Wave Energy Generation

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Abstract- *Ocean waves are an enormous , largely untapped energy resource, and therefore the potential for extracting energy from waves is considerable. Research during this area is driven by the need to meet renewable energy targets. But is comparatively immature compared to other renewable energy technologies. This review introduces the overall status of wave energy and evaluates the device type that represents current wave energy convertor (WEC) technologies. Here, our project focusing to eliminates the prevailing limitations of wave energy converter methods, and also helps the potential of this method for generating electricity and this might be common way to producing electricity in future.*

Keywords- Ocean, Wave, Energy Generation, Electricity

I. INTRODUCTION

The idea of this project is to build a "wave energy generation" Wave energy is as source of power that comes from the endless march of the waves as they roll into the shore then back out again. Energy that comes from the waves the ocean sounds like a boundless, harmless supply. Ocean Wave Energy also referred to as Wave Energy, is another sort of ocean based renewable energy source that uses the power of the waves to generate electricity. Wave power converts the periodic up-and down movement of the oceans waves into electricity by placing equipments its converts kinetic energy into mechanical energy. Waves transport energy from where they were created by storms far call at the ocean to a shoreline. But a typical ocean wave doesn't resemble a perfect sinusoid, they're more irregular and complex than a simple sinusoidal wave. Only the steady up-and-down movement of an important swell resembles a sinusoidal wave much more than the chaotic nature of locally generated wind waves. the tactic extends perpendicular to the direction of the wave and capture or reflect the power of the wave.

There are the following methods of wave generation:

- Wave energy conversion by floats.
- High level reservoir machine.
- The dolphin type wave power machine.

In this Project we are using dolphin type wave power machine.

II. BLOCK DIAGRAM

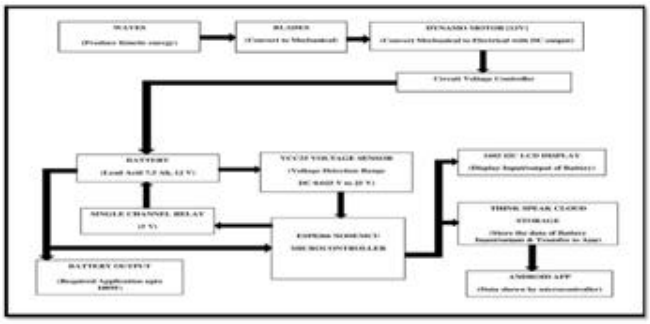

Fig.1 Block Diagram of wave energy generation

a) Dynamo Motor:-That converts mechanical energy to electrical energy. Electrical generator that produces direct current with the use of a commutator. For this project we are using 12VDynamomotor.

b) Circuit voltage converter**:-** It takes DC input and gives DC ouput in different voltage.

c) Battery:-Batteries are used to store the electric charge coming from circuit voltage converter to provide power to the Applications. For this project we are using lead acid battery 12V,7.4AH capacity is used.

d) VCC Voltage Sensor**:-**It take supply form battery to sense the voltage of battery. To protect the battery form overvoltage. For this we using 0.025V to25V.

e) Android App:- To store and record the voltage and current of battery capacity with the help of cloud storage.

III. METHODOLOGY

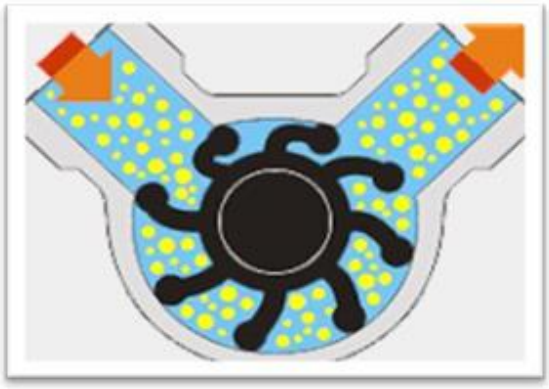

Fig.2) Model of wave energy generation

Fig.2 shows the basic diagram of our project The system consists of mechanical arrangements by which continuous wave energy would be captured and this captured energy would be further transmitted and converted into mechanical energy.

So here the blades have direct contact with the ocean wave As the wave passes through the system, the blades will capture energy and simultaneously the gear will be in action and start rotation according to the intensity of the wave. Thus, the connected gear transmits energy to the generator, and the generator produces electricity. This is then converted to DC by the use of the DB107 rectifier. The DC signal is then boosted using XL6009 module. The energy is then stored in the battery. The status of the battery is then sensed using the voltage sensor and the data is displayed on the I2CLCD.

Different types of waves converts:-

- Attenuators
- Point Absorbers
- Oscillating wave surge converter
- Oscillation water column
- Overtopping/terminator device
- Submerged pressure differential
- Bulge wave
- Rotating mass

IV. CONCLUSION

As increasing demand of energy, the choice way can be use fulin future. With design at large scale to fulfil the facility demand of domestic as well commercial. The dependency on Non-renewable resources are going to be overcomes and reducing missions of greenhouse gases.

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