12' burn-in table to cut out steel and aluminum parts out of up to 4" thick plate, certified welders, a full time draftsman and a machine shop. We are an innovative, but also practical manufacturing shop for both prototype manufacturing and production line manufacturing. www.mcfaulkner.com

- **Certifications:**
- **Processes/Qualifications:**
- **Specialized Equipment and Processes:**
- **Material Handling Capacity:**
- **Metal Fabrication:**

Accidental ANOMALIES, Inc. located in Turner, Maine is a fabricated structural metal manufacturer that specializes in the construction of commercial and residential stairs, handrails, platforms and catwalks. www.accidentalanomalies.com

Bangor Steel Service, Inc. located in Bangor, Maine is a fabricated structural metal manufacturer that specializes in fabrication of catwalks, railing, guarding and structural steel members. Bangor steel has experience serving electrical, gas and wood power plants. www.bangorsteel.com

- **Certifications:** AISC MEMBER
- **Processes/Qualifications:** D1.A
- **Specialized Equipment and Processes:** 220 TON PRESS BRAKE, 1/2 X 10' METAL CUTTING SHEAR
- **Material Handling Capacity:** 10 tons
- **Metal Fabrication:** CARBON STEEL AND ALUMINUM



Alexander's Welding & Machine, Inc. located in Greenfield, Maine is a fabricated metal and machine shop providing mechanical problem solutions, design, fabrication, machining and prototyping services to numerous industries including the ocean energy industry. www.AlexandersMechanicalSolutions.com

- **Certifications:** Individual employees hold various welding certifications through the American Welding Society
- **Specialized Equipment and Processes:** 1 Mazak CNC 3-Axis Vertical Machining Center, 40" x 20" travel, 4,000 rpm, 1 Milltronics 3 Axis Vertical Machining Center, 18" x 20" travel, 8,000 rpm, 1 Milltronics 10" x 50" 2 Axis CNC Lathe, 1 Mori-Seiki AL-2 15" x 24" CNC 2 Axis Lathe (continued within cell but not visible), 1 5' x 12' Torchmate CNC Burning Machine with Water Table, (6" capacity flame cut; 3/4" plasma cut, Torchmate Software)
- **Material Handling Capacity:** 5000 lbs
- **Metal Fabrication:** All steels including stainless, aluminum, titanium, plastic, composites

Metal Fabrication (cont)

Flu Gas Solution, Inc. located in Windham, Maine fabricates fabric and metallic expansion joints - louver, butterfly and guillotine dampers for the Power Generation Industries. www.flugassolutions.com.

- **Material Handling Capacity:** 5000 lbs

Megquier & Jones, Inc. located in South Portland, Maine is a fabricator of structural steel, miscellaneous metals and light gauge steel truss and framing components with experience manufacturing barges for a variety of industries including power co-generation industries. www.megjones.com

- **Certifications:** AISC; AWS
- **Processes/Qualifications:** Certified Welding Inspectors (CWI); Complex Steel Bridges; Major Steel Bridges; Sophisticated Paint Endorsement
- **Specialized Equipment and Processes:** Shot blasting (SSPC Requirements); Steel Plate Burning Table; Automated Welding & Drilling Equipment
- **Material Handling Capacity:** 30 Tons (Interior Overhead Cranes); 25 Ton (Fork Lift)
- **Metal Fabrication:** Carbon Steel A36, A572, A588, A992; Light Gauge Steel Framing



Newport Industrial Fabrication, located in Newport, Maine performs sophisticated welding and coatings including heavy welments (up to 4”). NIF has the ability to meet Q&A for demanding clients and perform work to meet international certifications.

- **Certifications/Processes/Qualifications:** AICS, AWS certified Weld Inspector, AWS D1.1 & D1.5, ASME & AWS Welders, NACE & SSPC-CI Certified Coatings Inspector, Level II NDT UT and MT Testing
- **Specialized Equipment and Processes:** Automated Welding



Morrison Manufacturing Inc. located in Perry Maine is a fabricated structural metal manufacturer with experience providing services for maritime transportation, aquaculture and energy industries including specialized barge construction for tidal energy.

- **Certifications:** AWS Certified Welders, Master Mariner Licensed.
- **Material Handling Capacity:** 3 in-house cranes with access to cranes to 100 tons
- **Metal Fabrication:** MIG, TIG for Aluminum, Stainless and Carbon.



