iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** IX **Month of publication:** September 2023

DOI: https://doi.org/10.22214/ijraset.2023.55628

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue IX Sep 2023- Available at www.ijraset.com

Utilization of Conventional and Non-Conventional Energy Sources

Dhaval A. Bharda[1], Rohit Dixit[2]
[1]*Assistant Professor, Department of Mechanical Engineering, Dr. V. R. Godhaniya College of engineering and technology, Porbandar*
[2]*Assistant Professor, Department of Mechanical Engineering, School of Engineering, RK University, Rajkot*

Abstract: ***A teenager and environmental - social worker of Sweden GRETA THUNBERG presented her views on the transformation of hydro energy in August 2018 at the UNITED NATION ORGANISATION which shocked everyone wherein she made the school declare holidays to the students in Sweden and enlightened them for the preservation of the environment and expressed that if the quantum of carbon dioxide is not reduced in the world then the world will have to face serious consequences. In this paper, the author has included essential data on specific conditions due to environmental events. The work has been taken around many kinds of research made about ecological studies.***
Keywords: Renewable energy, solar energy, Environmental data, Ecofriendly, Promote renewables

I. INTRODUCTION

In the today's world, human beings are living mechanical life. All the humans are going towards achievement of success in a short way and if this is not achieved , he will face depression .
With the development of science and technology , his desire for obtaining physical happiness grew at the peak point and as a result went for using the petroleum products without any limits . As a result of large industrial production, the emission of carbon dioxide in the environment grew at large and as a result of which the layers of the earth heated up . Icebergs started melting. The surface of the sea starting rising.

II. LITERATURE SURVEY

National Aeronautics and Space Administration – NASA has given a warning that the north pole and south pole of the earth are reducing by about 9% every ten years. If this continues then there will be a great threat to the earth.
Nagendra Vijay (2019)[1] had stated that the scientist of the earth believes that there are about 400 millions of trees in the world. About 650 millions of metric tons of carbon is been absorbed by these trees as a result of Photosynthesis . The largest prison of carbon dioxide in the world is the Rainforest of Amazon. However , its positive side is that it produces about 20% of oxygen of the world . Due to fire in the jungle about millions of trees get burnt out and as a result of this the forest is not about to absorb carbon dioxide of the world and also not able to emit oxygen in the environment .
The world is celebrating the 150th birthday of Mahatma Gandhi and his thoughts says that (2019)[2] , " this earth has ample of resources which can satisfy the needs of every living" . However it does not have ample of resources to satisfy the greed of certain people .My aim in not to eradicate the use of machines , but to restrict it usage. My objection is not against machines but against it unlimited usage.
Whenever there is any human hindrances in the nature's balanced and self-control activities , pollution comes into being As is stated by Dr. Motibhai patel (2008)[3], Humans for their personal greed, creates a negative effect on the nature environment and this creates pollution . This leads to air , water , noise and land pollution .
The PHD study of James Hansan (2014)[4] relates to the environment of Mars. He is continuously serving the NASA's Guided institute relating to space research . Hansan had written to Holden , the chief advisor of Obama that for the safeguard of human beings and for the maintenance of the nature , we should control the greenhouse gas and we still have time to reduce and stop the negative effect of the environment if we take sufficient steps in this direction . Thus policies proposed by science should be put to use and further we should make sufficient efforts for the use of renewal and non-renewal energy sources . Further efforts should be made for the usage of renewal energy sources. Thus renewal energy sources are very important. Due to its usage, the questions of pollution can be solved. Example: - Wind energy, Hydral energy, solar energy, etc.

©IJRASET: All Rights are Reserved

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue IX Sep 2023- Available at www.ijraset.com

The power to work is known as energy. Fuel is used in vehicles. This fuel is burnt in the engines of vehicles and from it power is formed running the vehicle.

