



CONCEPT

The concept 'seawind' generator inspired by seaweed and came about in response to maximizing the total energy output offshore by both wind and tidal energies. Insofar as the seawind concept utilizes the different kinetic energies while integrating with the surrounding landscape to form dynamic public spaces for recreation and social interaction.

Our project consists of 200 seawind stalks, 5 meters long, anchored to the floating pad with recycled aluminum and steel framework bases with air pockets evenly distributed radially and that are 20 meters in diameter. The seawind stalks are made of carbon fiber reinforced resin poles, 30 cm in diameter at the base and 5 cm at the top. The upper extension are 1500mm tall with a 50 cm top on the poles that are lit up by an LED lamp that glows and dims depending on how much the poles are swaying in the wind and tide. Since in incorporates both wind and tidal technology it is very unlikely that it dims out.

Within each hollow pole is a stack of piezoelectric ceramic discs. Between the ceramic disks are electrodes. Every other electrode is connected to each other by a cable that reaches from top to bottom of each pole. One cable connects the even electrodes, and another cable connects the odd ones. When the wind sways the poles, the stack of piezoelectric disks is forced into compression, thus generating a current through the electrodes. Within each concrete base is a hollow chamber that houses a torque generator. Where a typical windmill converts wind energy into rotation, which powers a spinning generator that creates electricity, seawind stalks convert winds energy into electricity by harnessing the strain and flex of its stalks. In theory, the seawind pads should be able to produce about as much electricity with the utilized seafront as a traditional wind farm would, all the while loom, eel-like, under the water.

One problematic issue with Piezoelectrics is that as promising as they may be, have never been used on this scale. Successful deployments of piezoelectric generators have been relative modes. A jump to a large seawind farm based entirely on piezoelectric carbon fiber tubes would prove challenging but a worthy course to pursue.

The kinectart generator concept is essentially a combination of the seawind farm (wind-tidal energy off shore generators) and the windscape on the land (onshore wind generators).The windscape is wind farm inspired by the wave forms to form a dynamic, natural, undulating landscape that can be used as a public space for recreation and observation while generating electricity from wind turbines installed at its apex.