

New Invention of Water Turbine for Green Energy Production

Arulappan S.S.

Associate Professor (Retired), Department of Mechanical Engineering, National Institute of Technology, Tiruchirappalli, Tamilnadu, India.

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Abstract

Electricity is derived form of energy which means a secondary source of Energy. It has become vital to have this electrical energy and it is still being produced by using Thermal and Nuclear Power plants. These power plants are directly and indirectly harmful and dangerous to the world.

Yet to be tapped Mega Source of Energy which is very powerful, available free of cost and everlasting is Ocean Wave Energy.

Ocean never sleeps or waves never stops. UP and Down, Forward and Back ward the water waves are always moving. When off shore wind turbines are possible, off shore ocean wave energy turbines should also be possible by submerging a particular turbine assembly inside the ocean water so as to extract the kinetic energy of the waves into rotation of the Turbine shaft.

Keywords: Running Water Kinetic Energy, Ocean Wave Hydrokinetic Energy, Double Acting Turbine, Green Energy

1. Introduction: Ocean Wave Energy

Wave Energy is “Green Energy” Source which means Harm Less and it has direct kinetic energy supplying capacity than all other known conventional sources of kinetic energy.

Water is a Denser Medium than Air so more effective and productive than air flow driven wind energy Turbines. Mighty Ocean waves can Push and Pull the sturdy blades of the Turbine much more powerfully than the diffused wind energy and harmful Thermal and Nuclear Energy.

The Water stream in river or Ocean water waves which are violently moving here and there, up and down all the time of the Day and Night and all around the Earth say definitely Everlasting Giant source

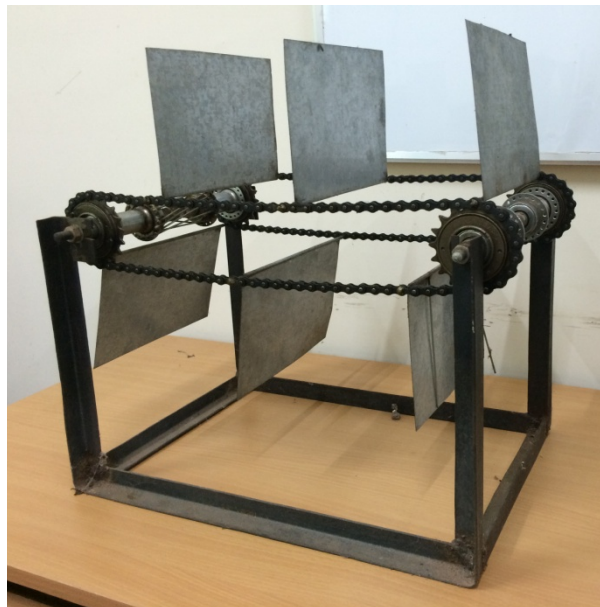
of Energy. This source of energy can be used to produce electricity by using the following mechanical kinetic energy extracting Devices / Turbines.

Hence Why not these movements can be used to move or rotate the turbines and intern the turbines can be coupled with an alternator to produce electricity. The photographs of New physical models are presented.

Reciprocating and Rotating Physical More than ten Models are chosen and finally a conceptual new design models are presented. These ideas are new to the world which are inventions.

2.1. Model 1

Basic Trial idea converted into physical model and shown in the following photograph. It is a horizontally moving blades / vanes arrangements held hanging from a frame. If Half immersed into the running water or ocean waves will get pushed and start moving and keep rotating with the use of bicycle chains and sprocket arrangements. A trial physical model is presented for a feasible turbine movement for the absorption of kinetic energy from the running water or moving water waves.



2.2. Model 2

One sided Curved Vanes of another turbine physical model with bottom half alone immersed into ocean water or any running water stream so that it can convert the water movement movement into a continuous motion by receiving one after the other waves or kinetic energy from any running water stream. The waves can push one after the other of the Turbine Vanes / Blades. This rotating movement can be used to rotate an Alternator to produce Electricity.



All our need for electrical energy can be fulfilled by the Mighty and Vast Ocean. No need to worry about Energy Requirements. This Energy is available free of cost and free from all types of pollutions.