Energy is needed for making the needed food for the living beings. For alternative sources, Shri Devji S. Dafada (2014)[5] has stated that solar energy , air energy , hydral energy , biogas and atomic energy is used . Wood was the main source of power for the ancient man. However, the man of today uses 100 % more energy source than the ancient man. Due to the development of industry during the last 100 years the need for energy source has increased.

The company of Britain has created certain techniques for formation of hydral energy into electric power . As per Dr. Vihari Chhaya (2014) , in the procedure of transformation of hydral energy to electric energy , there are sailing tubes which gets up and down with the waves and as a result of its push the machines becomes active and as a result of high pressure of the pump the turbines are runned and thus electric power is generated.

The production of coking coal is done mainly by COAL INDIA LTD. (CIL). As per satyapanthi J J TRIVEDI (2008)[6] the production is done by TATA IRON AND STEEL COMPANY (TISCO) . TISCO AND IISCO has its quarries for is production. Thus about 85 % of the production of coking coal is done by COAL INDIA LIMITED . In its report to the energy ministry the energy policy committee has stated that there is about only 35 years stock of resources and after the year 2000 the conditions will become critical .

For a good future , we will have to save the environment or else climate change will deteriorate our earth . We will have to save the jungles , grow more trees and maintain them , maintain green farms . In order to save water we will have to learn to stop unnecessary usage of water. We will have to maintain green farms in order to safeguard that bad and dangerous gases are kept in control and are not emitted . Maintain jungles and greenery.

Now time has changed. After the climate change and change in seasons , people have come to know about the safety of their life . Due to increase in natural calamities , floods in the rivers , and untimely monsoons and due to landslides , there has been a death of about 1600 or more people in the year 2019 . There has been a massive increase in the temperature of the earth. Since due to the heat in the sea waves, more evaporation of water takes place and at some place there is heavy rainfall and at some place there is drought. Cement concrete jungles , highways and roads have taken the place of green land . Further there is a increase in the carbon emission and air pollution in India . In order to reduce air pollution and increase greenery we need to understand this point. For the maintenance of jungle and trees , we need to grow more trees, increase jungle lands , save water , reduce dangerous gas and carbon emission and take steps for environment protection which will be helpful to the new generation from climate change .

III. ROLE OF INDUSTRIES

On the basis of Capital investment , number of labors and quantum of production , industry is divided into three parts .

1) *Cottage Industry:* Wherein the people make goods and materials in their house where the capital investment is less. For example: - essence stick, papad, furniture, pickles,etc. Are made in this cottage industry.
2) *Small Scale Industry:* Wherein there is one factory having limited machines , more labors and the capital investment is more than cottage industry and this is called small scale industry . In small scale industry – toys, TV, Fridge, Plastic items are made.
3) *Large Scale Industry:* There are many industries where , in order to make various items there are many factories , big machines , thousands of labours and large investment of capital and this is called large scale industry . In large scale industry motors, cement, etc. is made.

In Gujarat state , the coastal region covers one thousand miles and there are medium type of harbours and Porbandar is one of the important of them . Furthermore , Porbandar occupies an important place in the Arabian sea line . The sea export business of Porbandar with East Africa and Europian countries very old. The merchants and citizens of the Porbandar have made Porbandar famous in the Eastern Countries.

From the view point of geographical area the Porbandar of Arabian sea is located at 21.15 to 21.5 north latitude and 69.55 to 70.25 east longitude and Porbandar has got the status of district on 2/10/1997 . The number of large and medium industry in porbandar is 12. [7]

