erated voltage may also be transformed to one or more appropriate levels. Other portions of the powered may be transformed into an AC waveform of appropriate frequency to operate other items on floating platform **102** that require AC power.

[0030] The simple conversion to DC power, without subsequent rebuilding of the power into an AC signal (and subsequently bringing it back to a DC signal at each computer or rack in modular data centers **104**) may provide for energy efficiency benefits. Each conversion introduces losses, and because the power can be used in DC form, there is no need to convert and re-convert the signal. Although the varying frequency of the AC signal generally coming from motion-powered machines **106**, **110** generally requires rectification and rebuilding of a constant AC signal, because commercial and domestic users of the electrical demand an AC signal and because transmission over long distances is difficult using DC current, the described single conversion does not require particular AC current, and also does not require transmission over such a distance. Such an approach of converting AC generated at a non-standard frequency to DC without further changes could be used for other natural sources having a changing frequency, such as wind generators on wind farms.

[0031] Electricity generated by the motion-powered machines **106** travels through electrical cables (not shown) connected to the platform **102**. The electrical cables may run along mooring lines that tie the various motion-powered machines **106** back to the floating platform **102**. Alternatively, the electrical cables may run separately from the mooring lines.

[0032] The motion-powered machines **106**, **110** may be arranged in multiple configurations. Some configuration may be well-suited for maximizing efficiency, while other configurations may be well-suited for survivability, navigation, maintenance, or other purposes. Configurations may trade off several factors, including survivability, efficiency, deployment time, materials required, etc. In FIG. **1**A, motion-powered machines **106**, **110** are arranged parallel to the heading of the ship and to each other. A standard size for such a system may cover an area approximately 600 m×200 m. Each motion-powered machine may have a pontoon diameter of 3.5 m and length of 35 m. Additional pontoons may be added that increase the overall length of the motion-powered machine.

[0033] Some configurations of motion-powered machines may be best suited for efficiently collecting as much energy as possible. For instance, larger arrays may collect more energy than smaller arrays, and larger arrays may be useful where wave activity is not as vigorous as in other locations. Some configurations of motion-powered machines may be well-suited to conditions involving a prevailing weather pattern. For example, motion-powered machines may be oriented so that they are at a particular angle to surface trade winds may harness energy from the waves driven by the trade winds.

[0034] Some configurations of motion-powered machines may be best suited to areas with waves that come from many directions. For instance, locations without prevailing winds may have motion-powered machines deployed in a manner that allows them to automatically orient themselves perpendicular to whichever waves are present. In such cases, the motion-powered machines may orient themselves automatically by being tethered at only one end so that the waves pull the motion-powered machine to the most efficient orientation.

[0035] Some configurations of motion-powered machines may utilize a layout that maximizes usage of a given space. For example, the motion-powered machines may be laid out in a grid with their anchored points making a honeycomb-shape that allows unhindered operation of all the motion-powered machines with any orientation while at the same time minimizing unused space.

[0036] Some configurations of motion-powered machines may be used to minimize required materials. For example, configurations may be used which variously minimize the use of cabling, piping, tethers, anchor points or other equipment. Such configurations may minimize the number of anchor points and tether points that are needed. In some instances, several motion-powered machines may be tethered to the same anchor, thus reducing the number of anchors required. In some instances, motion-powered machines may use the ship as an anchor point. In some instances, several motion-powered machines may be connected together into a group with a single connection with the main ship.

[0037] Some configurations of motion-powered machines may be well-suited for surviving storms or other extreme situations. Certain configurations may be best suited for surviving natural or man-made disasters such as tsunamis or wars. For instance, motion-powered machines which are more submerged than are others may have a higher survival rate when exposed to large waves by "diving" beneath wave crests that might otherwise overstress the motion-powered machines. Installations where each motion-powered machine is connected directly to the platform **102** may reduce the effect of a single set of connections being cut; for instance, if a single motion-powered machine were to be lost, the others may not be affected.

[0038] Motion-powered machines may be used in configurations which accommodate other shipping traffic in the area, such as fishing boats, recreational vessels, shipping vessels, etc. Such traffic may be unduly affected by encounters with the array, such as fishing nets tangled with the tethers. Various signaling mechanisms, such as strobing lights, flags, and horns may be used to alert other ships of the existence and location of a particular field of devices.

[0039] Some configurations may involve the use of a grid in which each motion-powered machine is connected to multiple other motion-powered machines or the ship in a manner that provides for redundancy in the event a link goes down, e.g. due to failure or maintenance requirements. Such grid connections may occur in the moorings and also in the electrical cables.

[0040] Some configurations may be useful for quick deployment, such as towing a string of motion-powered machines that are already attached to the ship and only need to have their anchors attached. Prearranged mooring fields may also be prepared, so that quick connections may be made when the motion-powered machines arrive on-site. Such mooring fields may be prepared while a group of machines is being manufactured and hauled to a site. In addition, the mooring fields may be moved, such as when demand for computing or telecommunications power moves, when sea conditions change (e.g., seasonally) or when a time period for legal occupation of an area expires.

[0041] In some implementations, a smaller vessel may be based on the platform **102** which may be used for tending the motion-powered machines. It may perform activities such as site setup, maintenance, or other necessary activities that may