2.3. Model 3

Forward and Backward movements of the ocean water can be converted into continuous rotary motion by the Model 3 Turbine shown in the following Photograph. This turbine looks like a usual hydraulic turbine but back to back assembled double turbines immersed into ocean water waves completely. The movements of the water waves can push the blades and rotate the blades only in one direction for a particular angle of inclination of the blades and can rotate continuously for both the pushing and returning action of the waves in a unidirectional way.

Hence the Kinetic Energy of the waves can become rotary motion of the turbine and this turbine can be coupled to an alternator to produce electricity.



Since Ocean wave energy is much more Superior, Powerful less Harmful than the Wind Energy, Thermal and Nuclear Power plants both by overall Cost and Power produced because water is a denser medium than air. Direct Mechanical Kinetic Energy is available in large quantum that too Free of Cost, Non-polluting and also Everlasting.

Note for the Commercial Investor

Small, Medium and Large-scale water wave turbines can produced extract Ocean waves or from any Moving water source with a back flow. Hence One can confidently invest money into this Big for a Business and buy the Basic Designs and Physical models from the Author of this research Paper. The model is Patented.

2.4. Model 4



Double acting, rotation in constant direction arranged back to back assembly Turbine can receive Push and Pull or power knock with Forward and Reverse flow movement of the ocean waves into rotary movements and by connecting these rotors through a gear box and an alternator ...Electricity can be produced in large amount from multiple Turbines erected near by the ocean shores a;; over the world or any moving water stream.

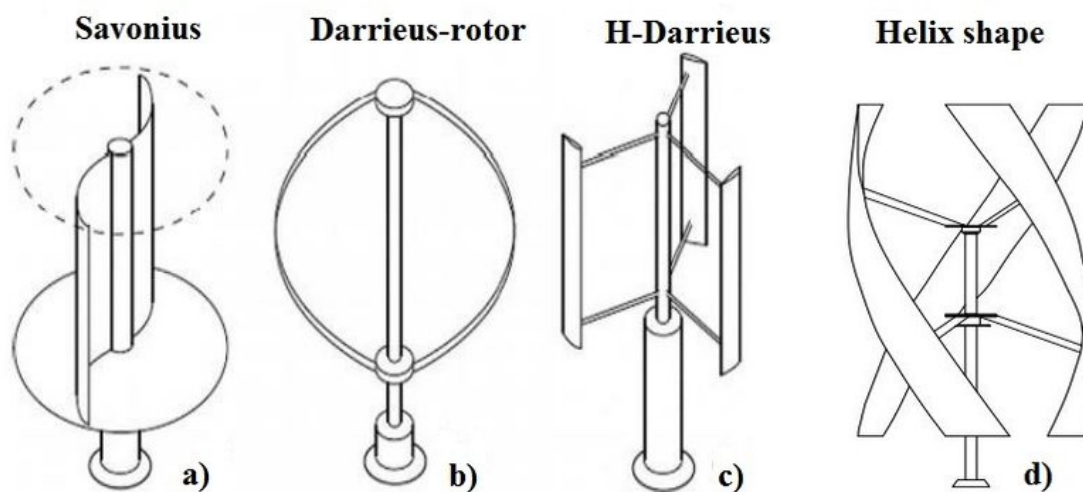
3.1. Mathematical Equations Involved

(a) Power in Water waves $P = [\frac{1}{2} \rho A V^3]$ in Watts ρ - Density of Water kg/m^3 , A is the Swept Area of the Turbine Rotor m^2 , V - velocity of water waves m/sec . and (b) Kinetic Energy possessed by the Rotating Turbine Rotor $= [\frac{1}{2} m k^2 \omega^2]$ where m - mass of the rotor, k - Radius of Gyration of the rotor in meters m . ω - Angular speed of rotation in Radians.

Ocean wave energy is Not just an Alternate Energy but this can become a Main Source of energy and that too everlasting. As long as Solar Radiation is received by the Earth, Ocean will be having the Waves and the Kinetic Energy will be always available for us.

3.2. Other Known Old Less Efficient Vertical Axis Turbines

These following known turbines can also be used to produce electricity by immersing these into the ocean water waves and can push to rotate each of them continuously in one particular direction. These rotating turbines can also be coupled with an alternator to produce electricity but with lesser efficiency than the proposed turbines.



4. Conclusion

Ocean never sleeps, so also the Energy from its continuous kinetic movement can be harnessed forever. Big technology with large scope for big businesses.