©IJRASET: All Rights are Reserved

Sr No.	Name of the unit	Nature of production
1	Cham mill nets industries digvijaygadh taluka ranavav	Fishnet
2	Cham syntherites industries digvijaygadh taluka ranavav	P P Rotes
3	Cham trollnets organisation digvijaygadh	Fishing Nets
4	Amar polyfills private limited taluka Porbandar	Polytheline twins and rotes
5	Saurashtra chemicals limited Porbandar	Sodaash Bauxite brasin
6	Saurashtra cement limited ranavav	Portland cement
7	Saurashtra fuels private limited bhod ranavav	Low ash coke
8	Orient abrasives limited GIDC dharampur ranavav	Calcine bauxite
9	Amar ice and cold storage javar naka porbandar	Frozen fish
10	SHV energy LPG Infrastructure limited javar naka Porbandar	Port Terminal and Storage ACDT Liquified Trolium Gas
11	Hoddar athiporths private limited javar porbandar	Frozen marine products
12	Silver sea foods javar porbandar	Fish and Fisheries

The units registered in Porbandar as per the Factory act as on 31/03/03 is as stated - 55 in Porbandar taluka , 22 in Ranavav taluka, 12 in Kutiyana taluka totalling in all to 89 units in
Porbandar District. Porbandar imports coal, LPG Mixture, combustion, raw Dates, and exports cement, clinker, bauxite, fish, onion, soda ash, white chalk, salt, and dolomite.

A great incident happened in Gujarat. The Prime Minister of India Shri Narendra Modi projected a 600-megawatt solar energy unit in Patan in Gujarat state. With this incident about 10 districts in Gujarat started solar energy units which diverted the attention of the world towards Gujarat. The energy department of the government of India launched a two-day national-level energy conference at Kevadiya near sardar patel dam in Gujarat where all the new energy projects implemented all over India were discussed. The projects discussed and implemented were the implementation of renewable energy source Pradhan mantra kutum yojana, solar rooftops, renewal energy development schemes in border areas, the establishment of ultra-mega renewal energy parks, solar and wind power transmission, thermal energy conservation, etc. were implemented.

IV. SOLAR ENERGY AN ALTERNATIVE SOURCE

Till now we used to produce electricity with the help of ancient energy sources and as a result of this, we used to face the problem of electricity shortage more often. In spite of the fact that the Sun use to lighten our Earth with its solar energy, we were not using this solar energy to its utmost effect. However, recent science has given us modern technology through which we were able to transform this solar energy into electricity. If we have a look at our solar energy source, the circumference of our Sun is 14, 40,000 kilometers i.e. 8, 64,000 miles whereas

Compared to this the circumference of our Earth is 13100 kilometers i.e. 7900 miles. Thus from this, we can assume how vast the sun is as compared to our Earth. Further, the Sun is about 15 crore kilometers far from our Earth and gets only a soft touch of heat. Due to high pressure and quantity of heat in the Sun, it continuously transforms the hydrogen gas into helium. Every second 5640 lakh tons of hydrogen gas is transformed into 5600 lakh tons of helium gas. During this process of transformation about 40 lakh tons of matter gets transformed into energy. Thus per second the Sun loses about 40 lakh tons of its matter and transformed into energy. This secret of the Sun has remained unknown. Thus this power house Sun, per second produces 3086 x 10 raise to 33 energy sources. Thus if this number is written on paper then it will be 386 followed by 31 zeros. If further calculation is made then it will be 517626 followed by zero horsepower of energy per second is been produced by our Sun. Thus this is our Unlimited Power house - our Sun. Sun emits this quantity of solar energy per second in space wherein 47 % of the solar energy is absorbed by the environment, land, and sea which is then released in the form of heat. This heat which is wasted can be converted into solar energy and the invention of technology and machines is been continuously carried out by the world. This includes the letting off of photovoltage cells – PVC on water dams and storages and thus solar energy unit ideas have come into existence.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

In the Photo voltage cell method, a small circumference plate is used on which the sun rays are reflected and energy is so formed. These plates are connected together and a panel is made and is let off at such a place where ample sunlight is emitted and solar energy is collected. This area is termed a "Photo voltage farm". In order to frame this farm a large amount of land is required. Hence if such energy units are spread out on the water layers then a good use of these water layers can be done. Thus a large amount of the land can be saved for other use and such floating energy units can be formed.

