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Generation of Energy by Non Conventional Method

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A B S T R A C T

Ocean is a infinite source to get energy. Number of experiments has been done to get renewable energy from the Ocean. One of the best way to get energy is difference of temperature of the surface of Ocean. It is found that at the top surface area Ocean has higher temperature while as depth increases the temperature goes down. It is advantages for the scientists to achieve energy. Temperature gradient is a main function concern generation of energy. But sometime at costal area temperature difference is less and power generation possibilities are reduced.

Keywords: Power generation, Water temperature, Heating time, Heat loss, Heating rate, Turbine Operation and flow of fluids..

Nomenclature

SU	Super heater
Wall tem	Temperature of Turbine wall (%)
NW	Normal water
CL Water	Cooling of water
WT time.	Waiting time
Eff TB.	Turbine efficiency
Vol de	Voltage decrement
Con Temp	Temperature of Condenser .
Cool-TB =	Turbine cooling rate

1. Introduction.

Now a days there is shortage of energy due to large population. In thermal power plant energy is generated by the combustion of coal and therefore large

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amount of Sulphur dioxide, nitrogen oxides and other poisonous gases are generated and this gases are responsible for the bed health of human kind. In developing countries like India and number of other countries in the world are generating power by the combustion of coal because they don't have enough structure and don't have structure of nuclear reactor so till date they are using coal as of fuel but issue is that they are generating number of poisonous gases. In thermal power plant there are number of components are used but main components are boiler superheater turbine condenser cooling tower feed pump economizer and electrostatic precipitar. Mindly Hindi thermal power plants mountings are used for the safety of boiler and accessories are used to increase the efficiency of boiler.

So in actual practice is the quantity of call that is used in the boiler is reduced then overall efficiency of the boiler will increase and due to this increased efficiency consumption of coal will be reduced. Therefore pollution that is done by the power house will be reduced by increased efficiency of boiler. There are number of accessories that are used in thermal plant like economizer superheater etc. Apreater is used to preheat the air that will enter inside the boiler due to this preheated as combustion of call will take place perfectly and carbon monoxide and carbon dioxide will be generated less. Also economizer is responsible to reduce the conjunction of call because it will enter inside the boiler so overall quantity of coal that is required to heat the water up to saturation temperature will be reduced. Economics will preheat the water up to 70 degree Celsius .Therefore scientists are doing experiment two generate energy by non conventional way.

1.1 Some other ways to generate energy

There are also some otherwise two generate non conventional energy. In today's world wind power and solar power are most popular ways to get energy from the nature. Both ways to get the energy are free from pollution and maximum amount of energy can be achieved from the natural source of energy. But issues that initial cost of the horizontal and vertical wind Axis machines are extremely higher. But in rural area free wind is available but distance from the manufacturing industry of windmill and that site is more therefore transportation expense goes high. So whenever windmill is installed at the sea coastal area and other rural area government is trying to install manufacturing plant near that area. Geothermal way of getting energy is also non conventional and non polluted way to get energy.

In geothermal energy heat is absorbed in the form of steam that is continuously coming from the Earth and with the help of that steam turbine main rotate or this team can be used for process industries. But geothermal energy is not available worldwide at every region therefore some selected areas are available in the world to get geothermal energy. In geothermal energy continuous supplies available but sometime unwanted particles are also mixed with this steam so purification ation of steam is also required. Tidal way of energy is also available but this natural source of energy is only used when low and high tides are available at frequent proposation to the site. Tidal energy can be harnest at lower rate but it is totally pollution free but initial cost maybe higher.

2. OTEC system

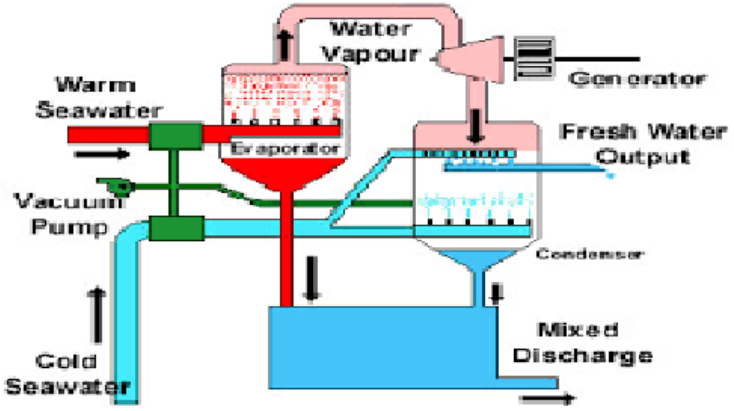

Figure 1 Layout of OTEC.

