**CLAIMS**

We claim:

1. A method for manufacturing hydrogen, comprising:

placing a water-borne structure into a body of water, the water-borne structure comprising a buoy including a water collection reservoir in fluid communication with an effluent conduit, a liquid pressurizing columnar conduit depending from the buoy configured to inject water into the water collection reservoir, an electrical energy generator operatively coupled to the effluent conduit to generate electrical energy from a flow of water through the effluent conduit, and an electrolyzer electrically coupled to the electrical energy generator;

vertically displacing water from the body of water to the water collection reservoir via the liquid pressurizing columnar conduit;

evacuating water from the water collection reservoir through the effluent conduit to energize the electrical energy generator;

electrolyzing water by electricity generated by the electrical energy generator to evolve hydrogen; and

storing the hydrogen in a tank.

2. The method of claim 1, wherein the floating, self-propelled, water-borne structure is controlled by satellite.

3. The method of claim 1, wherein the electrical energy generator includes a water turbine.

4. The method of claim 1, further comprising transmitting electromagnetic control signals to the water-borne structure via satellite to control a hydrogen production rate of the water-borne structure.

95. The method of claim 1, wherein the water-borne structure further includes a hydrogen port on an exterior surface.

6. A method for manufacturing hydrogen, comprising:

deploying a hydrodynamic pump to an ocean, the hydrodynamic pump including an inertial water tube comprising a constricting feature to pressurize ocean water, a pressurized fluid reservoir partially filled with ocean water transported from the ocean to the pressurized fluid reservoir via the inertial water tube, a turbine energized by a flow of pressurized ocean water exiting the pressurized fluid reservoir, an electrical generator coupled to the turbine, an electrolyzer, and a hydrogen tank;

transmitting electrical energy from the electrical generator to the electrolyzer to generate hydrogen; and

storing the hydrogen in the hydrogen tank.

7. The method of claim 6, wherein the electrical generator is a rim-drive generator.

8. The method of claim 6, wherein the hydrodynamic pump further includes a navigation control computer.

9. The method of claim 6, wherein an electromagnetic control signal changes a flow rate of water from the pressurized reservoir by adjusting an electrical current draw of the electrolyzer.

10. A method for generating and transporting hydrogen, comprising:

deploying a hydrodynamic pump to an ocean, the hydrodynamic pump including a pressurized fluid reservoir partially filled with ocean water transported from the ocean to the pressurized fluid reservoir through wave action, a columnar conduit extending below the pressurized fluid reservoir to impel ocean water to the pressurized fluid reservoir, a turbine energized by a flow of pressurized ocean water from the pressurized fluid reservoir, an electrical generator coupled to the turbine, an electrolyzer, and a hydrogen tank;

conducting electrical energy from the electrical generator to the electrolyzer to generate hydrogen;

storing hydrogen in the hydrogen tank;

coupling a ship to the hydrodynamic pump by a hydrogen conduit;

transferring hydrogen from the hydrodynamic pump to the ship; and

decoupling the ship from the hydrodynamic pump.

11. The method of claim 10, further comprising transferring water from the ship to the hydrodynamic pump for water-splitting.

12. A wave engine, comprising:

a buoy configured to rise and fall under an influence of a body of water;

a hollow tube depending from the buoy and having a water ingress/egress mouth at a lower end and a water discharge spout at an upper end, and further comprising an interior including a wall defining a water accelerating surface adapted to eject water through the water discharge spout in response to an increasing pressure within the interior of the hollow tube;

a water collection reservoir in fluid communication with the water discharge spout;

a first effluent conduit extending from the water collection reservoir to the body of water for diverting at least a portion of water collected in the water collection reservoir to the body of water; and

a first electrical energy generator for converting an energy of a portion of water in the first effluent conduit into electrical energy.

13. The wave engine of Claim 12, wherein the first electrical energy generator comprises a magnetohydrodynamic generator configured to create a voltage by said flow of water moving through the first effluent conduit.

14. The wave engine of Claim 12, further comprising a computer electrically coupled to the first electrical energy generator for utilizing the electrical energy generated by the first electrical energy generator to power the computer.

15. The wave engine of Claim 14, further comprising a power management system for automatically managing a power usage configuration of the computer based on a rate of electrical energy generated by the first electrical energy generator.

16. The wave engine of Claim 12, further comprising a one-way valve at the discharge spout.

17. The wave engine of Claim 12, further comprising a second effluent conduit extending from the water collection reservoir to the body of water for diverting at least a portion of water collected in the water collection reservoir to the body of water, and a second electrical energy generator for converting an energy of a portion of water in the second effluent conduit into electrical energy, and further comprising a load controller for steering the wave engine by controlling an electrical load of the second electrical energy generator.

