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Tapping Renewability: Different Aspects of Renewable Energy Sources

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ABSTRACT :

Renewable energy can become a new ray of hope in energy sector .as the fossil fuels resource are decreasing ,deforestation occur,glacier melting ,as a result climate changes happen .resulting that the conventional energy source can easily get exhausted near future .for this type to scenario tapping to renewbility can solve the enegry production problem .the object of this present study were to explain and explore the newable energy source ,different types of fact and trivia .the study was a research based exploration ,secondary data have been used for this study .from this study it was conclued that transition towards renewable energy is crucial to reduced global crisis and replace conventional energy production method and achieving sustainable development.

Keyword : renewable energy ,global crisis ,conventional engery ,geothermal ,wind ,tidal engery ,kinetic energy ,generator ,grid .

INTRODUCTION :

renewable energy is the energy derived from the source that are regerative.that can be driven from nature with out harming the nature .innovation and tech advancements of the past century made renewables kore established and reliable source of energy .at present the renewable accuest for about 30% of global power production .currently hydropower is the biggest renewable source ,follwed by wind and solar energy .

Object of The Study :

1. to identify the types of renewable enegry source .

2. to explain the facts and trivia about it.

3. to explore the source of renewable energy source .

4. to explain the power production method .

Methodology:

 Type of Study: Review-based exploration

 Secondary data have been used for this study. Information has been collected from the existing research papers, academic news, reviews available on websites and solar dome museum.

FACTS AND TRIVIA ABOUT RENEWABLE ENERGY :sun is the ultimate source of all renewable energy .it constantly provides earth with about 173000 terawayts of energy .surpassing global consumption by over 10,000 times .

2. by utilizing only 20% of global wind power potential we can annually produce 123000 terawayts -hours of electricity .with more than 1400 gw of installed capacity hydropower is currently the largest producer of renewable enegry .

3. renewable energy is becoming increasingly affordable .only between 2010and 2020 the cost of photovoltaic cells decreased by about 85%,currently renewable produced close to 40% of the world electricity .africa holds the largest renewable energy potential,whereas nearly half of the world's installed renewable capacity is in Asia ,this sector creates 5 times more job than fossil fuels .

wind energy :

wind power is one of the cheapest and cleaned ways to generate electricity .

working mechanism of wind engery :

wind's movement (kinetic energy) pushes the large blades of a wind turbine, causing them to spin.The spinning blades turn a rotor, which is connected to a shaft. This shaft transfers the rotational, or mechanical, energy to a generator.This generator then converts the mechanical energy into electrical energy, which is sent through power lines to the grid.

facts and trivia :

1. large number of wind turbines are often installed together in wind farms to generate large amounts of power

2. Wind turbines are built on tall towers to access stronger and more consistent winds.

3. Wind energy generation fits well in agricultura and multi using landscapes .

4. Land-based, utility-scale wind turbines provide one of the lowest-priced energy sources available today.

5. china produce the most wind energy in the world .

6. india is the fourth largest wind power producer in world .

Tidal energy: tidal energy is One of the source of renewable energy, basically bulid on the concept of moons sun gravity.

Working mechanism of tidal energy:

dam is built across an estuary or bay to capture water during high tide.

Energy generation: As the tide goes out, the gates are opened, and the trapped water is released through turbines in the dam, generating electricity.

Facts and trivia:1.clean energy with no greenhouse gas emissions.

2.south koris is largest producer of tidal energy.

3.tidal energy production is around .5 gw making it smallest renewable energy source.

GEO THARMAL ENERGY :

beneath the earth's surface geo tharmal energy reminds us of the fiery power with in ,the potential far geothermal energy is for greater than most people realization ,the inside of earth is full of heat ,the deeper you go the warmer it's gets. the earth's core makes s lot of heat from radioactive stuff breaking down ,way more than we need the power ,even we get .1% of its ,it's can supply engery needs of humanity for more than 20 laks year .

working mechanism of geo tharmal energy :

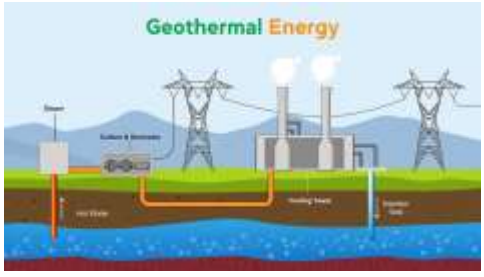
heat generated from geo tharmal reservoirs deep in the earth's can be harnessed to create steam and ultimately electricity

1.deep production well is dug to an underground stream reservoir.

2.pressurized steam to released to and piped to power plant ,where it's force trun a turbine .

3. turbines powers a genarator that converts the rotational engery into electricity .

4. after the water goes through power plant it's injected back into the reservoir to maintain the resource .



Facts and trivia of geothermal energy:

1.its could help us use 75% less energy than traditional heating and cooling system.

2.geo thermal energy has the potential to have an installation capacity of 100,000 megawatts in next 50 years .

3.icelanders have been using geothermal energy since the Viking age

4.25% of Europeans energy demand is met solely by geothermal energy.

5.the life span of geothermal plants are more than traditional energy plants.

6.its produces significantly lower ghg emissions compared to fossil fuels.

7.since it's is unaffected by weather conditions, geothermal is a reliable and consistent energy source.

Solar energy:

Sun is the ultimate power of renewable energy, solar thermal Power is environmentally friendly alternative to the traditional thermal Power station.in recent years solar energy has emerged as a shining renewable sources due to its reliability and cost efficient.

Working mechanism of solar energy:solar power plants harness the sun energy in two ways directly via photovoltaic cells and indirectly through solar thermal plants, these plants begin with solar panel usually made of silicon, solar panel serve two key functions first they convert sunlight into electricity through the photovoltaic effect, secondly they absorb heat and thansfer it to a critical component of the panel called the thermal receiver,in photovoltaic plants inverters essential to convert the direct current produced by solar cell into alternative current for grid usage,the thermal receiver plays a crucial role in advance solar power plants by capturing excess heat from solar power panels, this heat is then utilised to produce steam which drives a turbine connected to a generator thereby transforming thermal energy into electrical energy.

Facts and trivia:

1.solar is the ki most abundant energy source,90 minutes of sunlight can power the whole world for year.

2.can produce electricity even in monsoon.

3.its reduce electricity bill

4.less reliance on electricity grid and retailers .

5.lower yours home carbon footprint.

energy production in future_

solar power will dominate it's expected global capacity to surpass 4.6 terra watts,wind energy also cross 5000 gw by greatly shifting to offshore farms for consistent and strong winds,with the innovation and consistent breakthrough geothermal and tidal power will become More reliable potentially producing 10_12%of global energy .

Conclusion

:this type of energy system will become more efficient with time to came ,it has low maintenance cost ,huge resources, stabilze energy prices,and it doesn't produce green house gases or other harmaful pollutants,it can provide energy to independence to household and business.. finally we can say we need to develop our renewable energy resources more and more if we want to protect our bio system and met today energy hunger,and a peaceful world ..

__Reference__

1.wikipedia

2.solar dome museum kolkata.