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Importance of Renewable Energy in Rural Electrification of Developing Countries for Computer Literacy

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Abstract:- The present decay is engaged in development the power sector in a new way as a combination of electrical energy and ICT. The benefit of these two is creating a new era for energy management system where energy procurement, distribution and reuse of energy are making the system robust. The use of renewable energy from sustainable energy has created an opportunity for electrifying remote areas which can benefit people of those areas and in development of education and life style of the people. How renewable energy can produce electricity to reduce and maintain electricity production cost, distribute and collect revenues through the application ICT from remote areas.

➢ ***Research question***

How electricity production can be benefited from renewable energy and the distribution of electricity in remote areas?

I. INTRODUCTION

The use of sustainable energy is growing as clean energy. But the reuse of energy is more important to reduce the loss of energy. An approach has taken to use renewable energy to lower the electricity production cost and to distribute it in rural areas. Energy is a power in the process of transfer from one state to another by applying certain force and that force can be generated from different resources either physical or chemical like battery, fossil, wind, geothermal to provide light and heat or to run different types of machineries.

To find an alternative of fossil fuel energy harvesting is going on for a healthy living society. Among sustainable energy resources many countries have chosen solar, water, wind and geothermal energy as main resource for electricity production.

In today's world electricity is the main resource of advancement of the living society. The availability of electricity can only progress the growth of an area. The alternate resource of electricity production needs to be used in large or small scale which will reduce the cost of the electricity. The users will be benefitted by getting electricity in lower rate and clean environment as well. In Iceland both water and geothermal energy are used as resource to produce electricity. Researchers are trying to find out alternate resources to cut down the production cost of electricity for sustainable environment. Notable research activities and major advances have occurred over the last decade in this direction.

The use of renewable energy can reduce the cost of electricity if it is locally available and distributed. Hydropower, wind, solar energy, geothermal, nuclear and tidal power from sea waves are mostly used to produce renewable energy.

Whether application of wireless technology in remote areas will help rural communities to use of electricity in low rate is debatable.

➢ *Research questions:*

- What are those reasons behind the increase of electricity production cost?
- How to find different resources to generate low cost electricity?
- What are the challenges to be faced to reduce the electricity production cost?
- What are the procedures to be followed to create algorithm to convert mechanical energy to clean energy?
- How to procure data from electricity users from different sectors of the society?
- How will it improve the lifestyle of rural community?
- How to benefit from smart grid electricity distribution system applying wireless technology?

➢ *Data Collection*

- The process of data collection will be done through the web based system, creating website for the research subject, collecting information through form for remote places.
- By the survey of the rural community in India.

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II. DATA ANALYSIS

- To find out the solution for reducing electricity cost.
- Cost of using sustainable energy as resource of electricity production.
- Analysing data from different sources for the availability of resources.
- Cost of converting in renewable energy of the resources
- Cost of Software to be used for controlling, monitoring data for production.
- Implementation of the system to simulate in real world.

➢ *Problem Statement*

- The use of electricity is growing as the application of electronics items are increasing to ease the daily work of working people in metropolitan cities.
- Electricity bills in every month have become a headache for residents of metropolitan cities in developing countries as the production cost is high and maintained by public organizations.
- Rural electrification is required to use of computers in Schools, Colleges and in offices.
- The use of artificial intelligence, controlling robot applications all are mainly controlled by the electricity.
- Each mobile needs to charge the battery by plugging in electrical point. Still the electricity production depends on fossil fuel in India and other developing countries which is harmful for health as it pollutes air.

➢ *Proposed Field of Study*

Sustainable energy to renewable energy is used for producing electricity and distributing it by the application of wireless technology from remote areas.