In Ocean thermal energy conversion system mainly energy can be harnest by temperature difference of water. It is observed that in tropical area temperature of the surface water is higher compare to the temperature of the deep water therefore scientist can use this difference of temperature to harness energy. There are number of techniques to achieve energy from the ocean. Now a days Western countries and other developed countries are trying to achieve energy from the non conventional way because most of the countries in the world are getting energy. Countries are using call as a fuel and their making large amount of pollution to the environment and due to this pollution number of glaciers in the Antarctica are continuously melting and number of low altitude countries are facing issue of floods. In Ocean thermal energy conversion system minimum temperature difference is required 77 Fahrenheit. There are number of elementary components that are used in Ocean thermal energy conversation system

In open Ocean thermal energy conversation system fluid will be taken from the upper surface area of the sea. Mostly hot water is fast from the upper level of the sea because temperature of the upper surface area of water is higher compare to the area of ocean. First of all hot water is first to the evaporator and this hit of hot water will be transferred to the working fluid. Then this working fluid will be operated and it will enter inside turbine. Due to this vaporization process of working fluid turbine will come in action and soft of the turbine will rotate. Generator is attached to the shaft of turbine there for electricity can be produced by this method. Hot working fluid is transferred to the condenser from the turbine and now this what working fluid will be condensed inside the condenser. Now deep water sea will be fetched tonyhe condenser to cool hot working fluid. Therefore heat of the hot working fluid will be transferred to the cold water that is achieved from the deep sea area. After cooling of hot working fluid sea water will be sent to the see again. Sometimes it is observed that sea water is heated and salt is left behind the material and evaporated water can be used for the wash area and other drainage system. It is also found that this evaporated water is not very pure that it can be used as a drinking water.

In open cycle otc system pure water can be achieved up to some extent level. But open cycle system can remove the number of unwanted particles and Salt from the water therefore one can use this water as a drainage purpose. Energy conversion system is mainly implemented at the remote area where sea coastal is available. This process is also known as the desalination of water. Meaning of selinization is that to remove Salt from the water and make sure that see water should be a usage water.

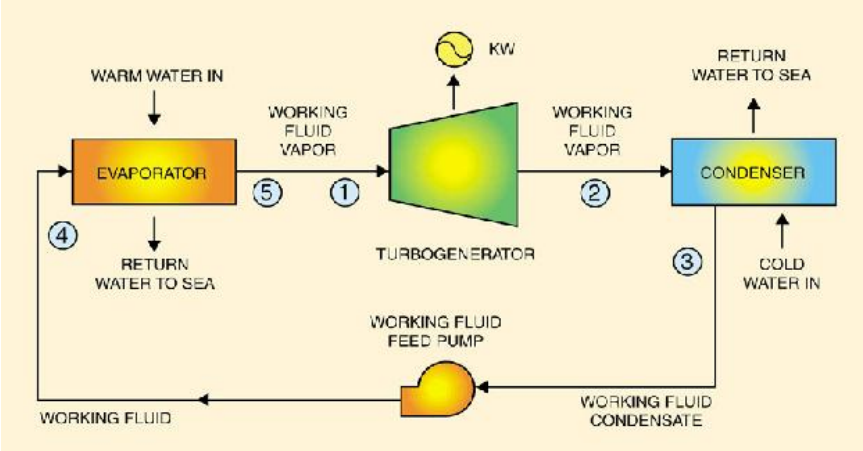

Figure 2 Layout of OTEC.

Just like open Ocean thermal energy conversation system there is another close Ocean thermal energy conversation system is also available. In this system heated fluid is reused and the hot water that is cooled will not be sent to the ocean again and it will be used again in the cycle. Therefore is generated and all the fluids and water are circulating in the close loop of Ocean thermal energy conversation system. There is no entrance from the new water and other fluids to the system after completion of every cycle. Therefore the existing water and fluids are used again and again in close cycle so it is known as close Ocean thermal energy conversation system. There are number of benefits of cloth system like high efficiency rate can be achieved and higher generation of steam can be achieved with less amount of heat difference..

3. Limitation of OTEC

In Ocean thermal energy conversation system main problem mention with the temperature gradients that is mainly available at the tropical area. Whenever steam is required and heat is given to the water from the fluid whenever fluid is vaporized and getting heat from the upar surface area water of the sea it is noticed that sometime temperature difference cannot be achieved properly and fluid does not take place at sufficient rate. Therefore some external input is also required. Ocean thermal energy conversation system can work when temperature difference is 20 degree Celsius. This temperature is available at tropical area so this system cannot be installed at every part of the world and this limitation of temperature limits the utilisation of system at every region of the world. Roshan thermal energy conversation system is installed the coastal area there for one should take care of that each and every material and component that are used in the system must have capacity to resist corrosion. Because this plant will work continuously at the coastal area and it will continuous get hit from the Sun at least 12 hours for per day.

4.Conclusion

In Ocean thermal energy conversation system minimum temperature requirement is 20 degree Celsius , therefore the area where 20 degree celsius is not achieved at that site Ocean thermal energy conversation system cannot be installed. There is also requirement of highly volatile fluid that can be vaporised at lower temperature. To get maximum energy from this system low weight of turbine blades must be maintained. At the other side if manufacturer is reducing the white of turban blood but one cannot use synthetic or any other higher grade plastic material because any kind of plastic can't bear continuous high temperature and it will abrupt. Therefore one should think about always making blades from the corrosion free metallic materials and one can use

alloys for making turbined blades. Ocean thermal energy conversation system 30 percentage of the efficiency can be achieved by proper temperature gradient. Number of researchers have concluded that in tropical area 20 degree Celsius difference of temperature range is available. There for number of Ocean thermal energy conversation systems are installed at the tropical area and this area as limited in the world.

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