TW Dick Steel Co. Inc. located in Gardiner Maine is a fabricated structural metal manufactures with experience providing welding, steel fabrication and steel sales for wind and other energy industries.

- **Specialized Equipment and Processes:** Steel Rolling, 144 inch diameter, 10 ft length, 1/2 inch thickness
- **Material Handling Capacity:** 10 tons
- **Metal Fabrication:** Steel, Aluminum, Stainless

Precision Manufacturing and Machining



D&G Machine Products Inc. is fully ISO certified precision machining company providing services to the energy industry member including turbine parts for clients such as GE Power. Precision Design, Precision Engineering, Precision Quality Control, Precision Installation. www.dgmachine.com

- **Certifications:** ISO 9000, AS 9100, NDT, NADCAP



MIDCorp: Manufacturer and supplier of assemblies and sub assemblies focused on generating systems generally up to 100KW – expect to have full line production facility on line Fall of 09 – R&D focus on turbine performance enhancements and co-generation systems. E-mail: jcmonroe@maine.rr.com



Midstate Machine: Manufacturer of precise equipment for IGT, Steam, and wind generation, oil and gas and defense industries with ability to machine in various alloys to meet customers specifications.

- **Certifications:** ISO 9000, AS 9100, qualified for ASME pressure welding

Titan Machine Products Inc. is a full service high quality contract manufacturing company. Titan provides its Defense and Commercial customers with precision products, components, assemblies, fabrications and services. www.Titanmachineproductsinc.com

- **Certifications:** ISO 9000, AS 9100,

Kennebec Technologies: Precision machining and grinding for aerospace and defense industries. Providing services to Aerospace, Defense, Semiconductor, Telecommunication, Investment Castings, Propulsion, Homeland Security, Commercial Products.

- **Certifications:** ISO 9000, AS 9100, Nadcap EDM
- **Equipment:** CNC Grinding, EDM, CNC Mill/Turn, CNC Milling, CNC Turning, Light Assembly

Composites Manufacturing



ACSM, Inc. (GRP Gurur); providing composites-related services to manufacturers in the renewable energy field. Past clients include start up of the GE wind blade plant in Pensacola, FL, in 2003-2004. Services and expertise for the Wind Energy sector include: engineering and process-development of blade manufacturing plants; personnel training; trouble-shooting and auditing of operational manufacturing units; development and testing of structural laminates; rapid-response team for field inspections, failure analysis and repair of installed blades. www.GRPguru.com



Custom Composite Technologies, Inc.
Fabrication, Consultation and Design of Advanced Composite Structures for Renewable Energy, Aerospace, and Infrastructure Industries. Demonstrated success in large-scale infusion and pre-preg methods. www.customcomposite.com

Flotation Technologies is a world leader in the design, engineering and manufacture of deepwater buoyancy systems, and serves the offshore oil, oceanographic, seismic and government markets. The company specializes in syntactic foam and urethane elastomers. It has additional manufacturing capability in composites, metal fabrication and rotational molding. www.flotec.com

Kenway Corporation specializes in technically advanced industrial composite manufacturing, bringing products from engineering and design, through fabrication, to on-site installation, using processes from open-molding, to filament winding, to Light RTM and vacuum infusion. www.kenway.com



Lyman Morse: Composite and aluminum construction of custom yachts from 25-120' and Power Cubes. Service provided for all yachts around the world. Use of SCRIMP infusion process and prepreg composites as well as the usual vacuum bagging and hand laid construction. Metal fabrication shop – fully certified for 5086 and 6061 aluminum and coast guard certified for all steel fabrication. www.Lymanmorse.com



US Wind Blade: Design and fabrication of composite blades for wind and tidal turbines. www.USWindblade.com

West Bay Boats: Custom composite boat manufacture with a capacity to provide offshore energy service and crew vessels and composite components for energy production. www.westbayboats.com



Janseneering, Inc. located in Falmouth, Maine fabricates patterns and molds for the composites industry utilizing three 5-axis CNC machines with the largest having a 35' long capacity. Janseneering has experience serving the wind and ocean energy industries. Www.janseneering.com.