18. The wave engine of Claim 17, wherein the load controller controls a power consumption of one of a computer and a light emitting diode electrically coupled to the second electrical energy generator.

19. A hydrodynamic pump, comprising:

an upper hull enclosure adapted to float at a surface of a body of liquid;

a liquid collecting chamber at least partially housed within the upper hull enclosure, the liquid collecting chamber adapted to confine liquid and gas at elevated pressure;

a liquid pressurizing columnar conduit extending below the upper hull enclosure, the liquid pressurizing columnar conduit comprising an ingress orifice disposed outside the upper hull enclosure, an injection orifice opening into the liquid collecting chamber, and an interior wall defining a liquid pressurizing surface adapted to pressurize liquid in the liquid pressurizing columnar conduit when the hydrodynamic pump oscillates vertically in the body of liquid to inject liquid into the liquid collecting chamber;

a first effluent conduit configured to drain liquid from the liquid collecting chamber and having an external effluent port for discharging liquid from the first effluent conduit; and

a first flow governor adapted to maintain a liquid pressure gradient between the liquid collecting chamber and the external effluent port.

20. The hydrodynamic pump of Claim 19, wherein the first flow governor comprises a filter adapted to remove and sequester one of a substance dissolved in liquid and a substance suspended in liquid.

21. The hydrodynamic pump of Claim 20, wherein the filter comprises a lithium adsorbent material adapted to remove one of lithium, lithium salts, and lithium ions from seawater.

22. The hydrodynamic pump of Claim 20, wherein the filter is confined in an interior of the liquid collecting chamber and comprises one of an adsorbent material and an absorbent material.

23. The hydrodynamic pump of Claim 19 wherein the injection orifice of the liquid pressurizing columnar conduit is spaced from a floor of the liquid collecting chamber to reduce backflow of liquid from the liquid collecting chamber to the liquid pressurizing columnar conduit.

24. The hydrodynamic pump of Claim 19, wherein the liquid collecting chamber is configured to accrue a liquid ballast having greater volume than an internal volume of the liquid pressurizing columnar conduit to augment a momentum of the hydrodynamic pump.

25. The hydrodynamic pump of Claim 19, further comprising a light configured to illuminate one of an interior of the liquid collecting chamber and an interior of the liquid pressurizing columnar conduit, said light powered by an energy of liquid exiting the liquid collecting chamber.

26. The hydrodynamic pump of Claim 19, further comprising a second effluent conduit configured to drain liquid from the liquid collecting chamber and further configured to yaw the hydrodynamic pump when a rate of liquid discharge from the second effluent conduit exceeds a rate of liquid discharge from the first effluent conduit.

27. A wave engine, comprising:

a hollow flotation capsule configured to rise and fall under an influence of a body of water, the flotation capsule including a water collection basin and a pressurized air enclosure, the pressurized air enclosure in fluid communication with the water collection basin;

a hollow tube extending from the hollow flotation capsule, the hollow tube comprising a water inlet mouth spaced from the hollow flotation capsule, and further comprising a water discharge mouth configured to discharge water from the hollow tube into the pressurized air enclosure, and further comprising a wall defining a constricting surface adapted to increase an elevation reached by water flowing upwardly in the hollow tube when water oscillates in the hollow tube;

an effluent conduit having an inlet mouth configured to drain water from the water collection basin and an outlet mouth configured to discharge water to an environment of the wave engine;

a water turbine positioned proximate to the effluent conduit and configured to receive energy from water flowing through the effluent conduit; and

an electrical generator coupled to the water turbine for converting an energy of water flowing through the effluent conduit.

28. A hydrodynamic pump, comprising:

a hollow chamber configured to float at an upper surface of a body of water and to rise and fall in response to waves passing over the body of water;

a water tank included within the hollow chamber;

a pressurized air container included within the hollow chamber and in fluid communication with the water tank;

a hollow tube comprising a first mouth positioned within the hollow chamber and in fluid communication with the pressurized air reservoir, and further comprising a second mouth positioned outside the hollow chamber, the first mouth having a flow-normal cross-sectional area lesser than a flow-normal cross-sectional area of the second mouth;

an effluent conduit traversing a wall of the hollow chamber, the effluent conduit adapted to drain water from the water tank;

a water turbine adapted to receive energy from water draining from the water tank via the effluent conduit; and

an electrical generator coupled to the water turbine to generate electrical power from a rotation of the water turbine.