

A Study on Ocean Renewable Energy Conservation Technologies between India and Other Countries

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ABSTRACT

Water water everywhere but no water to drink such that with the abundant water available, there is no effective development for renewable energy conservation. The energy conservation development in energy conservation technologies in other countries and India and the reason behind the non implementation of the ocean energy conservation.

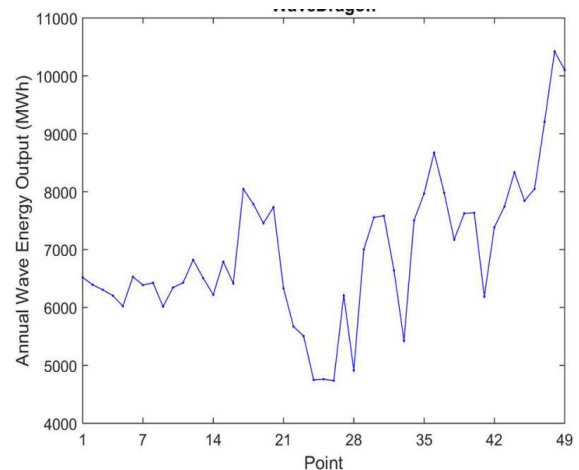
INTRODUCTION

Wave energy which is abundant in nature has been formed from the interaction with wind and water surface. India and other countries focus to reduce the carbon emission. Thus the countries have shifted to sustainable development. The electricity through ocean energy can be largely be used in ports and for other commercial purposes. This paper discusses some of the ocean technologies used in conservation.

Floating or pitching devices:



This device works in an oscillating motion of the internal surface by the incident waves and makes the air flow through a turbine that drives an electrical generator. The device has been developed since 1997 in Australia and this is been adopted in Brazil successfully and in south Korea 500kw capacity energy saving was installed at 1km of the coast. From 2017 further test have been conducted.

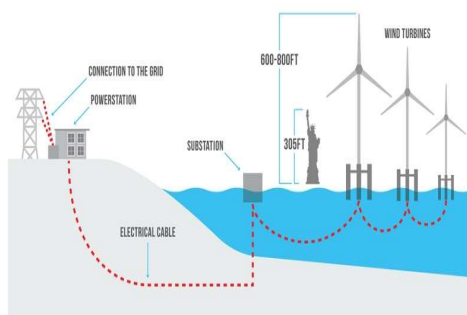


The point absorbers:

This is commonly known as power buoy. The point absorbers which are usually in a vertical dimensional and the horizontal dimension of the water utilize the rise and fall of the wave height to generate electricity. foremostly it has been installed in 2005 at 40kw in Atlantic City New Jersey. In sweden2016 more concentrated and dynamic infrastructure was made which provide an output of 10mw which would take 15 miles of ocean.



The wind energy:



The wind mills are usually fixed pole which means mounted on long vertical support that are pile driven into sea floor up to 800 feet above the sea level. This is connected to the grid and when the turbine rotates, electricity is generated and routed to the main power. This is only offshore wind facility available which is operational in united states at an output of 30mw consisting of 5 times

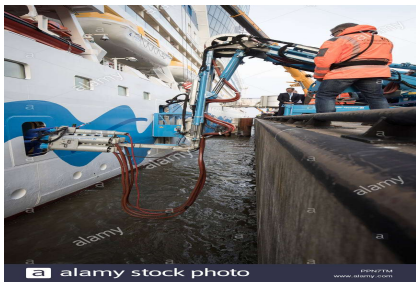
Wind output (MWh)	Load Factor	Number of homes	% of all households
January '18			
2,077,945MWh	49%	5.52 million	228%
January '17			
1,146,289MWh	27%	3.04 million	126%
January '16			
1,125,544MWh	30%	3 million	123%

Wave technologies in India:

The vizhniyam in India which was initiated in 1983 it was the world’s first wave power plant working on oscillating water column technology. The change in levels of water inside caisson as wave approach the water increase the air inside is compressed, and then drive the air turbine .this project was not successful and was aborted in the year 2011.

In India the exploration of wave energy conservation started in 1982. Primarily it indicates that the Indian coastline has the capacity or potential to generate 5mw to 15mw per meter.

V.o chidambaranar port in tuticorn is the first Indian port to offer shore power. The carbon dioxide emissions from the ships are increasingly significantly. The shore power can mitigate the growth in emissions. It is known as maritime power enables ship at dock or in dry dock to use shore side electricity to power onboard electrical system. The Indian grid delivery power at a frequency of 50 Hz. The port users can save about rs74000 a day on fuel.



REFERENCES:

- [1] <https://www.ecowatch.com/scotland-wind-power-2558314966.html>
- [2]http://www.beachapedia.org/Renewable_Ocean_Energy
- [3]https://www.academia.edu/13048930/Energy_management_in_seaports_A_new_role_for_port_authorities

Challenges:

The cost which plays a crucial role in implementing the, renewable energy in ocean. As the ports have limited space and highly concentrated with containers and vessel have not become successful in initiating the technologies. All the technologies are two sided coin which have both advantage and disadvantage. In initiating these technologies must not hinder the ecosystem and affect fish migration and some living organism die due to the spinning of turbines and other devices.

It is usually expensive to build and the profit or the generation of electricity must be equal to the cost incurred in installation. Therefore it takes very long process or duration to jump into conclusions.

Education and awareness:

The youth or the educational marine institution to bring a effluent awareness for the sustainable development. The government must enhance the strategic ideas bought by the students or institution for better prosperity of the country.

Economical problems:

As the India is a developing country is a developing country the economic potential is less compared to other countries due to the economic problems. The quality education is only the key to develop the nation as discussed above .the policy frameworks must include development of ocean renewable energy through providing test facility site, assessment and a cost benefit analyses. More test centres must be operated.

CONCLUSION

As wave is a clean and present always. The room for innovation and development is more. The need of electricity in future can be fulfilled if ocean energy is being considered effectively in harvesting and conversion devices of wave energy. In harnessing the ocean energy it coincide with the renewable energy target and conservation.