Yale Cordage provides engineered synthetic mooring lines , deep sea anchoring systems, and industrial cordage for any size and application for the most demanding ocean environment applications. www.yalecordage.com

Engineering and Environmental Services/Consulting



Forristall Ocean Engineering, Inc.: We provide meteorological and oceanographic (metocean) design specifications for off-shore projects. Our research into extreme values statistics for wave and crest heights has been incorporated into ISO standards. We have written metocean criteria for projects all over the world, from near shore to very deep water.

www.forocean.com



James W. Sewall Company: Founded in 1880, Sewall is a geospatial, engineering and forestry consulting firm that provides integrated solutions to government and industry. Sewall provides services in wind site assessment, design, and development and environmental and transportation engineering, throughout the United States. www.sewall.com

Maritime Applied Physics Corp (MAPC) has a 20-year history of engineering, prototyping, and production of emerging technology systems. MAPC provides engineering and design solutions to technically challenging problems and environments. MAPC has received more than 25 awards under the Small Business Innovation Research (SBIR) program. Our international experience includes projects in South Korea, Italy, France and the United Arab Emirates. www.mapcorp.com



Stantec is an integrated environmental, engineering, and construction management firm offering site planning, environmental studies, permitting, project management, and complete engineering services for both onshore and offshore wind projects. With 10,000 staff, 130 offices, and experience on more than 200 wind farms in North America, Stantec provides Global Expertise and Local Delivery of innovative wind power solutions. www.stantec.com



SGC Engineering, LLC offers expertise in the planning and design of wind power projects. SGC provides engineering expertise, design high voltage electrical transmission, collection and distribution systems. SGC also provides civil engineers and land surveyors for layout, design and permitting of access roads, turbine and transmission line right-of-ways, and substation site development.

SGC has a skilled land acquisition staff to identify and negotiate the purchase of parcels, easements, and leases needed for a project. www.sgceng.com



Terracon is an employee-owned consulting engineering firm providing geotechnical, environmental, construction materials, and facilities services. We offer practical, cost effective solutions suited for projects of all sizes from nearly 100 offices nationwide. By anticipating project requirements and adapting to challenges, we make it easy for you to work with us. You'll benefit from a flexible partner focused on your business objectives. For projects large and small, single- or multi-site, our clients can rely on consistent results. www.terracon.com



HDR|DTA Has experience siting, permitting, and designing nearly 17,000 MW of the 28,000 MW developed in the United States, and supporting the licensing and permitting of some of the first offshore and near shore energy projects in the US. It's engineers, scientists, and regulatory specialists, serving clients in the renewable energy industry, provide consulting services for hydropower and alternative technologies in ocean energy and wind power. www.devinetarbell.com



TRC is a full service company providing solutions for a broad range of project requirements including strategic planning, environmental surveys and assessment, permitting, engineering, wind modeling and construction management/quality assurance. TRC staff has successfully permitted over 40,000 MW of generation capacity nationwide. TRC has over 300 experienced power delivery staff located in 27 offices from Augusta, Maine to San Diego, California. Our wind energy project services include: Site Selection Support, Permitting Support, Engineering Support. www.trcsolutions.com

Engineering and Environmental Services/Consulting (continued)



Delorme Publishing Company: Integrating Map Data, GIS, and GPS into Affordable and Easy-to-Use Solutions. www.delorme.com



NBT Solutions LLC: provides data management and visualization systems, GIS mapping, and related services to the wind energy market. NBT's sensor network data integration offerings facilitate analysis and monitoring of critical environmental and meteorological data. NBT's core GIS expertise assists energy project development through site analysis, permitting, and communications mapping. www.nbtsolutions.com



Normandeau Associates Inc. is a natural resources environmental consulting firm with experience supporting both onshore and offshore wind projects. Normandeau conducts wildlife, wetlands, fisheries, water quality, benthos, plankton, and environmental assessment studies to provide the basis for work plans that ensure the information adequately addresses project licensing and permitting requirements. www.normandeau.com

Legal , Insurance and Financial Services



The Allen Agency has partnered with Insurance Industry leaders to offer cutting edge products for the full array of insurance and risk management programs for the renewable sector including wind (on and offshore) solar, tidal, bio and hydro. www.allenagency.com



Bernstein Shur represents on-and-offshore wind developers and alternative energy interests by providing energy, environmental permitting and compliance, financing, contract negotiation, tax incremental financing, governmental relations, and real estate (including title insurance) services through our 100-plus attorneys and our subsidiaries—Stratex Energy, Monument Title, and Government Solutions. www.bernsteinshur.com

Norton Insurance & Financial Services is an independent agency, brokerage and consulting company serving the needs of successful, entrepreneurial, forward thinking business of New England. Our Commitment to serving all renewable energy initiatives is evidenced by our dedication to keeping insurance costs low and value high. www.nortonne.com



Norman Hanson and Detroy is a full service law firm serving the needs of construction, development and energy industry members of New England. We are commitment to serving all renewable energy initiatives . www.nhdlaw.com



Pierce Attwood has long been recognized as a leading New England commercial law firm providing a full spectrum of services to regional, national and international alternative energy clients. www.pierceatwood.com.