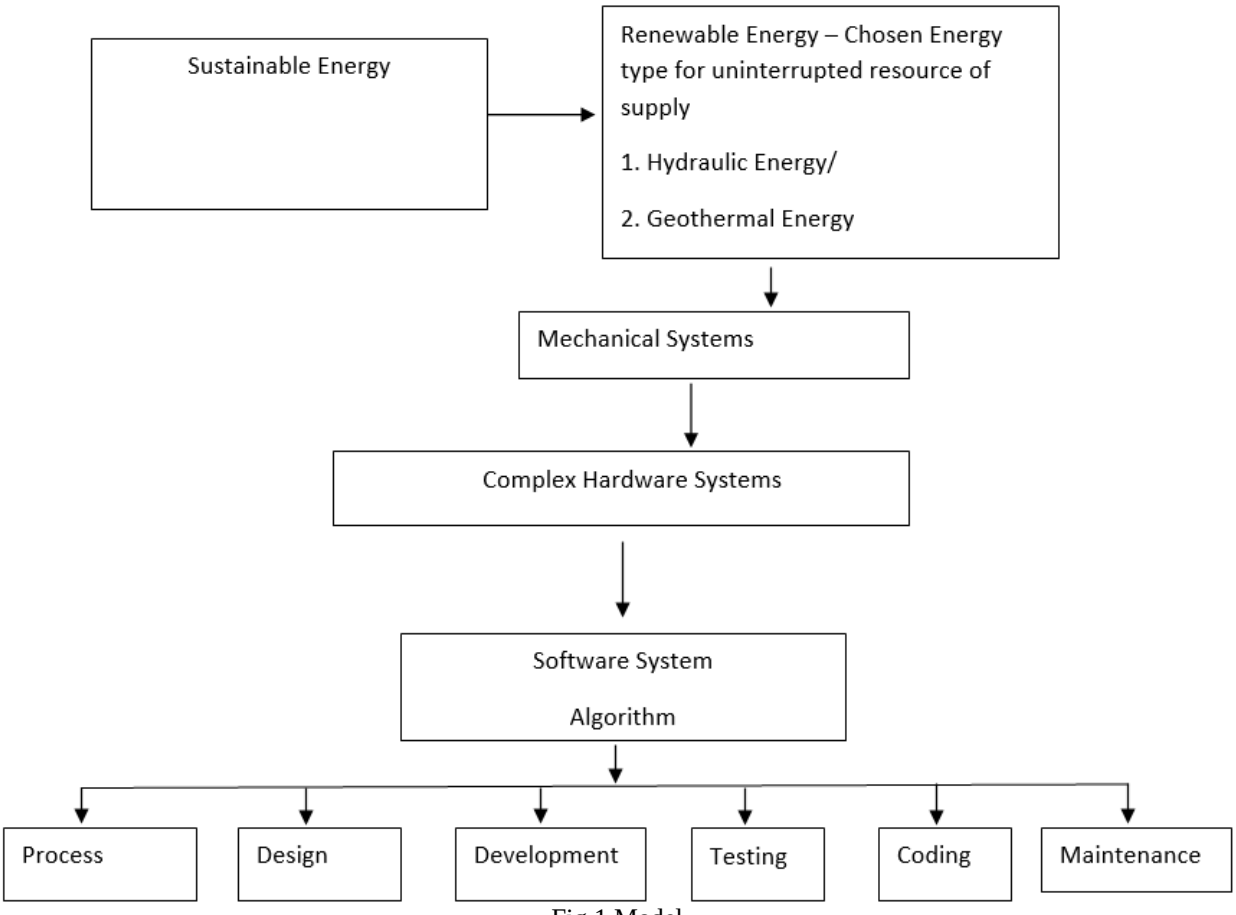

Fig 1 Model

III. LITERATURE REVIEW

Geothermal power could benefit an additional 750 million people around the world. Only one third of the world's potential hydropower resources have been developed. Hydropower already saves 4.4 million barrels of oil every day. Iceland has made a significant change in their energy consumption to 80% of it by renewable energy. Iceland generates almost 100% of its electricity with clean energy. Experts from all over the world are participating in UN University Geothermal Training program [1]. An intelligent energy management scheme is introduced for renewable resources by the application of dynamic programming. Application of Computer Intelligence (CI) in smart grid is implemented through logical flow by

applying if-then rules [2]. Distributed energy resources may help to develop distributed renewable energy. Smart grid technology is helping as an alternate use of fossil fuel for the production of electricity. The smart grid network of electricity distribution following various network topologies is helping to understand power flow behavior and distribution of power accordingly. Inductive automation is software following SCADA system which is accepted worldwide for controlling, monitoring and data analysis process of energy conversion at various industries.

IV. CONCLUSION

If the production of electricity can be started by the renewable energy from the sustainable energy it will not only help to get a pollution free environment, it will also help to save money of the users. Further research will help to find a better solution by which electricity can be distributed through wireless technology by the use of unused Radio Frequency.

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