Further, an engineer at the University of Masoori has invented such nanoantennas that will be transformed 90 % of solar energy into electricity. For this, a small thin layer of flexible solar sheet is formed which is called an antenna and formed with the connection of many small antennas.

This antenna collectively catches up the infrared rays of the sun and its other rays and transformed into electric power.

Thus this layer converts 90 % of the rays into electric power.

For transformation of solar energy into electric power, mostly silicon is used as the semi carrier. This silicon is sand. Like other things silicon also contains protons, neutron and electron atoms. If certain more atoms are added in this silicon then negative electricity load increases. This silicon with the negative electricity load is called N-type of silicon. In this manner if certain electron is removed from silicon then such place remains empty and this is called as positive electricity load silicon. Such silicon with positive electricity load is called P- type of silicon. Thus N type of silicon have more electron and P type of silicon have more space. Now when the silicon plates are made from this silicon, then on the N-type of the layer is kept on the top and the P-type of layer is kept on the bottom. When both layers get together, this part is called Junction. Thus when the sun rays are reflected on this silicon plate, the photon atoms of the sun rays enter the silicon and dash with the atoms on the upper layer, and as a result, certain atoms get out. Thus on the upper layer, the quantum of electrons increases and the layer down already has space in it. Electron has negative electricity and space has positive electricity. Thus both layers get attracted to each other. Thus a large amount of the panels having such silicon plates are spread on the land or water. The electron collected in the top layers of the plates flows on the lower layer of the plate via a copper wire kept in the middle and thus each plate works as a power cell. Thus numerous panels made of the plates develop a large amount of solar energy. Nanoantenna is also one sort of modern solar sheet which transformed solar energy into electricity at its maximum.

In Gujarat on the Narmada canal solar panels are spread out and within two months, two lakh units of electricity are so produced and large numbers of such solar energy centers will be so developed.