Verrill Dana Verrill Dana's Energy Group combines deep experience with broad expertise to provide proven results for clients. Verrill Dana represents and has successfully permitted every operational or permitted grid-scale wind energy facility in Maine (amounting to over 270 MW of capacity), and has been successful in every appeal brought against its wind-power clients. Verrill Dana is able to assist clients in every aspect of wind power development.

Transportation and Logistics



Bangor Hydro Electric Company is a electric utility wholly owned by Emera, Inc. of Halifax. Nova Scotia, Canada. The Company provides transmission and distribution services to a population of 192,000 in eastern Maine . Bangor Hydro is a member of the New England Power Pool and is interconnected with other New England utilities to the south and with the New Brunswick Power Corporation of New Brunswick, Canada to the north.

www.bhe.com

Chase, Leavitt & Co. Provides agents for the vessels owners/operators and performs condition and discharge surveys for various principals involved with the shipping and receiving of these windmill components.

www.chaseleavitt.com



The Maine Port Authority develops and maintains Maine's port infrastructure. Maine's ports play a key role in the import, export, staging, assembly and servicing of the wind industry in the North East. www.maineports.com



The Port of Eastport is Maine's Deep Water Cargo Port; the deepest natural seaport in the continental United States. As an international cargo port it serves both import and export markets including the wind energy market.

www.portofeastport.org



Ports America: Terminal and stevedoring service in the Port of Portland. Terminal delivery of import units and receipt of export units. Stevedoring, loading export units from FPOR to vessel and unloading import units from vessel to FPOR .www.portsamerica.com



Sprague Energy Corp : one of the largest suppliers of energy and materials handling services in New England. The company has a network deep-water terminals and rail connections that serve as a gateway for goods into and out of the Northeast U.S., Canada and the Midwest markets. Sprague has the expertise and experience in transporting a wide range of products including wind turbine components. www.spragueenergy.com

Research and Development



AEWC is a one-stop-shop for developing a composite product or structure from the conceptual stage through research, manufacturing of prototypes, comprehensive testing and evaluation. The 70,000 sq. ft AEWC laboratories are adding an integrated design, prototyping and testing facility for advanced composite materials with the ability to manufacture and test up to 70 meter wind blades under one roof. www.aewc.umaine.edu



The Marine Maritime Academy - Maine Maritime Academy provides technical marine support in collaboration with the University of Maine research projects. www.mainemaritime.edu



The Ocean Energy Institute - is an independent think tank with the mission to accelerate the technological development of innovations that harness the ocean's power. With a current focus on far offshore wind in the State of Maine, the Institute identifies emerging opportunities through deep technical, policy and business expertise, and by coordinating the efforts of businesses, policy leaders, researchers and innovators. www.oceanenergy.org.

The Gulf of Maine Research Institute catalyzes solutions to the complex challenges of ocean stewardship and economic growth in the Gulf of Maine bioregion through a dynamic fusion of science, education, and community. www.gmri.org.

Education and Industry Training



Northern Maine Community College provides educational programs for Associate in Applied Science degrees in Wind Power Technology, Electrical Construction & Maintenance, and Precision Metals Manufacturing. We also provide courses toward certificate programs in Machine Tool Technology and also Welding & Fabrication. www.nmcc.edu

Maine Advanced Technology Center (MATC): Develop and implement training which supports the workforce training needs of advanced manufacturing companies and utilize advanced composites materials and other integrated manufacturing processes. www.matc.smccc.edu



The Marine Maritime Academy

Situated in a waterfront setting along the Bagaduce River in Castine, a tidal estuary, the Maine Maritime Academy's close proximity to the University of Maine uniquely positions it to be a conduit for cooperative engineering efforts around renewable energy. The two universities are currently collaborating: UMaine allows MMA to use the tow tank in exchange for MMA assistance on the tidal turbine. For more, visit: www.mainemaritime.edu



The University of Maine educational programs applicable to renewable energy and so much more. Study is led by world-class scholars and includes groundbreaking research in one of the world's most beautiful natural landscapes. Applicable studies include: [College of Engineering](#); [College of Business, Public Policy, and Health](#); [College of Natural Sciences](#). www.umaine.edu.