V. CONCLUSION

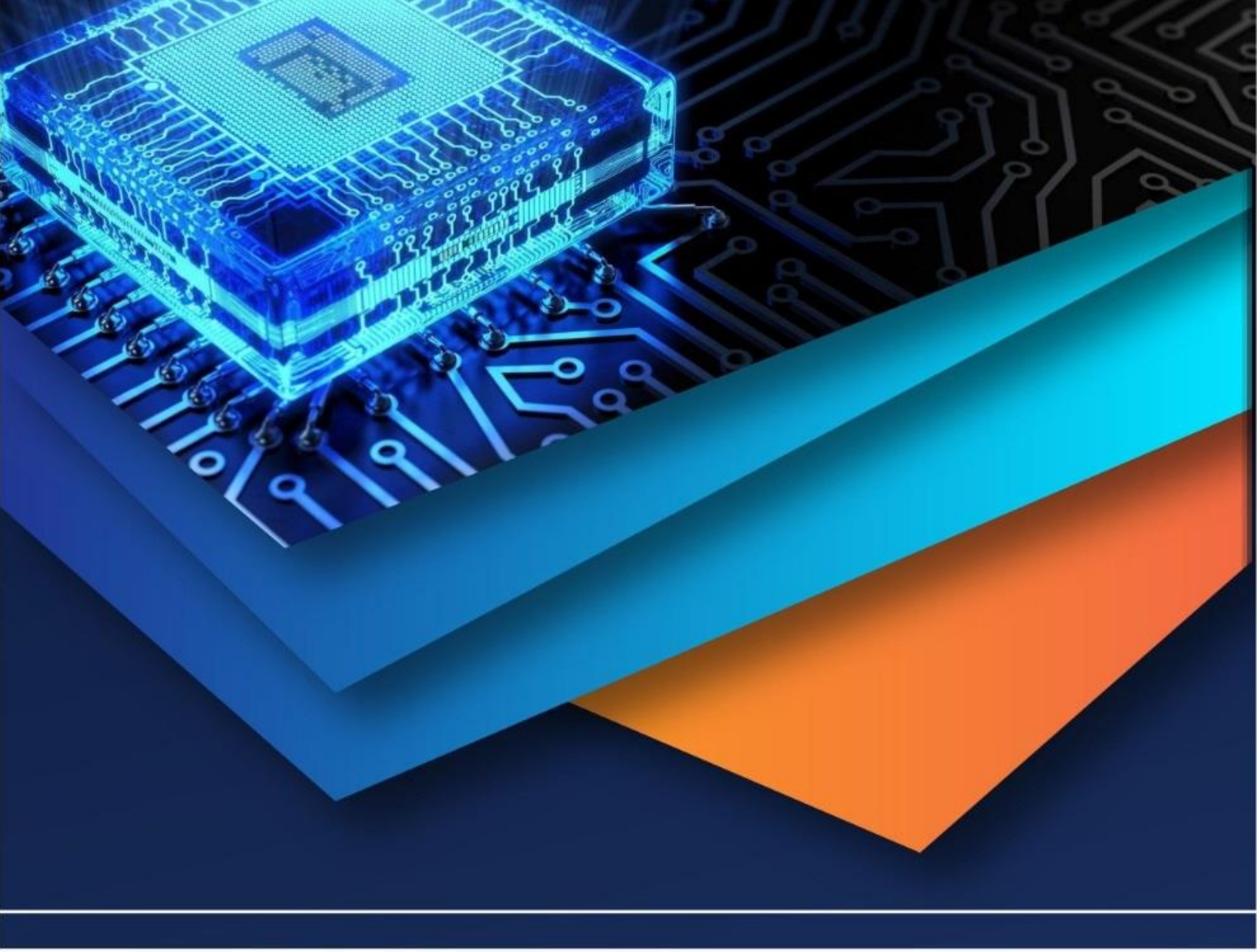
Conventional sources are widely used now days due to their high performance. But it cost seriously on environment as well as on human life. More and more renewable sources should be promoted by upcoming generations. Educational Institutions and government should make more strict laws and they should encourage people by providing advertisement in newspaper, social media, etc. an advertisement should be given weekly bases or monthly bases.

VI. ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to my guide Mr. Rohit Dixit (Assistant professor, Department of mechanical engineering) as well as our principal Dr. Kartik Kothari who gave me the golden opportunity to do this wonderful work on the topic of UTILIZATION OF CONVENTIONAL AND NON-CONVENTIONAL ENERGY SOURCES. Special thanks to Mr. Tirath Kargatiya for helping us to find more information regarding to the work.

BIBLIOGRAPHY

[1] Nagendra Vijay :- Safari Harshal Publication Ahmedabad newsletter no. 305 , October 2019 page no.: 70.
[2] Hemantkumar Shah :- Gandhi Bole che : Swati trust Ahmedabad , First edition : 2019 page no.: 30
[3] Dr. Motibhai M. Patel and others :- Education in developing Indian society : B.S.Shah prakashan Ahmedabad , Edition no. 2008 , page 174.
[4] James Hansan (2014) :- PHD study of the environment of Mars. Page no. : 30-45
[5] Devji S. Dafada :- Global warming - Serious warning madhyamik shikshan and parikshan august 2018 . Gujarat secondary and higher secondary education board Gandhinagar page 56-57..
[6] Pravin Sagar Satypanthi J.J.Trivedi : Kolso : Gujarat Vishvkosh Khand -5 Mukhya Sapadak Dr.Dhirubhai Thakar Gujarat Visvkosh trust,Ahemdabad.Dwitiya Avruti,Feb.2008 page no : 791
[7] Ghanshyam Mehta : Porbandar pravah ane prtibimb – sat sahitya prakashan trust maharshi dayanand saraswati marg porbandar February 2006 page no. 236 – 248.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)